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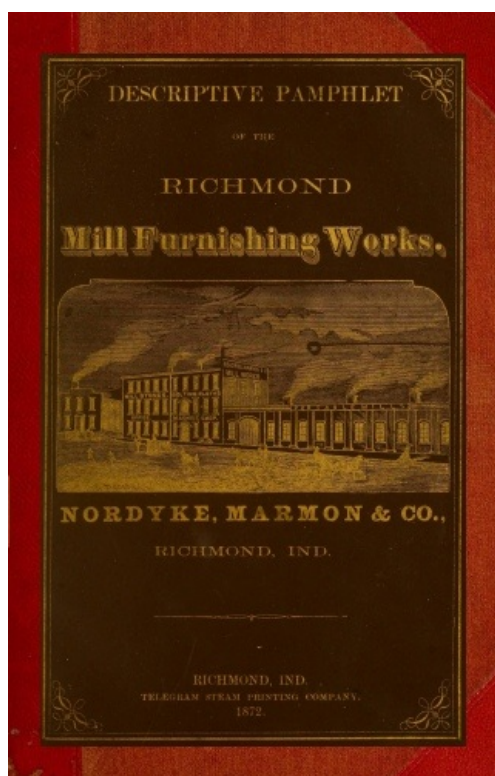
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*** START OF THE PROJECT GUTENBERG EBOOK DESCRIPTIVE PAMPHLET OF THE RICHMOND MILL
FURNISHING WORKS ***



DESCRIPTIVE PAMPHLET
OF THE
RICHMOND
Mill Furnishing Works.

ALL SIZES OF
Mill Stones and Complete Grinding and Bolting
Combined Husk or Portable

FLOURING MILLS,

Portable Corn and Feed Mills; Smut and Separating
Machines; Zigzag and Oat Separators, Dustless Separators,
Warehouse Separators, Water Wheels;
Mill Shafting; Pulleys; Spur and Bevel, Iron
and Core, Gearing.

AND

Bolting Cloth: Flour, Meal, Buckwheat and Rye Bolts.
Complete in Chests; Plantation and Farm Mills;
Screen Wire; Perforated Zinc; English Steel Mill
Picks; Elevator Cups; All kinds of Belting;
Hoisting Screws; Proof Staffs, &c.

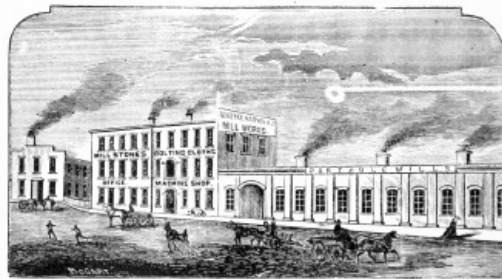
NORDYKE, MARMON & CO.,

RICHMOND, IND.

—*—

Factory and Office two Blocks South of Railroad Bridge.

RICHMOND, IND.
TELEGRAM STEAM PRINTING COMPANY.
1872.



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CONTENTS.

Introductory	5
Mill Stones	8
Building and Balancing Stones	9
Standing and Running Balance	9
Bolting Cloth	13
Under-Runner Mills	14
Under-Runner Geared Mills	16
Upper-Runner Mills	17
Pulley Mills	18
Attaching and Driving	18
Geared Mills	19
Single Reel Bolt, complete	21
Portable Mill and Bolt	22
Complete Portable Grinding and Belting Flour Mills	24
Combined Mill Husk	31
Double Reel Bolts	35
Grinding and Flouring, and Capacity	35
Keeping in Order	37
Directions for Ordering	39
Setting up and Starting	40

Smut and Separating Machines	41
Ordering Smut and Separating Machines	44
Dustless Oat Separator and Zigzag	45
Flour Packers	47
Bran Dusters	49
Farm and Plantation Mills	52
Corn and Cob Crusher, and Grinder	54
Corn Shellers	55
Hominy Mills	58
Scales	60
Weight of various Products	64
Contents of a Hopper, how to find	65
Contents of a Bin, how to find	65
Shafting, Hangers and Boxing	66
Rules to find Speed of Pulleys and Gearing	70
Weight of Round or Square Iron	71
Weight of Sheet Iron	71
Spring Coupling and Driver	72
Gearing	73
Spur Geared Mills	74
Cogs	74
Water Power	75
Measurement of Water in a Stream	75
Steam Engines	77
Self-Tramming Mill Irons	78
Oil Bush	81
Mill Bushes	82
Lighter Screws and Hand Wheels	84
Lighter Levers	85
Mill Steps	85
Mill Curbs or Hoops	86
Silent Feeders	87
Proof-Staffs	88
Red-Staffs	89
Mill-Picks	89
Hoisting Screws, Bales and Pins	92
Damsels	92
Elevators	94
Elevator Cups and Fastenings	95
Bag Trucks	96
Conveyor Flights	96
Belting	97
Buckwheat Bolts	97
Meal Bolts	97
Perforated Zinc and Iron Plates	97
Screen Wire	97
Duster Wire	98
Prices, Terms, and Weights	98
Testimonials	99
References	115
Table of Logs, reduced to Board Measure	118

INTRODUCTORY.

We present our customers and those whose names have been given us with our descriptive pamphlet for 1872.

Having now been established over thirty-five years in the construction of machinery in this particular line, and knowing most of the old and new improvements which have been a success and those which have failed, we are offering, after almost a constant course of labor, mill machinery of undoubted superior qualities. And now we invite the attention of those interested to the articles of our designing and make, fully believing a careful investigation and comparison with the work of any manufacturer will convince them of its excellence. Our work being represented in OVER ONE THOUSAND FLOURING MILLS is some evidence of its practical

merits. NO EXPERIMENTS, BUT GET THE BEST. We have files of letters and statements that tell of the costly experiences of those having bought new and untried machinery.

The mill of to-day of whatever dimensions must be simple, compact, efficient, durable and cheap.

THE FOLLOWING POINTS

have claimed our special study to obtain the best results in the different locations, and purposes required.

1st. The best wheat scouring and separating machinery.

2d. The quality of burr stones required, best speed, draft and form of furrows, and best mode of driving them.

3d. Numbers of cloth, amount of bolting surface required, best arrangement of numbers, &c.

4th. Propriety of regrinding, how best to grade the offal for this purpose, as well as other requirements of flour mills.

COMBINED HUSKS

with two to four run of stones varying from two to four feet diameter, and all in one substantial frame, spindles being long and arranged for the gearing and lower part of husk to be in the basement of the mill-house on an independent foundation, are made complete in our works, carefully put up and adjusted, marked, taken apart, small pieces boxed and otherwise prepared for shipment and ease of putting up. This plan was first adopted by us in the year 1867; since that time we have put out considerably over one hundred run of stone on this plan, all receiving the highest commendations of the owners.

OUR PORTABLE MILLS

are in extensive use, but by careful observation we have found the means of improvement, and within the last few years have revised our patterns, and we say, with entire confidence, all things being considered, that we make the best heavy husk portable mill in the market, they having none of the objectionable features so common in mills of this class.

PARTICULAR ATTENTION

is directed to OUR COMPLETE GRINDING AND BOLTING FLOUR MILL adapted to the special demands of a custom mill. Those now made have all the improvements of value to the present date, and furnished at a price so reasonable that every town or neighborhood of sufficient demands can be supplied; good flour and yield guaranteed.

SELF TRAMMING, DRIVING AND BALANCE IRONS

as improved, are extensively used, and in brisk demand. These are no new and doubtful experiment. See the cuts and description, and the defects of other modes of driving irons will readily be understood. We are prepared to execute

DRAWINGS AND PLANS

with description, bills of material required in the construction of mill-house all ready to receive the machinery, showing also the location of mills and machinery in the building. This is of special advantage, as it can be turned over to the carpenter or contractor for execution, thus saving trouble in knowing the cost before you begin, as well as knowing where to strike.

OUR ADVANTAGES.

Our whole attention is devoted to this particular line of manufacturing, with special tools, machinery and permanent buildings built and adapted expressly for the purpose, at a great expense. We are thus enabled to conduct with system and accuracy the production of good work. We have advantages in location, as a glance at a map of the States will show; we are central, in ready access to lumber, coal and iron, (other makers both east and west of us are supplied in a great measure, some altogether, with hard lumber from our State.) We have good Railroad shipping facilities in all directions, and purchasers can have their work safely delivered almost at their own doors at low shipping rates.

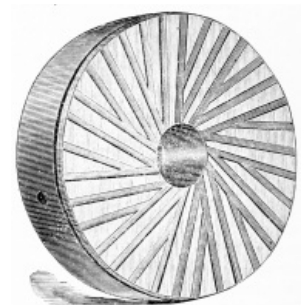
With these advantages we are able to compete with any factory, east or west, saving time, money and risk to the purchaser.



MILL STONES.

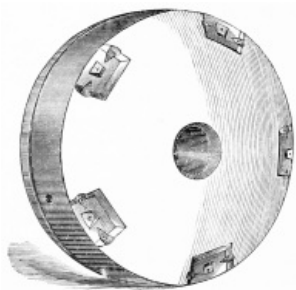
This is one of the specialties of our business. It has been built up from small beginnings to one of the largest west of New York. We keep a large stock of burr blocks from which to make selections. Hence if we should not have on hands, built up, the sized stone or quality that is wanted, we can give our customers just what they need on very short notice. Our facilities for turning out first-class work of this kind, are equal to any in the west. Having in our employ men experienced in the manufacture and use of burrs, we are able to furnish our customers just the quality of goods they need for their particular class of work.

We are well aware of the importance of a good mill stone to profitably flour wheat, and give this department the most careful attention. For a description of our method of building and backing up runner stones, we refer the reader to the article following, under the head of "Building and Balancing Runner Stones." Where our customers prefer to do all the mill-wright work in their mill, we are prepared to make in addition to the burrs, such shafting, gearing,



FACE OF MILL
STONE.

spindles, irons and machinery as they may need.



BACK OF STONE.

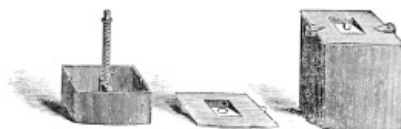
Building and Balancing Stones.

We put all runner stones on a point or cock-head, and keep them in balance while "backing up;" consequently they are as near in standing and running balance as they can be, by this means. We have testimony to the fact, that a number of stones we have made (all balanced upon the old plan of a cock-head at the center,) are in such perfect balance that if the wheat is exhausted in the hopper, the face of the runner *will not touch the bed-stone*. The importance of balancing on the true principle, is mostly overlooked. In a mill properly balanced, the stones will keep a better grinding face with one-half the time and labor required if they are not thus balanced. Particular attention must be paid to *keeping* the runner in balance, as after leaving our works, the cement dries out in such a manner as to sometimes throw the runner out of both standing and running balance. For a description of the means we provide to do this important work of balancing, see the cuts and description under head of "Standing and Running Balance."

We put *iron backs* on our under-runners, to protect the stone from wearing out of balance.

Standing and Running Balance.

Millers as a rule know that a stone in standing balance is not always in running balance, and *vice versa*, yet they are well aware that a stone should be in both. The reason these two balances do not always exist at the same time, or why the *light* side of a stone standing should seem the *heavy* side on running, is not clearly understood, and hence the difficulty in obviating the trouble. The importance of a correct standing balance and at the same time a true running balance, cannot well be over-estimated. Suppose the balancing weights in a runner are so adjusted that the stone stands in balance on the cock-head when raised above the bed-stone, but on starting, instead of its face remaining true and running steady, one side droops, and it runs with an apparent vibration or oscillation of the face. It will be found, however, upon examination, that it will always run with the same side low—going to show that the difficulty is centered in one certain point.



In these cuts are shown the improved balance boxes adopted by us. The one on the right is the box complete. They are placed in the runner with the rounding part in contact with the band, with the lid of the box a little below the plaster back. The figure to the left illustrates the inner adjustable box and screw for adjusting the same when in the stone. It will be noticed it has two parts divided by a partition. The cover to this inner box shown in the middle figure is secured with a screw, and fits down upon the box and close over the division, so that either side may be used when the weight is wanted at a point between any two of the balance boxes. We put five of them in a runner stone. This number is deemed entirely sufficient. They are made of cast-iron and fit up in good style, the wrought screws being all tapped into the iron. We find this balance box gives the miller entire control of the runner, and easy to operate, simply by removing the curb and letting the stone rest in position. A wrench is all the tool needed; the weights when in position are not subject to derangement, as those ordinarily used.

Now that we have the means explained by which this important work is to be done, next comes the question, How shall I do it? First, we would say, put the runner in standing balance in the usual manner, and lowering the required weight to the bottom of the boxes. In mills with the old style of stiff driving irons the spindle and driver must be *carefully* trammed to the runner, as well as a proper bearing and a good fit of the cock-head into the cockeye; unless this is attended to it will be no use to proceed. Where our self-tramming driving irons are used, the process of putting in a balance will be a pleasure instead of a long disagreeable process, and it will be more perfect than is possible with any other appliance for this purpose.

The runner being in standing balance, place two boards planed evenly and $\frac{3}{8}$ of an inch in thickness between the stones, (they may be 4 to 8 inches wide) allowing the ends to project sufficiently to fasten securely to a block or piece of timber fastened to the husk; place them about midway between the spindle and outer edge of stone, and put the stone in motion, letting it down upon the boards until its face runs steady and true; then turn off the plaster back perfectly true with the face, from a firm rest properly supported; now try the standing balance again. By turning off the back it may have been changed. Next find the light side of the stone by elevating the runner from the boards, and run it as fast as it will bear without too much vibration, as in cases where the stone is much out of balance the full speed should be approached

gradually in the process. Hold a pencil against the rest plank and approach it slowly until it touches the turned back of the stone, say 4 to 6 inches in from the band or skirt. It will of course mark the side which runs high. The principle or real cause of this side of the stone running high is that the center of gravity or weight on this side is too low, (below the cock-head and point of suspension,) while the center of weight on the side that runs low is too high and above the center. To change this so as to bring the center of weight of each side respectively on the same level, is what we must accomplish.

As we know which side of the stone was high, now take, say two to six pounds, as the case may require, of iron, broken into small pieces, or shot, and take one-half of the amount and put into the inside box screwed to the top of the box on the side that runs high, and the other half in the box or boxes opposite, and lowered by the screw into the bottom of the balance box. Then test the stone and make a new mark, add weight carefully until the face runs true up to the full grinding speed. Be careful to divide the weight, as it may be added, so as not to disturb the standing balance.

Standing balance is simply an equal weight on all sides.

Running balance is having the center of gravity just as far from the face on one side as the other.

Irregular motion, and no matter how fast, will not affect the runner when balanced as we have explained.

If this important item is properly attended to, as well as keeping the stones in good flouing face, there will be less killing of the life of flour, and allowing middlings and unclean bran to escape. The value of the flour, both as regards nourishment and health, depends on the amount of nutritious, aromatic and saccharine properties retained in the flour which the wheat contains.

This result depends upon the flouing process the meal has been subjected to between the stones. On the amount of these properties in the flour also depend the weight and sweetness of the loaf when baked; likewise its light and white qualities when used for any purpose.



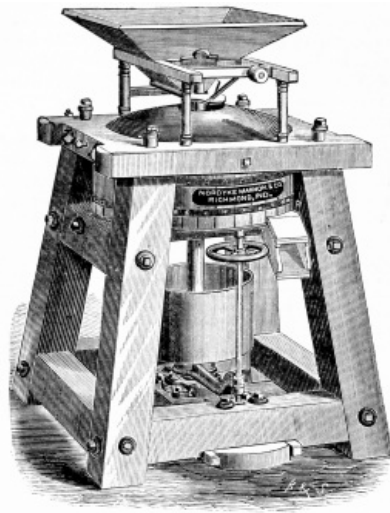
BOLTING CLOTHS.

There is a great deal said and published by those who furnish cloths, concerning the merits of the brand of cloth they sell, and demerits of others, so that millers are at a loss where to buy, when there is so much difference of opinion. When bolting cloth is wanted, all we can ask is to address us for samples to examine. If the cloth is ordered at once, and you want privilege of examining at express office before paying for same, please state it in the order. In the examination of Bolting Cloths parties are often led astray; some brands of the French and Swiss appear even, smooth and heavy; they are well sized with a kind of gum and sugar of lead, but when used awhile their bad qualities are betrayed by the uneven and fuzzy appearance.



The cloth kept in stock and for sale by us is the brand of "Dufour & Co.'s Old Dutch Anchor," acknowledged by the most experienced mill-wrights and millers to be THE BEST. We have it imported direct by the only importer of this kind of cloth in the United States, and get it as low as any of our competitors. We have tested this cloth, not alone by long use, but by thoroughly washing and rubbing out all the sizing from a piece of this, as well as the other brands, and comparing carefully the weights and texture of each before and after the process. As the result we have found more silk in the Dufour Cloth than any other brand, as well as more firmly locked thread and even texture. We make cloths up in large quantities; have at times ten to fifteen on the way. We require the length of the reel, number of ribs, measurement around the reel, and distance from center to center of ribs, to enable us to make a good fit.

UNDER RUNNER PULLEY MILLS.



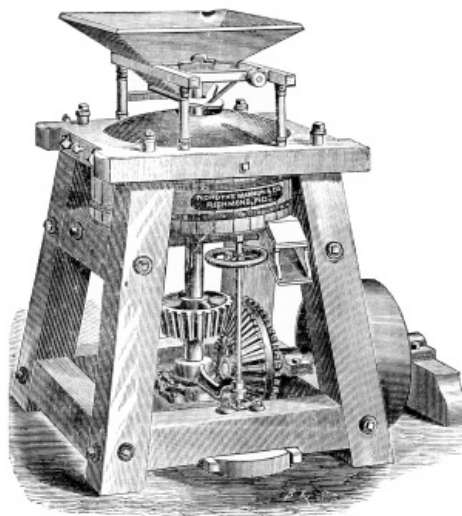
The above engraving shows our PORTABLE UNDER RUNNER MILL, as improved. For grinding wheat, corn, feed, or flouring middlings, they are inferior to none. The runner is balanced upon a steel point or cock-head, projecting into a steel seat. Argument is no longer necessary to prove to intelligent millers the advantages of a cock-head mill over those having the runner stone secured rigid to the spindle. The driving irons in this mill are those shown under head of "Self-tramming Mill Irons." No mill is perfect without them; with them they are more desirable for wheat grinding than any other under-runner mill.

The bed stone is stationary in the upper part of the husk frame, and is turned over on heavy hinges when necessary to sharpen the burrs. Four stiff rubber springs around bolts, are provided above the bed stone-frame, holding it down while grinding, for the important duty of allowing said bed-stone to yield up in case any hard substance enters between the stones. In this way we prevent the liability of breakage, and overcome the very popular objection to all other mills having the under stone to run. In addition we provide a metallic bush arranged to oil collar of spindle while mill is running. The curb is made of pine staves, and banded with neat iron bands. We furnish either damsel or silent feed as desired. The runner has a cast iron back to prevent any inclination to wear out of balance. The husk is made of hard wood and very strong. Many other points of excellence could be mentioned. The improvements are protected by Letters-Patent.

Diameter of Stones.	Diameter of Pulley.	Width of belt to drive.	Revolutions per minute.
26 inches.	18 inch.	7 inch.	440
30 inches.	20 inch.	8 inch.	400
36 inches.	24 inch.	10 inch.	330



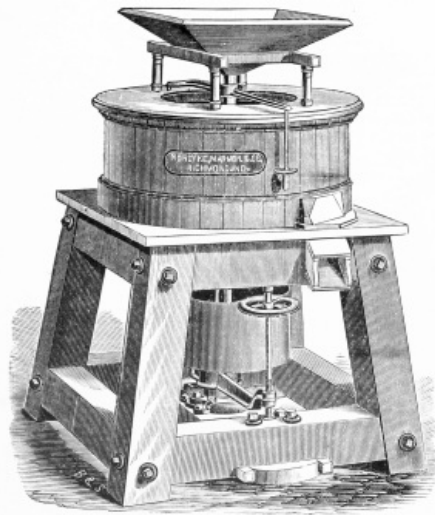
GEARED MILLS.



OUR UNDER RUNNER GEARED MILLS

Are substantially the same as set forth on page 14, excepting they are provided with heavy gearing, horizontal shaft, pulley and boxing lined with anti-friction metal. The gear is faced off in a lathe before the cogs are put in, the pulley is turned and balanced, all being fitted up in the best manner from new patterns, strong and in good proportion. We have the best and smoothest running geared mill in the market.

UPPER RUNNER PULLEY MILLS.



This cut represents our PORTABLE UPPER RUNNER MILL. The heavy runner in addition to being built in balance is provided with five improved standing and running balance weights, adjustable with screws. (See under head of "Standing and Running Balance.") This mill has the self-tramming irons set forth under its proper head; improved silent feed rig; wrought iron spindle with steel ends; steel cock-eye in runner stone; a tram step to tram by means of screws; the oil fountain bush and followers; pine stave curb or hoop banded with iron under walnut finish; stones faced and furrowed, of a good selection of French burr, of sharp even quality, and other additions and advantages not necessary to mention, all made complete with pulley as shown in the cut, or gear as shown on page 16, and secured in a strong ash husk frame. The step-irons used in this mill admit of our using a much longer spindle without making top of mill higher than usual. The principal improvements on this mill have been secured to us by two distinct Letters-Patent.

Diameter of Stones.	Diameter of Pulley.	Width of belt to drive.	Revolutions per minute.
30 inch.	20 inch.	8 inch.	360
36 inch.	24 inch.	8 inch.	300
42 inch.	30 inch.	10 inch.	240

ALL OUR PULLEY MILLS

Are furnished with our improved low down Set Screw Step, giving a spindle one-fifth longer than any other mill with same height of hopper, and constructed in the ordinary manner.

With this step the spindle is trammed by means of set screws, thus making it more readily and accurately adjustable, at the same time avoiding the liability of getting out of tram. This step is so constructed as to avoid changing from its true position or out of tram, when the runner stone is raised or lowered by the lighter screw. The *husks* of these mills are made of ash timber, strongly bolted together with wrought iron joint bolts. We furnish turned iron pulleys balanced and keyed to the spindle, so they can be raised or lowered at pleasure. The curbs around the runners are of the kind shown and described under head of "Mill Curbs or Hoops." The feed rig, either our improved silent, or shoe and damsel, as may be wanted by the purchaser, or for the purpose required.

Attaching and Driving.

It will generally be found most desirable to drive our pulley mills from a horizontal shaft and pulleys, with reel belts and tightning pulleys in a movable frame, or quarter-twist belt.

Place the mill upon a solid floor or firm foundation with the bed-stone level; cleat around the posts, and bolt through two of the lower ties; if room is precious a platform can be placed over the belt or belts running from the line-shaft to the mill. This shaft should be from thirteen to fifteen feet from the mill spindle, to give sufficient length of belt.

