PRICE LIST

AND

DESCRIPTIVE CATALOGUE

OF

BARNES' PATENT

Foot-Power Machinery.

W. F. & JOHN BARNES,

Sole Manufacturers,

ROCKFORD, ILL.

U. S. A.

No. 13.—47*m.*

Daily Gazette Steam Print, Rockford.

INDEX.

INTRODUCTORY.

TEN years ago, comparatively little attention was given to foot-power machinery. Its usefulness was supposed to be limited to the narrow capacity of the old crank and treadle motion, which had followed along down unchanged from the time of the ancient Egyptians. Good mechanics, being well aware of the defects of this old motion in driving machinery, knew that they could accomplish nothing with it in actual business to pay for the expense of such machines. About that time, the Barnes machines were offered to those having use for foot-power machinery, and were an entire surprise to all who tested them. Such was their power and utility, that the accurate statements given by those using them were not at first credited. Only actual trial would convince, thus always ending doubt, and now the old established prejudice begins to yield everywhere to the fact that foot-power machinery *without dead centers* is a success in actual business. We commenced first with manufacturing only the No. 7 Scroll Saw (page 8). This meeting so fully the needs of scroll-sawyers, created demands for machines to use in other departments, and, following these demands, we now have the several machines hereinafter described, suited for use in the different lines of pursuit. To-day, fifty thousand can testify to the merits and efficiency of these machines in use, and, with the thousands who have seen them reporting their work to others, it is no wonder that foot-power machinery now has a large increase of attention and is eagerly inquired after. Many learn in a general way of this success, and are prompted to buy without careful investigation. Thus they are caught by advertisers of the old faulty style of construction, who have found it possible in such cases to sell their wares on the reputation of these new machines. The result, of course, is only disappointment. Therefore, be sure to know what you are buying, and carefully examine the descriptions of our machines.

W. F. & JOHN BARNES.

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BARNES

PATENT FOOT-POWER MACHINERY.

Complete Outfits of Foot-Power Machinery for Practical use in Workshop Business.

SECURED BY FOURTEEN PATENTS.

These inventions have made a radical revolution in foot-power machinery. They have been thoroughly and successfully tested in actual workshop business, and are found to develop new and practical methods which no other machines can have or use. They meet needs long felt by good mechanics for practical foot-power machinery

WITHOUT DEAD CENTERS,

with a positive motion, always in the right direction, and with the largest economy of power. In these machines the pressure of the foot can never retard the motion already gained, but, on the contrary, sends more power from the treadle to the work than is possible with any old-fashioned machine. They *have no dead centers* to pass, and therefore no necessity to press the treadle at exactly the right point, and raise the foot at exactly the right moment. In all old-style machines the operator must do this or else retard the motion and often cause it to stop by a wrong pressure; but with these patent foot-power combinations, ANY pressure of the foot upon the treadle, whenever made, always develops a machine motion in the right direction, and always adds to the working power. This great advantage

ALL GOOD MECHANICS

at once appreciate, as we find by thousands of letters where these machines are in use.

It is not claimed that these machines generate power in themselves; no combination has ever yet done this. But they do save and use more of the foot power applied, and use it more immediately and surely, than any other machines can.

CONSTRUCTION AND MATERIALS.

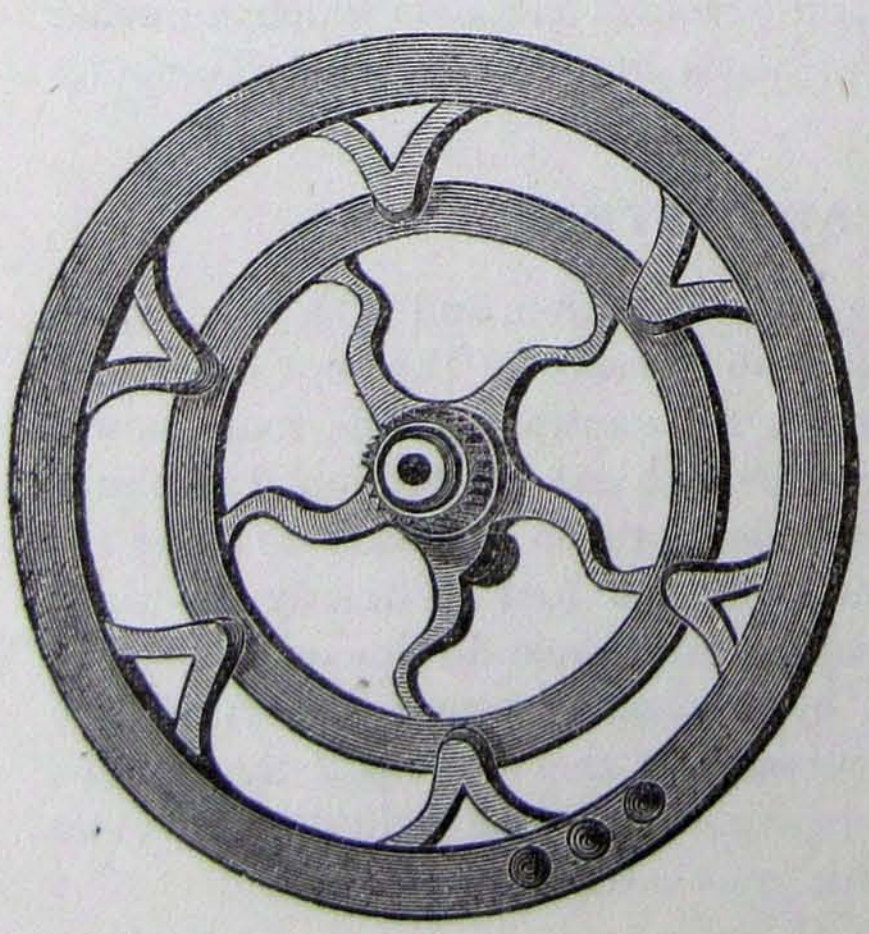
In building these machines, the very best materials are used and the most skilled workmen employed. Steel is used in every wearing part where it will best serve the purpose, and every part in each machine is so adjusted that it will fit perfectly the corresponding place of any other machine of the same kind.

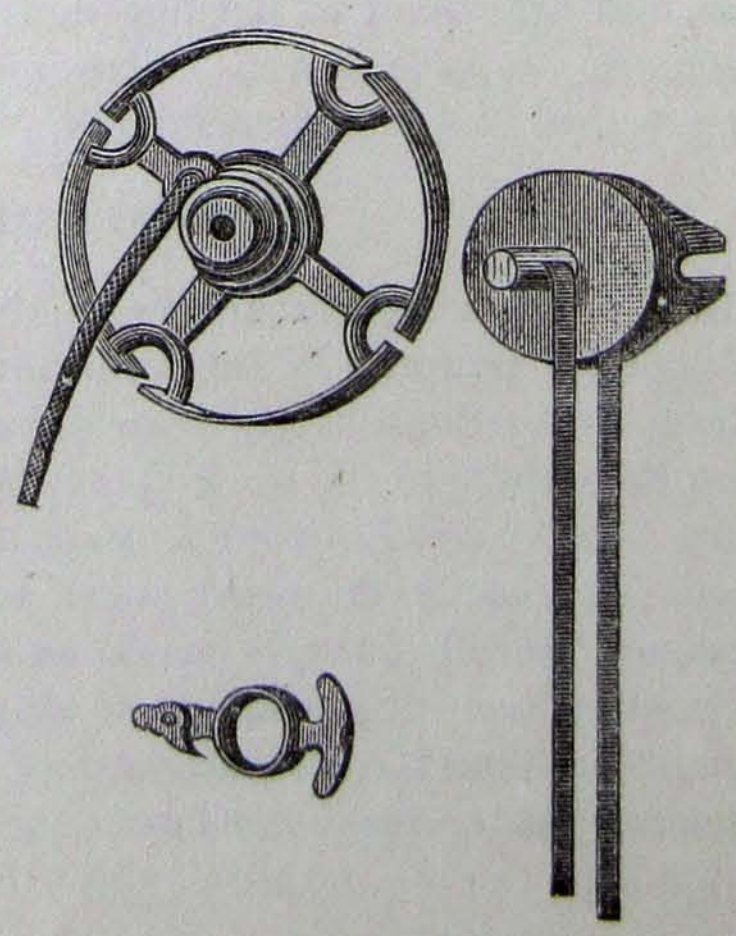
ECONOMY IN USE.

We have the cheapest machines in the market for the uses for which they are designed, viz., actual and permanent service in the workshop. They are made to meet the requirements of practical and skilled workmen in the different branches of work. We believe that the best is the cheapest; and while we have put our prices so low that every workman can get back the price of his machine many times over, each season, by the time and labor it saves him, we spare no pains to make it so well that he will find it as serviceable after many years as the first. The only true economy is to secure a strong and durable machine.

DESCRIPTIONS OF BARNES' PATENT FOOT-POWER COMBINATIONS.

We have two Patent Foot-Power Combinations, the Ratchet and the Velocipede, both of which stand unrivaled in their practical application to





the many uses made of them. The advantages gained by these foot-power devices are so great that some incline at first to doubt our statements, therefore we give the following descriptions, that all may more fully understand.

PATENT RATCHET FOOT-POWER.

The preceding illustrations show the different parts of the Ratchet Combination. The parts shown detached, together with the same parts shown combined in the machines, with the explanations, will clearly illustrate the movement.

The wheel A is the only continuously-revolving wheel. Wheel B oscillates about once around, and is termed a "take-up" wheel. C is an oscillating thimble with two straps, which wind on and off by the action of the treadle-spring and wheel B. E is termed a "dog," and connects motion from thimble C to wheel A.

OPERATION.

The thimble C is caused to oscillate by the two straps winding on and off. One is attached to the treadle, the other to the wheel B. Wheel B is acted upon by the treadle-spring, which re-winds it, and thus causes the treadle-strap to re-wind upon thimble C. Thimble C carries dog E back and forth, which engages in wheel A in its forward motion, and, without checking its speed, runs back idle for a fresh hold. By this simple arrangement, and with the effort of an ordinary walk, the wheel A can be driven at the rate of from 800 to 1200 revolutions per minute.

PATENT VELOCIPEDE FOOT POWER.

No illustration of parts is necessary to explain the Velocipede Motion, as the illustrations of our machines on which it is used plainly show its application and operation. The movement is easy and as natural as in walking, and greater power is given with less exertion than is possible with any old-style foot motion. It has no dead centers, and motion may be started, stopped or reversed instantly, at the will of the operator.

REVISED TERMS.

HOW TO ORDER MACHINES.

The cheapest possible way is to send money with order, and have machine shipped by freight. This saves collection charges. The best way of sending money is by draft, postoffice money order or registered letter. In any of these ways it may be sent at our risk. We warrant the safe delivery of every machine shipped to points in the United States.

MACHINES ON TRIAL.

We offer to send any of our machines on trial on the following favorable terms: Upon receipt of $5—$10 will be required for No. 5 Lathe; $20 for No. 6 Lathe—with the order, we will ship by freight, on trial, any one of the machines described in this catalogue. The balance of the bill we will send to your express agent for collection, with instructions to hold the money on deposit until you try the machine. *By trial, we do not mean simply an examination at the freight or express office, but you may take the machine to your workshop and test it fully.* If the machine does not prove satisfactory, you may return it, and the express agent will refund you the money deposited with him. Then, when the machine reaches us, we will pay freight and charges out of the amount sent us with the order, and return you the balance. Strangers to us and our machines, ordering on these terms, by risking but a small amount, secure to themselves the privilege of testing what they buy before paying for it, and of returning it if not found satisfactory

SHIPMENT BY EXPRESS.

Machines will be shipped by express ONLY when an amount sufficient to pay all charges, both ways, accompanies the order. This amount can be ascertained of your agent.

The above terms may appear to some unnecessarily guarded; but we are obliged to use this precaution or add largely to our price. There is this satisfaction for those who may object, however, viz: They get what they pay for, and do not pay a heavy margin beyond the cost of the machine they buy, to cover losses by bad debts and delayed collections from others. We have shipped thousands of machines on the cash system, and find that it gives the best satisfaction. We have but one price and offer no credit terms.

W. F. & JOHN BARNES.

CASH VS. CREDIT.

We sometimes receive letters like this: "I want one of your machines, but ask the favor of a little time in which to pay for it. I am honest and responsible, and will pay you soon, but it is not convenient for me now; besides, I would like to try the machine first."

To all who write thus we will say: (1) As to testing the machine before paying for it, we are willing that you should. We have sent out vast numbers of machines on trial with perfectly satisfactory results. But we cannot send machines to unknown persons, relying only upon their word. An honest man will be willing to give us some guarantee. So we offer to send out machines on trial in accordance with our terms on page 6, and the plan works well. (2) You promise to pay sometime; but of three who thus write us, two may be honest and the third a deadbeat. We cannot tell which one of the three is dishonest. So, if we gave the credit asked, we would have to treat all alike and put up our prices so that the two paying customers would pay us not only for their own machines but also for the one lost by the very credit system on which they wished to make their orders. (3) Your letter says you are responsible. This is what every such letter says. Since this is true of you, it is for your interest to get the money from your friends at home, rather than to ask credit from us, strangers, at a distance. If we give you credit, we must give it to others and make our prices enough higher to you and to all, to cover all losses from those who fail to pay us finally, for their machines.

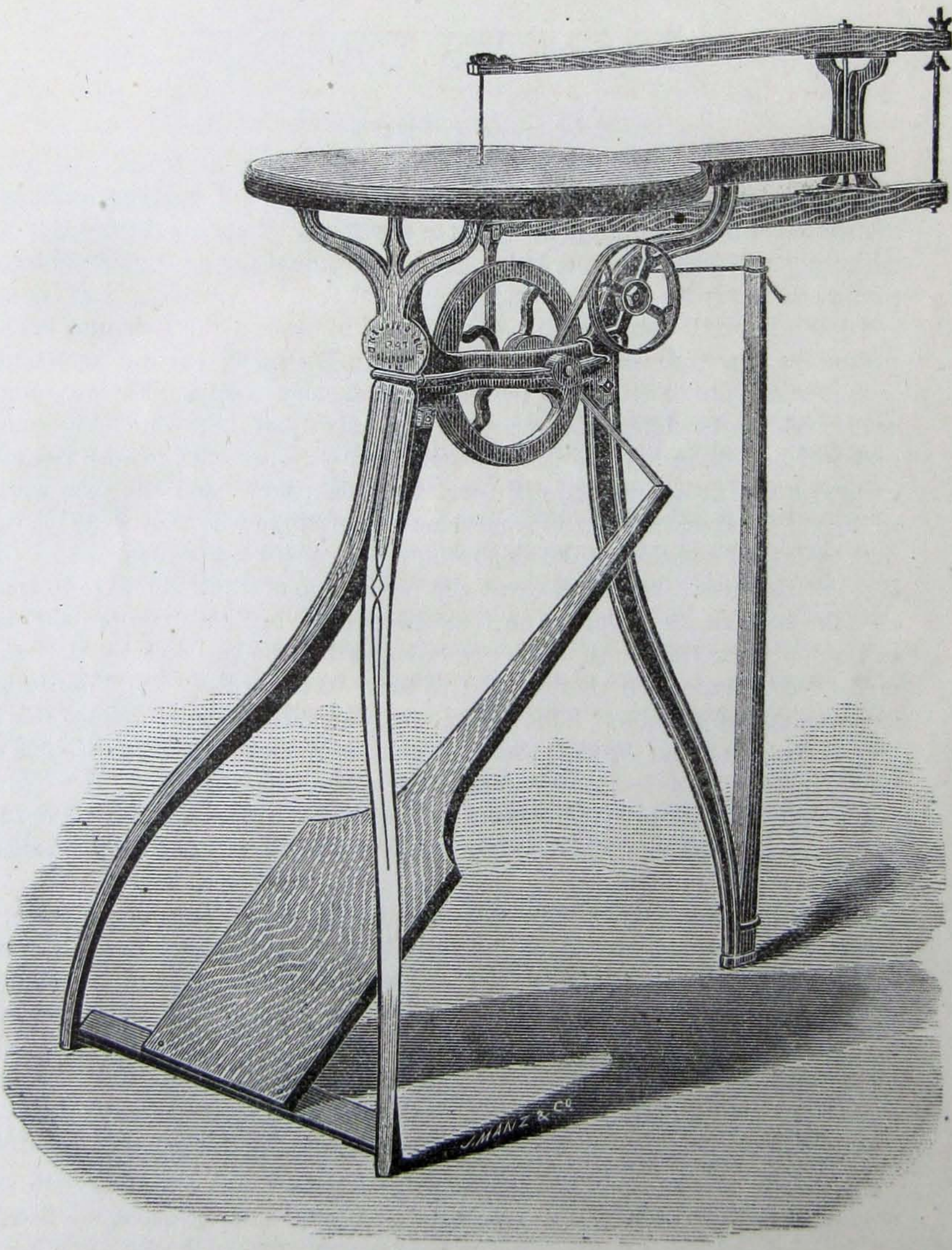
Our cash system gives all the advantage to the honest paying customer; a credit system would give it to the dead-beat, who, unknown as such to us, writes a letter claiming to be honest and promising to pay, and who finally gets the machine for nothing while you help pay for it.