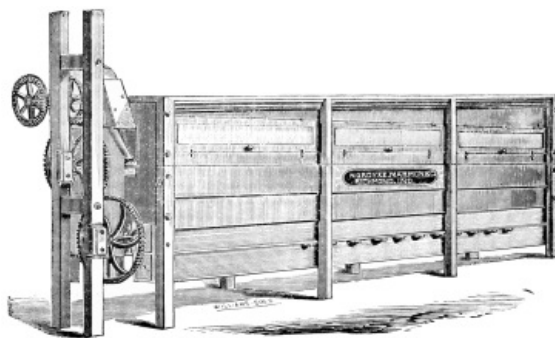
The center of the mill pulley and driver must not be in line, but as follows: When the reel belt plan is adopted, *place the center of the mill pulley four or five inches below the top of the driving pulley that runs from the mill, and the side of the mill pulley that runs towards the driving pulley in line with the center of the driving pulley, then place the idle or tightning pulley in a sliding frame on the under side of the slack belt near the driving pulley, and of the proper height and angle to lead the belt squarely on the mill pulley.*

When locating the mill to run by "quarter twist belt," place thus: *Upper or lower side of the driving pulley, which runs towards the mill, should be five or six inches above the center of the burr pulley, and the side of the burr pulley that runs towards the driving pulley must be in a line with its center.* In attaching the

bolt it will be observed that its position depends somewhat upon how the elevator foot and cooling conveyor are placed. It will be found best in most situations to put the cooling conveyor and elevator foot entirely below the floor. It is a good plan to set the Portable or in fact any kind of a mill on a foundation entirely below and independent from the floor of the house. The reel belt plan of driving from a pulley on a horizontal shaft, even if a large one, will make no edge strain on the belt whatever, and in stopping and starting is of great convenience. We have it shown in a small way in the cut, Fig. 3, under head of "Complete Grinding and Bolting Mills." Where we furnish the mills, we always, when requested to do so, send draft and plans showing how to set up and arrange all, so that it will be a success, and without additional charge.

GEARED MILLS

Are furnished with wood and iron gearing—wooden cogs in the driving wheel. This does away with the noise and deafening clatter of the ordinary, or all iron geared mills. (See under head of "Gearing," and "Under Runner Geared Mills.") These cogs are of wide face, thus having a large bearing surface, and wear but slowly. Where there is one mill the shaft is long enough to receive the pulley and one journal box outside. We often put three run of burrs, two wheat and one corn, upon one continuous shaft. This makes a very compact arrangement. In this case the mills are detached by slipping the pinion or wheel out of gear, on a sleeve provided for the purpose.



SINGLE REEL BOLT.
Lower part of Elevator and Cooling
Conveyor not shown.

SINGLE REEL BOLT—Complete, and Dimensions.

(See preceding page.)

Our bolts are so well known that a full description seems superfluous. Their constant use for fourteen years has suggested some marked changes, which together with a brief outline of the bolt itself, we will describe. The object gained is a more efficient bolt for custom work, either for a Portable Mill or any flouring mill however large or small, where a bolt is wanted specially adapted to the demands of custom grinding; at the same time a bolt that can be shipped to any point on a navigable river or railroad in the United States or Territories. We have already sent a number of them into Northern Minnesota and Wisconsin. Also, Texas, Kansas, Georgia, &c., &c. When so ordered they are taken apart and boxed, previously marked how each part belongs, and drafts and description of how to set it up, sent so that one at all skilled can put it up in the mill and have it ready to run in two to three days time. For those residing within a few hundred miles of our works, we mostly send on open cars or boat, well protected by paint and varnish, and out of the great number shipped within ten years past, have not had a single one at all damaged that we know of. They are made in large quantities, the parts being duplicated and cut out from patterns, and by machinery adapted to the purpose. The lumber contained in them is thoroughly seasoned, and selected of the best quality. The parts usually sent with them unless otherwise ordered are:

1st. All the gearing and shafts required, with supporting frame and bearings for the elevator head, spout, gear and shafts.

2d. Extra heavy cloth of Dufour & Co.'s Dutch Anchor brand made up to fit the reel, with strips of ticking to come in contact with the ribs of reel, and proper arrangement of numbers to make flour that will bear inspection. This is generally sent by express in a separate package.

3d. The elevator complete, as follows: forty feet of $4\frac{1}{2}$ -inch leather or gum belt, thirty 4-inch heavy tin, iron banded, cups, with improved copper clasp fastenings, head and foot with turned pulleys in them, including an outside pair of bevel or spur wheels or turned pulley to receive power. (See cut of elevator head and foot under head of "Elevator, Cups and Fastenings.")

4th. A cooling conveyor geared by suitable wheels to the shaft in foot of the elevator, so that it can be located in any direction to suit the situation. To fill some special orders we have put the cooling conveyor on top of the chest; in most cases it is best to have it below. The frame work of the bolt is made of hard wood and well bolted. Conveyor for flour and one for returns full length of bolt; conveyor flights are of hard wood; cut offs are provided so that one-fourth, all or any degree of the flouring cloth may be used for fine flour, at the option of the miller.

TABLE OF DIMENSIONS.

Length of Reel.	Extreme Length.
For 26 and 30 inch mill 16 feet.	18½ feet.
For 30 and 36 " " 18 "	20½ "
For 36 and 42 " " 20 "	22½ "
For 42 and 48 " " 22 "	24½ "

They are 3 feet 6 inches wide and 6 feet 2 inches high to top of elevator.

PORTABLE MILL AND BOLT.

In our portable Mill and Bolt we have condensed all the advantages required of a custom mill in making a prime article of flour and much better suited for the purpose. We have not been sparing in the material necessary to make every part strong and durable, and they will bear to be continually used with a strong power without any part yielding in the least. The bolts are arranged for making all the cut-offs for changing the grade of the flour, thus using more or less bolting surface, or making more or less returns, as may be found necessary. It makes a quick and even discharge of flour from the flour spout, there are no hoppers or anything for the clogging of flour, and every customer gets his own flour from his own wheat. This is of great advantage, and if not pretty fully accomplished creates dissatisfaction with customers. The Bolts in connection with our Mills are of ample capacity when the grain is in proper condition to make good flour. They are made much larger and in more roomy chest than ever before. They are supplied with our improved *percussion apparatus*. This has now been in use in its present style for over ten years, with perfect success. It is composed of three sets of hinged arms, or knockers, three in each set, secured to every alternate rib of the reel inside, gently tapping the ribs on the downward or empty side of the reel, thus not forcing the flour *through* the cloth, but dusting out and unclogging it. These can be stopped or started by the miller at any time while the Bolt is in operation—either one set, two, or all, as circumstances may require. These, every practical miller knows, after having used them, to be indispensable to counteract the extremes of damp and dry, or cold and exceedingly warm weather. Some millers utterly condemn the use of knockers on bolts, and, in reference to those commonly in use, we will agree with them in this. The difficulty lies in the fact that commonly they are so arranged that the miller is obliged to use them at all times. In free bolting weather, he not only wants to stop the *percussion apparatus*, but also to have all the safeguards against too free bolting at his command. With this apparatus and proper grinding no clogging of the Bolt will ever be noticed. By the use of this apparatus we are enabled to use finer cloth than without it, and at all times bolt even and obtain better yields. This tried and valuable improvement has been secured by Letters-Patent.

These *Mills and Bolts*, or either of them separately are constantly being attached to old and new mills, warehouses and places where steam and water power can be had or used. We use on these Bolts Dufour & Co.'s celebrated Dutch Anchor brand of Bolting Cloth made up in best manner with 2½ inch strips of heavy ticking to come in contact with the ribs of reel.

Some parties erroneously entertain the idea that a *portable mill* is a temporary affair. They obtain this idea from the word *portable*. This word, applied to a mill, means only that the machinery is built in such a manner at the factory as to permit of its being shipped the same as any other machinery. Our portable mill has all the qualities for doing good work, and all the durability, that any old style mill has. It further has the advantage of enabling a man to put up his mill without near so much delay and expense as is required in the old style. In every instance where a portable mill has failed to do its work properly or to be durable, it has not been because it was a *portable* mill, but because it was not constructed on *good well-trying* principles, or of good material, or the fault may have been because it was not set up as it should be, or had not been properly managed after it was set up.

Our Mills and Bolts are fitted up and put together ready to run, before shipment, then properly arranged for shipping, and delivered on board the cars at the proper depot here, and a through rate of freight contracted in the shipping receipt.

COMPLETE PORTABLE GRINDING AND BOLTING FLOURING MILLS.

The cuts, Figs. 1, 2, 3 and 4, are intended to show the different arrangements in buildings and are made by us of the following sizes of stones: 30, 36 and 42 inches diameter of upper-runners, and 26, 30 and 36 inch of the under-runner kind, with the bolts described fully elsewhere, of ample capacity and to meet the special demands of a custom mill, capable of making flour that will bear inspection in any market, at the same time good yields, and are as economical in the use of power as any mill in the United States. Drawings and directions to set up sent with each mill when ordered. It betters the arrangement to place the husk frame 20 inches below the floor; the discharge spout and hoppers all come at a convenient height for the miller to see into the hopper and operate the mill without stooping. In Figs. 1 and 3 they are shown thus. We advise making a platform in the rear of the mills over the belts. The stones and bolt-chest can be placed on same floor, as Fig. 1, or the bolt above as the situation requires. They will grind and bolt from six to fifteen bushels per hour according to size, and can be put in operation in a short time, and are no more liable to get out of repair than the best mill in use.

Those having their power all ready, should give us the dimensions of it and kind, to enable us to give correct information as to size of mill best adapted to it, &c., &c.

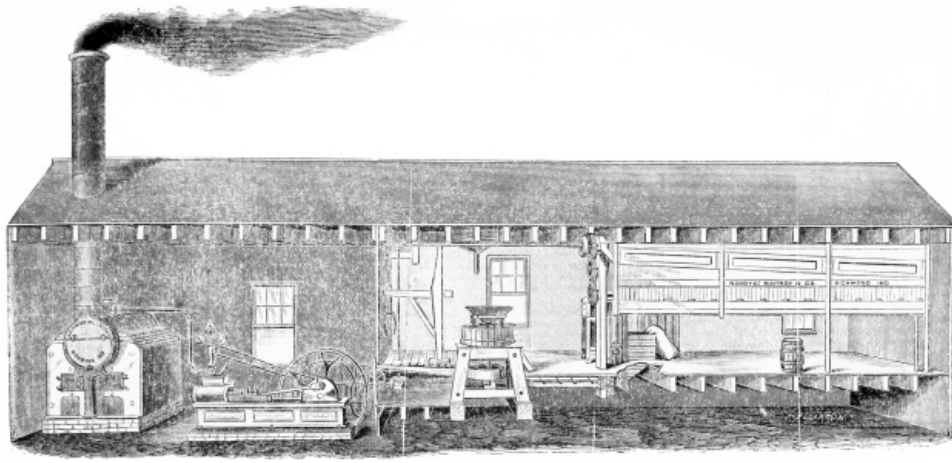


Fig. 1.

The above shows our Portable Mills, arranged in one story house and driven by Reel Belts and Tightening Rigging to Shift Belts. For Ground Plan, See Fig. 4.

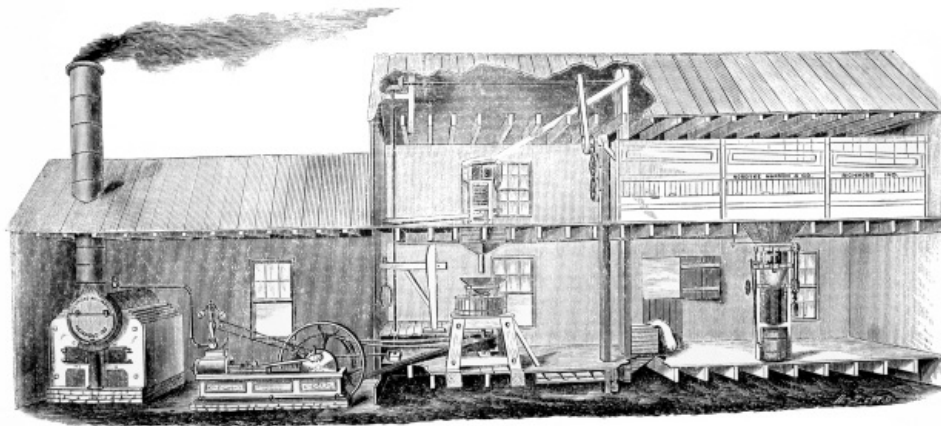


Fig. 2.

Portable Mills driven by quarter twist Belts without the tightening rigging. For Ground Plan, See Fig. 4.

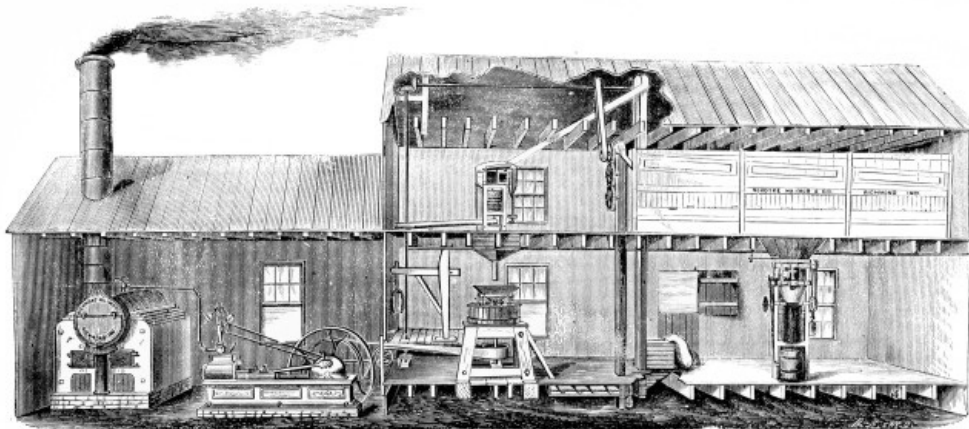


Fig. 3.

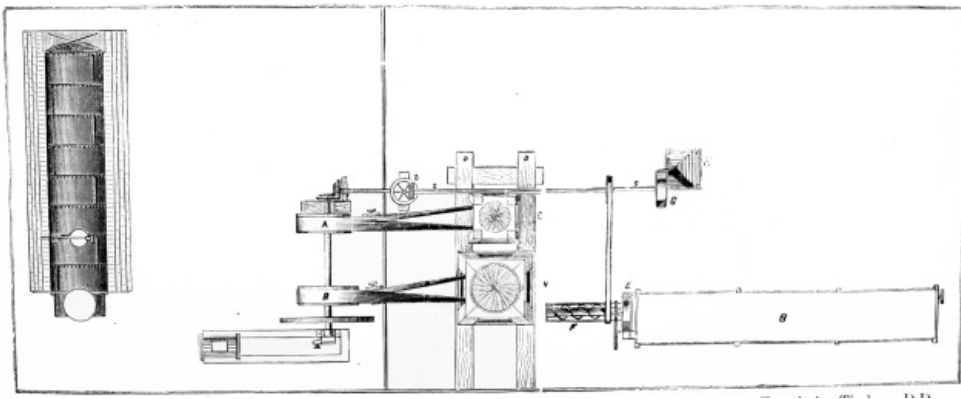
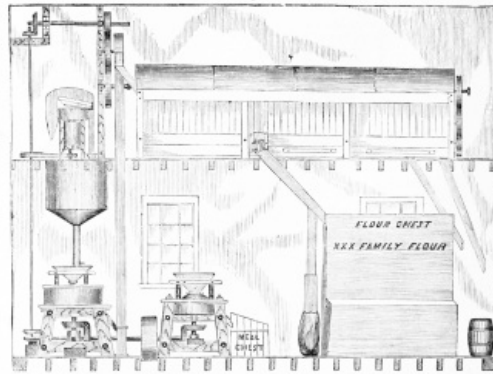


Fig. 4.

This Ground Plan view applies to Figs. 1, 2 and 3. Line Shaft, S S, Bolt at B, &c., is located above. Foundation Timbers, D D and Cooling Conveyor, E, is under lower floor.

Fig. 5.



This engraving represents two geared Mills with their attendant machinery as arranged in the Mill Building, Warehouse, or any house suitable. The application of the Power to be by belt from Engine or Water Power to the Large Pulley between two Mills.

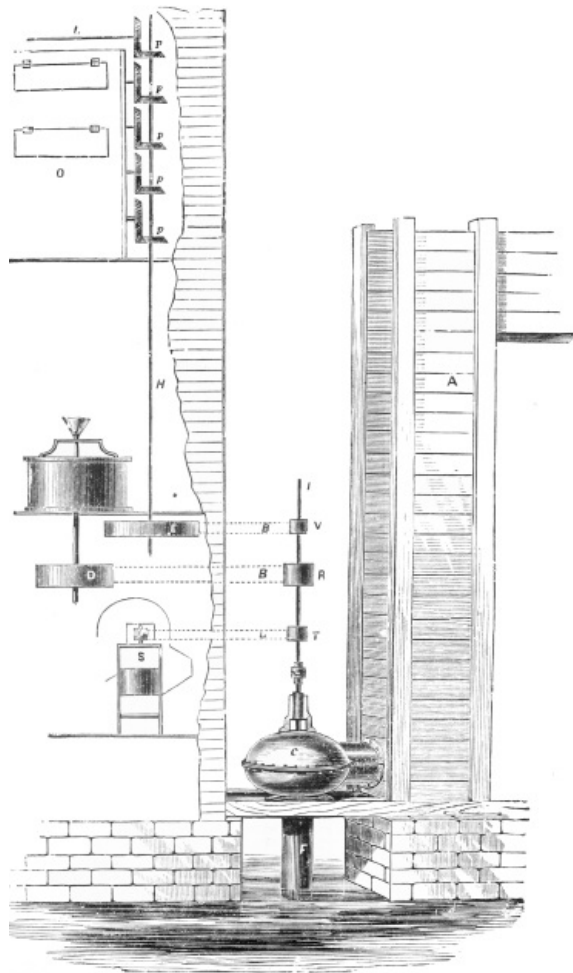


Fig. 6.

**WATER MILL,
Driven by Belts under high head, with
Wheel in Iron Casing.**

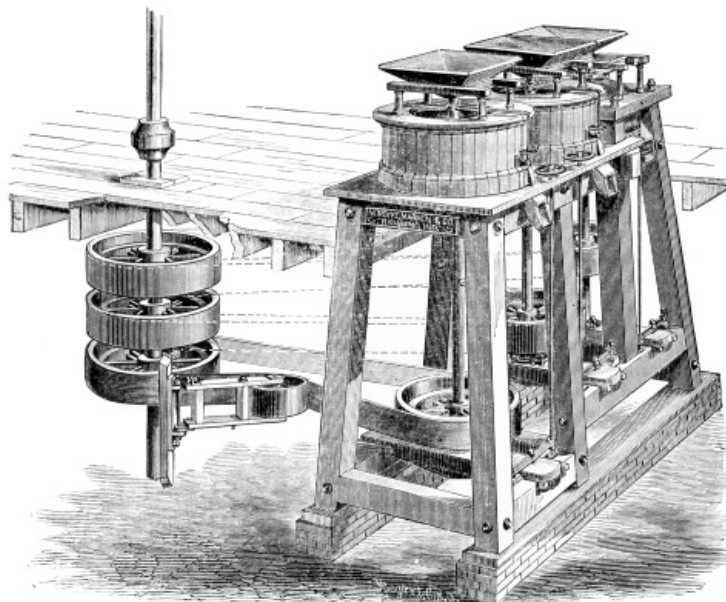


Fig. 7.

**COMBINED
MILL HUSK.**
[See Page 31.](#)

COMBINED MILL HUSK.

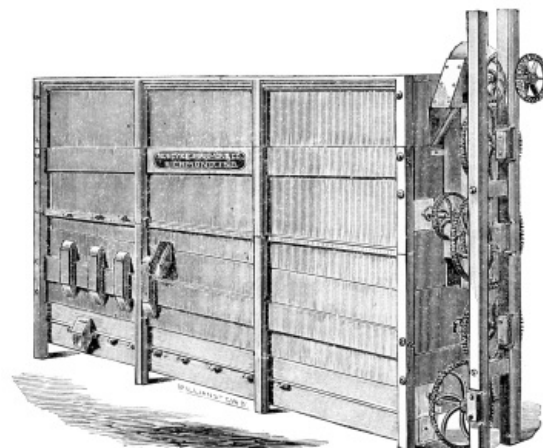
In cases where there is or can be a basement under the grinding floor, we advise lengthening out the husk posts sufficiently to throw the gearing or belts entirely below the floor. When this is done the husks of

the two or more run of burrs are combined into one, making it very solid. This style of mill, where there is room under the grinding floor for it, is the best arrangement possible.

A husk of this kind has all the firmness and solidity of the usual style of frame husk, and yet it is not so bulky and cumbersome. Heavy joint bolts being used entirely, instead of pins, it can readily be tightened up, should any part become slack. These joint bolts bring the timbers harder and more firmly against the shoulders than it is possible for pins or keys; hence its exceeding firmness. Mills put up by us in this style cost the purchaser less money than it is possible for him to buy the burrs, spindles, steps, lighter screws, steps, feed rigging, etc., complete, and then get his timber, hire hands, and build it himself. After he finishes his husk, he will find, in addition to its costing him more than if we should furnish it, he has not nearly as neat a husk, nor one that looks like a finished piece of machinery. The entire timbers in our Combined Husks are dressed and varnished. While it is together in our shop, before taking apart for shipment, every piece is so marked as to show plainly its place in putting up when it arrives at the mill. Customers purchasing these husks, etc., complete, avoid the delay in starting their mills that is necessarily connected with this when all is made at the mill. At the mill, everything has to be done at a decided disadvantage over doing it at a shop where there are tools and machinery especially adapted for the work, and hands that are thoroughly accustomed to doing it.

This style of Mill, with pulleys on the spindles, driven from an upright shaft by belts with tightening pulleys on the slack side, makes the most convenient, and at the same time, as durable and efficient a mill as can be built. With this arrangement, any burr or burrs can be stopped or started at pleasure, without disturbing the others. Where any changing of burrs has to be done, as is the case in custom mills, this is an important item, both for convenience and economy. It saves the time that would be lost in stopping the entire machinery of the mill, shifting the gearing, and again starting, which will always amount to several minutes, by the time the burrs are again properly grinding. And, further, belts do away with all liability to that jar and chatter that always more or less accompanies gearing not kept in proper condition in every respect, which is very seldom done. The belt gives to the burr a very even, steady motion. Our experience is that these belt mills are as easily and more *accurately* kept in tram than geared mills with any kind of gearing. This method of driving burrs is not only desirable for custom mills, but is also well adapted for merchant mills. We think no better or more satisfactory arrangement for driving either custom or merchant burrs than this, is in use, and we have had experience with all methods. We have over one hundred of this style of mills running, driven by belts in this manner, and they are giving the most entire satisfaction. Most of them are run by parties that have used various other methods of driving their burrs. These all give this style a most decided preference over any other method of driving. The cost is about the same as gearing. We can now give parties interested, references to mills of this same kind in most any of the middle and western States. Of course we do not advocate this plan of driving burrs, nor this style of husk for every case. There are a great many places where there is not the necessary basement room, and parties do not wish to go to any more expense than the usual short husk portable mill, and some situations would require a geared mill all rigged and fitted up in the best manner.

In the engraving, Fig. 7, is shown one of these husks with two upper and one under runner mill; the frame is not shown as heavy as we use for 42 inch and 4 feet stones; one of the lower belts is shown, the others in dotted lines. The shelving for supporting the belt when the tightening pulley is thrown back is not shown. Our adjustable tightening frame and hinge is of superior advantage in stopping and starting either one or all the burrs. They are operated by hand wheels from above in a very simple and easy manner not shown in the cut. The precise slant and position of this movable pulley is regulated by an improved hinge having but three castings, a wrought iron rod, and three screw bolts, one of them provided with two hexagon nuts to regulate the position in one direction, while the plate to which the frame is hinged allow it to be adjusted in another required direction. By keeping the pulley in the proper position the belt raises from the shelving and touches nothing but the pulleys when in motion. The excellence of this combined mill arrangement, with the new features, is considered of great advantage, and is highly commended by all of those using them.