W. F. & JOHN BARNES.

SCROLL SAW NO. 7.

(Formeriy called Large Size Scroll Saw.)

Price Reduced to $20.00.



SCROLL SAW NO. 7.

Price Reduced to $20.00.

This machine is designed for practical service in the workshops of carpenters and builders, cabinetmakers, and other wood workers.

WARRANTY.

We warrant it to be well made, of good material and workmanship, and, with reasonable practice, to saw at the following rates: Pine, 3 inches thick, 1 foot per minute; 1 inch thick, 4 feet per minute; walnut, 3 inches thick, ½ foot per minute; 1 inch thick, 2 feet per minute; and other woods and thicknesses at proportionate rates.

The ordinary rate of speed when sawing is from 800 to 1200 strokes per minute. The saw leaves the work as smooth as it is possible for any saw to do, and can be taken out and replaced in an instant for inside work.

The swing around the blade, under the arm, is 24 inches.

The length of the blades is 7 inches.

The table and arms are made of hard maple.

The frame is of cast-iron, strong, yet light.

The balance wheel runs on a steel arbor.

The machine weighs 55 pounds.

Boxed ready for shipment it weighs 80 pounds.

We include 1 doz. blades with each machine.

The price of the machine includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies, we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the U. S.

Mr. Fred Bell, Architect and Builder, Fulton, Mo , says: "I consider your No. 7 Scroll Saw just as essential in my shop as a pair of bench planes. Any carpenter, however small his business, can introduce one of them to his scrap pile and make enough in one week to pay for it. I sawed 110 frets for balustrade for portico, and 15 brackets in first two days running."

Messrs. Deeds Bros , Contractors and Builders, Pittsburgh, Pa., say: "We have had one of your No. 7 Scroll Saws for the last five years, and would not sell it for many times its cost if we could not get another We consider that it saves us at least $100 a year, besides a great deal of time and trouble running to the mills. We get much work that would go to the mills if we did not have the machine."

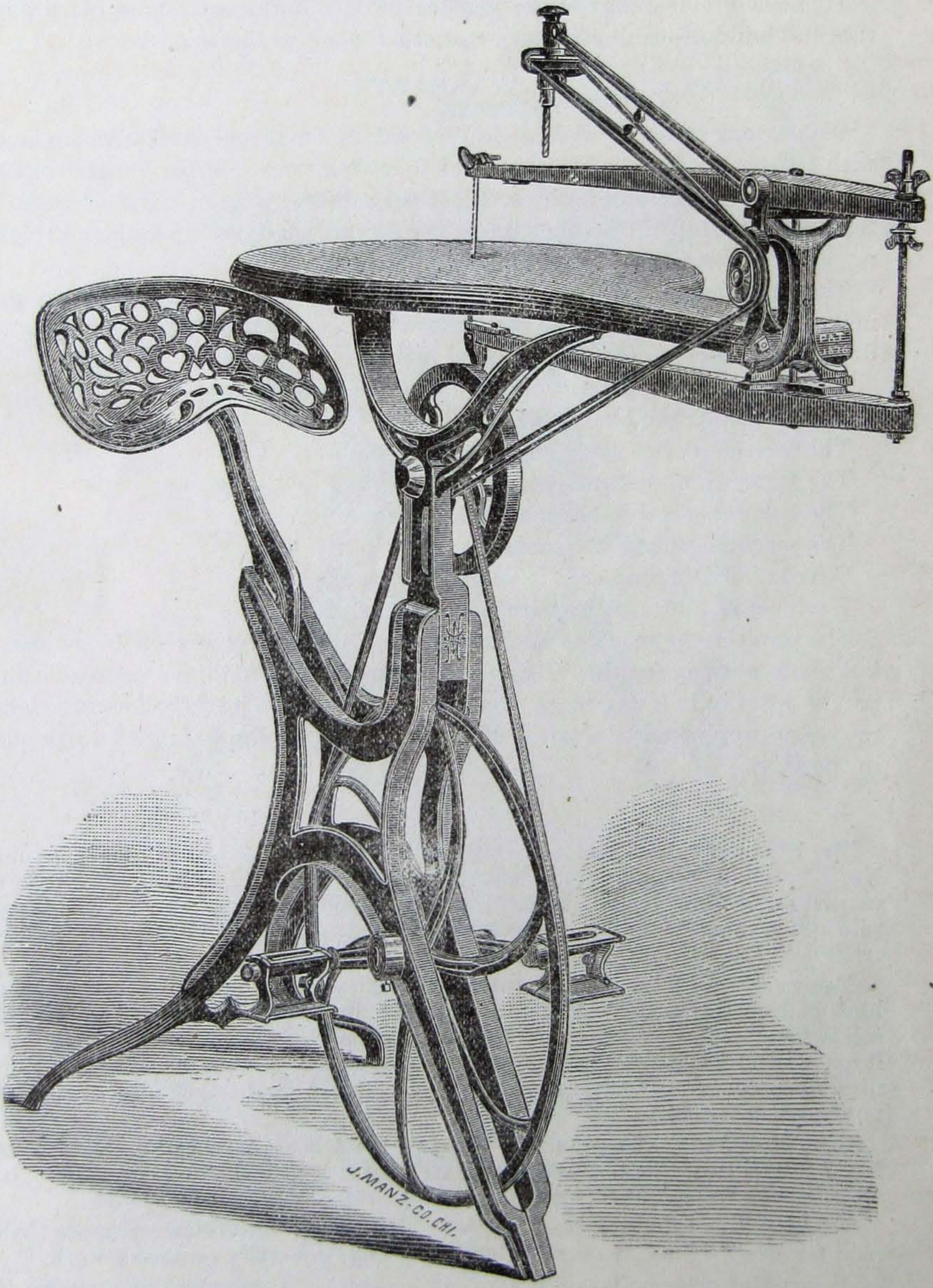
R. S. Morgan, Ravenswood, W. Va., says: "I have been using one of your No. 7 Scroll Saws for the past five years, and it is still in good condition. In all this time it has not cost me one cent for repairs excepting blades."

S. Jones, Lake Crystal, Minn., says: "The No. 7 Scroll Saw has more than paid for itself. I use it more or less every day, generally on heavy work."

Angus McEachern, Toronto, Ont., Can., says: "I have one of your No. 7 Scroll Saws, and would not take $100 for it if I could not get another."

VELOCIPEDE SCROLL SAW NO. 2.

Price, complete, $23.00; without Boring Attachment, $20.00.



VELOCIPEDE SCROLL SAW NO. 2.

Price, complete, $23.00; without Boring Attachment, $20.00.

This machine has about the same capacity as Scroll Saw No. 7, the warranty as to what that machine will do applying equally to it, but this is preferred by many on account of the Velocipede Foot Power, having a Boring Attachment to open for inside work, and being fitted for attaching the No. 2 Former Top, (page 12.) The ordinary speed when sawing is from 800 to 1200 strokes per minute. The saw leaves the work as smooth as it is possible for any saw to do, and can be taken out and replaced in an instant for inside work.

The swing around the blade, under the arm, is 24 inches.

The length of the blades is 7 inches.

The table and arms are of hard maple.

The frame is of cast-iron.

The balance and drivewheels run on steel arbors.

The machine weighs 90 pounds,

Boxed ready for shipment it weighs 130 pounds.

We include 1 doz. blades with each machine.

The Boring and Former Attachments can be furnished at any future time, if not desired when ordering the machine.

One 3-16 Bit is included with the Boring Attachment. We can furnish extra Bits at the following prices each: 1-16, 15c.; 3-32, 15c.; 1-8, 20c.; 5-32, 20c ; 3-16, 25c.; 7-32, 30c.; 1-4, 35c.

The price of the machine includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the U. S.

Edwin M. Hervey, Hancock, N. Y., says: "I am more than pleased with the No 2. Velocipede Scroll Saw, and all that have tried it wonder at the ease with which it works."

Chas. Listner, Kosciusco, Miss., says: "I have one of your No. 2 Velocipede Scroll Saws, and it works like a charm."

Isaac M. White, Brainard, Minn., says: "I have one of your No. 2 Velocipede Scroll Saws, and would not take $50 for it if I could not get another."

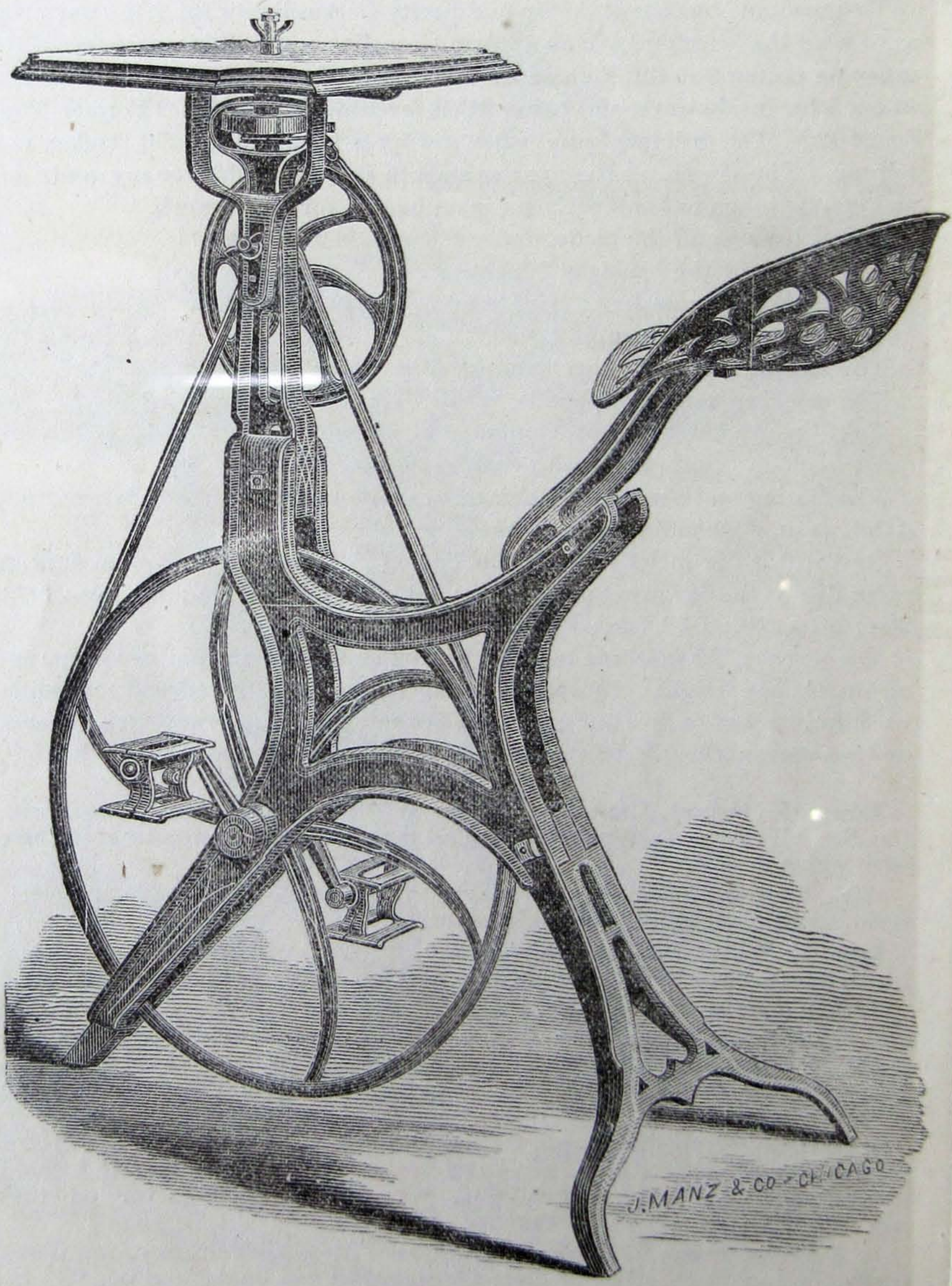
A. J. Woodman. Russell, Iowa, says: "The No. 2 Velocipede Scroll Saw and Former Attachment came duly to hand, and do all, and more, than you claim for them. No cabinetmaker can afford to be without these machines. Before I tried them I thought that the testimonials from parties using them were exaggerated, but it is not so.

I H. Schott, New Pittsburgh, O., says: "The No. 2 Velocipede Scroll Saw works like a charm. I would not be without it for twice its cost if I could not get another. I am better satisfied every time I use it. Every one that has seen it gives it the highest praise."

L. A. Oates, Kings Mountain, N. C., says: "My No. 2 Velocipede saw works finely. I would not sell it for three times its cost and do without one."

FOOT-POWER FORMER, No. 2.

Price $25,00; Knives Extra.



FOOT-POWER FORMER, No. 2.

The cut on previous page represents a machine for molding edges of brackets, scroll-work, panel-work, regular and irregular mouldings of all styles up to ⅞ inch. The speed of the knives is from forty to forty-five hundred per minute. By the aid of our

PATENT VELOCIPEDE FOOT-POWER

the knives are, at the will of the operator, caused to rotate in either direction that the grain of the wood may require, thus avoiding all complicated devices for reversing motion usually employed on single spindle Formers. The great speed of the knives ensures rapid and smooth work. Articles that look very plain can be made elegant and costly in appearance by the rapid and perfect work of this machine. It supplies a want long felt by every mechanic.

While it has not the range for work of a steam-power Former, costing from $125 to $200, we guarantee that it will do vastly more than its relative cost would indicate.

The spindle and its bearings are of cast steel, with adjustments to take up the wear. The parts to set the machine for the use of different knives and work are convenient, and all is substantial and durable.

The price of the machine is $25.00 without any knives; or, as an attachment to Saw No. 2, the price is $15.00. Many who already have the Saw will want this Attachment.

The machine, complete, weighs 70 pounds.

Boxed ready for shipment it weighs 110 pounds.

The price of the machine includes boxing and delivering on board the cars, but we do not pay freight. By special arrangements with the railroad companies we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the U. S.

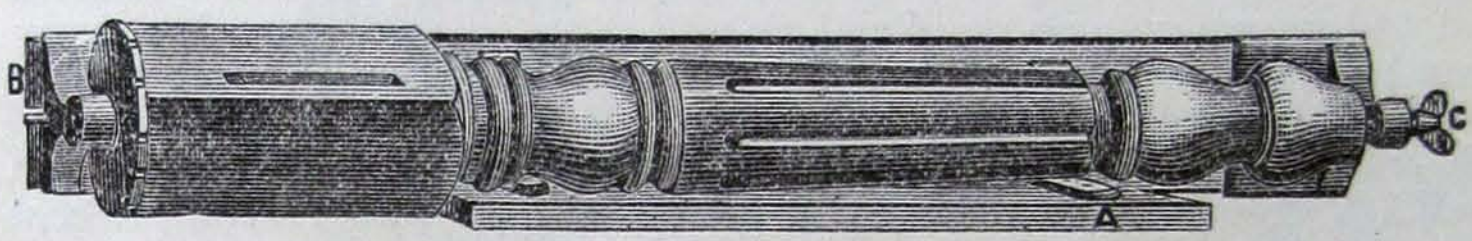
FORMER KNIVES.

The above cut shows the different styles of edges which we have knives to make; by stating the number we will know which knife to send. The price

of these knives is one dollar each. Parties ordering the Former, can select such us will best serve their purpose.

They can be sent at any future time by mail if not taken with the machine at first.

FLUTING ATTACHMENT.



PRICE $3.00.

The above cut represents an attachment to be used on the Former, for fluting table legs, etc., as the leg in the cut shows. "A" shows the edge of the pattern, the shape of which regulates the cut on the leg lengthwise.

The index plate is spaced to make several divisions of a circle, and is regulated by the snap-latch at "B." "C" is a screw-center with which the leg is fastened to place.

This attachment has all the adjustments necessary to work legs of usual length, and up to 3 inches in diameter.

W. H. Chase & Co., Evart, Mich., say: "The Former is received all O. K., and works like a charm."

E. F. Southwick, North East, Pa., says: "I am so much pleased with your machinery that I shall purchase more as fast as I am able, until I have a full set. The No. 2 Former I am very much pleased with. It takes away that home-made appearance from my furniture, so that no one would think it was made in a little shop like mine."

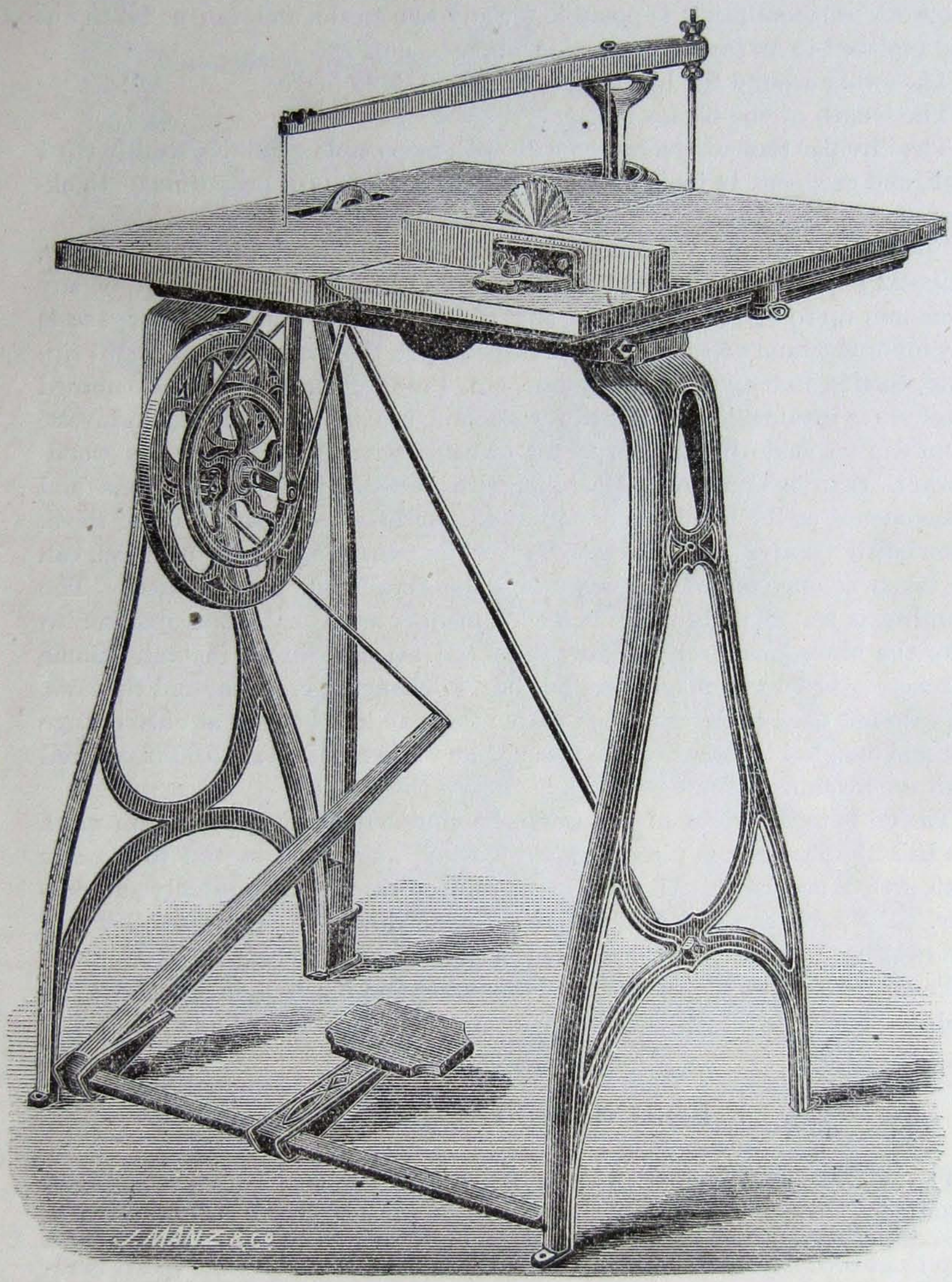
Jas. M. Sheetz, Fisherville, Pa., says: "The No. 2 Velocipede Saw and Former Attachment came to hand in good order. They do all, and more, than you claim for them. No cabinetmaker or builder doing any business at all, can afford to do without your machines. Before I tried them I thought the testimonials from parties using them were exaggerated, but it is not so. Besides the No. 2 Saw and Former, I have seen other of your machines, and can recommend them highly."

W. S. Smith, Larwill, Ind., says: "The Former works like a charm. I would not take $100 for it if I could not get another."

Wright Bros., Rushsylvania, O., say: "The Former does excellent work, and has already paid for itself."

COMBINED MACHINE.

See Prices, Page 20.



This machine combines a perfect Scroll and Circular Saw. Each machine is perfect, neither being impaired by the other. The two machines can be put in one, ready for use in either way, in one minute, and each will do its work with absolute success. This combination of uses doubles the value of

the machine without any detriment to its power or working qualities. The capacity of the Scroll Saw is exactly the same as that of Scroll Saw No. 7, the warranty as to what that will do applying equally to this. The ordinary speed when sawing is from 800 to 1200 strokes per minute. The saw leaves the work as smooth as it is possible for any saw to do, and can be taken out and replaced in an instant for inside work.

The swing around the blade, under the arm, is 24 inches.

The length of the blades is 7 inches.

The Circular Saw we guarantee will, with reasonable practice, readily rip 1 inch, and cross-cut 1½ inch, dry pine, and harder woods of proporionate thicknesses.

For general ripping we especially designed the Hand Circular Rip Saw, (page 22.) With capacity and power to rip either hard or soft wood of any thickness up to 3¾ inches and of any width up to 19¾ inches, it far excels any other machine of the kind ever placed upon the market, but for light ripping, cutting to length, cutting joints, etc., the Circular Saw of the Combined Machine is invaluable. In short, for general use, no more profitable investment can be made by any carpenter or cabinetmaker, or almost any woodworker, than a Combined Machine, with the different combinations and attachments, as the hundreds of letters in our files, from parties using them, abundantly testify. The Circular Saw, while remaining on its mandrel, can be taken at once out of the way when the Scroll Saw is to be used. The mandrel is set in its bearings in such a manner as to enable the operator to take the whole (mandrel and saw) from the machine in an instant. Some purchasers order two mandrels, and thus, in changing cross-cut and rip saws, they do not need to detach the saw from the mandrel, but can at once change saw and mandrel together. The price of an extra mandrel is $5.00 if ordered with the machine.

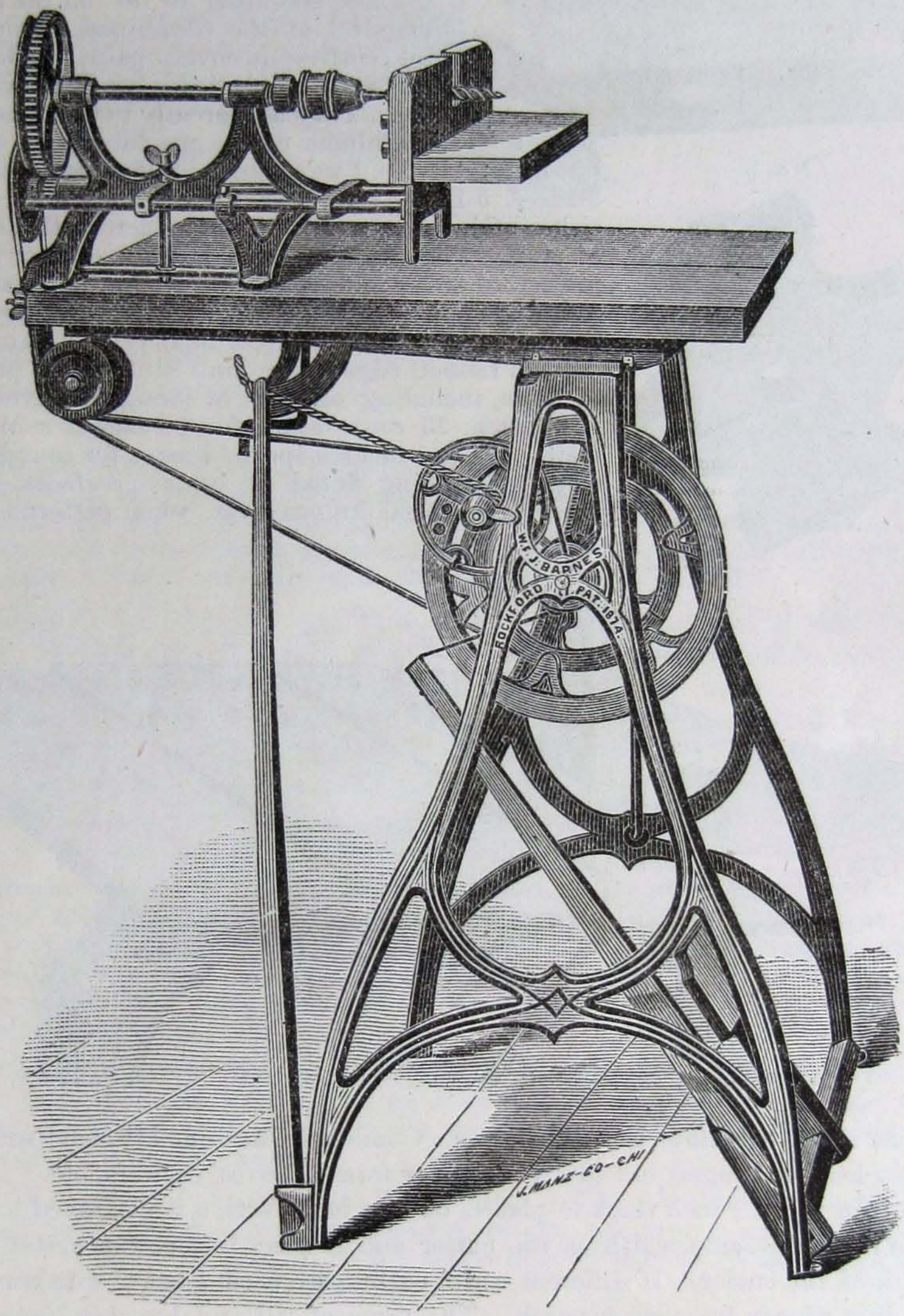
The table to the right of the saw is mounted on truly planed iron ways. On this the material is placed, at any desired angle, and moved to the saw with perfect accuracy. All varieties of joint work can be done truly and rapidly. The table can be handily adjusted up or down by a screw to allow any desired depth of cut being made by the saws or cutter tools.

The Circular saws are six inches in diameter, and reach 2⅛ inches above the table.

BORING ATTACHMENT.

The cut on opposite page shows a Boring Attachment on the Combined Machine. It has a sliding table on which the work is placed. This moves on substantial ways which carry the material uniformly to the bit. It also has a stop to govern depth of hole. For hard wood and large bits the speed is reduced and the power increased by an arrangement of gear wheels. For small holes and light boring the gear is not used, for high speed is gained by using the belt only. Thus large or small holes can be bored and with a speed and power to correspond. An Old Reliable Self-Centering Drill-Chuck is included with every Boring Attachment. This allows the use of a common auger bit by cutting off the square shank.

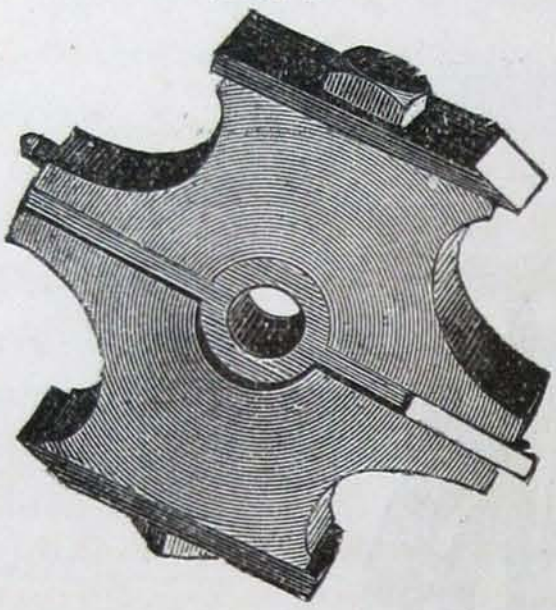
BORING ATTACHMENT ON COMBINED MACHINE.



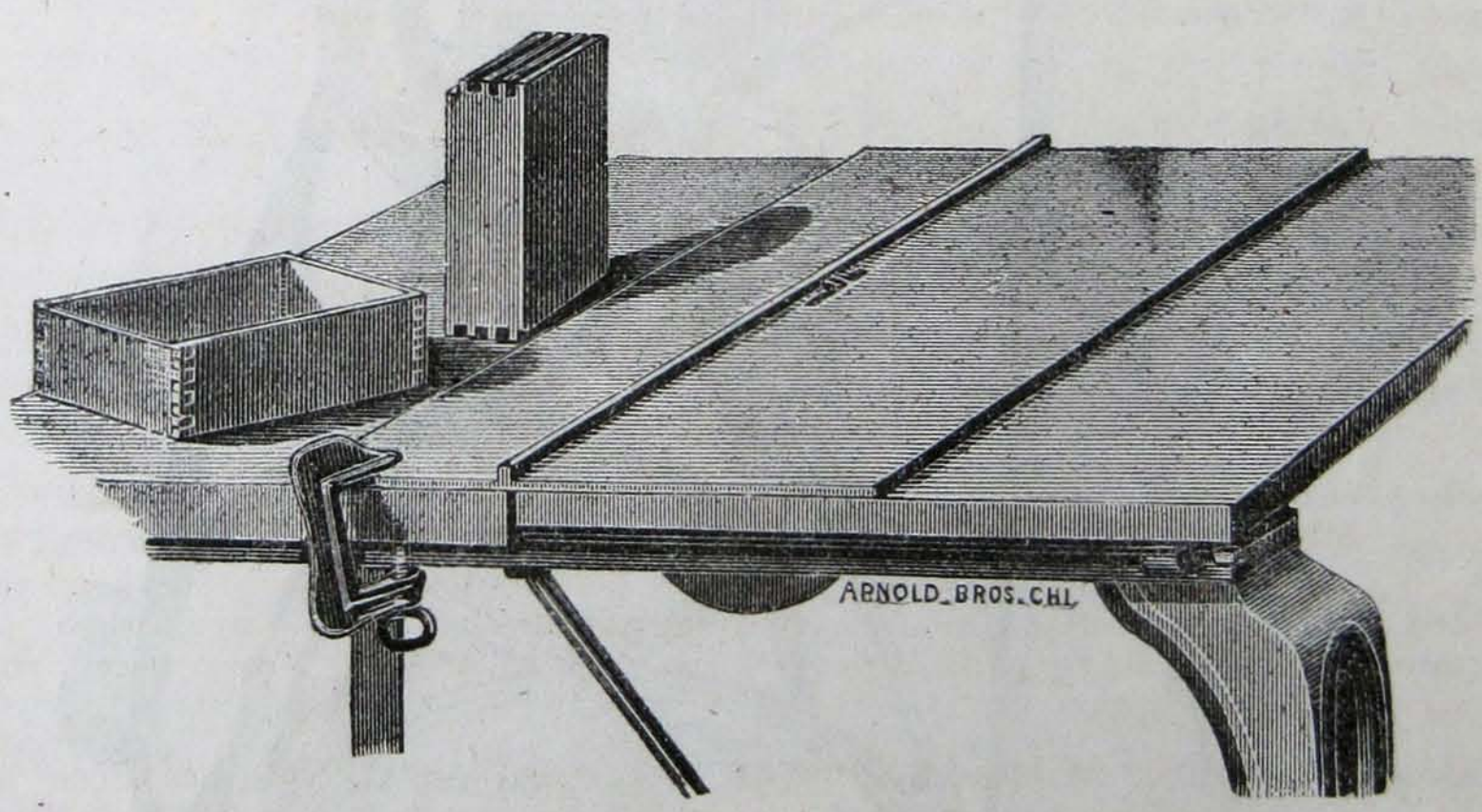
CUTTER HEADS.