DOUBLE REEL BOLT.

Lower part of Elevator and Cooling Conveyor not shown; doors opening to the reels on the opposite side of chest.

DOUBLE REEL BOLT.

Where more bolting surface is required than there is in a single reel bolt, we build them with two reels, in portable chests, and embodying all the advantages and improvements of our single reel portable bolts. We furnish with them the gearing, elevator, etc., complete and neatly finished. They are built in sections for convenience in shipping and handling. We build also three and four reel chests to order. We send with these bolts all that is mentioned as being furnished with the single reel bolts, except we send 48 feet of elevator belt and 36 cups. Will state that while we are willing to furnish all the irons belonging to our bolts at fair rates, with draft and specifications showing how to make them, we advise our customers to have the complete bolt made here and shipped with the other supplies of the mill. The mill and all by so doing gives better satisfaction, besides a great saving in expense. We have sent them South into Georgia; North into Northern Minnesota, and West into Western Kansas and Nebraska. For such long distances we recommend to have them taken apart and boxed as referred to under head of "Single Reel Bolt."

We make them of the following length of reel shafts, 16, 18, 20 and 22 feet; the chest and frame supporting the gearing at head makes each bolt measure 2½ feet longer. They are all about 8 feet 7 inches high to top of elevator.

Grinding and Flouring, and Capacity.

All should know that the most important item in converting wheat into flour, is the *Grinding Mill*. Grain cannot be properly floured without burrs of good quality, dressed expressly for the purpose. Although a Miller of not much experience may sometimes make a pretty fair article of flour, yet those having the most experience will always find something to learn on this subject. It is best that the skill of an expert Miller be employed to prepare the face and furrows of the burrs and put them in order for grinding. Our mills, when properly dressed and in order, make a quality and yield of flour unsurpassed by any other mill, as the letters from our customers testify. Nevertheless, some of our mills, run and managed by unskillful hands, are making a tolerable article of flour, without much care to dress the burrs and keep in order, and sometimes are run a long time without any dressing. In grinding wheat, the burrs should be adjusted with precision, and should always occupy the attention of the Miller. In grinding grists, some damp and others dry, and of different qualities of wheat, the stones require close attention. The runner should be raised slightly for damp wheat; if not, the burrs are liable to heat the chop, and clog their grinding surfaces. If allowed to run too close on dry wheat, the bran will be cut and the flour made dark. These are common difficulties, but can be avoided by a careful miller who wants to make a fine article of merchantable flour, and good yield. The several qualities of wheat and its conditions, as well as the particular quality of flour required to meet the demand of any particular market, must be observed and understood in order to determine the best mode of grinding.

AN IMPORTANT ITEM.—Be sure to keep the *furrows sufficiently deep*, and *especially so for corn*, and see under heads of "Setting up and Starting" and "Keeping in Order." Burrs are apt to throw out unground grain if run too slow, when, if the speed is increased, this difficulty is obviated.

GRINDING CORN.—The dress is not that required for wheat. For corn, let every part of the surface be sharp, and the *furrows cut deep*; thus, with a high speed, the meal will not be heated. *When the meal is ground hot, the stones are dull or the furrows not deep enough*. It requires much more power to grind with dull stones or shallow furrows. Every stroke with a sharp pick makes a great number of sharp cutting edges upon French Burr, which cut easy, like a sharp tool in wood.

Be careful to keep the burrs well balanced and in tram. See observations elsewhere under this head.

In reference to the capacity of our mill we will give our opinions from the practical knowledge and experience we have had with them. Having a number of water and steam mills of our entire make and completion near our works and in our city, some having been built with special reference to having all first-class, our opportunities have been good near at hand for constant improvement. While much depends upon the power and condition of grain, our mills are made of the kind of burr stone, carefully selected, with furrows drafted and shaped in the most approved style, that the greatest attainable results may be accomplished. Under favorable circumstances our three feet mills have ground to make good flour and yields 14 bushels per hour, which, when in moderate condition as to sharpness, would do but 8 or 10 bushels. Our under-runner mills average a greater capacity than the upper-runner kind.

The amount our mills and mill stones will grind to do it well, is as great as that successfully obtained by any mill in existence, and always has been entirely satisfactory, oftentimes astonishing old and experienced millers. On one occasion two of our three feet upper-runner mills with two single reel bolts have made 100 bbls. of merchantable flour in 24 hours. With the larger sizes we could point to proportionally greater results.

Our three and three and a half feet mills are often found grinding faster than the four feet sizes of the old style of mills, at the same time doing as good and better work. These are facts, and the reasons why are simply because the stones are run at a greater speed, while the furrows are shaped to avoid heating, and properly drafted to distribute the grain evenly over the grinding surfaces. Also, much is owing to a good selection of the burr stock of which the stones are made. We conclude this subject by reference to some who have given us their views, carefully expressed in writing, and here published for the benefit of all those interested in milling.

Keeping in Order.

The face of the bed stone must be kept level and the spindle in perfect tram with it. To tram, take off the hoop and runner stone, and if a *Pulley Mill*, put on the belt the same as when grinding; then place on the spindle a wooden arm with a hole in one end to fit tight on the upper end of spindle, so that it will traverse the face of the bed stone, having before made a small hole through the projecting end to receive a quill or piece of whale-bone to trace the surface of the bed-stone about two inches in from its skirt. On turning the spindle, it can now be readily seen which way the step is to be moved in order to throw the spindle in tram; if it is properly in tram, the quill will traverse the bed-stone evenly around its face. To tram our *geared mills*, the toe of the spindle must *not be moved out of line* with the shaft holding the driving gear wheel; the proper way is to tram it in the bush, which is provided with suitable keys. However, when the toe of the spindle or step is required to be moved length-ways of this shaft, no bad results will follow, provided the cogs are all the time in proper depth—even on their back or large end, and not too deep in gear. The spindles of our mills are not apt to get out of tram, but in all mills they should be closely watched and frequently tried in this particular. When the *spindle is in perfect tram*, and the *runner in balance*, the *burrs will not wear out of face*, but the reverse, they will naturally *wear in face*. The followers should not be forced too hard against the spindle by the wedges in the iron bush, as it will make the spindle heat.

The space under the leather, on top of the bush, should be well supplied with tallow rolled up in a woolen cloth and laid immediately around the spindle. The oil cup in the bush should be supplied with good sperm or lard oil every time the burrs are taken up. Place some candle-wick in this cup, with one end against (*not around*) the spindle. This keeps the spindle supplied with a continual flow of oil in addition to the tallow. Oil the spindle step with good sperm or lard oil, clean out once a month, and keep out dirt.

In geared mills, pay particular attention to the adjustment of the gear wheels. If they are *too deep or not deep enough* in gear, they will not run so smoothly and will cut out. As the wooden cogs wear, in time a shoulder will be formed on them by the iron cogs in the pinion. In order to obviate the tremble or rough running that this shoulder would cause, it should be trimmed off from time to time. Grease the cogs with tallow, and see observations on keeping stones in order, under head of "Setting up and Starting."

WE REQUEST as a favor of any of those using our machinery, mills, bolts, &c., to inform us if they are not working satisfactorily; in such a case, state plainly as you can in what particular, as we will take pleasure in correcting the defect or giving advice concerning it. Some of our mills and mill stones that have been used constantly for 8 to 12 years may require some changes, such as re-setting the irons, improving the dress, &c., that would make them as good as new; when written to or interviewed on the subject, will state to the best of our ability what should be done.

In Ordering, or when a Correct estimate of Cost is Wanted,

It will be quite a help both to our customers and to ourselves to observe the points mentioned below. A plain statement of the situation and what is wanted, together with a rough sketch will often save much delay and trouble.

1st. Give location of Mill, *i. e.*, its relation to road, railway, and power; where it is most convenient to receive grist work and where merchant grain.

2d. State size of mill house; height of stories from floor to floor; pitch of roof, and which way comb of house runs; which way the joist and timbers of the mill run, and their size.

3d. If there is a basement under the grinding floor, and how high.

4th. If water power is to be used, state size and kind of water wheel and its speed. If a turbine wheel, give height of head, which way wheel runs, and location of mill-house.

5th. If the power has not been improved, state the fall that can be obtained, and give the amount of water in depth and width running over a weir. See "Measurement of Water in a Stream."

6th. If the power used is steam, give the diameter of cylinder and length of stroke of engine; number of revolutions per minute made by engine; diameter and width of face of band wheel on engine; which way the engine runs—whether top of band wheel runs to or from the mills.

7th. Make a sketch showing the location of engine bed plate and shaft to the mills.

8th. State whether the mills are wanted to run with or against the sun. We build them to run with the sun unless otherwise ordered.

9th. Name the place to which the machinery is to be shipped and, if thought best, by what route. It often happens that we can judge best the way to ship. Also, your name and post office plainly and in full.

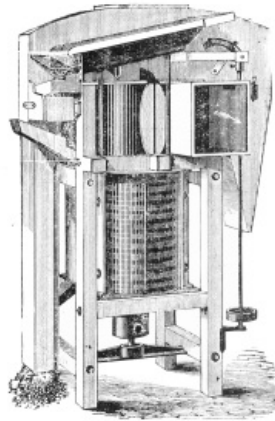
We deliver our goods on board cars at the proper depot here, free of charge, and take a contracted through receipt with rate of freight stated in it, and send to the purchaser, thus guarding our customers against over-charges or high rates of freight. For 5 per cent. added to our prices, we will pre-pay freight on one half and full car load lots to Buffalo, Philadelphia, Baltimore, St. Louis, Quincy, Rock Island and Memphis. 3 per cent. will cover it to Chicago, Pittsburgh, Toledo, Louisville and Evansville. On boat or cars at any depot in Cincinnati we will pre-pay freight at 10 cents per 100 lbs., (weights are given on list.) Great care is taken to inclose such parts of our supplies and mills when necessary in strong boxes, iron bound at the corners, so that they can be conveyed safely to any part of the world.

Setting up and Starting.

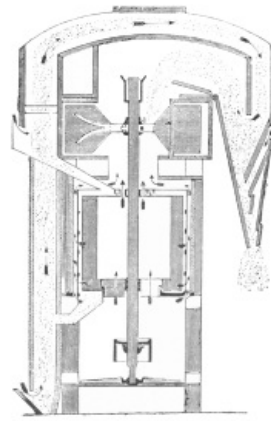
We have often found it to the advantage of our customers to have one of our own men assist in *setting up and starting*. Their experience and familiarity with our machinery enables them to expedite the setting up. They are employed on this important part of our work constantly. Our charges for their services are reasonable. In some of the far western States we have skilled mill-wrights for this purpose, thus saving time and expense to the purchaser. From drafts and explanations we send (when requested to do so) with our

mill work and mills, mill-wrights can generally succeed in giving good satisfaction.

The burrs of all our mills are faced true and furrowed, but do not have as smooth a grinding or flouring face as is necessary for flouring wheat. A few days work by the miller with pick and rub stone is of great advantage. To do this important work *correctly* requires one skilled in the use of the red staff, with a good true iron proof staff close at hand. We are sorry to be compelled to say that the millers are few that know how to correctly handle the red staff on the face of a mill stone. It is a difficult matter to explain the manner of doing it without a personal interview and the implements in readiness. However, we are ready to give on this point of *great importance* all the information we can by sketches and writing.

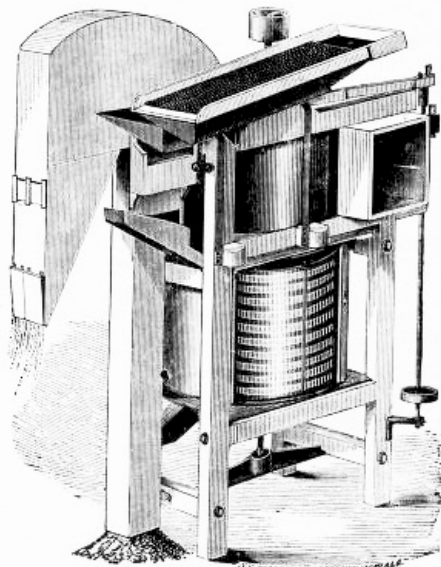


View of Eureka Smutter.



Sectional View.

(See following page.)



This Cut Represents either size Machine driven from the Top when so required.

Some of the Reasons why the Eureka Should be used in preference to any other Smut and Separating Machine now offered for Sale:

1st. The scourer used in the Eureka is constructed of the best imported *cast sheet* steel, manufactured and rolled expressly for this purpose. The scouring is done on an entire smooth surface, and by direct action on the grain, thoroughly scours and polishes the berry without waste, and at the same time retains its scouring qualities until the scouring case is entirely worn out. As the beaters or fan blades of the revolving scouring cylinders are chilled cast-iron, they will last for years without perceptible wear, and when the steel case is worn out by severe friction of the grain, can be replaced at a small expense. All machines are so strongly and permanently built, and the revolving cylinder so perfectly balanced, that they will, with ordinary care, last for years, with the small additional expense of renewing the scouring case, once in from three to five or eight years, as the case may be.

2d. For its entire reliability in cleaning the worst samples of smutty wheat; the preliminary or first separator is attached to all the No. 0, 1, 2 and 3 Ordinary sizes, which removes smut balls, dust, chaff, chess or cheat, and light and worthless grains, before the wheat goes to the scourer. As the scourer is thoroughly ventilated, supplied by air at the bottom, and discharging the smut and dust loosened from the grain during the process of scouring, through the perforations of the scouring case, and the fan at the same time drawing a strong current of air through the revolving cylinder, there is no possibility of the grain coming in contact with smut and dust during the process of scouring. Most of the so-called close scouring machines that are now being urged upon millers are destitute of this important principle, and hence worthless.

3d. The Eureka, so far as we know, is the only machine that has a perfect shoe attachment, and where the machine is the best known is always invariably ordered. It requires little or no attention, being driven by a belt from main shaft of the machine and a spring pitman; it makes no noise, and with the improved double screen, takes out more headings, straw joints, rat filth, corn and oats, than can possibly be taken out with

the rolling screen, while the cockle screen takes out cockle, sand, etc., and we earnestly advise all persons ordering the No. 0, 1 or 2 machines, to order the shoe in all cases. It is now very seldom that we have an order for either of the three sized machines above referred to without the shoe, and in nine cases out of ten when machines are so ordered, the shoe is afterwards ordered, thereby causing extra expense and trouble.

The last reason we shall give is that this is, in all respects, the best wheat cleaning machine in the world; this to millers is an important consideration, and cannot well be overlooked.

In Ordering Smut Machines,

First, decide the size or number of machine wanted, and in deciding this, it will be well to remember that the machines will do all claimed for them. If a machine is wanted to clean twenty-five bushels per hour, a No. 1 machine, run to the motion designed for it, will do it much better than a No. 2, and either size machine run to the motion and fed to the full capacity, will do much better work than if run at a less motion and with a less feed. Some have thought that if a No. 3 machine, for instance, will clean one hundred bushels per hour well, that it will clean sixty bushels better. This is a mistake.

Warranty.

All machines are warranted to be built of the very best material and perfect in all their parts, and any defect in the material or construction will be made good to the purchaser without charge; and further, to give entire satisfaction, when put up and run according to directions attached to all machines.

Terms.

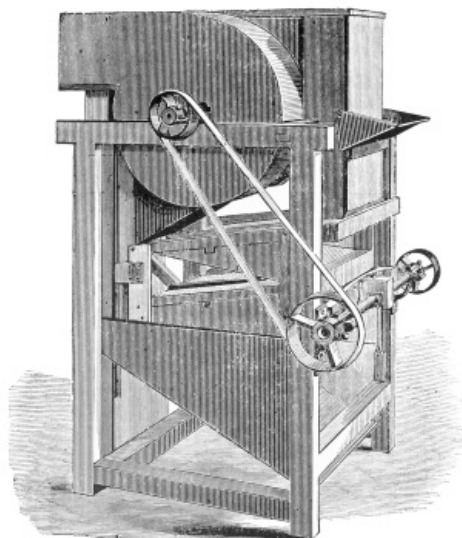
When the cash is remitted with the order, or within thirty days from date of shipment, a discount of five per cent. will be allowed, or list price at the end of ninety days. If longer time is required, approved notes on interest after ninety days from date of shipment, payable in bank, will be required.

No	EXTREME HEIGHT.	Height from where wheat enters to floor.	SIZE ON FLOOR	Motion per Minute	DIAMETER OF PULLEY.	Height from Floor to Centre of Pulley.	CAPACITY PER HOUR.	
0	5 ft 5 in.	4 ft	2 ft 2 in.	700	6 in--4 in face	1 foot.	10 to 15 bu	
1	6 ft 2 in.	5 ft 6 in.	2 ft 2 in.	700	7 in--4 in face	1 foot.	20 to 30 bu	
2	6 ft 10 in	6 ft 2 in.	2 ft 8 in.	625	10 in--5 in face	1 foot 2 in.	40 to 60 bu	
3	7 ft 6 in.	5 ft 9 in.	3 ft 1 in.	550	14 in--6 in face	1 foot 4 in.	100 to 125 bu	
2	7 ft 8 in.	5 ft 2 in.	2 ft 8 in.	650	10 in--5 in face	1 foot 1 in.	40 to 60 bu	
3	7 ft 11 in	5 ft 3 in.	3 ft 2 in.	550	14 in--6 in face	1 foot 1 in.	100 to 125 bu	
Length' Scourer.	4	8 ft 2 in.	5 ft 6 in.	3 ft 6 in.	500	14 to 16 in--8 in face	1 foot 1 in.	125 to 150 bu
	5	8 ft 2 in.	5 ft 4 in.	3 ft 9 in.	450	18 to 24 in--8 in face	1 foot 4 in.	175 to 200 bu

DUSTLESS OAT SEPARATOR AND ZIGZAG.

With two or four Wheat Riddles and Cockle Riddle.

Patented April 9, 1861; Re-issued, April 19, 1871.

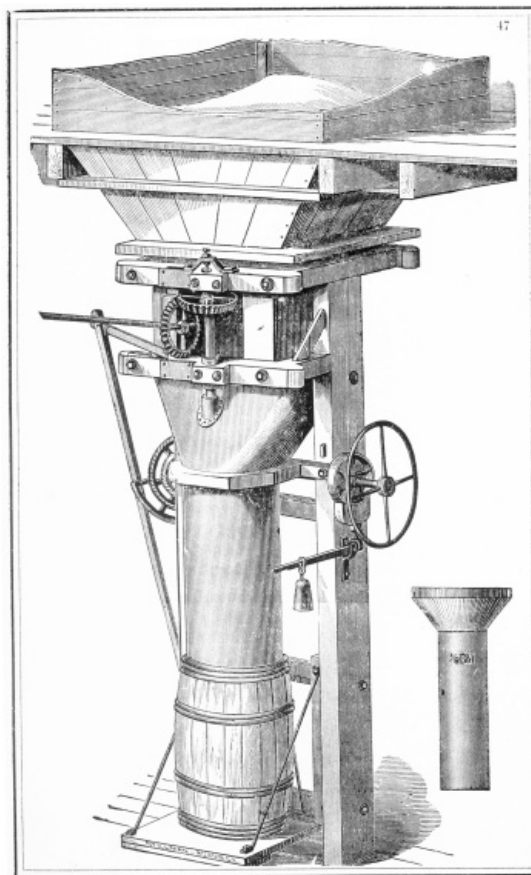


This Machine is named "Dustless Separator," because the *Dust* is separated from the wheat, conveyed out of the mill, and deposited in a dust room, before the grain passes to the riddles; the wheat and screenings are left free from dust.

Its operation is as follows:—The grain enters the Machine at the hopper, which is shown, where it receives the *first* blast; then passes through two to four wheat riddles in succession, and over a cockle riddle into the *second* blast. The riddles deposit oats, sticks, weeds, ergot, rat-balls, etc., in suitable spouts; the heavy screenings fall into a hopper and are spouted off. This Machine has none but *suction blasts*, and is offered to the milling community as a *first-class Separator*.

Dimensions and Capacity.

No.	Capacity per hour.	Size on floor.	Extreme Height.	Pulley.	Rev. per minute.	
2	30 to 40 bush.	33×34	5 ft. 4 in	6 in.	440	2 riddles for
3	60 to 80 bush.	45×34	5 ft. 5 in	6 in.	440	winter wheat
2	30 to 40 bush.	33×34	6 ft. 2 in	6 in.	440	4 riddles for
3	60 to 80 bush.	45×34	6 ft. 3 in	6 in.	440	spring wheat

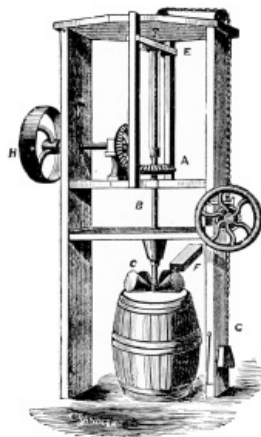


FLOUR PACKER.

FLOUR PACKERS.

MATTISON', TAGGART' and other well known Packers, ready for shipment on short notice. For some situations one kind may suit better than another, and when we know the purpose it is designed for can advise which would suit best. The advantages of them are, that they are ready for use when shipped by merely setting up and attaching power, and suited to a variety of work in the packing line. The MATTISON kind will pack in barrels or paper sacks of different sizes.

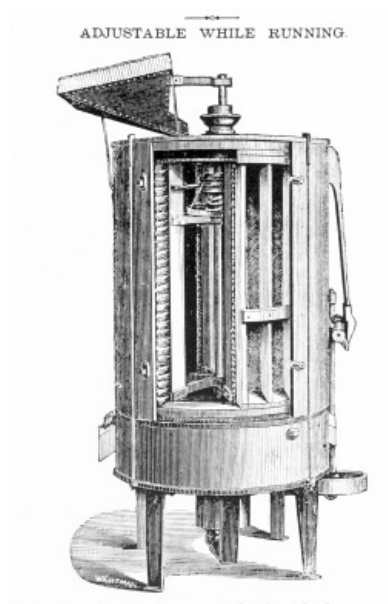
When a cheap Packer is wanted we have the *Portable Conical Roller Flour Packer*.



Capacity, 3 barrels per hour—12 to 18 revolutions per minute. Weight, 250 pounds.

HUNTLEY & HOLCOMB' EXCELSIOR BRAN DUSTER.

ADJUSTABLE WHILE RUNNING.



This cut shows the Duster as completed, with shoe attached, with part of the outer case and part of the wire gauze cylinder removed, to show the interior of the Machine. The lower section of the outside case containing the spouts never being removed after once set up in the mill; the shoe can be turned to any position required, by turning the top plate with it which can be done by slacking the tie rods that bind all together.

The manufacturers have recently improved their already celebrated and widely-known Machine. They say in their latest circular, "We have had thirteen years experience on Bran Dusters, and nearly eleven years of the time on our present Machine, and think we understand the wants of Millers in this line perfectly. Our aim has been to make as perfect a Duster as could be made, and think we now have a perfect one to offer the milling public.

"Ours is a vertical Machine and so constructed that it can be run either with or against the sun, as may be required.