No. 1.

No. 3.



These are fitted to use on the saw mandrel of the Combined Machine for cutting grooves, gains, dadoes, rabbets, etc., joints for boxes, drawers, etc. They add greatly to the general usefulness of the machine, and cost but little. Of No. 1 we make the following widths: 3-16, ¼, 5-16, ⅜, 7-16, ½, ⅝ inch. They will cut either with or across the grain, or across the end of stuff. The price of them is $1.50 each or $10 per set of seven; no extra charge for postage if sent by mail. Of No. 3 we make the following widths: ¾, ⅞, 1, 1¼, 1½, 1¾, 2 inch. They can be used to rabbet, edge up or joint stuff. The price of them, including one set of straight knives, is $3 50 each, 25 cents extra for postage if sent by mail. We can furnish special knives for rounding edges or making fluted or beaded surfaces, etc. Prices of special knives given when patterns are sent.



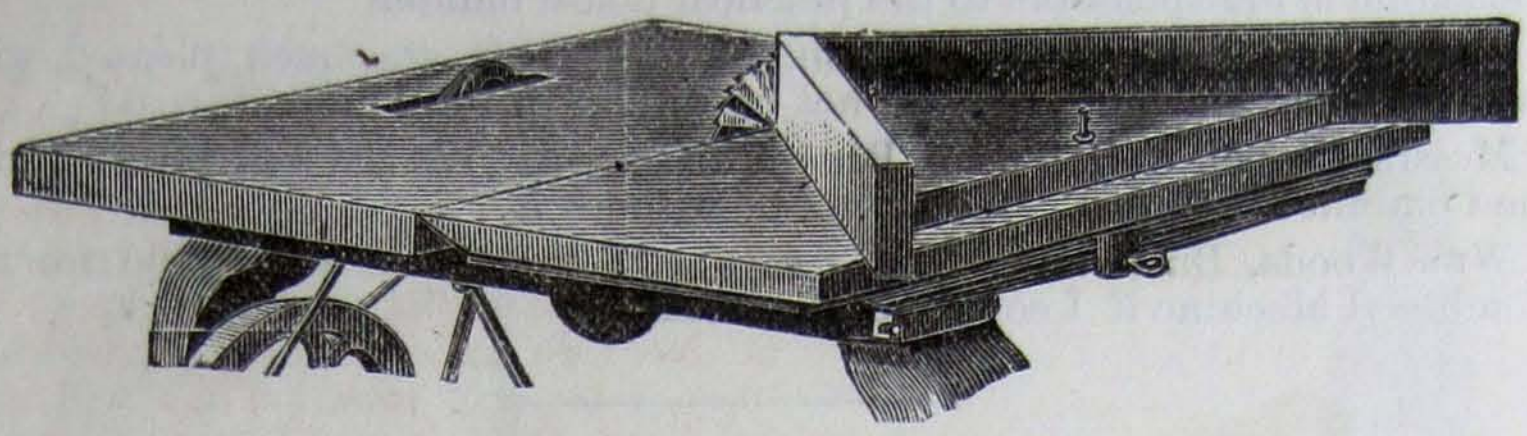
The above cut shows the table of the Combined Machine arranged with a cutter-head to tongue and groove stuff for frames, boxes, drawers, etc.

A thin board ¼ inch thick is placed on the table with a rib fastened to it. This rib is the same width as the cutter and is placed from the cutter the width of the cutter. If different width cutters are used, a board with corresponding rib can be made for each. The price of rib and board is 75 cents, but they are so easily made that we seldom furnish them.

This way of cutting the tongue and groove joints for boxes, drawers and frame work is cheap, effective and rapid. Different width cutters can be used, varying the width of the tongues and grooves as desired.

Carpenters and cabinetmakers make joints for boxes and drawers in this way; bee men their section honey boxes and frames; fruit men their boxes.

MITER ATTACHMENT.—PRICE 75 CENTS.



Above cut shows an attachment to be used upon the sliding portion of the table of the Combined Machine. With it mouldings, etc., can be cut for making frames and like purposes. It is readily attached or detached, and will do smooth and true work.

Messrs. Burgett & Cox, Wabash, Ind., say: "We have used the Combined Machine all summer, and pronounce it a success in every respect. It paid for itself on one house alone that we built. We use it constantly for making heavy brackets and panel cornices, and find it indispensable for inside finishing work. We would not be without it for four times its cost."

Frank B. Johnson, Canadea, N. Y., says: "I have had one of your Combined Machines nearly a year, and can say that it comes fully up to your recommend, and is all that I expected, and more."

David Gill, Irwin Station, Pa., says: "I received the Combined Machine the 23d inst, and am well pleased with it. It far exceeds my expectations."

Messrs. Pence & Bargebaugh, Conway, Ark., say: "The Combined Machine came to hand in good order. We have not had it two weeks yet and have done over $40 worth of work with it."

Messrs. Ammann & McDowell, Orrville, Ohio, say: "The No. 1 Lathe and Boring Attachment for our Combined Machine came to hand in good order; we are very much pleased with them, they give better satisfaction than we anticipated. Since your machines so far have given such good satisfaction, we have concluded to have a full line. Please ship us a No. 2 Former with the usual set of knives."

Messrs Tolmie & Wilson, Bridgeton, Ont., Can., say: "We have one of your Combined Machines which we have had in constant use the past four years, and it is as good now as it was the day we bought it. We would not be without it for any amount."

F. A. Gerber, Jewell Center, Kan., says: "The Combined Circular and Scroll Saw, bought of you about two years ago, has proved an excellent machine. It has been used every day and is as good as new. I would not take $100 for it if I could not get another."

S. Woodburn, Dickinson, Pa., says: "After a trial of three months I am well pleased with the Combined Machine. I have made 50 hives complete besides several hundred frames."

Will D Grosvenor. Sidney, O., says: "I am well pleased with the Combined Machine."

J F. Montgomery, Lincoln, Tenn., says: "I like my Combined Machine better the longer I use it."

Abraham Pontius, Akron, Ind., says: "I bought one of your Combined Machines about a year ago, and have used it with entire satisfaction. Such a machine is indispensable to the practical house builder."

Messrs. J. F. Burt & Co., London, O., say: "We are much pleased with the Combined Machine. Would not be without it for double its cost."

Messrs. Cornell & Robinson, Bristol, Ill., say: "We are well pleased with the Combined Machine. Would not be without it."

Wm. Woods, Butternuts, N. Y., says: "I would not take $100 for my Combined Machine if I could not get another."

PRICE LIST OF COMBINED MACHINES.

Combined Circular and Scroll Saw and Boring Attachment, including two circular saws, 12 assorted scroll saws; the Boring Attachment with an 'old reliable self-centering drill-chuck," all combined in one machine $50 00

Combined Circular and Scroll Saw, including two circular saws and 12 assorted scroll saws 40 00

Circular Saw alone, including two circular saws, one rip and one cross-cut 35 00

Scroll Saw alone, including twelve assorted scroll saws 32 50

Boring Machine as shown by cut on page 17 with table fitted for attaching either the Circular or Scroll Saws at any future time 35 00

Boring Machine, with table especially for the purpose, without provision for the other attachments 25 00

When either the Circular Saw, Scroll Saw or Boring Machine has been ordered seperate, the other parts can be furnished, if the number of the machine is given, at the following prices:

Circular Saw Attachment, Mandrel and boxes, with two six-inch circular saws, one rip and one cross-cut $10 00

Scroll Saw Attachment, including 12 assorted scroll saws 7 50

Boring Attachment, including an "old reliable self-centering drill-chuck" 10 00

The above prices include boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the U. S.

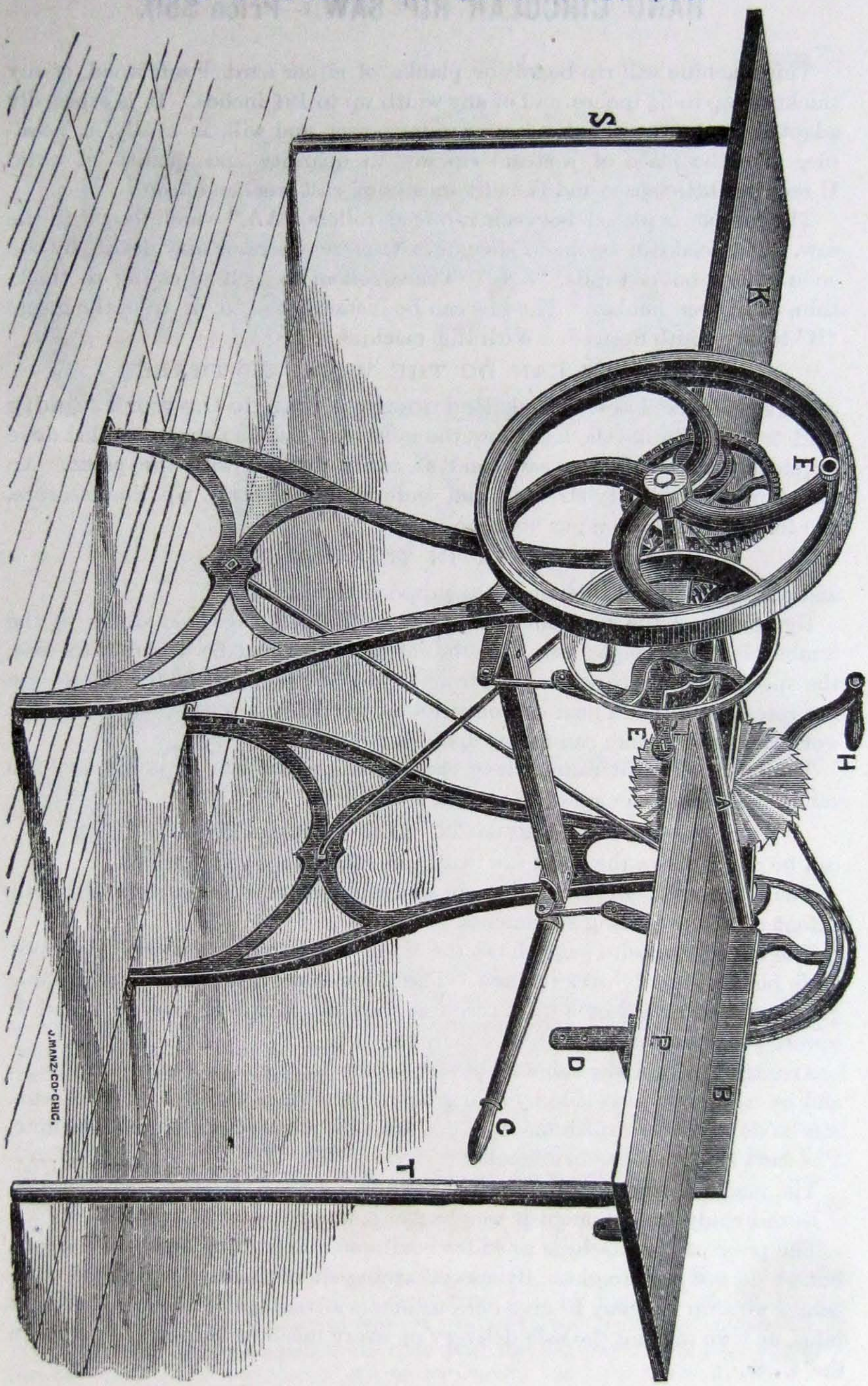
Emery wheels can be run on the circular saw mandrel of the Combined Machine, and are very convenient and useful for grinding and sharpening tools. See price list of emery wheels.

CAST STEEL AUGER BITS.

Fitted for Boring Attachment of Combined Machine.

Size, 3-16, 1-4, 5-16, 3-8, 7-16, 1-2, 9-16, 5-8, 11-16, 3-4, 13-16, 7 8, 15-16, 1 in
Price,30c., 25c., 25c., 30c., 30c., 30c., 35c., 40c., 45c., 50c., 50c., 55c., 65c., 70c.
The above are common auger bits with the square shanks cut off.

HAND CIRCULAR RIP SAW.—Price $50.



HAND CIRCULAR RIP SAW.—Price $50.

This machine will rip boards or planks, of either hard or soft wood, of any thickness up to 3¾ inches, and of any width up to 19¾ inches. It is especially adapted to shops without steam or water power, and will, as nearly as possible, take the place of a steam rip saw in quantity and quality of work. It requires little space and is built mostly of cast steel and iron.

The lumber is placed between two feed rollers, "AA," which feed it to the saw. The feed can be made slow or fast, as the operator may desire, by the cone pulleys on feed rolls, "XX." These rollers are self-adjusting to thick, thin, or uneven lumber. The saw can be instantly set to or from the guage "B" to any width desired. With this machine

ONE MAN CAN DO THE WORK OF THREE

using the old hand saw. **Unskilled operators can do the work rapidly and truly.** Unlike the hand saw, the work is as true and square as that done by steam or water power saws, and as easily dressed with the plane. An operator with ordinary strength and endurance can easily rip, line measure, 600 feet of 1-inch pine per hour, or

6,000 FEET IN TEN HOURS,

and other woods and thicknesses at proportionate rates.

By changing the feed to correspond with thickness or hardness of the lumber, hickory, maple, ash, oak, walnut or cherry can be sawed with ease, the speed (line measure) varying from 150 to 600 feet per hour. These are not rates given that a man can only follow for a few minutes, but actual day work rates that a man can follow up from day to day.

Taking into consideration the greater amount that can be sawed, and the smoothness and trueness of the work, a saving of

FROM $3.00 TO $8.00 PER DAY

can be made above the hand saw with this machine.

The machine is strong, well made and durable, and we warrant it to the extent of the preceding statements.

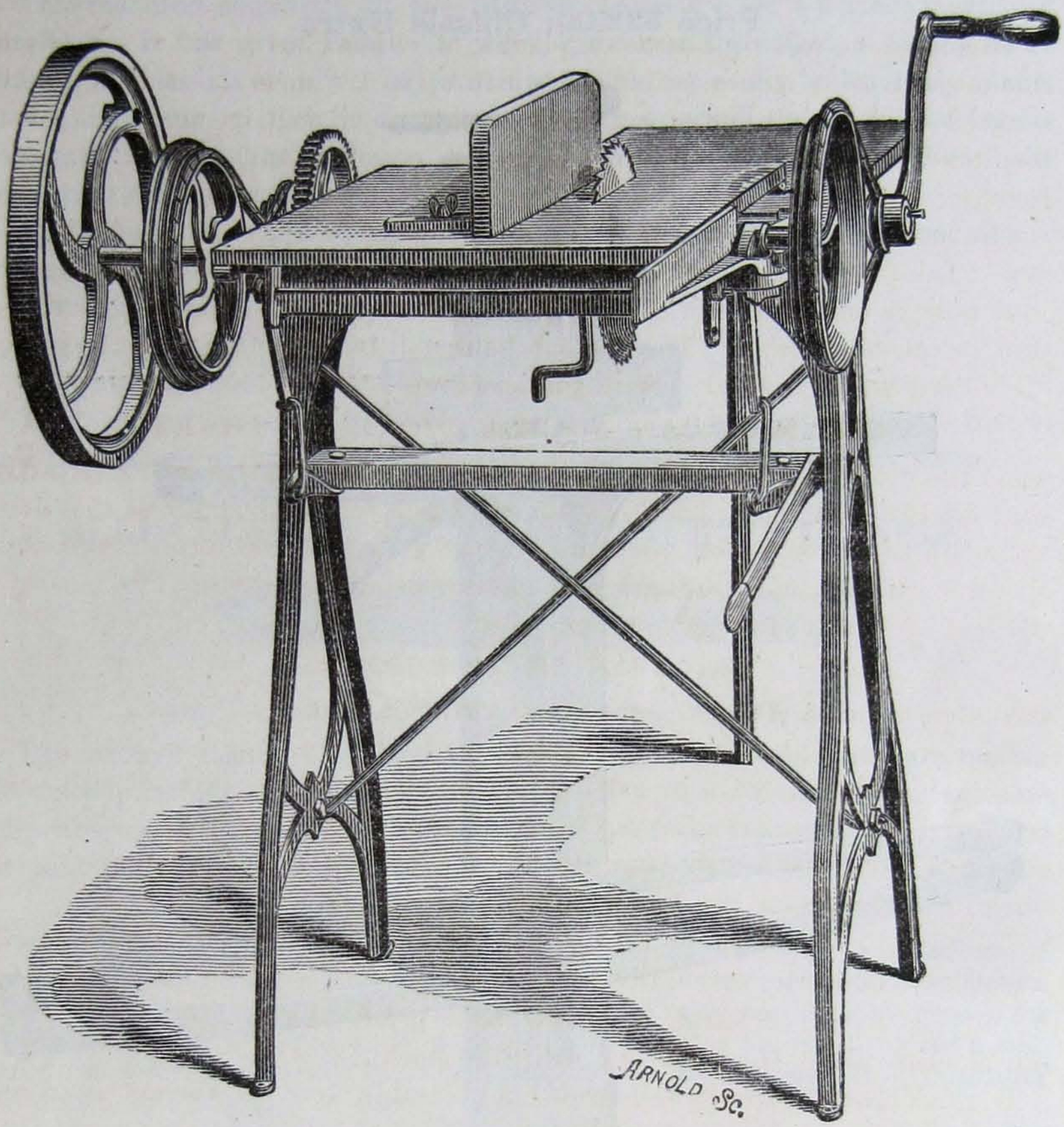
The cut on opposite page shows the Hand Circular Rip Saw with the front table placed directly over the saw. The table is provided with an adjustable guage, and by means of a hand screw at rear end, it can be readily raised or lowered to govern the depth of cut by the saw.

Arranged in this way rabbets, bevels, tenons, etc., can be cut to advantage, and by using two saws side by side grooving for window and door stops, etc., can be done. We furnish an extra saw for this purpose with each machine. The saws are 10 inches in diameter.

The machine complete weighs 190 pounds.

Boxed ready for shipment it weighs 230 pounds.

The price of the machine includes boxing and delivering on board the cars, but we do not pay freight. By special arrangements with the railroad companies we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the U. S.



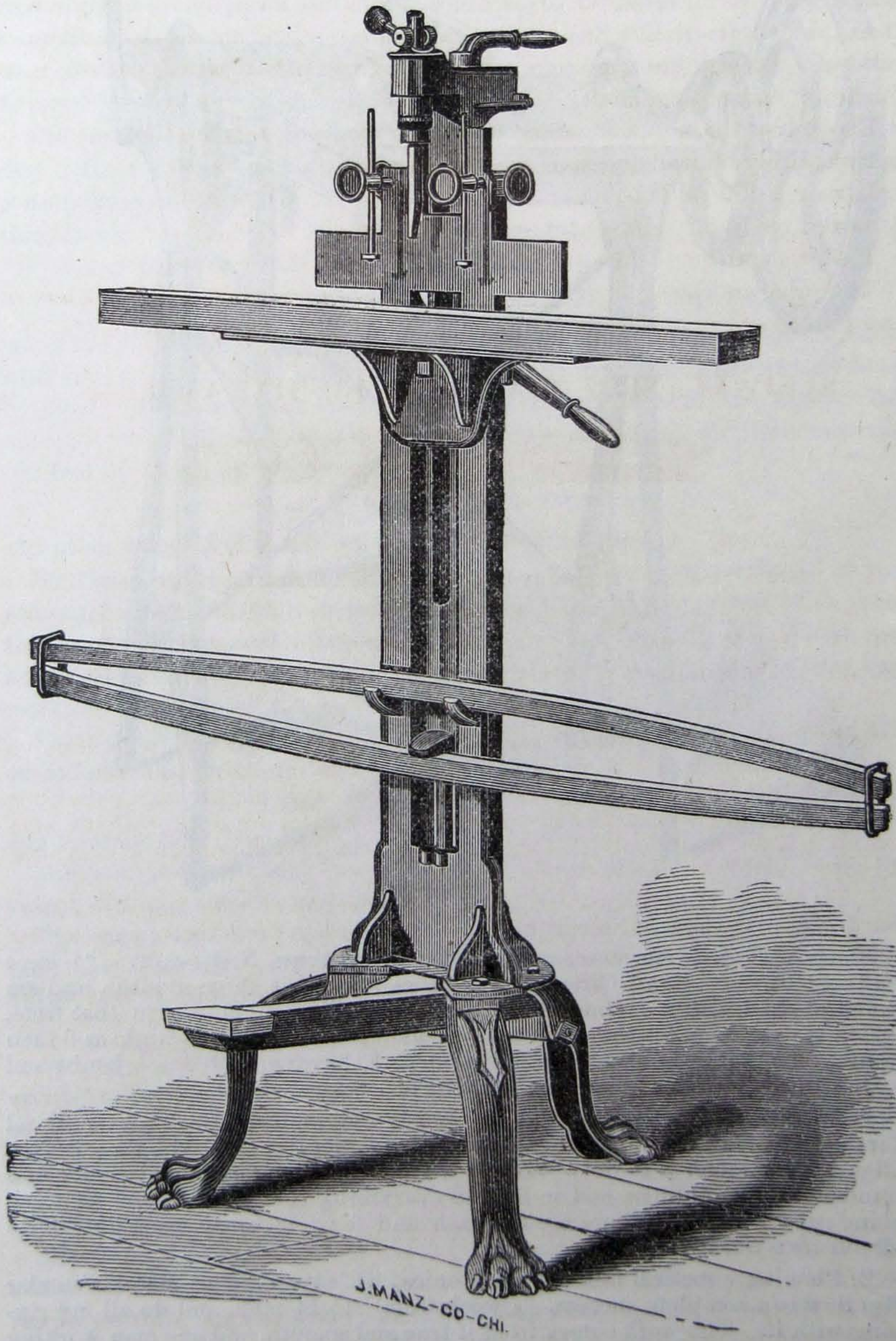
Clarence F. Lee, carpenter and builder, Morristown, N. J., says: "I have had one of your Hand Circular Rip Saws for about three months, and am much pleased with it. Have done the ripping for 15 houses in that time, which is over 40 miles through inch boards. Have ripped as high as 3 inch plank. The table is also good for rabbeting, have rabbeted all jambs and sawed all drips for 200 windows."

S. Wetzel & Co., Carlisle, Pa., say: "We have had one of your Hand Circular Rip Saws in constant use the past six months, and find that it does all you recommend it to do, With it we rip door tenons, rabbet doors and blinds, bevel mouldings, and in fact do everything that can be done on a machine run by steam There are two sash and door factories here, but we do all our own work."

E. Fleming, practical builder, Pecatonica, Ill.. says: "The Hand Circular Rip Saw is a complete success. I work from 7 to 14 men, and do all my ripping with it. The work comes from it true and smooth, and one man working the machine can accomplish more than four the old way. The slow speed of the saw gives great power, and we can saw heavy thick planks with ease."

IMPROVED FOOT-POWER MORTISING MACHINE.

Price $22.00; Chisels Extra.



IMPROVED FOOT POWER MORTISING MACHINE.

This machine combines all the features necessary for a perfect mortising machine. It has great range for work, power on the chisel, accuracy in its action, and has all required adjustments, which are easily and quickly made. It has abundant strength, is durable, and stands on small space. All mechanics can but appreciate its operation. Each machine is warranted perfect in its operation and construction.

Excepting the supplementary table, springs and treadle, the machine is made entirely of iron and steel.

It weighs 130 pounds.

Boxed ready for shipment it weighs 170 pounds.

The price, without chisels, is $22.00.

The price of chisels is $1.00 each, extra. We give a list of chisels below, and purchasers of machines can select such sizes as their work requires.

SELF-CLEANING MORTISING MACHINE CHISELS.

Sizes, 1-4, 5-16, 3-8, 7-16, 1-2, 9-16, 5-8, 3-4, 7 8, 1 inch.

The price of machine includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies we ship in a way to give our customers advantage of the lowest freight rates, and warrant the safe delivery of every machine shipped to points in the U. S.

N. E. Buser, Mt. Morris, Ill, says: "The Mortiser is a complete success. I can take one hundred screen doors and do all the mortising in seven hours. This equals three days' hard work for one man with mallet and chisel, for which I have usually paid $2.50 per day. These rates are not for what a man can do in a few hours only, but are rates that can be followed from morning till night, and from day to day."

A. G. Harris. Greensboro, Ga., says: "I have one of your Improved Mortising Machines, and cut more mortises in one day than three men can by hand."

C. P. Hinman, Clinton, Wis., says: "I run my Scroll Saw twenty hours last week, sawing two-inch hard pine, without breaking a saw. I have mortised 110 screen doors with the Mortiser. Would not take $100 apiece for them if I could not replace them."

Messrs. H. S. & Hugh Jones, Kingston, Pa., say: "The machines arrived safe and in good condition. The Combined Machine gives perfect satisfaction. The Mortiser is a complete success, and all that could be desired. They are machines that every builder and cabinetmaker should have. We would not be without them for three times their cost."

Messrs. Woodbury & Wyman, contractors and builders, Greeley, Col., say: "We have a Hand Circular Rip Saw, an Improved Mortiser, and a No. 7 Scroll Saw, and find them all that you claim."

J. F. Hodge, Decatur, Tenn, says: "I have been using a Mortiser, Combined Machine, and No. 2 Former four or five years, and have found them to be all that you claim, and more."

HAND TENONING MACHINE.

Price $25.00.

"A"—Tenon being cut.
"B" "B"—Screws to set depth of shoulder.
"C" "C"—Handles to raise cutters from work.
"D"—Lever to hold work in place.
"E"—Lever to drive the cutters forward and back.
"F" "F"—Cutter heads.
"H" "H"—Springs to press cutter heads against work.

HAND TENONING MACHINE.

Price $25.00.

This machine will cut tenons of any length up to 3 inches. It will work on stuff of any size up to 2x12 inches, and can be adjusted to guage the length, thickness and shoulders of the tenon. It will not cope a shoulder, but will cut one shoulder further back than the other to accommodate stuff having a rabbeted edge, and will cut one shoulder deeper than the other or both alike, as desired. Both sides of the tenon are cut at once, or one side only can be cut. Each thrust of the lever "E" cuts a shaving similar to that of a rabbet plane, the rapidity of the thrusts and set of the knives—as with a plane—governing the speed of the work. The machine cuts true, smooth, square shoulders, and can be set to cut tenons of uniform thickness and kind. Every mechanic knows the importance of a perfect tenon, and will appreciate a hand machine with which as perfect tenons can be made as with steam power machinery.

The price of the machine is $25 00.

It weighs 100 pounds.

Boxed ready for shipment it weighs 130 pounds.

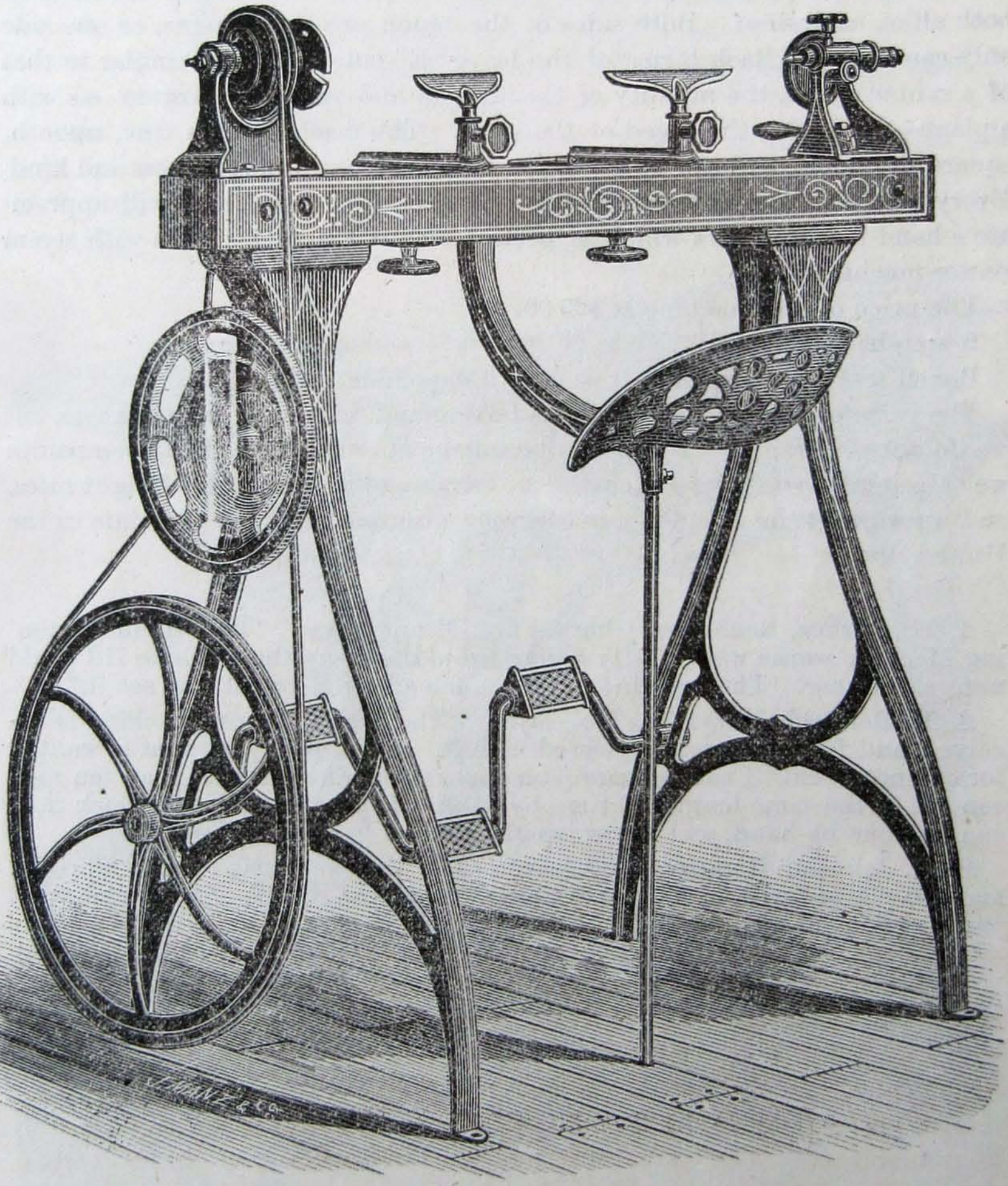
The price of the machine includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the United States.

A. W. Durkee, Rochester, Olmsted Co., Minn., says: "The Hand Tenoning Machine works well. Fifty dollars would not buy the machine if I could not get another. The machine is very much admired by all who see it."

S. M. Redfield, Maryville, Mo., says: "The Hand Tenon machine is received, and I am very much pleased with it. I find it is just what is wanted for cabinet work. I can cut more tenons with it in one hour than ten men can cut in the same length of time by hand. It does much better work than can be done by hand, and works equally well on hard or soft wood."

R. M. Johnson, Hickory, N. C., says: The Tenoner came to hand all right, am well pleased with it. It saves the labor of four hands. It does all that you recommend it to do."

NO. 3 LATHE.— Price $35.00.



NO. 3 LATHE.

This Lathe is designed for wood turning. It will take in stuff 9¾ inches in diameter and 3 feet long. Having our Patent Velocipede Foot-power and improved seat, the operator sits comfortably in the best possible position for the management of his work, and can work steadily without fatigue. The speed can be varied from one to 2,000 revolutions per minute, and the motion can be started, stopped or reversed instantly, at the will of the operator. Greater power can be applied on the work than with any old-style foot-power, and with greater ease. The seat can be moved readily along to any part of the bed that the work requires. The Lathe is made entirely of iron and steel except the bed, which is wood. The spindle is of cast steel, fitted up in the best manner. All the bearings are of steel, making them strong, durable and light running. The centres are accurately fitted to taper holes. No wrench is required to adjust the tail stock or tool rests and sockets, hand wheels being used instead.

The price of the Lathe is $35.00; this includes three centres (one a spur) two tool rests and sockets, and one turned face plate.

It weighs 170 pounds.