"The Wire-cloth Cylinder is made in halves, and can be unbolted and taken out one-half at a time, and can be turned around for examination *on all sides* while the Machine is running.

"We put on all sizes, a shoe to throw off dough balls or any foreign substance that would injure the wire-cloth, making it a perfect Machine without any other device than the Machine itself.

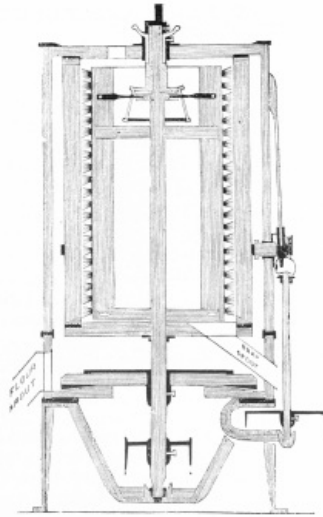
"We have had Machines running side by side with all the other kinds of Dusters and have always beaten them in quantity and quality of flour, and are ready at any time to put one to a test with any other Machine.

"This Machine has a Revolving Cylinder of pure Bristol Brushes and has nothing but the Brush Cylinder to drive, making it run extremely light, requiring less than one-half of one-horse power to drive the largest sized Machines.

"There are now over seven hundred of them running, and as far as we know all are giving perfect satisfaction, and we defy any man to show us where one has been superseded by any other Machine; further, we will say that we have put our Machine in place of several other kinds, and have given satisfaction in all cases where others have failed. We find in other Circulars statements that their Machines will make ten per cent. of flour; *we say this is exaggerated*; we have made five and one-fourth per cent., and

say this is more than any other Duster can do with a fair test. We do not make statements that are exaggerated, but only such as we are willing to guarantee.

“For cleaning Cracked Wheat, Pearl Barley, and all this class of material, there is no better Machine, and we can give the best of testimonials of their work on this kind of material.”



This cut is a sectional view of the Machine showing the entire construction, except the Shoe, which will accompany all of the Machines. The Flour and Bran Spouts can be turned to any direction required, independently, to adjust them to any location in a mill.

Dimensions.

No.	Extreme Height.	Size on Floor.	Motion per min.	Dimensions of Pulley.	Capacity per Diem.
1	4 ft. 4 in.	2 ft. 1 in.	400	7 inch diameter, 4 inch face.	100 bbls.
2	4 ft. 7 in.	2 ft. 6 in.	350	8 inch diameter, 4 inch face.	200 bbls.
3	4 ft. 11 in.	3 feet.	300	8 inch diameter, 4 inch face.	300 bbls.

☞ When required, Pulleys can be furnished from six to twelve inches diameter.

FRENCH BURR FARM AND PLANTATION MILL.

Patented August 1st, 1871.



This mill has been built by us and in use for a number of years, and in all cases has proven itself worthy of the reputation it has obtained.

The changes made within the last two years make it the best investment of money that can be made by any one wanting a cheap mill. It is complete in itself, not requiring any hangers, &c., to set it in operation, and can be put to work without an experienced mechanic. In its structure we have not been sparing in the material necessary to make every part strong and durable. They will bear to be continually used with a strong power without any part yielding in the least. The objections to most mills of this class is caused by their being put up in soft wood frames, and castings of frail dimensions, the consequence being that the spindle and important parts soon get out of place. To those having any kind of light power the smaller sizes are well adapted, and in every situation where they have been properly placed their satisfactory working has been exemplified and will be guaranteed by us. It will grind middlings or minerals, all kinds of feed and make good family meal.

The above cut is a fair representation of the mill; it is simple, and has less parts than any other mill in the market. It has a horizontal steel spindle running in anti-friction metal bearings, and a steel seat at its end to receive the pressure of the burrs in grinding.

The runner is placed in an iron back and rigidly keyed to the spindle. The bed stone is so arranged as to be self-adjusting. The mill cannot get out of tram, since when left at liberty it will adjust itself into perfect tram. The bed stone is held up to its place in grinding by a stiff rubber spring, so as to enable it to yield in case any hard substance enters between the burrs, thus obviating the danger of breakage, and yet not permitting the stones to yield or press apart in grinding ordinary substances. The spindle being horizontal

this mill can be driven directly from an engine, horse-power, or line-shaft. One great item of superiority is that a strong or light power may be used and the mill will grind in proportion, and will do good work at the same time. *Every mill warranted.*

DIRECTIONS for using and keeping in order sent with each mill.

Diameter of Burrs.	Power to Drive.	Diameter of Pulley.	Face of Pulley.	Capacity per Hour.	Revolutions per Minute.
14 in.	1 to 4 horse.	9½ in.	5½ in.	2 to 8 bush.	600 to 1200
16 in.	2 to 6 horse.	11 in.	6½ in.	4 to 12 bush.	400 to 800
18 in.	4 to 10 horse.	11 in.	6½ in.	8 to 20 bush.	400 to 700



CORN AND COB CRUSHER, AND GRINDER.

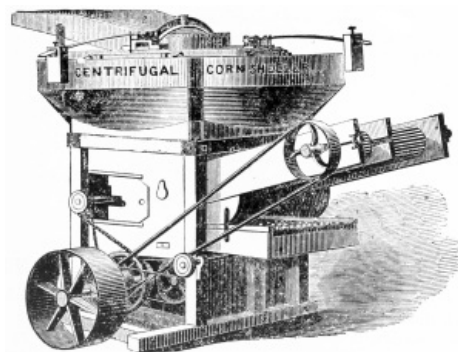


Chill Hardened Corn and Cob Cracker, Bone and Bark Mill.

They are made of the best chill hardened iron, well fitted, and are undoubtedly the best thing now made for the purpose, outwearing, in some instances, three of the common kind. They can be set up in any kind of a building, sometimes to the side on two strong brackets, or on any suitable frame. It has a tight bottom and side spout, the power can be applied at either the upper or lower end of spindles, or it can be run with horizontal shaft by belt and gear. Speed from 160 to 175 revolutions per minute. Capacity from 30 to 60 bushels corn per hour, depending upon speed, power, and condition of corn.

They can be furnished complete with a large iron hopper, and set on a frame, with gearing, shaft, tight and loose pulley attached if so ordered.

PATENT CENTRIFUGAL CORN SHELLER AND CLEANER.



Clean the Shelled Corn Perfectly. Shell each Ear Separately. Require no Self-Feeders. They shell Clean. Do not Break the Cobs. Do not waste the Corn.

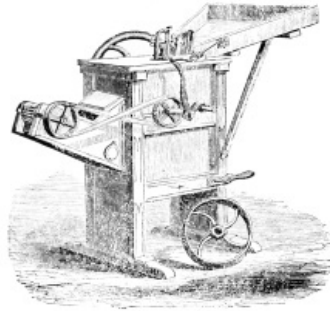
The above is a cut of our No. 1 Centrifugal Corn Sheller and Cleaner. The operation of this Sheller is as follows:

The ears of corn are *shoveled direct into the Sheller*, and fall on to the center of a flat Perforated Shelling Wheel where they are thrown by centrifugal force towards the outside, but being caught by guides held down by a spring plate working between them are, "by the action of the wheel," made to revolve, the corn shelled off, and the cobs forced off the wheel *endwise and without being broken*, fall on the Cob Carrier, and are carried away from the Sheller; while the shelled corn passes through the Cob Carrier to the Shaker, and thence to the Conveyor, into the Elevator, when it is raised into bags, wagons or cars.

In cleaning the shelled corn they cannot be excelled. In addition to our Cob Carrier, we have a Shaker with a sieve made of perforated iron, which is preferable to a wire sieve, as no silks will adhere to and clog it. While falling on and passing through the Shaker, the grain is subjected to a strong blast from the fan, which thoroughly cleans it of all chaff, pieces of cobs, dirt, etc., leaving it in prime order for market.

Our No. 1 will shell and clean from 700 to 1200 bushels of shelled corn per day, with two to four horse power.

THE VETERAN.



Two-Hole Separating Sheller.

For these we have a steady demand at all times of the year, and send them to all parts of the country.

They do not operate in the loose rattling way of ordinary Two-Hole Hand Shellers, got up to sell cheap, but work as closely and effectively as any of the most effective Power Shellers; and no hand sheller has been so much relied on for regular business as the Veteran.

The frames are made of the best and most thoroughly seasoned hard wood, framed as closely as the joints can be driven together, and are "solid as rock." The shafts, shelling wheels, boxes, journals, etc., are on the same scale of strength and close fitting.

They have the revolving wire cob carrier for separating the cobs from the shelled corn, and when so ordered, they can be fitted with a hand wheel for connecting with power, and a feed table, as shown in the cut, thus making a small and convenient power sheller.

THE CADET.

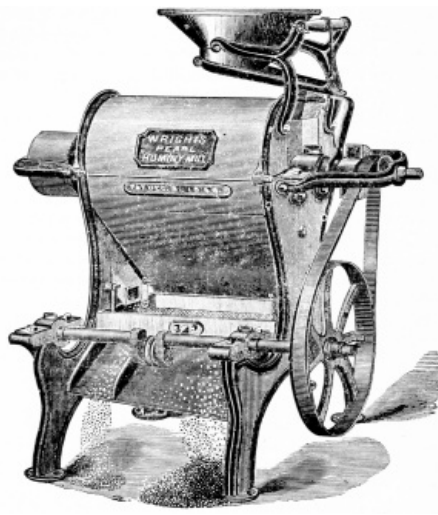


Single or One-Hole Hand Sheller.

It is strong framed: the frame being of the best seasoned hard wood, capped with iron. Has the same character of shelling wheels as the power shellers, bored true and fitted on shafts which are turned full length and held in strong and durable boxes; has a fine adjustment of spout irons and springs.

It separates the Cobs from the Shelled Corn, and has a Fan for Cleaning the Grain.

WRIGHT' PEARL HOMINY MILL.



Simplicity in Operation—Economy in Power—No Dust—No Dirt—Regular Feed and Discharge.

In presenting this Machine to the millers of this country the manufacturers say: "We feel confident that we fill a desideratum long felt in milling circles, that is, a practical horizontal mill, having the prominent features of economy in power, simplicity in operation, cleanliness, and the perfect manner in which it does its work, yielding more hominy from the corn than any other mill in use. The grain needs no soaking or steaming, but can be worked dry as well as when damp. The hominy and feed are separated before leaving the mill, the hominy running out on a shaking screen where the fine is separated from the coarse, leaving it in a perfect condition for market. The feed is deposited on the opposite side. The mechanical construction of this machine is first-class, and its durability and simplicity is unequaled by any other known mill. It is compact; the space it occupies does not exceed two by three feet square. The skill of a practical miller is not required to run it, as any one, however limited their knowledge of machinery may be, can operate it successfully.

"Our long experience in the manufacture of hominy and Hominy Mills enables us to say confidently that we can now offer a machine

PERFECTLY ADAPTED TO GENERAL MILL USE,

And no mill in the country should be without one. We have witnessed the rapidly increasing demand for this excellent and wholesome article of food from comparatively a few to more than ten thousand barrels a year in our own business alone. That Hominy is a healthy and nutritious article of diet no one pretends to deny, as it has been ascertained by chemical analysis and comparison that one pound of Hominy equals five pounds of Potatoes.

"This Mill will work from FOUR to SEVEN bushels of corn per hour. One bushel of common corn will make from twenty-eight to thirty pounds of Hominy. Flint corn will produce a greater yield. The offal, or meal, sells rapidly, and brings a price equal to that for ground corn, making a superior feed for hogs, cattle, etc."

We have a Hominy Machine, horizontal cylinder screen, &c., not a continuous feeder, that takes in a charge of one-half bushel at a time, and does first-class work, that we will sell at a less price. See price list.



SCALES OF ALL KINDS,

Of the Best Makes, and Warranted.

Always Ready for Shipment, at Manufacturers' Lowest Prices.

Deal direct with us; Satisfaction Guaranteed.

General Purpose Platform Scales,

With and without wheels and drop levers, or with extra heavy wheels and drop levers.

	Description.	Capacity.
	Platform.	Lbs.
No. 1,	21½×15 in.	400
" 2,	23¼×16¾ in.	600
" 3,	25×16¾ in.	800
" 4,	26×17 in.	1000
" 5,	28×20 in.	1200
" 6,	28½×20½ in.	1400
" 7,	28¾×20¾ in.	1600
" 8,	30¾×22¾ in.	1800
" 9,	32×23 in.	2000
" 10,	33¼×24¾ in.	2500



Cornometer, or Grain Testing Scale.

Adopted by the Chicago Board of Trade. Graduated so that by balancing a quantity of grain in the cup, the beam will designate exactly how many pounds it will weigh to the bushel.



Grain Scales.



PORTABLE HOPPER SCALE.

- 30 bushels, 16 inch opening, without wheels.
- 30 bushels, 16 inch opening, with wheels.
- 40 bushels, 17 inch opening, without wheels.
- 40 bushels, 17 inch opening, with wheels.

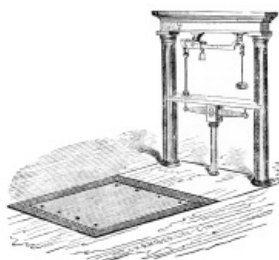
DORMANT HOPPER SCALE. With Drop Lever.

- 60 bushels, 18 inch opening.
- 100 bushels, 3 foot opening.
- 125 bushels, 3 foot opening.

ONE PILLAR DORMANT SCALE.

- 2500 lbs., Platform 3×3 feet. 3500 lbs., Platform 3½×3½ feet.
- 5000 lbs., Platform 4×4 feet.

Iron Pillar Grain Scales.



- 60 bushels, 18 inch opening. 125 bushels, 3 foot opening.
- 100 bushels, 3 foot opening. 200 bushels, 4 foot opening.
- 300 bushels, 5 foot opening.

IRON PILLAR DORMANT SCALE. With Graduated Counterpoise.

- 2500 lbs., Platform 3×3 feet. 3500 lbs., Platform 3½×3½ feet.
- 5000 lbs., Platform 4×4 feet.

These Scales are fitted up with the Patent Combination Grain Beam, when so ordered. With it they are very desirable. They are furnished with the Platform, as shown in the cut, or with opening to receive hopper as wanted.

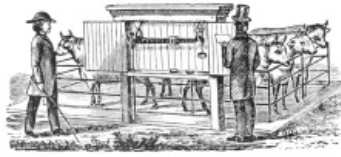
On the double and single pillar Scales of each of the above sizes the sliding poise is furnished without additional charge, and all highly finished of first-class material.

Flour Scale.



DORMANT FLOUR SCALE. Capacity, 600 lbs.

Grain, Hay, Coal and Stock Scales.



	Capacity. Tons.	Size of Platform.	Distance from edge of Platform to beam rod.
Portable Shallow Pit.	3	13 × 7 feet 3 inches.	1 foot 8 inches.
	4	14 × 8 feet 4 inches.	2 feet 1½ inches.
	5	14 × 8 feet 4 inches.	2 feet 1½ inches.
	6	15 × 8 feet 5½ inches.	1 foot 10 inches.
	3	14 × 7 feet 7 inches.	1 foot 11½ inches.
Trussed Levers.	4	14 × 8 feet 1 inch.	2 feet 7½ inches.
	5	14 × 8 feet 1 inch.	2 feet 7½ inches.
	6	15 × 7 feet 10¾ inches.	2 feet 4¼ inches.
	8	22 × 8 feet 5¼ inches.	2 feet 3 inches.
	10	15 × 8 feet 4¾ inches.	2 feet 9½ inches.
	15	24 × 9 feet 5 inches.	2 feet 3½ inches.

Brass Tare Beam and Graduated Counterpoise, extra.

Patent Combination Beam, extra.

Combination Grain Scale Beam.

PATENTED NOV. 2, 1869.

Has proved a great success. We have introduced it into some of the largest Elevators and Mills in the country, and it is universally pronounced a great improvement on the old style of beam. *No weights are used*, as the weighing is done exclusively with the poises.

The three upper beams register respectively, wheat, corn and oats, giving the bushels and pounds on each beam; hence all computation of figures, and liability to mistakes are avoided.

It is composed of three beautifully polished brass beams, and brass poises respectively marked corn, wheat and oats.

NOTE.—“Dormant Scales” are those with platforms made to let in even with the floor; have given most all of the sizes we are prepared to furnish. We try to keep ready for shipment most any style and price of Scale wanted. Our price list gives dimensions, prices, &c.

STANDARD WEIGHTS OF INDIANA. STANDARD WEIGHTS OF ILLINOIS.

Wheat	60	Wheat	60
Rye	56	Rye	56
Barley	48	Barley	48
Oats	32	Oats	32
Corn	56	Corn	56
Ear Corn	68	Ear Corn	70
Potatoes	60	Potatoes	60
Sweet Potatoes	55	Sweet Potatoes	55
Onions	48	Onions	57
“ Top	28	“ Top	28
Turnips	55	Turnips	55
Clover Seed	60	Clover Seed	60
Timothy Seed	45	Timothy Seed	45
Flax Seed	56	Flax Seed	56
Hung’ Gr. Seed	48	Hung’ Gr. S’	48
Buckwheat	50	Buckwheat	52
Beans	60	Beans	60
Castor Beans	46	Castor Beans	46
Bran	20	Bran	20
Malt	38	Malt	34

Corn Meal	50 Corn Meal	48
Salt	50 Salt	50
“ Fine	55 “ Fine	55
Stone Coal	70 Stone Coal	80
Dried Peaches	33 Dried Peaches	33
“ Apples	25 “ Apples	24
Broom Corn S’	46 Broom Corn S’	46
Millet Seed	50 Millet Seed	50
Peas	60 Peas	60
Quick Lime	80 Quick Lime	80
Coke	40 Coke	40
Blue Grass Seed	14 Blue Grass Seed	14
Hemp Seed	14 Hemp Seed	14

How to compute easily and correctly the contents of a Hopper.

Multiply the length by the breadth, in inches, and this product by one-third of the depth, measuring to the point.

Divide the last product by 2,150 (the number of cubic inches in a bushel) and the quotient thus obtained will be the contents of the hopper in bushels.

The contents of a bin or box with perpendicular sides is found by multiplying the length by the breadth, in inches, and this product by the depth, and divide as above, will give the number of bushel measurement.

The U. S. Standard Bushel, Grain Measure contains 2150.44 cub. in.
 “ “ “ “ is 18½ in. diam. 8 in. d’.
 “ “ halfbush. “ “ 14 “ “ 7 “
 “ “ Gallon, Liquid “ contains 231 cubic in.

Usual Weight per Bushel of Articles of Produce.

Wheat,	60 lb	Barley,	48 lb	Flax seed,	56 lb	Timothy,	56 lb
Corn, shel’,	56	Oats,	32	Clover,	60	Coal,	80
“ in ear,	70	Rye,	56	Dr’ Appls,	24	Salt,	50
“ meal,	50	Buckwheat,	52	“ Peach’,	33		

In measuring vegetables, coal, etc., the measure requires to be heaped, and adds about one-fourth to the number of cubic inches.

SHAFTING AND PULLEYS.

Couplings and Adjustable Self-Oiling Hangers and Boxing.

This important branch is one of our specialties. Having had made in Massachusetts expressly to our order and for this particular purpose tools equal to any in the United States for speed and accuracy, we are prepared to furnish and keep ready to ship the supplies under this head.

The shafting, gear and pulleys properly proportioned are next in importance to the motive power.

1st. Shafting should run perfectly true and be turned to a gauge throughout its entire length.

2d. Couplings well fitted and easy to remove.

3d. Pulleys symmetrical in proportion and nicely balanced.

4th. The bearings should be self-oiling and adjustable, as by settling of the building or other causes their position changes.

With all of these items complied with, there will be less trouble and delays as well as a large per cent. of power saved.

In our price list we have fixed a price to each pulley, hanger, &c., for the convenience of our customers, and we here will say that in buying our work you do not pay for useless iron, while every part is strong and sufficiently heavy. Those wishing estimates by weight or wishing to purchase by weight, can always be accommodated.

OUR PULLEYS are turned, bored, correctly balanced and key-seated or set-screwed. For table of sizes see price list. All those over 36 inches diameter we are prepared to furnish with wood rims put up in a superior manner, of hard and soft dry timber, turned inside and out, well oiled, painted and balanced. The spiders are after the style shown in the cut under head of Elevators, &c., (represented as leaning against the Elevator.) The first segment or circle of the wood rim is of hard wood, and is carefully fitted to the iron spider and lug provided to receive the pressure and driving incident to the transmission of the power required. Clamp bolts let partly into the wood are provided to always keep the spider binding in the rim. No pulley rim is liable to get loose on the arms or spider when built by us.

OUR SHAFTING is turned by a special machine made for the purpose, and no variation in size will be noticed. Pulleys, gear or bearings may be placed at any point with a perfect fit.

OUR ADJUSTABLE HANGERS avoid all liability of binding; the bearing or boxing-part is free to find its natural

bearing; the ball and socket self-oiling pillow-block (Fig. 1, and Post Hanger Fig. 2. See engravings) have the same advantages. All have the improved self-oiling attachment making it necessary to oil but once in three months, and cleaning twice a year.

These bearings are adjustable every way as much as required, and not at all liable to heat.



Adjustable Self-Oiling Hangers, 8, 10, 12, 15 and 18 in. drop, Fig. 3.

Self-Oiling Hangers, Rigid Bearings, 9, 12 and 15 in. drop.

And rigid Pillow block bearings, not self-oiling, but large oil cups and cast cover, new improved patterns.

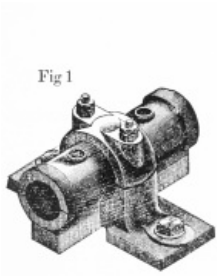


Fig 1
Ball and Socket Self-Oiling Pillow Block.

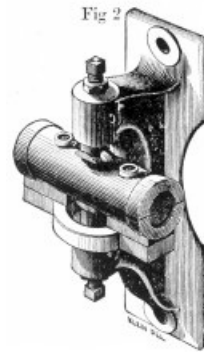


Fig 2
Adjustable Self-Oiling Post Hanger. 6 in. from post to center of bearing.

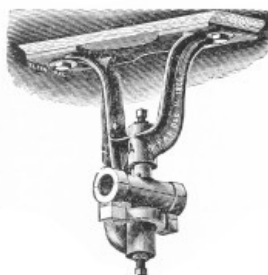


Fig 3
ADJUSTABLE SELF-OILING HANGER.

Rules to Find the Speed of Pulleys and Gearing.

PROBLEM I.

The diameter of the driven pulley or wheel being given, to find its number of revolutions.

Rule—Multiply the diameter of the driver by its number of revolutions, and divide the product by the diameter of the driven: the quotient will be the number of revolutions of the driven.

PROBLEM II.

The diameter and revolutions of the driver being given, to find the diameter of the driven:

Rule—Multiply the diameter of the driver by its number of revolutions, and divide the product by the number of revolutions of the driven: the quotient will be its diameter.

PROBLEM III.

To ascertain the size of the driver:

Rule—Multiply the diameter of the driven by the number of revolutions you wish to make, and divide the product by the revolutions of the driver: the quotient will be the size of the driver.

Note—FOR GEARING take the diameters at the PITCH LINE, or take the NUMBER OF COGS instead of DIAMETERS and use the same rules.

Weights of Rolled Iron, Round and Square,

From $\frac{3}{16}$ to 6 inches, and 1 foot in length, in pounds and 100ths of pounds.