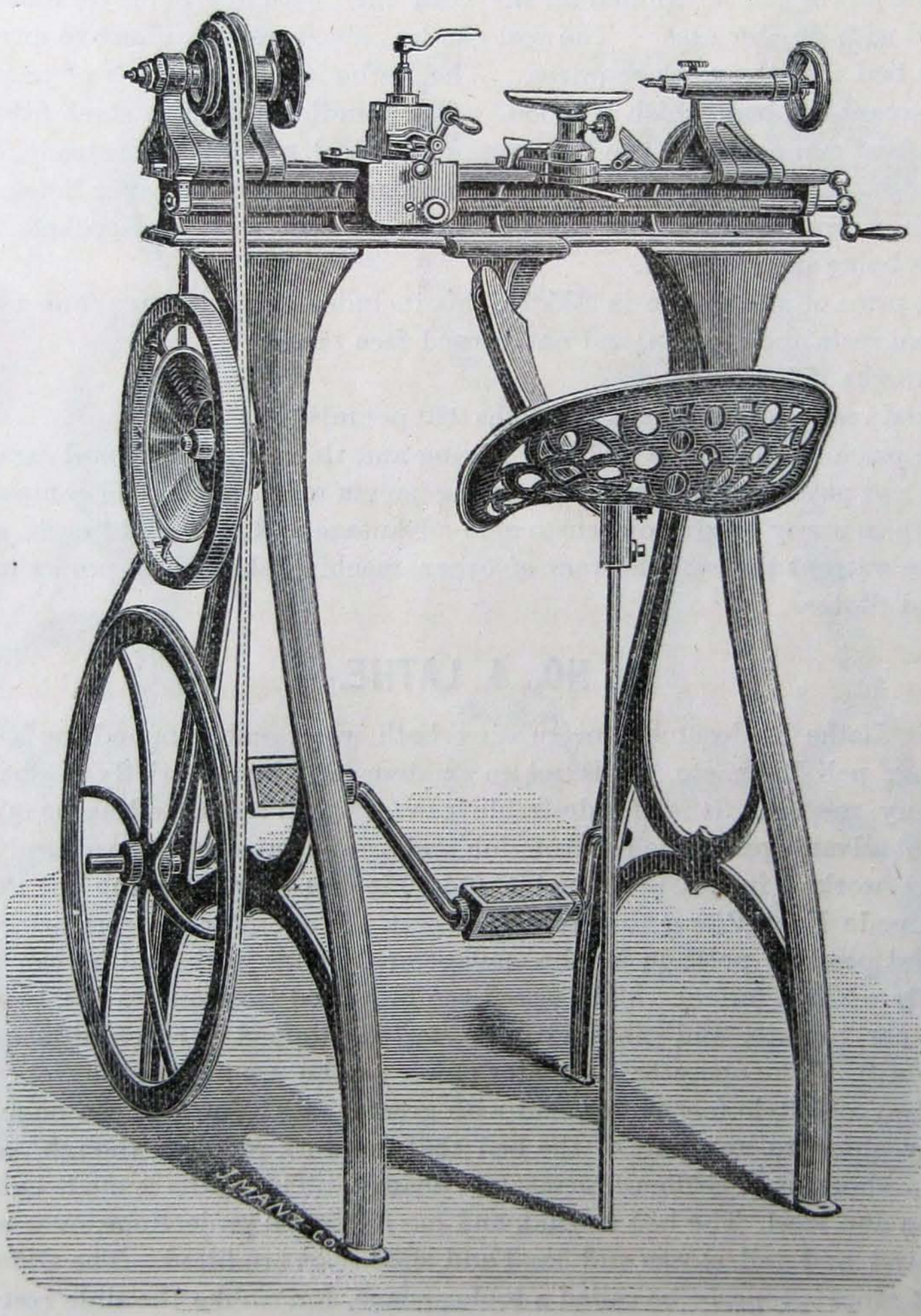
Boxed ready for shipment it weighs 220 pounds.

The price of the Lathe includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies, we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the United States.

NO. 4 LATHE.

This Lathe is designed for turning both wood and iron, and for boring, drilling, polishing, etc. It is not an amateur tool, but is strictly mechanical in every respect. It is of a desirable size for small work, and has many important advantages in the construction and arrangement of its parts. It will take in work 7 inches in diameter and 20 inches long. Having our Patent Velocipede Foot Power and improved seat, the operator sits comfortably in the best possible position for the management of his work, and he can work steadily without fatigue. The speed can be varied from one to 2,000 revolutions per minute, and motion can be started, stopped or reversed instantly, at the will of the operator. Greater power can be applied on the work than with any old style foot power, and with greater ease. The seat can be moved readily along to any part of the bed that the work requires, though, as the bed is short, it is seldom necessary to change. The Lathe is made entirely of iron and steel. The bed is solid, and has V-shaped projections, over which the head and tail stocks and hand and slide rests are fitted. The slide rest might more properly be called a tool-carriage, for, unlike the slide rest as it is generally known, this travels on the truly-planed ways of the Lathe bed, and becomes as much a part of the Lathe proper as the tool-carriage in a regular self-feed lathe, and yet it can be instantly attached or detached from the feed-screw, or taken from the bed entirely, no bolts or nuts being neces-

No. 4 LATHE.—Price $40.00.



sary to remove. The upper slide and ways of this carriage are mounted in such a way as to allow of the tool being set to the work at any desired angle, for cutting off, turning or boring tapers, turning balls, etc. The tail-stock can be moved and set at any point desired by the simple turning of a hand wheel, or it can be taken off entirely, thus leaving the bed free for face-plate or chuck work. The head-stock spindle has taper bearings, and can be adjusted with as much delicacy as a jeweler's lathe; that of the tail-stock is moved by a screw and hand-wheel. The centres in the head and tail-stocks are both taper fitted, and that of the tail-stock is self-discharging.

The price of the Lathe is $40 00; this includes one turned face-plate, two pointed and one spur centres, two rests with sockets and plate for hand tools, slide rest or tool carriage as described, and wrench and necessary belting.

It weighs 140 pounds.

Boxed ready for shipment it weighs 180 pounds.

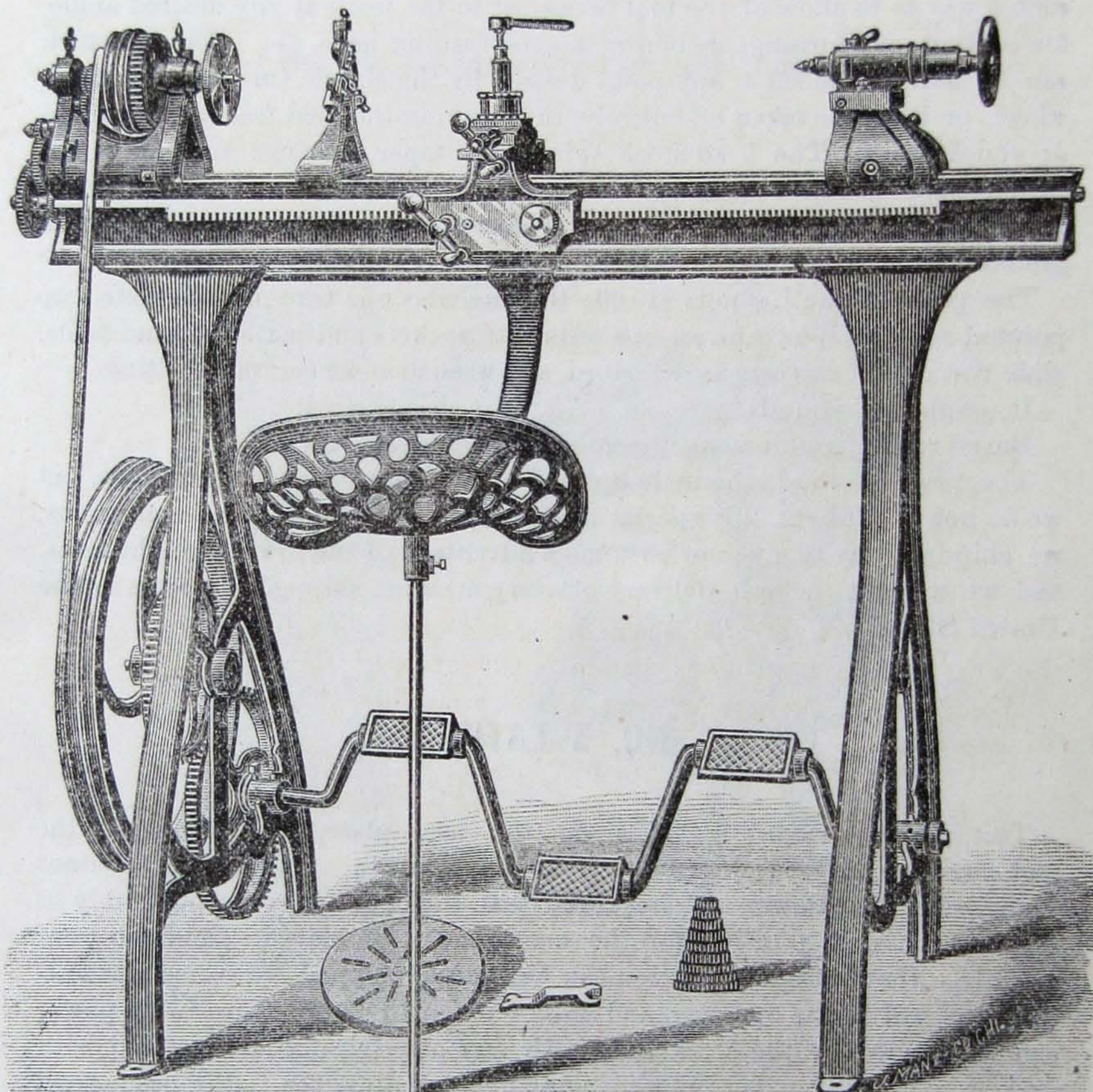
The price of the Lathe includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies, we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the United States.

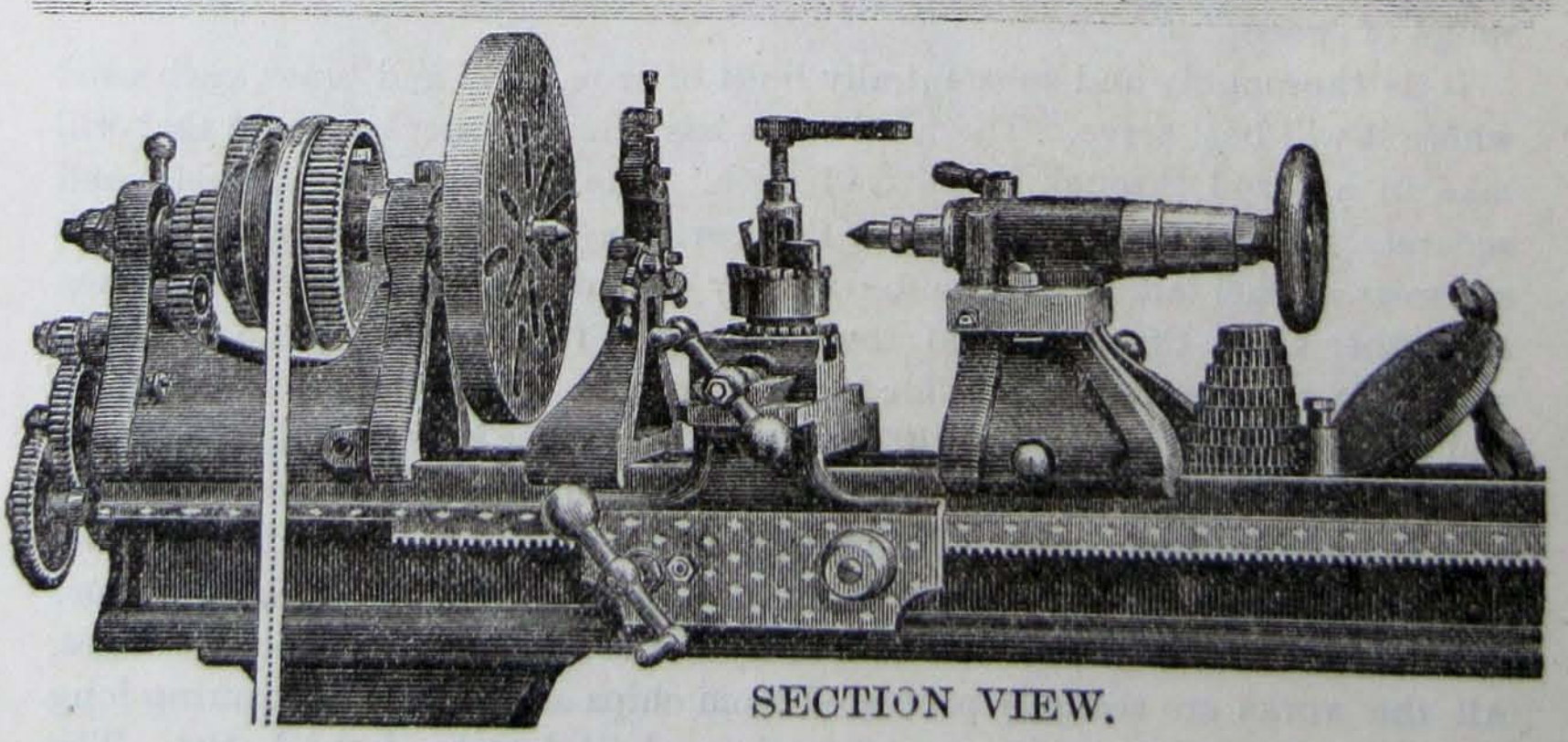
NO. 5 LATHE.

This Lathe swings 9 inches on the face plate, 5 inches over the tool carriage, and is 34 inches between centres. Having our Patent Velocipede Foot-Power and improved seat, the operator sits comfortably in the best possible position for the management of his work, and can work steadily without fatigue. Motion can be started, stopped or reversed instantly, at the will of the operator, and from one-fourth to one-third more power can be applied on the work than with any old-style foot-power, and with greater ease. With its back gearing and cone pulleys the Lathe has a great range of speeds.

It is thoroughly and substantially built of iron, steel and brass, each used where it will best serve. The head-stock has a hollow steel spindle that will take in a $\frac{8}{8}$ rod through its entire length. The boxes are of gun-metal and accurately fitted to the spindle, with provision to keep them true and take up wear. The tail stock can be readily set at any desired point or taken altogether from the lathe bed, thus leaving it free for face-plate or chuck work. It can also be set over for turning tapers. The spindles of both head and tail stocks are of steel, with positively true taper holes for the reception of the centres, and the tail stock centre is self-discharging. The Tool-Carriage is a model of convenience and accuracy, and is *gibbed* to the bed. The tool can be set to the work at any position or angle desired, also to bore a taper hole or turn a ball, features not ordinarily in the movements of tool-carriages. All the works are securely protected from chips and dirt, thus insuring long wear and durability to the most costly and vital parts of the Lathe. The

No. 5 LATHE.—Price $100.





SECTION VIEW.

gearing furnished can be combined to make some 500 different leads of thread. As a screw-cutting lathe it is simply perfect. All the gearing (except that in the foot-power) is cut from solid metal in the best machinery known for gear cutting, and is as true and noiseless as it is possible for metal gear to be.

The price of the Lathe, complete, as described is $100.00.

It weighs 270 pounds.

Boxed ready for shipment it weighs 350 pounds.

BED--EXTRA LENGTH.

The No. 5 Lathe, with its present dimensions, is in true proportion. Gunsmiths and others often require a greater length of bed, and do not care for proportionate strength in other parts. For such we can furnish a bed that will admit of 40 inches between centres, at an extra cost of $12.00.

For $10.00 extra we can furnish fixtures to raise the head and tail stocks and tool to bore out and swing fifteen inches in diameter.

For $2.50 extra we can furnish two rests with socket for hand turning.

The Lathe Tools for No. 5 Lathe are 30 cents each extra

The price of the Lathe includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the United States.

F. H. Chidester, Massillon, Ohio, says: "The No. 5 Lathe is received. Although I have had but little opportunity yet to test it, I can safely say that it is superior to any other tool of the kind I ever saw. It gives entire satisfaction."

Messrs. Allbright's Sons & Co., Allentown, Pa., say; "The No 5 Lathe gives entire satisfaction."

George J. Mattson, New Berlin, N. Y., says: "I have one of your No. 5 Lathes and could not ask for anything better. It beats anything around here. It is complete in every respect. The Patent Velocipede Foot-Power I consider far ahead of the old style. I can work steadily all day with it, when it would be impossible to stand on one foot and do so long at a time."

Frederick Palfrey, Macon City, Mo, says: "I never had a machine that gave any better satisfaction than does the No. 5 Lathe."

Wm. Greenhalgh, Litchfield, Ill., says: "I have one of your No. 5 Lathes, and never saw anything of the kind equal to it."

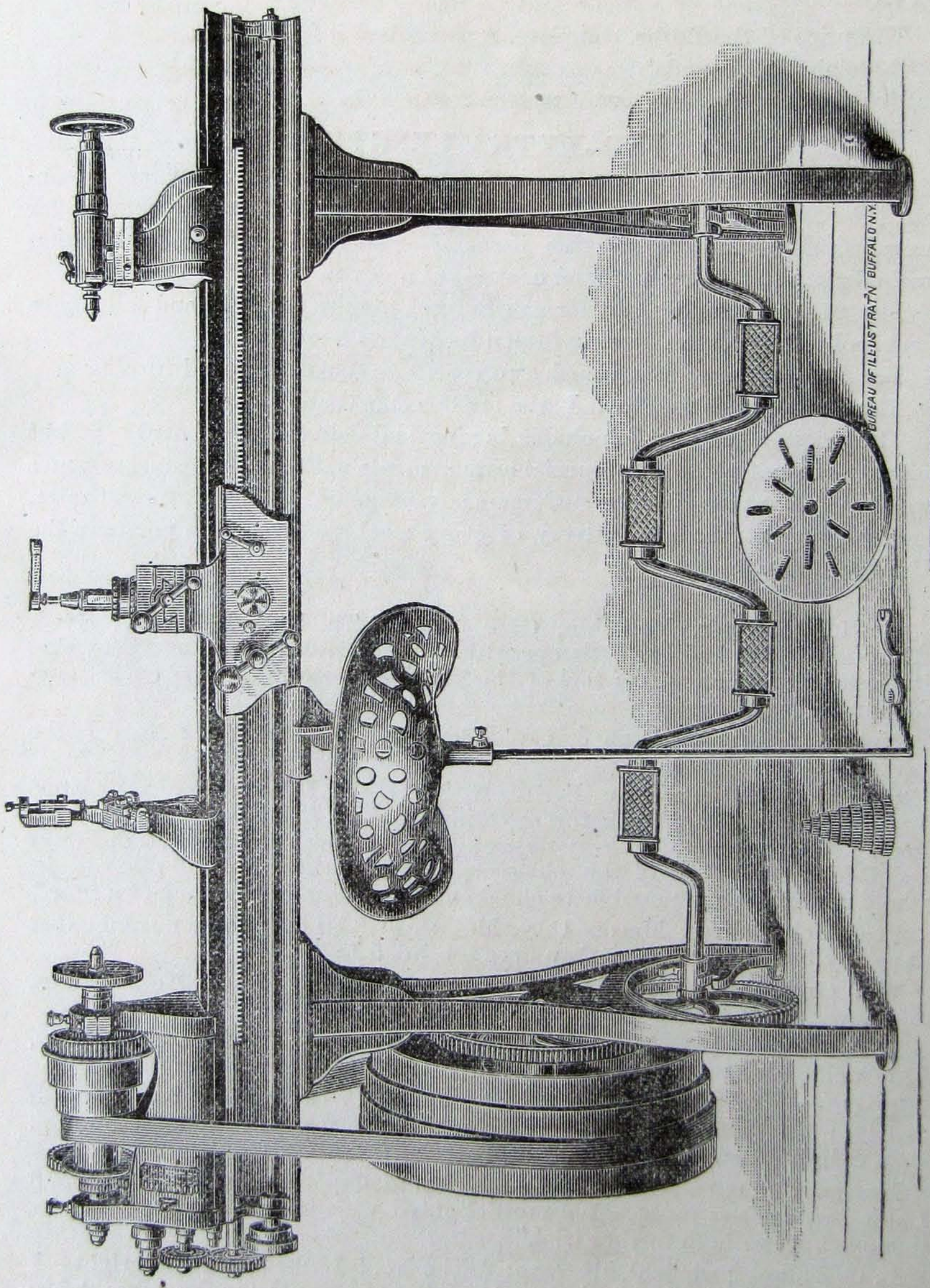
T. A. Caulson, Moss Point, Miss., says: "The No. 5 Lathe arrived safely. I am well pleased with it. It is the best tool of the kind I ever saw."

T. O. Smith, 14 Smith St., Charleston, S. C., says: "The belt gear and drills for No. 5 Lathe are at hand. Many thanks for your prompt attention. I am delighted with the machine."

Messrs. Cummins, Owen & Co., McMinnville, Tenn., say: "The No. 5 Lathe arrived last night. We are delighted with it, and start your money this morning without further trial."

L. G. Bailey. Pittsfield, Ill., says: "The No. 5 Lathe arrived all right. I am much pleased with it." In another letter, written later, he says: "My No. 5 Lathe has become indispensable. I am doing a great deal of work on it. It is the best tool of the kind I ever saw."

NO. 6 LATHE.



NO. 6 LATHE.

This is designed for those wanting a lathe for general work with a greater capacity than our No. 5 Lathe, and yet within the range of foot-power. It swings 12 inches on the face-plate, 6 inches over the tool carriage, and is 44 inches between centres. It has all the necessary appliances for rapid and accurate execution of both light and heavy work. Having our Patent Velocipede Foot-Power and improved seat, the operator sits comfortably in the best possible position for the management of his work, and can work steadily without fatigue. Motion can be started, stopped or reversed instantly, at the will of the operator, and from one-fourth to one-third more power can be applied on the work than with any old-style foot-power, and with greater ease. The seat can be moved readily along to any part of the bed that the work requires. With its back gearing and cone pulleys the Lathe has a great range of speeds.

It is thoroughly and substantially built of iron, steel and brass, each used where it will best serve. The head-stock has a hollow steel spindle that will take in a 7-16 rod through its entire length. The boxes are of gun-metal and accurately fitted to the spindle, with provision to keep them true and take up wear. The tail stock can be readily set at any desired point or taken altogether from the lathe bed without removing nuts or bolts.

It can also be set over for turning tapers. The spindles of both head and tail stocks are of steel, with positively true taper holes for the reception of the centres, and the tail stock centre is self-discharging. The Tool-Carriage is a model of convenience and accuracy, and is *gibbed* to the bed. The tool can be set to the work at any position or angle desired, also to bore a taper hole or turn a ball, features not ordinarily in the movements of tool-carriages. All the works are securely protected from chips and dirt, thus insuring long wear and durability to the most costly and vital parts of the Lathe.

This Lathe has both independent rod and screw feed. The gear furnished can be combined to make some 500 different leads of thread. As a screw-cutting lathe it is simply perfect. All the gearing (except that in the foot-power) is cut from solid metal in the best machinery known for gear cutting, and is as true and noiseless as it is possible for metal gear to be.

The price of the Lathe, complete, as described, is $150.00.

It weighs 510 pounds.

Boxed ready for shipment it weighs 650 pounds.

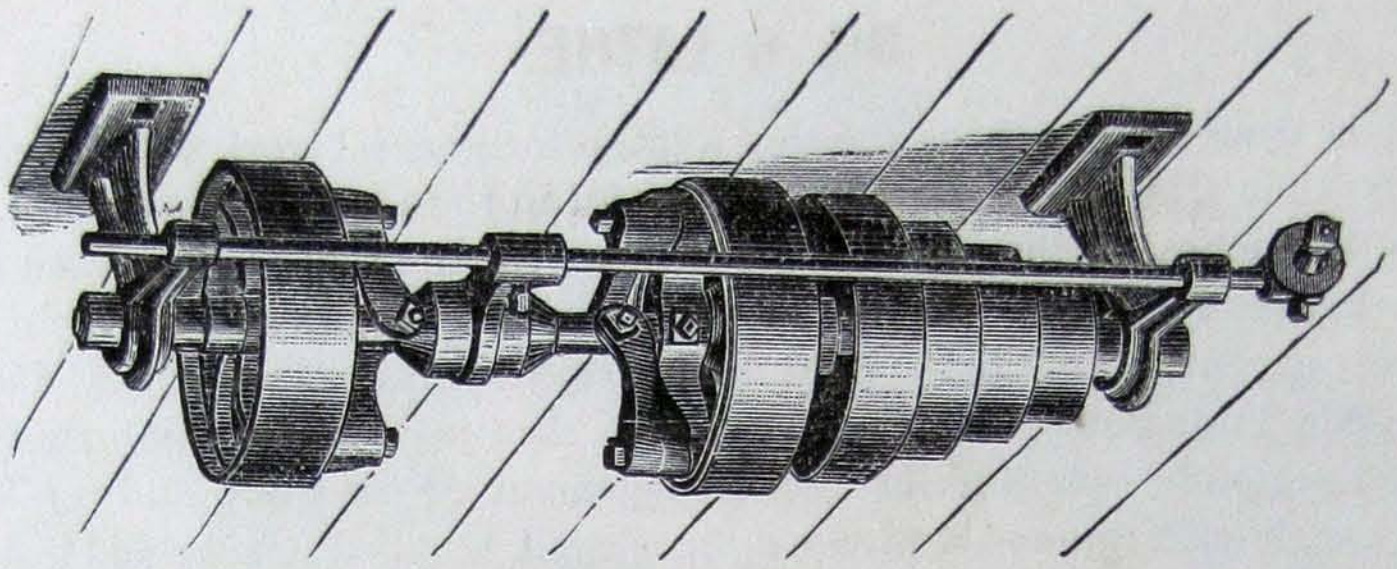
BED---EXTRA LENGTH.

The No. 6 Lathe with its present dimensions is in true proportion. Some require a greater length of bed, and do not care for proportionate strength in other parts. For such we can furnish a bed that will take 5 feet between centres, at an extra cost of $20.00.

For $10.00 extra, we can furnish fixtures to raise the head and tail stocks, and tool to bore out and swing 18 inches in diameter.

For $2.50 extra, we can furnish two rests with socket for hand turning.

The Lathe Tools for No. 6 Lathe are 40 cents each, extra.



The above cut represents a Countershaft for No. 6 Lathe.

Price of Countershaft ..... $ 20 00
Price of Lathe with Countershaft (no foot power) 155 00
" " " Foot-power (no countershaft) 150 00
" " " both Foot-power and Countershaft 170 00

The above prices include boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the U. S.

F. C. Stevens, Attica, N. Y., says: "Since receiving the No. 6 Lathe last February, I have tested it fully on all kinds of work, and am frank to say that it is the best made and most complete tool of the kind that I ever saw. It does all kinds of work to my entire satisfaction. It is strong and finely proportioned, and in style and finish it could not be improved. I have seen and used a great many different makes of Foot and Engine Lathes, but none as good as this."

D. Y. Smith, Joliet, Ill., says: "The No. 6 Lathe was duly received, and I will say I was disappointed, but it was a happy disappointment indeed. Instead of sending me an ordinary foot-power Lathe, you have given me a first-class, solid, well finished and well proportioned Screw Cutting Lathe, with improved foot-power that is hard to beat. Also independent rod-feed, which is just what I wanted. The Lathe has been examined by many, and they all decide that it is the 'Boss' Lathe."

Geo. W. Barclay, Tipton, Iowa, says: "Mr. A. C. Allen, of this place, has one of your No. 6 Lathes. It beats anything of the kind that I ever saw. It is capable of doing a large range and amount of work. I hardly believed it possible that you did, or could, sell so well made and complete a tool for the money."

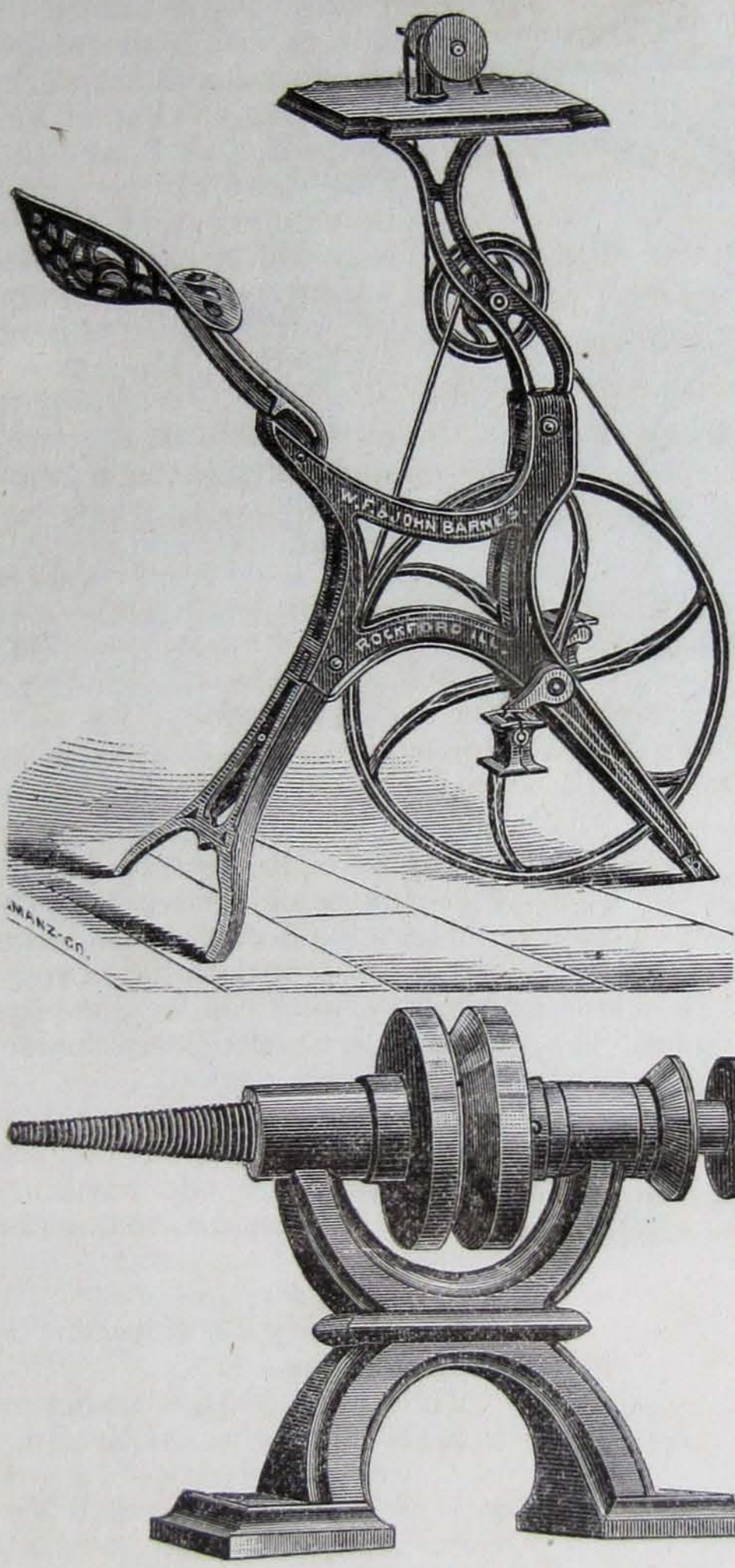
Clarence Culver, Centreville, Mich., says: "I am perfectly satisfied with my No. 6 Lathe. It is better than I expected."

L. H. Fisher, Wellington, Kansas, says; "My No. 6 Lathe gives perfect satisfaction. It is a first-class tool in every respect."

John T. Knapp, Lancaster, Pa., says: "I have set up the No. 6 Lathe and given it a thorough test, and find it complete in every respect. I would cheerfully recommend it to any one wishing a first-class lathe at a low price."

S. W. Mills, Kingsville, Mo., says: "The No. 6 Lathe arrived yesterday all in good shape. I set it up and tried it, and found it the most complete machine of the kind that I ever saw. It is far better than I expected, both in working qualities and style and finish."

GRINDING OR POLISHING MACHINE.



This is used by jewelers, dentists, glass-workers, and others. The head has a cone screw on one side and a nut and collar on the other side for emery wheels, etc. (See enlarged cut below.)