ROUND IRON.				SQUARE IRON.			
Size.	Weight.	Size.	Weight.	Size.	Weight.	Size.	Weight.
$\frac{3}{16}$	.09			$\frac{3}{16}$	.12		
$\frac{1}{4}$	.17	$3\frac{1}{4}$	28.04	$\frac{1}{4}$	.22	$3\frac{1}{4}$	35.70
$\frac{3}{8}$	.37			$\frac{3}{8}$	.48		
$\frac{1}{2}$	.66	$3\frac{1}{2}$	32.52	$\frac{1}{2}$	.85	$3\frac{1}{2}$	41.50
$\frac{5}{8}$	1.05			$\frac{5}{8}$	1.32		
$\frac{3}{4}$	1.50	$3\frac{3}{4}$	37.34	$\frac{3}{4}$	1.90	$3\frac{3}{4}$	47.54
$\frac{7}{8}$	2.03			$\frac{7}{8}$	2.60		
1	2.65	4	42.46	1	3.40	4	54.10
$1\frac{1}{8}$	3.36			$1\frac{1}{8}$	4.28		
$1\frac{1}{4}$	4.17	$4\frac{1}{4}$	47.95	$1\frac{1}{4}$	5.30	$4\frac{1}{4}$	61.06
$1\frac{3}{8}$	5.02			$1\frac{3}{8}$	6.40		
$1\frac{1}{2}$	5.97	$4\frac{1}{2}$	53.76	$1\frac{1}{2}$	7.60	$4\frac{1}{2}$	68.45
$1\frac{3}{4}$	8.13	$4\frac{3}{4}$	59.90	$1\frac{3}{4}$	10.40	$4\frac{3}{4}$	76.35
2	10.62	5	66.75	2	13.55	5	84.48
$2\frac{1}{4}$	13.45	$5\frac{1}{4}$	73.18	$2\frac{1}{4}$	17.12	$5\frac{1}{4}$	93.17
$2\frac{1}{2}$	16.70	$5\frac{1}{2}$	80.30	$2\frac{1}{2}$	21.15	$5\frac{1}{2}$	102.25
$2\frac{3}{4}$	20.08	$5\frac{3}{4}$	87.80	$2\frac{3}{4}$	25.60	$5\frac{3}{4}$	111.76
3	23.89	6	95.60	3	30.50	6	121.67

Weight of a Square Foot of Sheet Iron as per Birmingham Gauge.

No. 10 or .134 of an inch thick, 5.5 pounds.
 No. 12 or .109 of an inch thick, 4.3 pounds.
 No. 16 or .065 of an inch thick, 2.62 pounds.
 No. 18 or .049 of an inch thick, 1.92 pounds.
 No. 20 or .035 of an inch thick, 1.41 pounds.
 No. 24 or .022 of an inch thick, .95 pounds.
 No. 26 or .018 of an inch thick, .78 pounds.

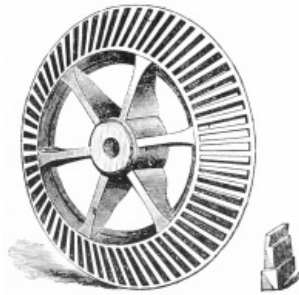
A Plate of Wrought Iron 1 foot square, 1 inch thick weighs 40 lb.
 " " " 1 inch " $3\frac{5}{8}$ " long " 1 lb.
 " Cast " 1 " " $3\frac{7}{8}$ " " " 1 lb.

SPRING COUPLING AND DRIVER.

This is an article long wanted in a number of situations where power is applied by stiff gearing, such for example, as where one or more run of stones are driven by spur or bevel gearing. The coupling is secured to connect the ends of the principal driving shafts as in the style of an ordinary coupling, or in case of backlash in the mill spindles it is placed immediately above the gear in such a manner as to allow it to be easily moved up out of gear, at the same time producing an elastic movement in the transmission of power. It gives the advantage of a belt connection in a great measure, in allaying the jar produced by fast running gear. It is

constructed of cast iron in two parts, with a space or opening between to receive the requisite number of large stiff rubber springs; each half is secured independently to the ends of the two shafts needed to be coupled, and the power is transmitted by pressure upon the springs; a like connection is made with the gear or trundle-head and mill-spindle of a mill stone. They are furnished of different sizes to suit the situation and amount of power to be conveyed.

GEARING.



Bevel Core Wheel.

This is a clear representation of the style of our bevel core gear patterns. It was engraved from a photograph taken direct from the casting to show correctly the proportion, shape, &c. With this style of gear, as well as those for spur gearing, we are sufficiently supplied to meet most any reasonable demand. All our patterns were made for the purposes of flouring mills, with a view to avoid superfluous metal, at the same time, to make them strong and in good proportion. Our spur bolting gear patterns have been prepared with special care; the patterns being iron with the teeth cut from blank rims by a gear cutter, they remain true and from these always make true castings. The arms are curved and oval in shape, and the whole of a design exactly meeting the tastes of the most skillful mill-wrights.

Any odd wheels that may be needed to complete the outfit of a job, we have arranged to get on short notice. There being some half a dozen foundries within a few blocks of our works, it will be seen we do not lack the means near at hand.

Having a gear cutting machine in our establishment, we are prepared to face and dress the cogs of spur pinions, trundle-heads, and spur gear of 40 inches diameter and less of narrow face, and those of 24 inches diameter and less of most any face or pitch.

Wood Cogs.

In the engraving of the bevel core wheel is shown (to the right of it) a wood cog as we furnish them from the machine. The now extensive demand, built up by close attention to this small but very important branch, for now over fifteen years, has made it necessary to prepare ourselves by keeping a larger stock of the material as well as improved machinery for making them. At the proper time each year we have cut of hickory, sugar, (often termed maple,) and some oak specially for this purpose, and we have at no time less than 25,000 feet of the best lumber, part of it being from three to six years old. For this purpose we use only the butt logs cut from trees standing exposed in the out-skirts of the timber. When cogs are wanted to refill a wheel it is best to take out one of the old ones and fit a temporary one in place of it, then send to us by express, with your order by mail, or with the cog, of the number wanted. The cogs will be shanked and place cut for the keys exactly as per sample, *and all uniform*, unless otherwise ordered. It is desirable for us to know about what the pitch of the gear is, although the projecting part of the cog is left of ample size to shape the tooth. We always box them, and ship by freight or express, as ordered. It is no uncommon thing for us to send cogs thus over a thousand miles from our works.

SPUR GEARED MILLS

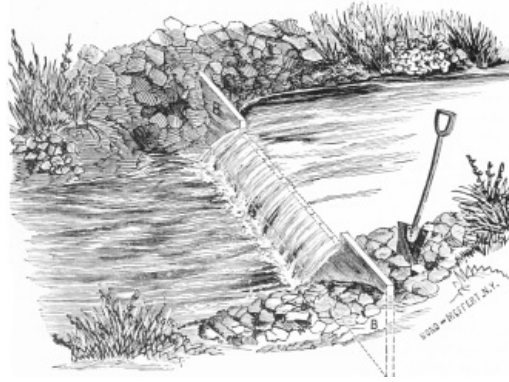
Are furnished to order to be driven by spur or crown wheel gear, direct from upright shaft, in iron or wood husks, or without husks as preferred. Such a mill is constructed to drive one or half a dozen run of stones from one crown wheel. The iron pinions are made to lift from suitable iron sleeves when necessary to stop one or more of the stones. This device is simple and not objectionable. To those who prefer to make the husks at the mill house we will send drafts and description showing how every part, iron and piece is located, as well as the entire structure on the most approved plan.

Management of Water Power.

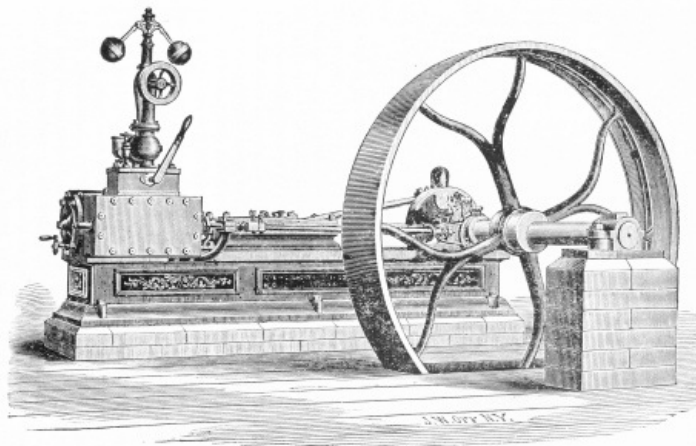
Here is where bad mistakes are often made, and the best of water wheels sometimes condemned when the fault may be in not properly attaching the wheel, or improper application of the water, or speed or size of wheel not properly proportioned to the height of head or amount of water. And we ask of parties interested in water powers to apply to us for advice, should they have no one at hand competent to counsel with. We have furnished and put in many kinds of water wheels for flouring mill purposes, and carefully observed the workings of them, some of which are still prominently before the public, and our experiences

have developed some valuable points of interest to those building water mills.

Measurement of Water in a Stream.



It is very important to ascertain the quantity of water that flows in a stream, and the head and fall, to determine the exact amount of power and the work it is capable of doing. It is frequently the case that mills are constructed before finding the power of the stream, and upon trial are found to fall short of their calculations. We give a very plain way which will determine this. Place a wide board as a dam across the stream (called a weir.) When the quantity of water is considerable, it must be made in sections to get it sufficiently wide and long; then cut a notch as shown in the engraving and about two-thirds the width of the stream, placing the bottom of the notch level, and let the ends of the weir dam (B B) be well bedded on each side of the stream. Observe in cutting the opening or notch to bevel the edges down stream to within say $\frac{1}{8}$ of an inch of the side up stream; that the edges of the notch sides and bottom be almost sharp but true and square, and the whole opening sufficient for the water to pass; the bottom of the notch can be leveled by letting the water pass over in a thin sheet; then drive a stake three to four feet above the dam to one side or the middle of the stream, and the upper end of it on a level with the bottom of the notch in weir. And now that you have the dam made and in position so that all the water will pass through the notch and no leaks, allow the water to reach its full depth, then take square or rule and measure the exact distance from the top of the stake driven in the stream to the top of the water flowing towards the weir; 2d. Width of notch; 3d. Head and fall, and send to us, and we will give you the power of your stream, size of wheel to do the desired labor, &c.



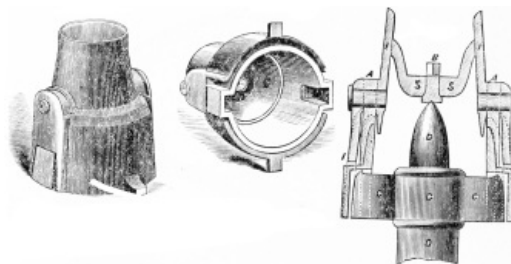
STEAM ENGINE.

STEAM ENGINES.

Careful experiments and practice with a view to properly proportion the motive power to the work to be done has prepared us for giving valuable information concerning steam engines for the purpose of flouring mills. And when requested will furnish the engines themselves combining the necessary qualities, and see in person that all the parts, speed, &c., &c., be exactly adapted to do the work. When we furnish the engine, with the other supplies of the mill, which is frequently the case, our customers may rest assured all will be satisfactory as regards style of finish, durability, sufficiency of power, and economy in the use of fuel. We do not make engines ourselves, but purchase them of the best makers, and if we should be consulted in all cases of whom to buy, style, kind, &c., or be ordered to supply the engine direct, our customers will be more likely to get what is best.

HANGING AND DRIVING MILL IRONS.

FIG. 1 FIG. 2 FIG. 3.



Patented September 4, 1866, and August 1, 1871.

We do not think it necessary to write at length on the advantages of this improvement, nor print our files of recommendatory letters. The necessity among intelligent millers and mill-owners for a good and durable self-tramming driving iron is already well established. Many attempts have been made to devise something for the purpose, and the results are numerous; among them the "slip driver," and those with loose oscillating appendages for the weight of the stone to rest upon and be driven by, and when adapted to their work, imperfectly accomplish the design; their lack of durability, the obstruction presented to the free passage of grain or middlings to be ground, and the fact that their form does not admit of a free adjustment while driving the stone are the chief objections. It has been established that these faults are entirely avoided by the improvement illustrated in the accompanying cut, in which Fig. 1 is an elevation showing the iron ready to be cemented in the eye of the runner. Fig. 2 is a view of the bottom and inside, with the sockets for the reception of the ends of the driver. Fig. 3 is a sectional elevation of all the parts, including the spindle and driver.

The bridge S S, in which the steel cock-eye is placed, is in the form of an inverted arch, and is a portion of the entire outside part. Being in this shape, it has the double advantage of increased strength, and, by the attachment above the point where the grain is distributed, making no obstruction whatever to the passage of the grain or other substance to be ground. The bearings for the ends of the driver, C C, are cast on the adjustable section of the iron shown on the inner part of Fig. 2. This being adjustable on the steel pins shown as passing through the lugs A A, gives to the ends of the driver at all times a free and equal bearing in a lateral direction. The object gained by this arrangement is the application of power by the driver to the inner section in a direct plane, parallel to the face of the runner stone, said plane at the same time passing through the cock-eye—hence there is no tendency whatever to tip the stone.

When the ordinary spindle with stiff driver is put in tram to the face of the runner, the miller has no assurance that it will remain so, the chances, indeed, being constantly against it. The heaviest spindle is liable to spring from its true position by the pressure of the gear or belt in driving it; the face of the runner stone changes, and the best driver, or its bearings, will from unequal wearing of the metal or in other ways cause it to get out of tram. The results are uneven grinding, inferior flour and diminished yield. The trouble necessary to take the spindle out, turn over the runner, make a staff and file the ends of the driver, is generally sufficient to deter the miller from performing the disagreeable job, and the bad grinding is conveniently attributed to some other difficulty.

Among the advantages offered by this improvement are increased grinding capacity with a given amount of power, more even grinding and better yield, and lastly, but not less important, increased facility in obtaining a perfect running balance. It will be observed that the runner is supported upon a steel seat secured in the stone permanently—being substantially the same in this respect as when the ordinary balance-iron is used.

The power being transmitted to the stone by the adjustable part of the iron and no weight upon any part of it, with the entire structure of the form to give the greatest attainable firmness and durability, combine to make it perfection as a driving iron, and it is accordingly in extensive use, although no especial effort has been made until late for their manufacture and sale. They are made in the best manner by skillful men and machinery adapted for the purpose, the parts well fitted and turned true inside where the grain enters and passes.

They are made of the following sizes: 8½, 10 and 12 inches diameter.

To order for attaching to stones with other irons already in, give diameter of the eye in stone at the face.

Distance from the cock-head point to the lower side of the driver.

Shape of cock-head as near as you can.

Shape and exact size of spindle where your present driver goes on.

In getting the shape as well as size of place where your present driver fits, it is a good plan to oil the inside surface of the hole in driver (in which the spindle fits) and fill it with plaster, then take out and send the cast by express. The shape of cock-head may be got by similar process.

We will send necessary instructions, so that any one of medium skill can put them in at the mill.

Give names, post office, county, and shipping point plainly, and how you wish to pay us. Money sent by Post Office Order is safe, and payment with the order always saves delay and trouble of making out bills, book-entries, &c. To those whose faith is not sufficient, will send the irons on trial or as circumstances best suggest at the time.

The safe arrival of them is guaranteed. Every iron is warranted.



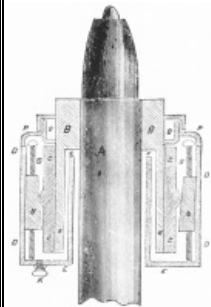
Fig. 1.



Fig. 2.

These two cuts are intended to represent the self-tram irons for our under-runner mills. Fig. 1 shows the form of the outside, as it appears before being bedded in the centre, and iron back of the runner stone. Fig. 2 is a view of the inside, showing where the point of the spindle and driver rest.

OIL BUSH.



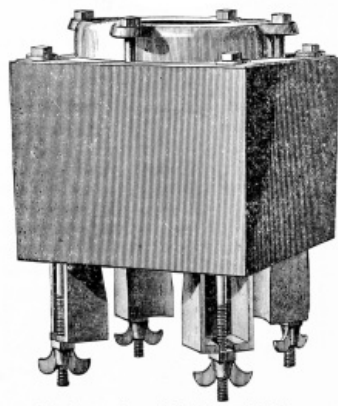
This cut is a sectional view of our improved oil bush. A shows the mill spindle, B B, B is the collar or part that turns with the spindle and is secured firmly to it. The parts E E E E, show the upwardly projecting sleeve at some distance from and encircling the spindle or shaft, and forms the inner wall of the oil chamber. C C C C are two of the four followers or segments lined with the best anti-friction metal. The wedges N N, are raised or lowered as circumstances require by the four metal screws, two of them being shown at S S; by this means the followers and spindle are adjusted with great precision. D D D D forming the outer wall of the chamber, and E E E E its bottom and inner part, gives us a complete oil well in which the followers, collar of spindle, &c., are immersed. THE OPERATION is as follows: the rotating shaft or spindle carries with it the collar or sleeve bearing and produces centrifugal force in the chamber, by which the oil is driven up the sides of the passages and followers; the bearing is thus made to move constantly in oil.

No oil can escape except when necessary to draw off at the orifice provided with the thumb screw K, when a fresh supply is needed. This simple self-oiling arrangement is the best thing in use for fast running upright bearings of any kind.

BULLOCK' MILL BUSH.

Patented December 31, 1867.

Fig. 1



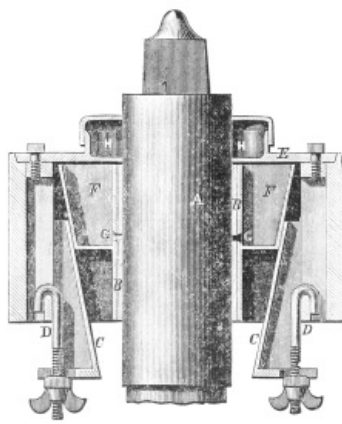
The object of the invention which is herewith illustrated, is to enable the spindles of mill-stones to be adjusted with perfect accuracy, and at the same time furnish bearings of anti-friction materials, which may be kept constantly and perfectly lubricated, and from which all extraneous dust or grit, calculated to aggravate friction, may be kept excluded.

Fig. 1 is a perspective view of this improvement, and Fig. 2 is a sectional view of the same, showing details of construction. A, Fig. 2, is the spindle, playing in segmental bearings B.

There are four of these, which, together, make up the entire bearing for the spindle. They are hollow, as shown in the engraving, and faced with anti-friction surfaces.

The outer sides of these segments are inclined, these surfaces resting against the inclined inner surfaces of the hollow binding wedges C. Through the lower part of these wedges pass hooked bolts, D, with thumb nuts at their lower ends, by turning which the wedges are forced upward, and the segments B being prevented from rising by the top plate E, are forced inward till their surfaces are brought in proper proximity to the spindle.

Fig. 2



It is evident that by raising and lowering these wedges, as circumstances require, the spindle can be adjusted with the greatest accuracy.

Lubrication is secured by placing a store of oil, in the chambers F, of the segmental bearings B, from which it is fed, as wanted, through the apertures G, to the bearing surfaces of the spindle and bush. Lastly, the exclusion of dust and grit is secured by forming a chamber H, upon the top plate of the bush, with an annular cap which shuts down over it, and encloses the spindle, in which chamber is placed packing yarn or other suitable material to intercept all extraneous material of this character.

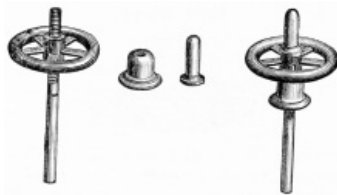
The top plate is bolted down to the external portion of the bush, and the whole enclosed, as shown in Fig. 1.

All experienced millers are aware that the attainment of the above objects by a simple device is a very desirable achievement. By the use of this improvement the adjustment can be readily and accurately made, and the wear of the spindle is reduced to a minimum.

We can fit any size spindle from 3½ to 5 inches diameter, and have three sizes of bushes, 7½, 8½ and 9½ inches square. In ordering bushes, all that is necessary is to state the diameter of neck of spindle and size of eye in bed stone, and the proper size bush will be shipped. Satisfaction guaranteed.

We have some half dozen different patterns of bushes ranging in price from \$2 to \$20—some having three and some four followers for wood or metal.

Lighter Screws and Hand Wheels.



These engravings illustrate the style of hand wheel and screw with cap and washer that we make and furnish with our combined husk mills, and when ordered we send them with the irons needed with mill stones. The figure on the right shows the hand wheel, screw cap and washer in position when ready for operation. The wrought iron screw is cut in a lathe and is what is termed a square thread. The wheel cap and washer are all turned and polished, making a good looking, durable fixture, as well as an accurate means of adjusting the stone. We sometimes make these of brass.

Lighter Levers and Arched Step.



This shows our pattern for arched bridge pot and lighter lever for geared mills or when an elevated step is wanted. The part holding the steel on which spindle rests, is contained in a central lifting chamber, which is turned to fit the body of the arch, like a piston, thus allowing a perfect perpendicular movement without any liability to vary from its true position; the heavy set-screw at the rear end of the lever is to admit of more adjustment; the lever can be moved around at most any required angle without interfering with any part of the step. We provide means (not shown in this cut) to tram the spindle by screws placed in the central lift part of the step, when desired.

Mill Steps.



Of these we have various styles, some sufficiently heavy for a six foot mill stone, and to tram by screws. The centre lift part is constructed in same style as the arch-step described above. We have patterns of all lengths of lighter levers, as shown under head of Lighter Levers, which fit over this style of step in same manner as shown, excepting we provide an independent rest for the rear end of the lever and screw for regulating it. This makes a very desirable rig for the lower end of mill spindles in any mill, and are fast taking the place of all others. It obviates the cutting of the bridge-tree or timber on which it rests.

The steel on which the spindle-toe rests and presses sidewise in running is constructed in various ways. In some situations we provide a flat plate, below for taking the downward pressure, and above it a heavy steel ring supported a little above to allow a chamber for the flow of oil around the very extreme lower end of the steel spindle toe. This chamber is free to be supplied with oil from the upper receptacle through holes provided for the purpose. A bearing made with a hardened steel plate below and a ring of good anti-friction metal around the spindle-toe is the most desirable when properly constructed and of suitable metals.

MILL CURBS AND HOOPS.



Fig. 1.

Of all the various styles and sizes we are better prepared to make than any other establishment we know of in the United States. We keep on hand large quantities of the material of which they are made so that it may be thoroughly seasoned before use. Their construction is as follows: the tops are made of double-thickness lapped and tongued and screwed together. The body is made of pine staves, worked on a double-headed tonguing and grooving machine made for this purpose, with their mandrels in radius positions to make a close fitting joint for any size we choose to make; the outside bands are of black walnut, under which we place neat iron bands, one at the base and one near the top, under the projecting curb or top. For protecting the wood from being affected, we coat the inside with white lead paint, and give the outside three coats of good varnish. In the preparation to ship them and keep every part from the liability of damaging in the least, we make a complete protection of a light frame work and circle pieces surrounding the whole. When the hopper frame and feed rig is ordered we place them inside. This not only makes a strong and durable cover to the mill-stone, but one that for style of finish and attractive appearance pleases all.

Silent Feeders.



Fig. 2.

Of these we make some half a dozen kinds, differing somewhat in construction and appearance, some of which are shown in the accompanying cuts. Fig. 1 is of the style known as "the glass globe tripod." The globe is made of the best clear flint glass from one-fourth to one-half inch in thickness. The iron frame can be lifted from its bearings on the curb at any time. The hand wheel and screw by which the feed to the stone is regulated, is provided with a spring so that by pressing upon the wheel the feed tube can be suddenly raised if necessary, when by the action of the spring it will take its exact position as before. All the parts are carefully fitted up, the hand wheel and such other parts turned as necessary to complete it in a tasteful manner.



Fig. 3.

With those shown in Figs. 2 and 3 we make large or small conical hoppers, of heavy tin, galvanized iron or brass. The feed rig shown in Fig. 3 is called the Bracket Rig. The feed wheel is turned, and all fitted up in same manner as the others, and suits more millers for custom and merchant mills than the other styles. Those however which are most frequently wanted is this bracket rig with the ordinary wooden hopper and frame, after the style shown upon the mill on page 17. If a feed attachment is wanted, with shoe and damsel for feeding corn, mixed feed, &c., we usually send the kind shown on the mill, page 14. In all cases where orders are given for any kind of a feed attachment for mill stones, we must know the size of top of curb, size of opening in it and distance from top of bail or balance iron to top of said curb, size of eye in stone, and when feed plate is wanted, give width of said balance bail, and if there is anything projecting above it, give its size and shape, so that we can fit the feed plate, damsel or what may be ordered, to it.

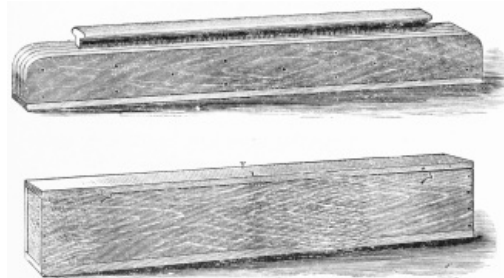
Proof Staff.



To promptly and satisfactorily fill all orders in this line we keep on hand a complete assortment. The use of this article in a mill of two or more run of stones is not as fully appreciated as it should be; we do not see how a miller can well get along without it.

The kind we furnish we think are the best in the market, exactly true, made of the best shape to retain a true face, provided with a spirit level in the back; for correctness no other can excel it, and the whole is placed in a close fitting, nicely finished box. Three sizes are made, see list.

Red Staffs.



These articles of the various sizes used in flour mills we make of the best entirely dry and seasoned cherry lumber. The staff is prepared by suitable machinery, every piece carefully fitted, then secured by glue and screws, the latter liberally put in. Both the staff and box are finished in neat style, well varnished, and sold at a price that will not pay for making them at the mill, unless the material was at hand and advantages better than usual.

Mill Picks.



We have under our constant employ pick makers that know their business, and we are having imported for this purpose a brand of English steel made expressly for mill stone picks. We make three sizes with eyes, unless otherwise ordered, as follows: light cracking, heavy cracking and furrowing. (See price list for prices, weight, &c.) If any points should prove defective (as will occasionally happen) do not have any other maker or smith work on them, but return to us and we will make it satisfactory, and send back at once, as we warrant every one. We have ready for shipment several patent picks, some of which we have tested and describe as follows:

Cumming' Pick.

Fig. 1.



Description.

Fig. 2.

Fig. 3.

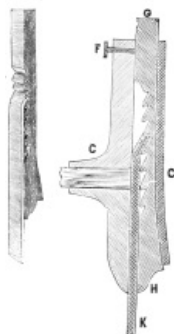


Fig. 1 represents the entire Pick ready for use. In Fig. 2 the pick or blade is shown in connection with the clamp-bar. While in Fig. 3 is given a complete sectional view of all parts of the device. In this Fig. C C represents the head or stock, and G the clamp-bar with its wedge-shaped head H. At K is shown the blade with its upper end bent to fit the notches in the clamp-bar. The device is perfect without the set screw F.

In adjusting for use the blade is placed upon the clamp-bar as shown in Fig. 2, and both are inserted within the socket of the pick-head; they are driven firmly into the socket by using. It will be seen that the more powerful the blows upon the stone the more securely is the blade confined within its socket, resulting from the wedge-like form of the clamp-bar. While to remove the blade reverse the pick and strike the opposite end of the clamp-bar on any solid substance, (a small piece of iron placed on the face of the mill stone is most suitable,) when the bar and blade will be instantly released, and another blade can be readily inserted. The blades being of a uniform thickness and temper only require grinding to sharpen. The wearing portion of each blade is 3½ inches; as they are worn by use they can be let down in the ratchet. Ten blades furnished with each.

Crossley' Pick.

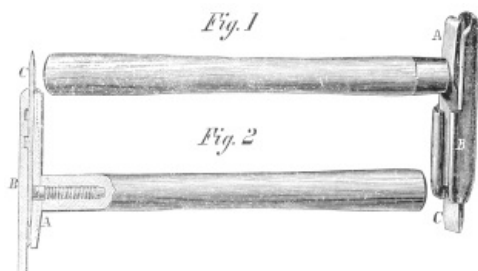


Fig. 1 is a perspective view, and Fig. 2 a sectional view.

This improvement supplies a want long felt by millers, more especially those who have not the convenience of sending their picks to a good blacksmith who understands tempering steel.

A is a wedge-shaped plate, which is attached to the handle by a screw shank; B is a piece of metal made so as to partly fold about A, as shown, but leaving a space between A and B, in which the steel bit C is held by a lug formed upon it, which fits into a corresponding recess in the plate B, as shown in the section, Fig. 2.

It results from this arrangement that blows upon the bit C, in dressing a stone, more firmly clamp and hold the parts together, while to loosen them, all that is necessary is to tap the plate B on the end opposite the cutting point or edge, which unwedges the two plates and releases the bit.

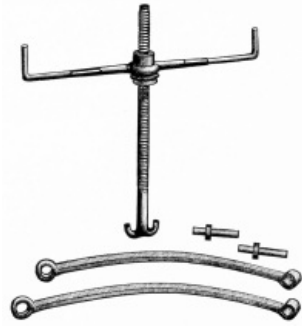
Two recesses are provided in the plate B, so that when the bit is worn down it can be set further out from between the plates A and B. When one end of the bit becomes so worn as to be no longer available, the bit is reversed, and the other end applied to dressing the stone. Thus the bit may be used until it is almost entirely worn away. It is retained firmly, and yet is instantly detached for sharpening or for adjustment.

The head is made of Malleable Iron, and the blades of the *very best quality hammered cast steel*, tempered the whole length, and do not require blacksmithing, but only to be ground when dull.

The price places these Picks within the reach of every miller.

Twelve 6 inch double blades sent with each head.

Hoisting Screw, Wrench, Bails and Pins.



We are well prepared for making the above articles and have all ordinary sizes on hands ready for use. The outfit is of the very best material; the wrench, screw, &c., is of wrought iron, and together with all the parts is in fine proportion and of great strength.

Damsels.

These we generally make to order, but we keep at all times a few of such as are mostly called for.

Those with from three to five beaters, with staff, and all wrought iron, are mostly ordered for merchant and sometimes custom mills. We have a variety of patterns for cast iron damsels with oval beating part. We turn and polish both kinds so as to make a neat and useful article. In ordering these some needed dimensions are necessary to enable us to meet expectations.



ELEVATORS.

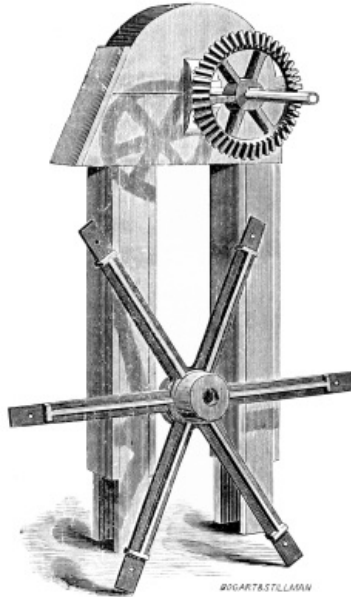


Fig. 1.

This engraving represents the head and part of the trunk of an Elevator, or what is termed an elevator head; Fig. 2 (on next page) represents the elevator foot. An elevator head and foot as furnished by us includes Fig. 1 and Fig. 2 with turned iron pulleys in them, the necessary shafting, and an outside bevel or spur gear wheel or turned pulley to receive power for driving the Elevator.

NOTE.—The iron spider as represented leaning against the Elevator head (Fig. 1) has no connection with any part of it except to show the shape of our patterns in that line.

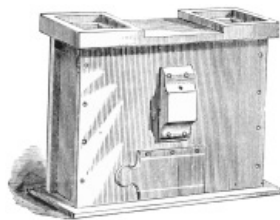


Fig. 2.

Elevator Cups (IMPROVED.)

Of all the sizes required for any kind of an elevator we make in our establishment. Having long employed a workman on this work with special machinery of our own, and as we buy the stock in large quantities, we are as well equipped as it is possible to be for making this useful appendage of a flour mill. Their advantages are: durability and economy, the different sizes are perfectly uniform, of the smaller and medium sizes the body is made of heavy tin, and all having an iron band neatly and skilfully secured around the upper edge. It makes a thoroughly strong, smooth, at the same time a light cup, and offering the least resistance in passing through the grain of any cup now offered.

They are less liable to catch on the sides of the Elevator trunking, and no breaking and tearing as is common to the cheap wired or rough iron cups secured to the belt in the ordinary manner. Cheap cups made in the usual style, wired tops, for old mills and repair jobs, constantly on hand.

Our Improved Fastening.

This is of special advantage, has been used since 1869, and all who use and see it pronounce it vastly superior. It is a copper clasp nicely contrived to firmly clamp the bucket to the belt. It perforates the belt and cup through two or three slotted openings. The cup can be easily removed from the belt; it does not cut the belt so as to weaken it; it prevents the cups from tipping as they pass down. The expense is some more than screws, but those having put up common warehouse elevators with this fastening, think it the cheapest article in use.

Bag Trucks.



The frequent calls for this useful article has induced us to prepare for and make them in large quantities, until we find ourselves supplying the leading retail and jobbing houses of the west cheaper than they have been heretofore supplied by eastern makers. It is a better constructed and more desirable tool than will generally be found. We make a box truck also, similar in style.

Conveyor Flights.

Of all sizes required, made of sugar or maple lumber. They are smooth, uniform and of desirable shape. In ordering, give dimensions of face or front of flight and size of hole you intend driving the tenon into; also, the size and kind of wood the shaft is made of.

BUCKWHEAT BOLTS.

We make these of various sizes. Some are wanted to make flour rapidly for some particular markets, and require to be of large size, with medium fine cloth. Those in most common demand are for custom mills and of two sizes: one with 8 feet, and one with 10 feet reels in complete chests with conveyor and necessary cut-offs for changing grade of flour; a shaft with coupling, and outside pulley or pair of bevel gear wheels is furnished, so that it can be driven from either end. Every thing is done to facilitate the convenience of setting up and attaching power. The cloth is made up of "Dufour & Co.'s best Dutch Anchor," to fit the reel, and of proper numbers for the work required. When a bolt is wanted for this purpose we should know the capacity required of it, &c.

Meal Bolts.

These are made in chests with conveyor, cut-offs, &c., as described under head of "Buckwheat Bolts." Cloth adapted to requirements, either of wire or silk. These are of two sizes, 5½ and 8 feet reels.

Belting.

"A good belt is what I want," is the remark often made, and to supply our already large trade in this line, we have made the necessary arrangements to ship on call what may be wanted at the lowest rates. In ordering, it is well to state the purpose for which it is wanted. For elevators, we recommend leather belting; when something cheaper is wanted, we furnish three-ply cotton duck. It is not so durable, but is firm, and strong as any gum belt, and answers a good purpose for a cheap warehouse, meal or feed elevator.

Perforated Zinc, Tin, Iron or Steel Plates.

Of most all sizes and shapes of holes for zig-zags. Riddles, malt-kiln floors, corn screen, and smut mill jackets furnished at low rates.

Screen Wire.

For wheat screen, meal bolts, &c., from number 2 to 24 meshes to the inch, most all widths, in any quantity desired. Wire is even and good size to form a strong fabric.

Duster Wire.

English and American wire for bran-dusters, 9 inches wide. The kinds mostly in demand we keep in stock.

NOTE.—In ordering perforated plates or woven wire, it is best to give us as much time as possible, as it is impossible to keep made up and in stock all the kinds wanted.

PRICES, TERMS AND WEIGHTS.

From our price list, although full and explanatory, it is difficult for some to get a clear understanding, especially when a complete outfit is wanted, including every iron, belt, &c., to attach power; therefore, write us stating clearly as possible your wants, when we will make a proposal of cost. We will send our printed weight and price list, when required.

As a rule when our customer is ready to order, or on our commencing the work and making it ready for shipment, we require a payment of from one-eighth to one-half of the whole amount, and settlement on or before delivery, which is when a shipping receipt is taken, as the work then passes into the ownership of the purchaser. By special arrangement we often ship to the care of some satisfactory person or firm who will receive and make settlement for the supplies. This person may reside at or near to the point of destination. Do not think us exacting; all we want is an equivalent for our products and some reasonably safe means of getting it.

TESTIMONIALS.

Under this head we have a few voluntary letters, answers and extracts from those who are using our Mills, &c. Manufacturing the outfits of grinding mills being our special business, it has been our custom to keep regularly informed by correspondence as to any objections or defects there could be in our work, and the results are numerous answers, which we have endeavored to print worded the same as they appear in the letters. In some cases, of course, the ideas are somewhat disconnected, as they were not written for the special purpose of publishing, but it is the facts that we are after, and they unquestionably show that our efforts to make the BEST MILL NOW OFFERED are a success, besides imparting much valuable information, some of the writers having spent half a lifetime in the milling business. All of these letters may be seen on file at our office, and the mills in their respective places in constant use.

Two 36 Inch Geared Mills.

CEDAR POINT, Chase Co., Kansas, Dec. 12, 1869.

MESSRS. NORDYKE, MARMON & CO:—

Agreeably to your request we write to inform you how we are getting along with our mill. We started our wheat burrs on the first inst. We had promised our customers we would do this months ago. We run through just enough of our own wheat to fill the mill and get the flour started, and then commenced on grist work. The first was a grist of spring wheat. We took one-sixth toll and made 30 lbs. of flour per bushel, which was pronounced by the owner the best he had ever had in Kansas, and he is an old resident here. We have been grinding regularly since, and in no instance have we heard one word of complaint. On the contrary, we are fast gaining a reputation, and the prospect for lively times with us is

most flattering. This and the adjoining counties are full of wheat, and there is a very large scope of new country to be supplied south and west of us. We have already made about one hundred 98 lb. sacks of flour for ourselves, and have sold the most of it. It is evident we are not going to be able to do the work with one run for wheat. We have only run ten days, and our flour has already gone from twenty to sixty miles. We think that you will agree with us that our mill is a perfect success. We set up the burrs ourselves, and got Mr. Britton of Cottonwood Falls Mills to assist us in getting the other machinery in line. What is the least in cash at which you can furnish us a Bolt like the one we have, with Elevators, Gearing, &c., and a Geared 30 inch Corn Mill? Hoping to hear from you soon, we are,

Yours respectfully,
O. H. DRINKWATER & Co.

In January, 1871, the above firm ordered a 16 feet double reel bolt, and another mill; they were shipped soon after, and we have another letter dated as follows:

CEDAR POINT, Chase Co., Kansas, April 9, 1872.

MESSRS. NORDYKE, MARMON & Co:—

The mill machinery we purchased of you gives first-rate satisfaction. The two run of three feet geared mills we run with a 48 inch Leffel wheel under 7 feet head while at work, and grinding 10 bushels per hour on each mill. The 2½ feet under-runner corn mill we run with a 35 inch Leffel wheel under same head, and grind 15 bushels of corn into fine meal per hour with ease. This same wheel runs both the single and double reel bolts that you sent us, as well as the other machinery of the mill excepting the two wheat stones. Our works are all of your make, and we have been running since the 1st of December, 1869, and are well satisfied with the whole outfit. They have been used almost constantly to do our grinding which is considerable and on the increase. We do as good work as any mill in the State, and any one wanting good works in this line, we would recommend to you.

DRINKWATER & SCHRIVER.

It is the Best Machinery for Custom Work.

ETNA GREEN, Kosciusko Co., Ind., Feb. 3, 1870.

NORDYKE, MARMON & Co:—

Gents:—Will say in reply to your inquiry, the 36 inch Mill I bought of you in November, 1869, gives entire satisfaction. I can average ten bushels an hour, and the 22 ft. Bolt does the separating of the bran and flour complete; the work is giving general satisfaction. The 26 inch feed Mill is all you recommend them to be. The Smut and Separating Machine is the best, I verily believe, in use. It is sure pop on cheat and rotten wheat; and, in short, all filth. I will say it makes the wheat fit for grinding, complete. I did grind twenty bushels in seventy minutes, by the watch, and did good work, on the 36 inch mill. My mill is driven by a 7¼ inch by 16 inch cylinder engine, and boiler 16 ft. long, 4 feet in diameter with three flues. I can make an average on the two run of 22 bushels per hour. With two cord of wood will grind on the two run over two hundred bushels. I have been engaged in the flour milling business for twelve years, and would say, the above described machinery is the best I have found for custom work; this is my main business.

CHARLES FRIBLEY,
Miller and Proprietor.

Pulley Mills—No better in the State of Ohio.

JOHNSVILLE, Montgomery Co., O., Jan. 24, 1870.

MESSRS. NORDYKE, MARMON & Co:—

I have two of your mills, with bolt, and smut machine, 36 inch for wheat, upper-runner, and 30 inch under-runner cock-head mill for corn; have been running them constantly since August, 1868. I have taken hold of the mill myself; I can make more flour to the bushel than the miller I had. I have made 40½ pounds of the best of flour out of a bushel of wheat and toll one-eighth. I have had splendid luck in grinding. My miller had run me out of custom, but I am restoring it again. I have got the burrs in better order than they ever were; can grind close and make the best of flour. I can take a bushel of the best Tappahannoc wheat and make 47 pounds of splendid flour. I have made 42 pounds of common red wheat and tolled one-eighth, which would be 5¼ pounds added to 42 pounds, making 47¼ pounds of good flour. I have been awfully humbugged in getting poor millers; have made but little and lost custom. The first time I dressed the wheat burr, I run the corn stone all day-ground buckwheat, and cracked the wheat burr in one day. She then ground splendid and clean at the rate of ten bushels per hour.

A. CLEMMER.

Under a more recent date we quote from another letter: "I am running the mills yet with better success than ever, making good flour and large yields. On several tests have made 47½ lbs. lately of excellent flour from ordinary red wheat. If you could give me some information about keeping the furrows in the stones in order to grind cool and fast, I would be thankful; as far as keeping in tram and cracking the face, I am doing very well. I grind close and bolt clean. I have taken 60 lbs. of good white wheat and made 50 lbs. of flour. What do you think of this? The farmers say I can beat any mill they have tried. Please answer, and give me all the instruction you can. It may be best for me to get a No. 1 Dresser to work on the furrows some, and I may catch items by it. I have an order from New York for 100 bbls. of flour at this time. I would like to exchange a half dozen of those light picks you sent me for heavy ones, and pay the difference. I like a 2 pound pick the best for light cracking.

Yours truly,
ANDREW CLEMMER."

Three Geared Mills. No Expense for Repairs.

GREEN CAMP, Marion Co., O., March 22, 1870.

MESSRS. NORDYKE, MARMON & Co., Richmond, Ind.:—

It gives us pleasure to write that we have used the Mills furnished us by you, since May 28, 1868—two 42 inch Wheat, one 30 inch Corn under-runner. The Wheat Mills have run ever since

without one cent repairs, and without any apparent wear—the balance being so perfect, and being put up in so substantial a manner. They give entire satisfaction, always doing their work in the best possible manner. The two 22 feet Bolts are all that we could wish, doing their work well, without one cent' repair. The Corn Stone, under-runner, 30 inches, will do double the work of 42 inch upper-runner Corn Mills, and do the work *well*. The Smut Machine always does its work well. The work was all put up in so substantial a manner by your James Albertson that we have never made any repairs, only to replace perforated zinc on Smut Machine. Our flour always brings the highest prices.

Yours, respectfully,
FOSTER & KANABLE.

Cannot do Better.

WESTFIELD, Hamilton Co., Ind., Jan. 8, 1869.

MESSRS. NORDYKE, MARMON & Co.:—

Gentlemen:—In answer to your letter of inquiry of Dec. 30. Your mills are doing well, they are giving as good yields and better flour than the large, old style mills. Your 30 inch upper-runner mills for wheat, grind from six to ten bushels of wheat per hour, and your 36 inch mill from eight to twelve bushels of wheat per hour. By crowding a little when the stones are sharp, will grind much more than I have stated. Your bolts and smut machines work well; your mills run light, considering the work to do. A 15 horse power engine, 8 by 16 inch cylinder, will drive two run of your 30 inch mills,—60 pounds of steam,—and will drive them twelve hours with one cord of wood. I think all wanting mill machinery cannot do better than to order from the "Richmond Mill Works."

Yours, respectfully,
DAVID CAREY.

36 Inch Geared Mill, 20 feet Bolt and Smutter.

NEW MAYSVILLE, Putnam Co., Ind., March 1, 1869.

MESSRS. NORDYKE, MARMON & Co.:—

Sirs:—I must tell you about the mill that I got from you. I am well pleased with it. I can grind from twelve to fifteen bushels per hour, and make first-class flour. I have run twelve hours with a half a cord of wood. I have a good custom and still gaining. I have done the best work with your mill that has been done in this country. There are several mills around me. I have stopped some of them from running; they get nothing to do in the line of custom-work. If I gain in work for the next six months, like I have for the last, I will have to get another mill. I am getting all I can grind now.

Yours,
LEWIS W. GEORGE.

Mr. George' mill is driven by a large sized Portable Engine.

N., M. & Co.

From same place we hear from Mr. George again under date of March 20th, 1872. I am still running the mill here that I got of you. I am looking for a larger engine, and can you give me information as to prices, size, &c., for three run of stones, same size as you sent me before? Suppose your prices and terms are the same. I have ground 100 bushels per day on this one on the average, and use $\frac{3}{4}$ cord of wood per day. I have regular customers that come by the doors of my competitors. Here they say they get better flour and more of it than at the old style water mills, and their own flour from their own wheat. In the four years that I have used your mill I have had but one item or bill of repairs to foot, which was one set of wood cogs. I often grind 15 bushels per hour, and do good work, but find the bolt will not clean it so well at this speed of grinding. I like your larger bolts, as improved, much better. I grind when the stones are in average condition as to sharpness 8 to 10 bushels per hour, and satisfy all in quality and yield of flour. There are two mills at Bainbridge, 7 miles, and two others, 6 and 7 miles in other directions, so you see I have competition all around me. Now, give me figures on the other mills, with your improvements. I have been a miller over 20 years and want a model job.

Yours, respectfully,
L. W. GEORGE.

One 3½ ft. Wheat Mill, and One 30 inch Corn in Combined Husk.

SPEIER, Blue Earth Co., Minn., July 16, '72.

NORDYKE, MARMON & Co.:—

Gentlemen:—I started my mills on the fourth day of July. It gives entire satisfaction. It over-reaches your recommendation. My miller says he thinks the burrs the best he ever saw. I think I will be able to meet my note promptly at the expiration of the sixty days given.

Very respectfully,
GEO. W. WOODHAM.

Corn Mill and Portable Engine.

CANOLA, Howard Co., Kansas, June 17, 1872.

NORDYKE, MARMON & Co., Richmond, Ind.:—

Gents:—Yours of 7th inst. is received, and will say in answer, that our mill came through all right and complete, excepting the hopper frame, which we mended without any expense, consequently did not report it. After thoroughly trying the mill, have to say that it fully comes up to the warrant, and beats it, as we can grind from 25 to 30 bushels per hour of good merchantable meal, with our Gaar, Scott & Co.'s fifteen horse engine and 80 lbs. of steam, and if we were to buy another mill it would be of the same brand.

Respectfully, yours,
MORGAN & LATTA.

What an Old Mill-Wright Says.

GUTHRIE, Lawrence Co., Ind., June 27, 1872.

Gents:—

The grist mills we purchased of you that we are using, are all right. Our miller has followed mill-wrighting and milling for 30 years with us, and he says that a better mill never run than the "Richmond Mill and Bolt," as they are now improved.

KINSER & WHISENAND.

MOSES FRENCH, Miller and Millwright.

The Nordyke or Richmond Mill, Stands the Test.

BOXLEY, Hamilton Co., Ind., June 21, '72.

NORDYKE, MARMON & Co.:—

Gents:—At your request I will write you what I am doing with the mill you made. My engine is a 10×18 inch cylinder, boiler 42 inches diameter and 20 feet long, with two large flues, and the stones, if you recollect, are one of your heavy husk, 3 feet upper-runner mills for wheat, and one of your 30 inch under-runner for corn and feed, and with one and a half cords of wood every ten hours we can grind the week through 10 bushels per hour on the wheat stone, and 20 bushels per hour of corn on the corn stone. It has now been over four years since this mill was started, but it does better work now than then, because of its better management. I have new customers almost every week from near other mills. It is no mistake, I make better flour—and my millers have discovered it—than any of the larger mills through this country. I need another run of wheat stones and bolts, as with them I could manage the whole with my engineer and miller, and do about double the wheat grinding with but little additional expense. Out of the wheat of the year before last I made 40 pounds of flour from weighed wheat per bushel, after tolling one-eighth; from last year' wheat I could not do it, it being rather light in this section.

Yours very truly,
RILEY WILSON.

Its Equal Cannot be Found in the State.

GREENFIELD, Ind., Dec. 23, 1869.

MESSRS. NORDYKE, MARMON & Co.:—

Gentlemen:—Yours of 23d inst. came to hand this date and contents noted. Our mill gives perfect satisfaction, and must say we don' think its equal can be found in the State, of its size. Our smut mill can' be beat. We would cheerfully recommend your mills to any one that contemplates building or refitting, in preference to any other mill. Our old mill was burned on the night of July 3. We commenced cutting timber for the new mill July 17, and the building was ready for the machinery August 7; machinery set up and running October 12, and during the time of setting up machinery one week was lost by the sickness of your mill-wright. The machinery of our other mill was made in Cincinnati, but it does not at all compare in finish and usefulness to our present mills. We now run three pair of stones, and grind faster on each of them, with less fuel, than we did on two pair before. We have two pair of 36 inch wheat burrs and one pair of 30 inch corn burrs in one of your Combined Mill Husks with long spindles; all three are under-runner cockhead mills. They are driven by eight inch belts, with tightner pulleys. This way of driving is so convenient for stopping and starting the burrs, that we would now use no other arrangement. Our two Bolts are single reel, 22 feet long. We have ground fifteen bushels per hour on each of the wheat mills, and twenty bushels per hour on the corn stone. When the wheat mills are in moderate order we consider ten to twelve bushels per hour a fair speed for grinding and bolting, and making a good yield. Our customers often get 40 and 41 pounds of flour to the bushel after tolling. Our Engine is 10½ inch cylinder and 20 inch stroke; it runs 110 revolutions per minute. Eighty pounds of steam will drive all three run with ease. It requires about four cords of wood to convert five hundred bushels of wheat into prime flour. We can say but little more in relation to our mill, other than this, that any one contemplating building a mill would do well to see our mill before building; would be pleased to have you come out and see our mills run, and should you have occasion at any time to refer people to us, would be happy to show them our mill and give them what information we are able to.

Yours, with respect,
WOOD & Co.

On Feb. 14, 1870, Mr. Wood stated to us in person that on Feb. 12, they ground twenty bushels of corn into nice family meal in forty-three minutes, or at the rate of nearly *thirty bushels per hour*.

N., M. & Co.

Another Letter Near Three Years Afterwards.

GREENFIELD, Hancock Co., Ind., May 18th, 1872.

MESSRS. NORDYKE, MARMON & Co.,

Gentlemen:—Yours of 10th inst. came duly to hand; have been so very busy have not found time to answer sooner. We can only repeat what has already been said in relation to our mill; it gives perfect satisfaction. We would not like to be considered vain, but we do think we have the best mill in the State. Our mill has stood the test of near three years constant and hard labor, with no perceptible wear.

Yours respectfully,
WOOD & Co.

WM. G. SALLIE, Miller.

This mill is located on the P., C. & St. L. R. R., 20 miles east of Indianapolis.

URBANA, Ohio, Sept. 20, 1870.

MESSRS. NORDYKE, MARMON & Co.

Gents:—Your mill gives entire satisfaction. Enclosed please find check on First National Bank of Cincinnati for the full amount of your bill.

Yours truly,
H. M. CHEW.

36 Inch and 30 Inch Geared Mills.

BROOKSTON, White Co., Ind., Aug. 5, 1869.

MESSRS. NORDYKE, MARMON & Co.,

Gentlemen:—We expressed you the amount of last note on mills yesterday. We have commenced grinding new wheat, but it is in rather bad condition yet. We are doing a very good business, and are giving perfect satisfaction in quality and quantity. We can make from 35 to 40 pounds of flour per bushel, and grind on an average from eight to ten bushels per hour. We have a 25 horse power engine, and can run both mills, bolt, smutter, elevator, conveyors and corn shellers with from 60 to 70 pounds of steam, and do it with all ease.

Yours, truly,
A. VENCIL & Co.

Oct. 20, 1869, Messrs. Vencil & Co. ordered their third run—a 36 inch geared mill, together with 20 feet Bolt, No. 1, Richmond Smut and Separating Machine, Flour Packer, &c.

N., M. & Co.

UNIONTOWN, Bourbon Co., Kansas, Aug. 26, '71.

MESSRS. NORDYKE, MARMON & Co.,

Gents:—Find enclosed draft on New York for twelve hundred and eighty-eight dollars and sixty-five cents, which, if you have not forgotten, is the amount of the first note. Please send it (the note) with the name torn off. Our mill gives entire satisfaction. Will write more fully in the future.

FOSTER & KIRBY.

Perfect Custom Flour and Corn Mill.

MONITOR, Tippecanoe Co., Ind., March 1, 1872.

MESSRS. NORDYKE, MARMON & Co., Richmond, Ind.:

Gents:—We have used your machinery with persevering energy, now commencing the second year, and have a larger custom patronage than all of the other four mills nearest us. Our machinery consists of a 42-inch iron turbine water wheel, under 9 feet working head; one 3 feet upper-runner mill for wheat; one 30-inch under-runner mill for corn; one Richmond Smutter with screen shoe separator; one 20 feet bolt, all of which you made for us.

The wheat mill runner is in such perfect balance that we can run it within thin paper thickness of the face of bed-stone; thus face to face it will run with nothing whatever between them to the speed of 270 revolutions per minute. Any grinding mill, no matter how heavy the runner stone, can be made to do this, if provided with your improvements; and it pays well to have a mill so rigged. When the hoop is on our wheat mill, a man standing six feet off and looking at the nicely turned back, cannot tell that they are running. Not a particle of jar or shake about them. The self-tram irons are the nicest thing ever invented; would not do without them for half the price of the whole mill. With one-third gait we can grind of wheat 8 to 10 bushels per hour, and make more and better flour to the bushel, than any mill our Mr. Fretz (in his 18 years of milling experience) has ever seen.

With a full gate it may surprise you to know that we grind of corn on the corn mill 25 to 40 bushels per hour. Our flour stands the highest of any that comes to LaFayette. There is no such thing as choking down, as is so often experienced with other mills. We would advise those wanting mill machinery to go to the Richmond firm and look before they buy elsewhere, or they are welcome to see our mills run, which will satisfy any one that understands anything at all about a mill. It only took us 15 days to set up our mills for running. Our machinery was shipped from works on the 1st day of February, to Lafayette, and on the 13th we commenced setting up by the assistance of your mill-wright, and on the 1st day of March, 1871, we started up and run every working day since, and without any expense at all for repairs or changes. Our pulleys being balanced, there is no such thing as any of the bearings heating. Our mills are run with 10 inch belts from upright shaft and pulleys. The smutter does better work than the Eureka or Silver Creek.

Yours, with respect,
REDINBO, FRETZ & BRO.

D. B. Fretz, } Millers and
W. B. Fretz, } Proprietors.

Three Pair of Burrs in a Combined Husk, with Belts.

MONROVIA, Morgan Co., Ind., Feb. 22, 1870.

NORDYKE, MARMON & Co.:—

Gents:—It has been eight months since you re-fitted our mill. We can run all of the Burrs, (one 42-inch and one 36-inch for wheat, and 30-inch under-runner for corn,) twelve hours on one cord of seasoned beech or sugar-tree wood. With 50 to 60 pounds of steam we grind on each Burr eight to ten bushels per hour. Our customers are highly pleased with their yields and the quality of their flour. In fact, our custom has more than doubled since the introduction of your mills. On our own account, we can say, in simplicity, durability and lightness of running it exceeds our expectations, and, if necessary, at any time can cheerfully recommend to others wishing mill machinery.

Yours, truly,
HADLEY & TAYLOR.

After Years of Steady use they Say.

MONROVIA, Morgan Co., Ind., May 8, 1872.

NORDYKE, MARMON & Co., Richmond, Ind.:—

It is now three years since we overhauled our mill and put in your improved

machinery; since which time it has been run almost daily as a custom mill, and in quality and quantity of flour gives universal satisfaction. In fact, the custom increased one-half since its introduction. We find it very permanent and durable, as well as tasteful in style and finish. We can grind at least 10 bushels per hour with each run of burrs, and use from one to one and a fourth cord of wood in ten hours' grinding on all three stones. We would recommend all desirous of purchasing mill machinery to procure yours, believing their money will be well invested if they do.

Yours, truly,
HADLEY & TAYLOR.

MADISON, Indiana, May 6, 1872.

Gents:—Yours of the 3d inst came duly to hand, making inquiries how we are pleased with our mills that we purchased of you over three years since, (we expected to write you before this.) If you remember our Burrs are sharp old quarry, not very open, and they make very lively flour, and don' get dull as soon as most others. Our stones are, two pair of upper-runner 3 feet mills. We make a barrel of flour with 3 pecks of coal; we do not know that we could say anything more, excepting that they work fine, and together with the bolt you made for us, make flour that we can find ready sale for in any market along with the best brands. Your flour bolt deserves special mention; with the knockers or "percussion apparatus," as you term it, which we can stop or start at any time while the mill is running, we are able to keep the bolt clean and bolt through the fine cloth without specking or injuring the flour. The arrangement of the bolt for clean bolting, we think is your best effort.

Very truly, yours,
W. W. & B. F. PAGE.

The above is from Madison, Indiana, 60 miles below Cincinnati, on the Ohio river.

ROCHESTER, Ind., Feb. 14th, 1872.

MESSRS. NORDYKE, MARMON & Co.:—

Gentlemen:—Our custom work runs from 60 to 250 bushels per day of wheat, besides a large amount of corn. Although there are several mills here, our flour has the preference, and sells more readily than any; the self-tram irons are perfect. You shall hear from us again.

Yours, truly,
A. L. BOWMAN & Co.

This mill is composed of two run of our 42-inch and one run 30-inch in combined husk, the two former being upper-runner, latter under-runner. They use our 20 feet double reel bolt and other supplies for the complete furnishing of a mill.

Two 30 Inch Pulley Mills.

CARMEL, Hamilton Co., Ind., Jan. 4, 1869.

NORDYKE, MARMON & Co.:—

Gentlemen:—The mills purchased of you last May, set up and started by David Carey, have given entire satisfaction. Our mill consists of two run of 30-inch upper-runner burrs, pulley mills—one for corn and one for wheat—can grind from seven to ten bushels of wheat into the best merchantable flour, and from ten to fifteen bushels of corn into fine meal, per hour on each burr. Our bolt is sufficient to bolt the above amount, and performs well. Our mills and machinery is driven by an engine, 8 by 16-inch cylinder, and runs 170 revolutions to the minute. We can run the entire machinery ten hours on three-fourths of a cord of wood, have been running almost every day since we started up. Our custom is still on the increase, extending over a great amount of country. We run now every day, while other mills in town and immediate vicinity do not run now to exceed two days in the week. Your mill and bolt arrangement is the only thing suitable for custom, and does well for merchant work. We would recommend persons who think of buying mills, to give you a call—or if we purchase again we will do so. We will take pleasure in showing any one our mill.

Yours, respectfully,
CAREY & ROBERTS.

Lay by Your Old Notions.—36 inch and 30 inch Pulley Mills.

CUMBERLAND, Guernsey Co., O., Feb. 14, 1870.

NORDYKE, MARMON & Co.:—

Sirs:—We have used your mills since the 4th of last November. We consider them durable as any mills can be. We can grind on our 36-inch wheat mill from fifteen to twenty bushels per hour, owing to the grain, and can make flour that will satisfy any community, both in regard to quality and quantity. On our 30-inch corn mill, we can grind forty bushels per hour, if the corn is dry. Our miller says he can make forty barrels of XX family flour in ten hours. We have a twenty-five horse power engine. Our boiler is twenty-two feet long, for two inches in diameter, and two flues. It affords enough power, under seventy pounds pressure, to drive both mills together with their attendant machinery, which is one of your twenty-two foot Flour Bolts, No. 1 Richmond Smut Machines, Buckwheat Bolts, Elevators, Shafting, &c. Three bushels of coal per hour is all we require. To those wishing mills we would just say they had better lay by their old notions and procure improved mills.

Yours, &c.,
HOWELL BROTHERS.

Mill and Bolt Cannot be Beat.

HAMBURG, Fremont Co., Iowa, Jan. 11, 1869.

MESSRS. NORDYKE, MARMON & Co.:—

Dear Sirs:—I have had one of your 36-inch Pulley Mills and 18 feet Bolt in operation nearly one year. I like it very much; my flour gives general satisfaction; am averaging ten bushels of wheat per hour on the one pair of burrs, making the best flour. In short, I think your Mill and Bolt cannot be beat.

It is driven by one of Leffel' 20-inch Double Turbine Wheels, under a total head and fall of 11 feet 9 inches.

Yours, respectfully,
H. LAMB.

Under date of January 25, 1870, Mr. Lamb orders another run of 36-inch burrs, together with bolt, &c., complete.

What One of Our three feet and 26 Inch Under-Runner Mills will do.

HOUSTONIA, Pettis Co., Missouri, March 3, '72.

MESSRS. NOR DYKE, MARMON & Co.:—

Gents:—The balance of the things we ordered came to hand yesterday. We have started the corn mill and the way it ground, we were all surprised; 30 bushels per hour of fine meal is a side show for it. The miller says he can grind 40 bushels per hour of corn into fine even meal, every part of the works go off right; will be ready to start the wheat mill last of this week. Our miller is an old experienced hand, and is doing a good job in putting the wheat stones in flouring condition; will write you soon again how we succeed in making flour; have strong competition, and it must do 1st class work to prove a good investment.

Yours, respectfully,
J. L. WILLIAMS & Co.

Under date of March 11th, 1872, they say, after ordering another flour bolt, "That you sent us a splendid pair of wheat burrs; they grind so rapid that we find we need the other bolt to do the work. I think we have the best mill in the State or any other State. The machinery works well, beyond my expectation. On the one run of wheat stones we can make with the new bolt 6 to 7 one hundred pound sacks of good flour per hour. Ship as soon as you can with the numbers of cloth as describe in your letter. We want to send some lots of fancy flour to St. Louis. Our miller is an old St. Louis miller, and he says with this addition he can compete with any mill in St. Louis or any other place.

"Yours,
J. L. WILLIAMS & Co."

The mill-wright who set up and started this mill, writes from same P. O., dated March 17, '72, "That I have to write you that this mill beats any mill of its size that I ever saw. We started the wheat mill last Saturday in the afternoon, and run it three-and-a-half hours, and ground 65 bushels of wheat, and could have ground more if we could have bolted it. Everything runs like a top; they will send you a specimen of their flour as soon as they get some sacks, then you can see what kind of flour it makes; 30 bushels per hour for the corn mill is an easy thing, and it does nice even work.

"Respectfully, yours,
ALONZO M. COLE."

WESTFIELD, Clark Co., Illinois, May 11, 1872.

MESSRS. NOR DYKE, MARMON & Co.:—

Gentlemen:—It has now been ten months since we started our mill, purchased of you, and you will, no doubt, be glad to hear that it more than fills your representations of its good qualities. We make flour that brings the highest price, and have competition of other mills at almost our doors. The mills, bolt, and all in our opinion excels in style and finish all other mills we have seen, and one of our firm has owned and used for many years several of the leading kinds now advertised and for sale. The temper and sharpness of the burrs are very good. With our power it takes near one cord of wood to make 20 barrels of flour. The quality and yield of the flour cannot be surpassed by any mill, as we take it all out, leaving the offal clean. If we need any thing more in your line, will let you know at once, because you have so far fully met our wants.

Yours, truly,
BOLTON & WOOD.

Would not Exchange their Mill for anything Known.

NINEVEH, Johnson Co., Ind., Nov. 28, 1867.

MESSRS. NOR DYKE, MARMON & Co.:—

Gentlemen:—You will please find enclosed four hundred and eleven dollars, the amount of note and interest of the note we gave you, due on the 30th inst., which note you will please send us marked paid. Our mill is still doing a splendid business. We make the best flour in this section of the country, and as much to the bushel. We weighed one man' wheat—19 bushels, then weighed the flour, after taking one-eighth toll, and made him 41 pounds to the bushel. The burrs and their gearing work very nicely. To use a common expression, they cannot be beat; would not exchange them for anything known. We can grind as much in a given time as any of the large merchant mills; make better flour and as much to the bushel. We can grind fifteen bushels per hour on either of the wheat run, and forty bushels of corn on the corn run, with a 20-horse engine, 10 by 16 inch cylinder, and uses about one cord of good wood in ten hours, for driving one wheat and the corn run. The meal is of even quality, and well ground. The only fault found with our flour is, one man says, his "wife set rising in the morning and had to bake bread before dinner, when flour that she had used heretofore would wait till after dinner." This, however, is easily remedied.

Yours, with much respect,
BARNETT, JONES & PUDNEY.

NINEVEH, Johnson Co., Ind., Oct. 18, 1869.

MESSRS. NOR DYKE, MARMON & Co.:—

Gentlemen:—We write you in regard to a bolt for rye and buckwheat—wish it to attach to our corn mill. We think a small one will answer, but want it to be of sufficient capacity for the mill, which grinds pretty lively. We have now been running the mills bought of you, since August 23, 1867, two 36-inch for wheat and one 26-inch for corn, bolts, shafting, smutter, &c. We are so crowded with custom work that it

is impossible to grind it in six days a week—it may seem strange to you, but it is so. If we had the bolt referred to, we can run all at once, and possibly keep up. Gents, we have proven beyond a doubt to the mill men of this section that your mills beat them all, and can now say that we have effectually dried up all the old style mills in this country, on custom work. We have some customers that come to us twenty-five miles, and pass two other mills on the trip. You will please give us your lowest figures for the bolt complete, with suitable cloth. We have bought Mr. Barnett out.

Yours, truly,
JONES & PUDNEY.

One of the Best Smutters and Separators.

WEST ALEXANDRIA, O., Nov. 22, 1869.

MESSRS. NORDYKE, MARMON & Co.:—

I will write you a few lines and tell you something about that Smutter we bought from you. I can truly recommend it to be one of the best Smutters and Separators that I ever run. I have run a good many Smutters, but never run a machine that pleased me as well as this. It does just right in every way; it can' be beat.

Yours, truly,
ABRAHAM WEIMER, Miller.
MICHAEL KLINGER, Proprietor.

Mr. Klinger is using one of our No. 1 Richmond Smut and Separating Machines; also, one of our twenty feet Portable Bolts, complete, and one pair of 42-inch new stock burrs. It is an old mill remodeled.

N., M. & Co.

36 Inch Mill Makes Superior Flour.

DANVILLE, Hendricks Co., Ind., Jan. 1, 1869.

NORDYKE, MARMON & Co.—

Gentlemen:—New Year' day, and feeling grateful to you for the complete mill machinery you furnished us, we send you our thanks in the shape of an acknowledgment of the same, and hope that all mills you may put up hereafter may prove as satisfactory as ours. Our mills are two buildings—one for sawing and one for the flour mill. We have two run of burrs, one for wheat, 36 inches, on which we can grind from eight to twelve bushels per hour; also, one 30 inch corn, under-runner, and grinds from twelve to fifteen bushels per hour; both are pulley mills, with your late improvements. Our flour is of superior quality, and therefore gives general satisfaction. Our engine is of ample power, and with one cord of good wood per day of 10 hours, and 50 lbs. of steam, runs the mills up to their full capacity. We have a tubular boiler, 14 feet long, with forty-six flues. Hoping this may find a welcome, we subscribe ourselves,

Gratefully, yours,
CHAMBERS & PIERSON.

42 Inch, 36 Inch and 26 Inch Burrs.

NORTH STARR MILLS, Warren, Huntington Co., Ind.,
January 6, 1869.

NORDYKE, MARMON & Co.—

Gentlemen:—June 2d, 1868, our mills, bought of you, were shipped at your depot, and your man assisted us in setting up, with two carpenters. We started up on the 26th day of June, 1868, must say we had a very successful start. Ours is a geared mill and consists of two French burrs of the following dimensions: One 42-inch mill and one 36-inch mill, former for wheat, latter for corn. Our bolt is 20 feet long, 33-inch reel. All is easily run by 50 pounds of steam. 11 by 22-inch cylinder engine. We use 1½ cords of wood in 12 hours for both run, to full capacity. Average grinding capacity is 12 bushels per hour, with a yield of from 40 to 42 pounds of merchantable flour that will bear inspection in any market. Any one wishing to purchase mill-machinery can see a good sample of your mills by paying our mill a visit.

Yours, truly,
SMETHURST & BRO.

Under date of December 1, 1869, Messrs. Smethurst & Bro. order a third run of burrs.

N., M. & Co.
NORTH UNION, Ind., Sept. 23d, 1872.

NORDYKE, MARMON & Co.,

Gents:—Supposing you would like to learn how our mill is doing, I pen you a few lines. You doubtless thought strange of me not sending for your mill-wright, but we employ a miller who professes to be a mill-wright, miller and engineer, and in three weeks from the time he commenced we were running. The mills, bolt, scales, and all perform well; we grind ten bushels of wheat per hour while running the other machinery with 30 lbs. of steam, and 10 lbs. more will drive the corn burr too; we don' pretend to raise steam above this. The miller put the wheat burrs in flouring order in a short time and put it down and made prime flour at the start; we have made 38½ lbs. of flour from 60 lbs. of wheat after it was tolled one-eighth. So far the mill gives perfect satisfaction. Your notice concerning note was received; I shall be prepared to meet it when due.

Respectfully, Yours,
JAS. H. ARMANTROUT.

This mill is located in Montgomery County, near Crawfordsville, and composed of two run of stones, one 42 inch old quarry for wheat, and one 30 inch under runner for corn, in combined husk, also one 18 feet double reel bolt, smutter, &c. The power being a 10×20 cylinder engine, and two flue boiler 42 inches in diameter and 20 feet long.

Three Feet Under-Runner Mill in LaFayette, Ind.

UNION MILLS, LaFayette, Ind., April 18, 1872.

MESSRS. NORDYKE, MARMON & Co.—

Gentlemen:—Having had one of your corn mills in use about six months, we take pleasure in saying that it gives good satisfaction in every particular. We can make about 30 bushels of meal per hour on this mill. The quality of the meal being superior to and more evenly ground than any we have been able to make heretofore on other mills. The sharpness and the temper of the burrs is certainly superior to any that we have ever seen or used, and we cheerfully recommend your mills to any one wishing to purchase a good article.

Very truly yours,
DAGGETT, MARTIN & Co.
ALFRED GAMBLE, head miller.

New Three Run Mill in Terre Haute.

JONES' MILLS, Terre Haute, Ind., May 20, '72.

NORDYKE, MARMON & Co.—

Gentlemen:—I would answer to your letter of inquiry and say that your oil bush, self-tramming driving irons are the things that have long been wanted to do perfect milling. The burrs, spindles, bolting cloths, shafting, gearing, and all the works you sent and made for me to complete my mill of three run of stones can' be surpassed, and I invite all parties wishing to build to call and examine, knowing they will give you the preference.

Yours, truly,
C. B. JONES.

18 inch Plantation Mill in Illinois.

EBERLY, Effingham Co., Ill., March 26, '72.

NORDYKE, MARMON & Co.:—

Sirs:—We received the mill and sent the balance by express due on it as agreed. We have tried it in making meal, feed, &c., and I believe we can grind faster and better of corn and feed than you said in your circular and letter. You do not rate their capacity enough. I think you could sell more if you did. I did not see or write to any of those you referred me to, I never broached or questioned your integrity or business; the question was simply on what terms you would sell me the mill, as regards payments, as there are many who sell on partial payments, this was all.

Yours, truly,
HENRY TRAVER.

Custom 17 Miles, and Pass Four Other Mills.

MONITOR MILLS, Monitor, Tippecanoe Co., Ind.,
May 12, 1872.

NORDYKE, MARMON & Co.:—

Gents:—We have concluded to write how our mills work, supposing you would be glad to hear of the success of your work. A great many practical men have been here since we started up, and they all say with us that it beats anything they ever saw. One mill near us has entirely stopped for the want of business since we have got established. It is of the old style heavy gear and large stones. Our custom trade averages over 1,000 bushels per month, and we buy wheat to keep up our demand for flour; we warrant every pound of flour, and so far not one complaint; our works, all complete, that we bought of you, give the very best satisfaction; our wheat is smutty here, but your cleaning machinery meets the case exactly, and our flour is clear as the most particular inspector could ask. It is no uncommon occurrence to get custom grinding from a certain district 17 miles from here where they have to come by four other mills. No more at present.

REDENBO, FRETZ & BRO.

In a letter dated December 19, 1871, they say: Our custom has increased to from 90 to 145 bushels per day; doing this and our own grinding on the one run of 3 feet stones, keeps it going steady twenty hours out of the twenty-four. We have heard of you starting a new mill at Colburn, some 12 miles from us, and that it was not doing well; if this is the case it is in the bad management of it, as your mills, run with any degree of care, will grind as satisfactorily as any mills can. We have not had any expenses in repairing since we started, now about one year; do not try to fill orders for flour in LaFayette, nor could we if we tried.

R., F. & BRO.

Under date of February 22d, they write:—The note came to hand in due time, and properly cancelled. The custom grinding will reach about 4,000 bushels this month; how will that do? Mr. G. L. Kemp of Frankfort was here, he says their mill is doing well and giving satisfaction. Would like to see your establishment again; will call on you some time before long if nothing prevents.

Yours,
REDENBO, FRETZ & BRO.

Self-Tramming Mill Irons.

FOUNTAIN MILLS, Logansport, Ind., March 28, 1872.

MESSRS. NORDYKE, MARMON & Co.—*Gents:*—In regard to your burrs and all other work I purchased of you, I will say it is the best I ever saw or used. The stones were in both standing and running balance; that is the first run I ever started that was so to perfection. I haven' much to say, except when I want mill works, you are sure to get my orders. You have so far satisfied me in quality and prices. I will say I never dealt with fairer dealing men than you, gentlemen.

Yours, truly,
JACOB MYERS.

Under date of April 18th, 1872, Mr. Myers writes again.

FOUNTAIN MILLS, 3 miles S. E. from Logansport.

Sirs:—I thank you a thousand times for making me acquainted with the self-tramming driving irons; they are the best improvement on mill burrs I ever saw. The spindle is always in perfect tram with the face of the runner, and it is no trouble at all to test and keep it in running balance. The stone keeps in better face and I do not have to dress my burrs half as much. It is just what we have been needing. I can make a bigger yield and clearer flour and grind more per horse power. It is astonishing how smooth the stone runs and evenly it grinds. In the States of Pennsylvania, Ohio and Indiana, by actual count, I have run and managed twenty-seven run of stones, and I have not stated to you anything but what I can show here to any one. I sent you Mr. Ringer, or he probably would not have found you out, I believe he ordered a pair of 42-inch stones with the self-tram irons. It gives me pleasure to recommend a good job.

Yours, as ever,
JACOB MYERS.

Three 30 Inch Pulley Mills.

WHITESTOWN, Ind., Jan. 11, 1869.

NORDYKE, MARMON & Co.—*Gentlemen:*—The mills we purchased of you are two run, of 30-inch upper-runner pulley mills, iron back and balance, for wheat—and one under-runner 30-inch mill for grinding corn, rye, buckwheat, &c. Our power is a 20 foot boiler, 42 inches diameter, and engine 8 inch cylinder and 20 inch stroke, speed 150 revolutions per minute; speed of mills 300 revolutions. The average grinding is 7 bushels of wheat per hour to each wheat run—and of good wheat we make our customers 40 pounds of flour to the bushel after tolling—the quality, our customers say, is the best in the market. We run the three mills, two smut machines, of your make, screen and three reels with 65 pounds of steam, and use from 1½ to 2 cords of wood per day.

Respectfully, yours,
OSBORN & DYE.

Under date of September 6, 1869, in a letter from the same mill, they say, “Our mills are doing well, making 40 pounds of good merchantable flour to the bushel, after tolling one-eighth.”

N., M. & Co.

We forbear to extend the publication of the large amount of similar testimony in our possession, as these statements from many points of the country widely distant from each other, indicate the various conditions under which our mills are placed and operated. We hope they will be found useful and instructive.

N., M. & Co.

REFERENCES.

NAMES OF SOME WHO HAVE ORDERED, AND ARE USING OUR MILLS AND MACHINERY.

C. Carter & Sons, Eaton, Delaware co., Ind.	L. W. George, New Maysville, Putnam co., Ind.
Henry Kreisher, Frankfort, Clinton co., Ind.	O. S. Culbertson, Greenville, Ohio.
G. L. Kempf, Frankfort, Ind.	Finley Smock, Arcadia, Ind.
Peterson & White, Fulton, Fulton co., Ind.	Payne & Harlan, Marshall, Ills.
Bentley & Paden, Kennesaw, Georgia.	Milhollin, Littler & Co., Wheeling, Ind.
Redinbo, Fretz & Bro., Monitor, Tippecanoe co., Ind.	Benjamin Austin, Hamilton, Mo.
J. C. Foster & Co., Ackley, Iowa.	Hadley & Taylor, Monrovia, Ind.
I. B. Thomas & Son, Iowa Falls, Iowa.	Henry Thornburg, Perry, Iowa.
Jerry A. Wilson, Shenandoah, Page co., Iowa.	Hollingsworth & Williams, Guthrie Centre, Iowa
Barnard St. Johns & Co., Cresco, Howard co., Iowa.	H. P. Josselyn & Co., Monroe City, Mo.
Jacob Myers, Logansport, Ind.	G. D. Wall, Noblesville, Ind.
Hudnut & Co., Terre Haute, Ind.	Forry, Post & Co., Sturgis, Mich.
A. M. Morse, Villisca, Montgomery co., Iowa.	Andrew J. Cauble, Harristown, Ind.
James Thompson, LaFayette, Ind.	W. L. Mansfield, Marietta, Ga.
J. D. Urmev, Harrodsburg, Monroe co., Ind.	W. W. & B. F. Page, Madison, Ind.
Dickey & Bennet, Pleasant Ridge, Green co., Indiana.	J. M. Stone, Cumberland, Ohio.
Sylvanus Nordyke, Verona, Lawrence co., Mo.	J. B. Imrie & Co., Coesse, Ind.
D. Kinsey & Sons, Gratis P. O., Preble co., O.	R. T. West, Kidder, Mo.
Jones & Graves, Ninevah, Johnson co., Ind.	J. H. & B. O. Butterfield, Centreton, Ind.
John Morton, Corsicana, Barry co., Mo.	A. Halderman, West Alexandria, Ohio.
M. S. Power, Butler, Bates co., Mo.	Bowles, Pearson & Co., Dexter, Iowa.
Foster, Kirby & Co., Uniontown, Bourbon co., Kansas.	Gov. Burbank, Dacotah Ter.
Parmiter & Davis, Wilmington, Wabawnsee co., Kansas.	Charles Fribley, Ætna Green, Ind.
Kinser & Whisenand, Guthrie, Lawrence co., Indiana.	Dee & Bro., Mulberry Grove, Ills.
Bolton & Wood, Westfield, Clark co., Ills.	A. Howell & Bro., Cumberland, Ohio.
Wm. B. Morgan, Lowell, Cherokee co., Kas.	Alpheus Harlan, Stilesville, Ind.
N. Bland & Co., Sharpsville, Ind.	Abraham Erwin, Whitestown, Ind.
J. & J. L. Cox & Co., Warren, Jo Daviess co., Illinois.	John Griffith, Casey, Iowa.
Robert Cox, Cox' Mills, Wayne co., Ind.	P. W. McAdow & Bro., Bozeman City, Montana Territory.
Wm. Sharp, Liberty, Union co., Ind.	Songer Bros., Kinmundy, Ills.
A. McFeely, Xenia, Miami co., Ind.	Ewalt, Lycan & Quick, Marshall, Clark co., Ills.
Cuberly & Erwin, Antioch, Huntington co., Ind.	Wm. Askins, Elida, Allen co., Ohio.
D. Smith & Co., Sherwood P.O., Jasper co., Mo.	Jacob J. Ringer, Curveton, Cass co., Ind.
Peter Hoyla, Greenfield, Dade co., Mo.	Davis J. Harrison, Zionsville, Boone co., Ind.
A. Pierstorf, Spring Hill, Gallatin co., Montana Territory.	John S. Webb, Southport, Marion co., Ind.
Hayas Bros., Sullivan, Ind.	David Wiemer, West Milton, Miami co., Ind.
Robinson & Branham, Paragon, Morgan co., Ind.	John Townsend, Frankton, Madison co., Ind.
G. G. Holloway, Bozeman City, Montana Ty.	Aleck Mann, LaFayette, Ind.
T. E. Paddock, Liberty, Ind.	George T. Polson, Randolph, Riley co., Kas.
H. A. Pollard & Co., Augusta Station, Marion co., Indiana.	Robins & Weinland, Economy, Wayne co., Ind.

Geo. W. Woodham, Speier, Blue Earth co., Minnesota.
Knowles & Son, Seneca, Nemaha co., Kansas.
John T. Adair, Ellwood, Madison co., Ind.
J. A. McCluskey, Hastings, Minn.
J. W. Watts, Sandford, Vigo co., Ind.
Henry Clark, Hamilton, Mo.
Neal & Cushman, Terre Haute, Ind.
A. L. Bowman & Co., Rochester, Ind.
C. B. Jones, Terre Haute, Ind.
Morgan & Latta, Canola, Howard co., Kas.
J. L. Williams, Houstonia, Pettis co., Mo.
Rout & Chubb, Decatur, Adams co., Ind.
Porter & Jennings, Rossville, Clinton co., Ind.
Alfred Gamble, LaFayette, Ind.
Buck & Wattawa, Fort Atkinson, Iowa.
George Kints, Terre Haute, Ind.
W. L. Foster, Terre Haute, Ind.
Daggett, Martin & Co., LaFayette, Ind.
S. S. Wiles, Houstonia, Pettis co., Mo.
Albright & Cody, Tecumseh, Johnson co., Neb.
Charles Bradbury, Arcola, Ills.
Ives Marks, Rose Creek, Jefferson co., Neb.
A. Weimer, Lewisburg, Preble co., Ohio.
Herman Shultz, Barnesville, Belmont co., O.
T. B. Jones, Diamond Bluff, Pierce co., Wis.
Cal. E. Calyer, Humbolt, Allen co., Kas.
Thos. M. Young, Koniska, McLeod co., Minn.
McClure & Trim, Cassville, Barry co., Mo.
Uriah Thomas, Homer, Rush co., Ind.
W. W. Stiles, Cooperstown, Brown co., Ills.
Henry Lucas & Son, Whitestown, Boone co., Indiana.
Wm. M. Smith, Twin Falls, Greenwood co., Kansas.
Pratt & Baldwin, Greenfield, Ind.
D. P. Church, Centre Creek, Jasper co., Mo.
Joseph Boots, Greenfield, Hancock co., Ind.
James Thomson, Lafayette, Ind.
D. Fargo, Farmington, Ills.
Washington Black, Indianapolis, Ind.
E. C. Pyle, Knob Noster, Johnson co., Mo.
Strickland & Bush, Newcastle, Ind.
Truelove Brown, Mountain Spring, Martin co., Indiana.
Worley Lease & Son, Kokomo, Ind.
Wm. Craig, Mountain Spring, Martin co., Ind.
Shirk, Johnson & Fisher, NewCastle, Ind.
John Ingram & Co., Centralia, Nemaha co., Kansas.
Owens, Lane & Dyer Machine Co., Hamilton, Ohio.
Shipman & Doolittle, Cottonwood Falls, Kas.
Alonzo M. Cole, Burlingame, Osage co., Kas.
Griffith & Wedge, Zanesville, O.
J. T. Obenchain, Logansport, Ind.
Owens, Lane & Dyer Machine Co., St. Louis.
Clark & Smith, Centreville, Ind.
Clement & Fish, Westfield, Clark co., Ills.
Clifford & Son, Augusta, Butler co., Kas.
Samuel Keister, Harrisville, Randolph co., Ind.
C. Baker & Sons, Bower' Mills, Lawrence co., Missouri.
Winger Bros., Martell, Pierce co., Wis.
D. R. Bailey, Baldwin, St. Croix co., Wis.
Donald Stevenson, Osakis, Douglas co., Minn.
Allen & Bro., Crawfordsville, Ind.
Foster & Kanable, Greencamp, P. O., Ohio.
Higbee, Jessup & Co., Boxley, Ind.
Mount & Co., Milroy, Ind.
Jones & Pudney, Nineveh P. O., Ind.
Carey & Roberts, Carmel, Ind.
A. Clemmer, Johnsville, Ohio.
Stipp & Strain, Harrodsburg, Ind.
Joseph Haskett, Oakford P. O., Ind.
Jenkins & Valentine, Sidney, Iowa.
J. W. Drake & Co., Boxley, Ind.
Wm. Elliott, Richmond, Ind.
David Walker, Coatsville, Ind.
Sinker & Davis, Indianapolis, Ind.
A. D. Osborn, Whitestown, Ind.
Charles Glazier, Indianapolis, Ind.
Joel Jessup, Friendswood, Ind.
Moses Conrad, Homer, Rush co., Ind.
Crawford & Sparks, Morgantown, Ind.
O. Tyson & Bro., Otho, Iowa.
Harris & Reynolds, Catlin, Ind.
Skeen & Homewood, Brownsville, Neb.
M. L. Strickland, New Marion, Ind.
Johnson & Henry, Vandalia, Ills.

Jas. H. Armantrout, North Union, Montgomery co., Ind.
Winkler Bros., Randolph, Riley co., Kas.
Calvin Newlin, Gilman, Iroquois co., Ills.
Parker & Hines, Rockmart, Polk co., Ga.
Jas. H. Gillespie & Son, Greenfield, Dade co., Missouri.
B. B. Snow, Limberlost, Adams co., Ind.
Brown, Smyth & Co., Harmony, Clay co., Ind.
McClure & Bryant, Stilesville, Hendricks co., Indiana.
T. W. Hollingsworth, Marysville, Johnson co., Texas.
Chas. P. Stough, Owensburgh, Green co., Ind.
Miles & Diver, West Mill Grove, Wood co., O.
R. & F. S. Newcomb, Hagerstown, Wayne co., Indiana.
Miller & Waybright, Twin Falls, Greenwood co., Kansas.
Wm. M. Champion, Mattoon, Coles co., Ills.
S. D. Schalk, Anderson, Ind.
Alvin Black, Albion, Noble co., Ind.
Bumgarner & Alford, Walton, Cass co., Ind.
A. B. Sosbe, Jefferson, Clinton co., Ind.
John Burnside, Greencastle, Ind.
John Sigman, Hamilton, Mo.
H. Lamb, Riverton, Fremont co., Iowa.
David Carey, Westfield, Ind.
James Leffel & Co., Springfield, Ohio.
Walker & Sons, Patoka, Ills.
Stringfield & Stumbo, Falls City, Neb.
T. T. Walker, Vernon, Ind.
Howard & Son, Bainbridge, Ind.
Chambers & Pierson, Danville, Ind.
J. & E. C. Dawson, Salem, Neb.
Elias Kirtland, Rochester, Ind.
Henry Horn, Arba, Randolph co., Ind.
Smethurst & Bro., Warren, Ind.
A. Boden & Co., Olney, Ills.
Jones & VanTrump, Norborne, Mo.
A. Vencill & Co., Brookston, Ind.
Williams, More & Dove, Summit P. O., Ind.
James N. Brooks, LaPorte, Ind.
J. H. Moss, Woburn, Ills.
E. T. Inman & Bro., Westfield, Ind.
Isaac Towel, Harveysburg, Ind.
F. E. D. Harris, Hurricane Creek, Ills.
Showers, Mickle & Co., Decatur, Ind.
Wm. Leeka, Plum Hollow, Iowa.
Jackson & Fansler, Coatsville, Ind.
Haynes & Co., Salem, Ills.
Jesse Cary, Blountsville, Ind.
James B. Fouch, Greenfield, Ind.
J. Locke & Sons, New Jefferson, Iowa.
E. & A. West, Santa Fe, Ind.
A. J. & W. W. Anderson, Akron, Ind.
L. Wilcoxon, Muncie, Ind.
Stewart & Son, College Corner, Ohio.
B. & A. G. Dunn, Foster, Ills.
Curtis & Clark, Cleveland, Ind.
Zuck, Street & Co., Kewanee, Fulton co., Ind.
John T. Resener & Co., Indianapolis, Ind.
W. B. Porter & Co., Xenia, Ills.
J. L. Peck, Allen, Ind.
P. M. Walters, Charon, Ohio.
D. Bush & Co., Richmond, Ind.
Wood & Co., Greenfield, Ind.
Miller & Bro., Montpelier, Ind.
L. M. Larsh, Richmond, Ind.
P. Allen, Chariton, Iowa.
I. P. Evans & Co., Indianapolis, Ind.
Clement & Fish, Ashmore, Ills.
Walter G. Crabb, Clinton, Ind.
M. Klinger, West Alexandria, Ohio.
O. H. Drinkwater & Co., Cedar Point, Chase, Kansas.
George Graham & Co., Hamilton, Mo.
John Caylor, Arcadia, Ind.
Conner & Richmond, Palestine, Ind.
G. V. Swearingen, Sidney, Iowa.
George Dunning, Newark, Mo.
Heckman & Sheesley, Indianapolis, Ind.
Knowlton & Dykeman, Logansport, Ind.
Moore, Nixon & Myers, Milton, Wayne co., Ind.
Nathan Davis, Salt Lake City, Utah Ter.
Moore & Fenton, Webster City, Hamilton co., Iowa.
Jas. D. Wallace, Waco, Texas.
Gentry & Chancy, Hampton, Hamilton co., Texas.
Warden & Cooper, Valley Junction, Hamilton co., Ohio.
Barker, Richardson & Co., Zionsville, Ind.

TABLE OF LOGS.

REDUCED TO BOARD MEASURE.

Showing the *Number of feet any Log* from 10 to 24 feet long, and from 12 to 50 inches diameter (measured at the small end) will produce when sawed into *square-edged inch Boards*.

Length.		DIAMETER.									
Feet.		12	13	14	15	16	17	18	19	20	
Length of Log.	10	49	61	72	89	99	116	133	150	175	
	12	59	73	86	107	119	139	160	180	210	
	14	69	85	100	125	139	162	187	210	245	
	16	79	97	114	142	159	185	213	240	280	
	18	88	109	129	160	178	208	240	270	315	
	20	98	122	143	178	198	232	267	300	350	
	22	108	134	157	196	218	255	293	330	358	
24	118	146	172	214	238	278	320	360	420		
Length.		DIAMETER.									
Feet.		21	22	23	24	25	26	27	28	29	
Length of Log.	10	190	209	235	252	287	313	342	363	381	
	12	228	251	283	303	344	375	411	436	457	
	14	266	292	330	353	401	439	479	509	533	
	16	304	334	377	404	459	500	548	582	609	
	18	342	376	424	454	516	562	616	654	685	
	20	380	418	470	505	573	625	684	728	761	
	22	418	460	518	555	631	688	753	800	838	
24	456	501	566	606	688	750	821	873	914		
Length.		DIAMETER.									
Feet.		30	31	32	33	34	35	36	37	38	
Length of Log.	10	411	444	460	490	500	547	577	644	669	
	12	493	532	552	588	600	657	692	772	801	
	14	575	622	644	686	700	766	807	901	934	
	16	657	710	736	784	800	876	923	1029	1068	
	18	739	799	828	882	900	985	1038	1158	1201	
	20	821	888	920	980	1000	1095	1152	1287	1335	
	22	904	976	1012	1078	1100	1204	1268	1415	1468	
24	986	1065	1104	1176	1200	1314	1380	1544	1602		
Length.		DIAMETER.									
Feet.		39	40	41	42	43	44	46	48	50	
Length of Log.	10	700	752	795	840	872	925	1038	1112	1262	
	12	840	903	954	1007	1046	1110	1249	1338	1512	
	14	980	1053	1113	1175	1222	1295	1462	1564	1767	
	16	1120	1204	1272	1343	1396	1480	1669	1790	1983	
	18	1260	1354	1431	1511	1571	1665	1878	2012	2275	
	20	1400	1505	1590	1679	1745	1850	2084	2338	2525	

Land Measure.—A piece of ground 208 $\frac{5}{8}$ feet square, makes 1 acre. A piece of ground 1 mile square makes a Section, 640 acres. A piece $\frac{1}{2}$ mile square makes a Quarter Section, 160 acres. In Long Measure, 1760 yards or 5280 feet, make 1 mile.

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