The price, complete, is $20.00

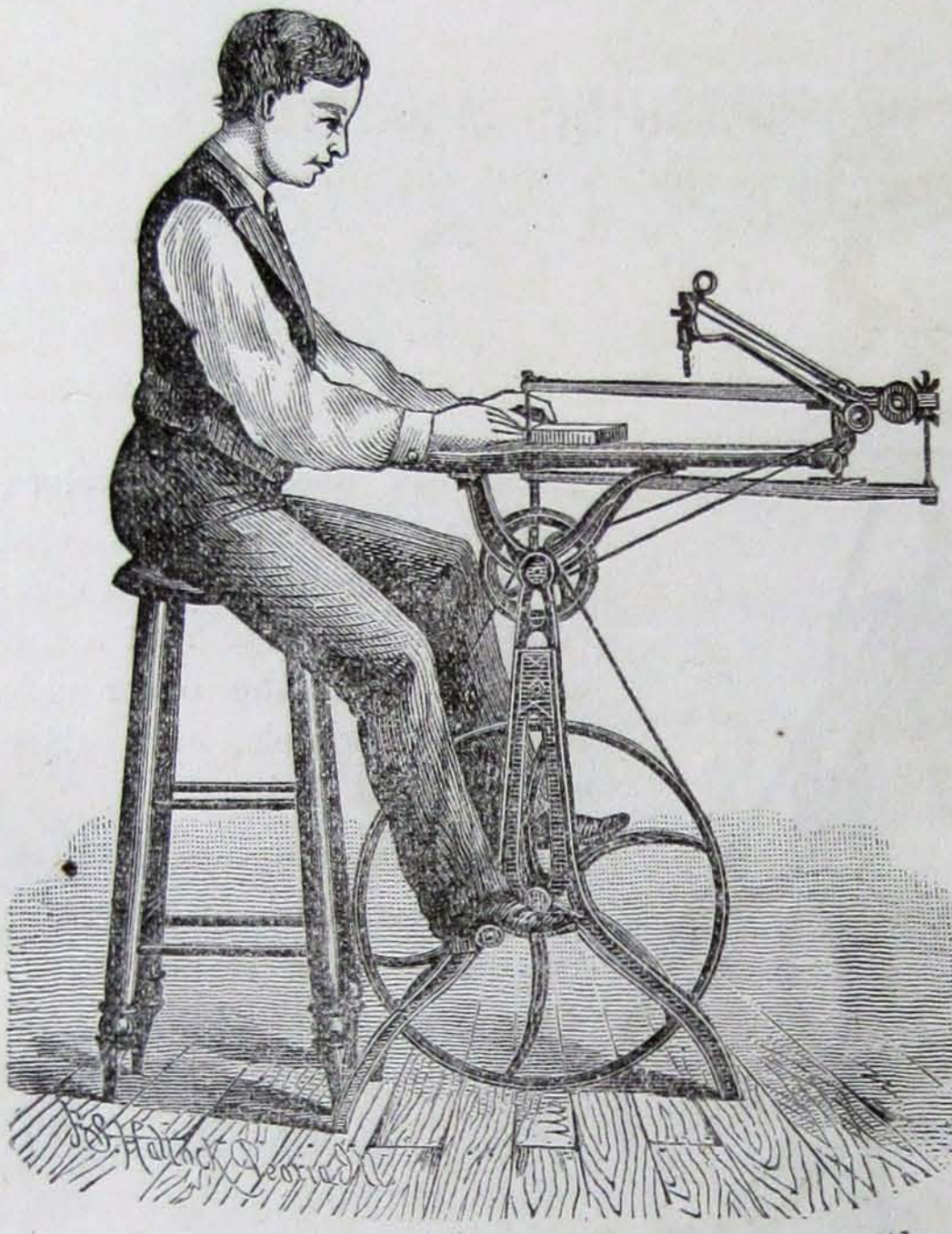
As an attachment to No. 2 Velocipede Saw stand, $10.00

The machine, complete, weighs 70 pounds.

Boxed ready for shipment it weighs 110 pounds.

The price of machine includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies, we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the United States.

No. 1 AMATEUR SAW.



This machine will cut pine of any thickness up to 1½ inches, and harder woods of proportionate thicknesses. It admits a swing of 18 inches around the blade, and accomplishes every branch of sawing within the range of general amateur work.

Having our Patent Velocipede Foot Power, the movement of the limbs in running this saw is easy and as natural as in walking, and the operator can work steadily without fatigue. All the muscles of the limbs are brought into healthful exercise, which should be a great consideration when selecting a machine. All old style foot-powers lack these advantages of ease of operation and healthful development of the muscles. An operator cannot run one of them steadily without tiring and experiencing an unnatural cramping of the muscles of the feet, ankles and limbs.

The table does not tilt, as in No. 6 Amateur Saw, but sawing for inlay work can be done by placing a beveled strip under the stuff being sawed.

The price of the machine complete is $12 00.

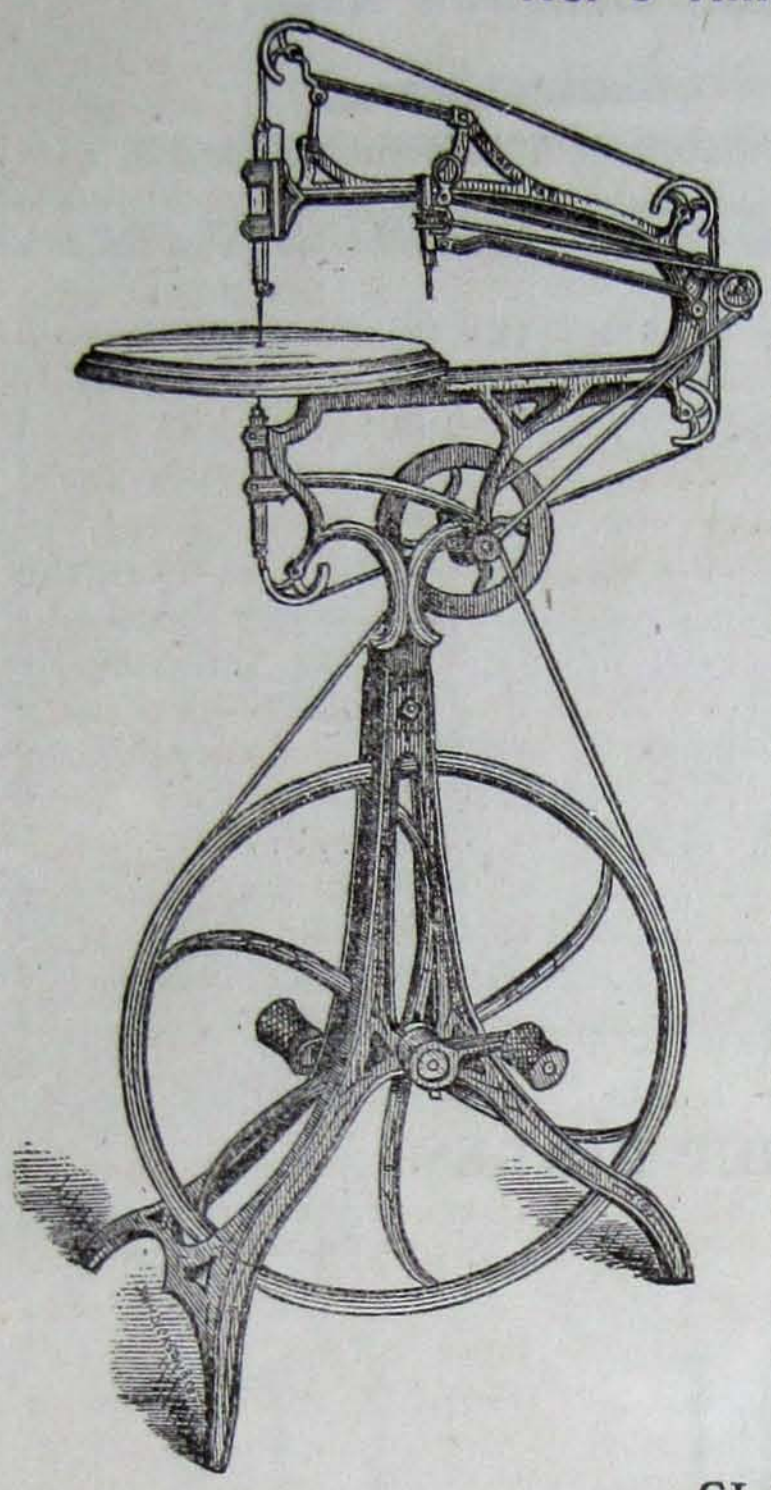
The price of the machine without Boring Attachment is $10.00.

It weighs 40 pounds.

Boxed ready for shipment it weighs 60 pounds.

The price of the machine includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies, we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the United States.

No. 6 AMATEUR SAW.



We offer this machine believing it to embody all that the most critical can desire. It will cut pine of any thickness up to one inch, and harder woods of proportionate thicknesses. It admits a swing of 16 inches around the blade, and will saw and drill ivory, bone, metal, shells, etc.

Having our Patent Velocipede Foot-power, the movement of the limbs in running this saw is easy and as natural as in walking, and the operator can work steadily without fatigue. All the muscles of the limbs are brought into healthful exercise, which should be a great consideration when selecting a machine. All old-style foot-powers lack these advantages of ease of operation and healthful development of the muscles. An operator can not run one of them steadily without tiring and experiencing an unnatural cramping of the muscles of the feet, ankles and limbs.

CLAMPS.

The blade has hardened steel clamps on slides which move in permanent guideways, above and below the table, giving the blade a positive and accurate motion.

TENSION OF BLADE.

To insure against the breaking of blades, and avoid unnecessary delay thereby, a perfect tension on the different lengths of blades used is of vital importance. By a very plain and handy arrangement of parts in this machine, this is most effectually accomplished.

NO SPRINGS.

No springs are used in this combination for giving tension to the blade, therefore none to break. The action is perfectly free and light, and with the ordinary speed, which is from eight to twelve hundred strokes per minute, a lady can run it with less fatigue than a sewing machine.

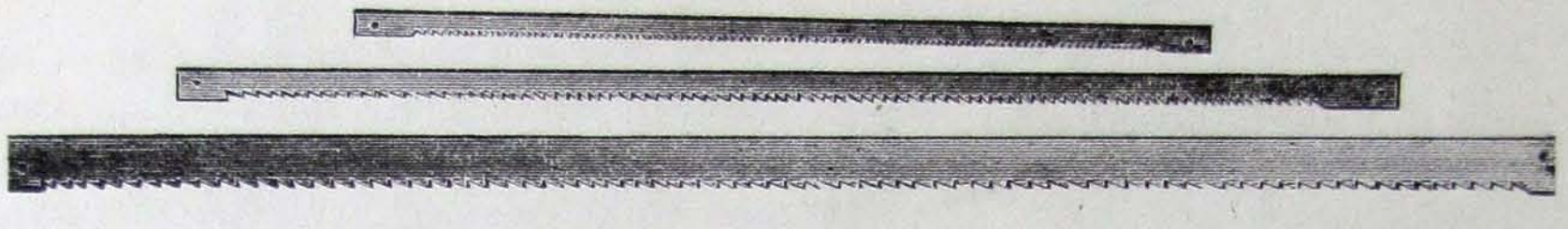
The table has a bevel adjustment, whereby it can be set for inlaying, mosaic and other work.

An effective piston blower is located just behind the blade, by which the sawdust is entirely cleared.

The price of the machine, complete, is $12.00. The price without Boring attachment is $10.00 It weighs 40 pounds. Boxed ready for shipment it weighs 60 pounds. We include 1 doz. Blades with each machine.

The price of machine includes boxing and delivering on board cars, but we do not pay freight. By special arrangements with the railroad companies, we ship in a way to give our customers advantage of the lowest freight rates, and we warrant the safe delivery of every machine shipped to points in the United States.

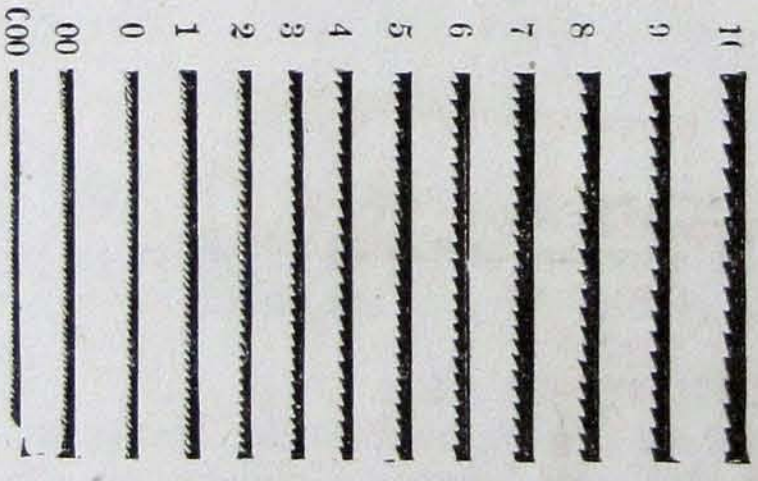
SCROLL SAW BLADES.---Our Own Make.



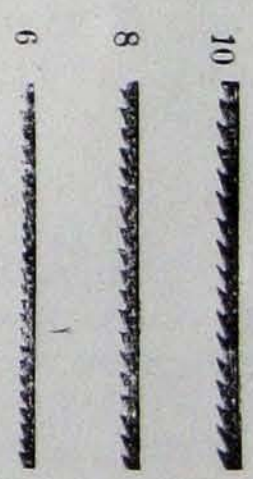
LENGTH.	WIDTH.	PRICE PER DOZEN.	PRICE EACH.
5 inches	1-16 to 3-16 inch	$ 75	$ 08
7 "	1-16 to 1-4 "	1 00	10
10 "	1-8 to 1-4 "	1 50	15
12 "	1-8 to 5 16 "	1 60	15
14 "	3-16 to 5-16 "	1 80	20
16 "	3-16 to 3-8 "	1 95	20
18 "	1-4 to 1-2 "	2 35	25
20 "	1-4 to 5-8 "	2 60	30
22 "	1-4 to 5-8 "	2 75	30
24 "	1-4 to 3-4 "	2 95	30
26 "	1-4 to 3-4 "	3 30	35
28 "	1-4 to 7-8 "	3 60	35
30 "	1-4 to 1 "	3 90	40
32 "	1-4 to 1 "	4 40	45
34 "	1-4 to 1 "	4 75	45
36 "	1-4 to 1 "	5 00	50

IMPORTED FRET BLADES.

IMPORTED FRET BLADES. 5 INCHES LONG.



IMPORTED FRET BLADES, 7 INCHES LONG.

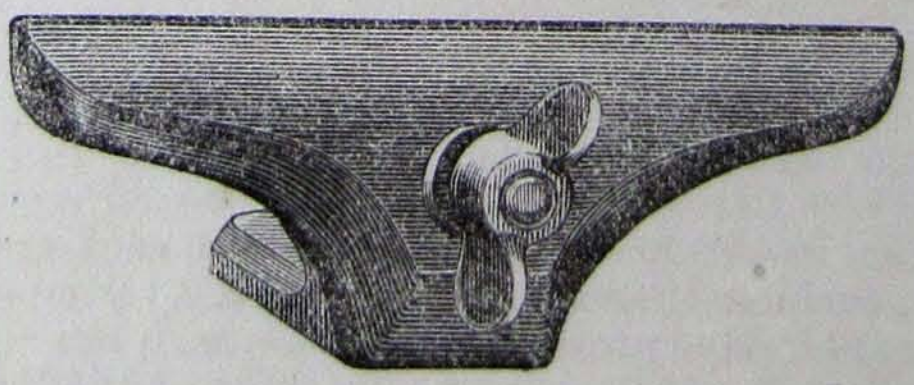


Nos. 000 to 5, 10 cts. per doz.; $1.00 per gross.
Nos. 6, 7 and 8, 15 cts. per doz.; $1.25 per gross.
Nos. 9 and 10, 20 cts. per doz.; $1.50 per gross.

25 cents per doz.
$2.50 per gross.

For use on our No. 7 Scroll Saw, No. 2 Velocipede Saw, or Combined Saw, order 7-inch blades. For use on our Amateur Saws, order 5-inch blades.

CLAMP FOR HOLDING SCROLL SAW BLADES.



Price each 30c
Postage, extra 20c

TAPER SAW FILES.

Length, inches	3	3 1-2	4	4 1-2	5	5 1-2	6	7	8
Price, per dozen	$1.00	1.00	1.13	1.25	1.38	1.63	1.88	2.38	3.00
" each	.10	10	.10	.15	.15	.15	.20	.25	.30

CANT FILES.

6 inch.....20 cts. | 10 inch.....40 cts.

These Files are designed especially for sharpening Circular Rip Saws. The 6 inch Files will sharpen saws up to 6 inches in diameter, and the 10 inch Files will sharpen saws from 4 to 10 inches in diameter.

PRICE LISTS OF BELTING.

ROUND BELTING.

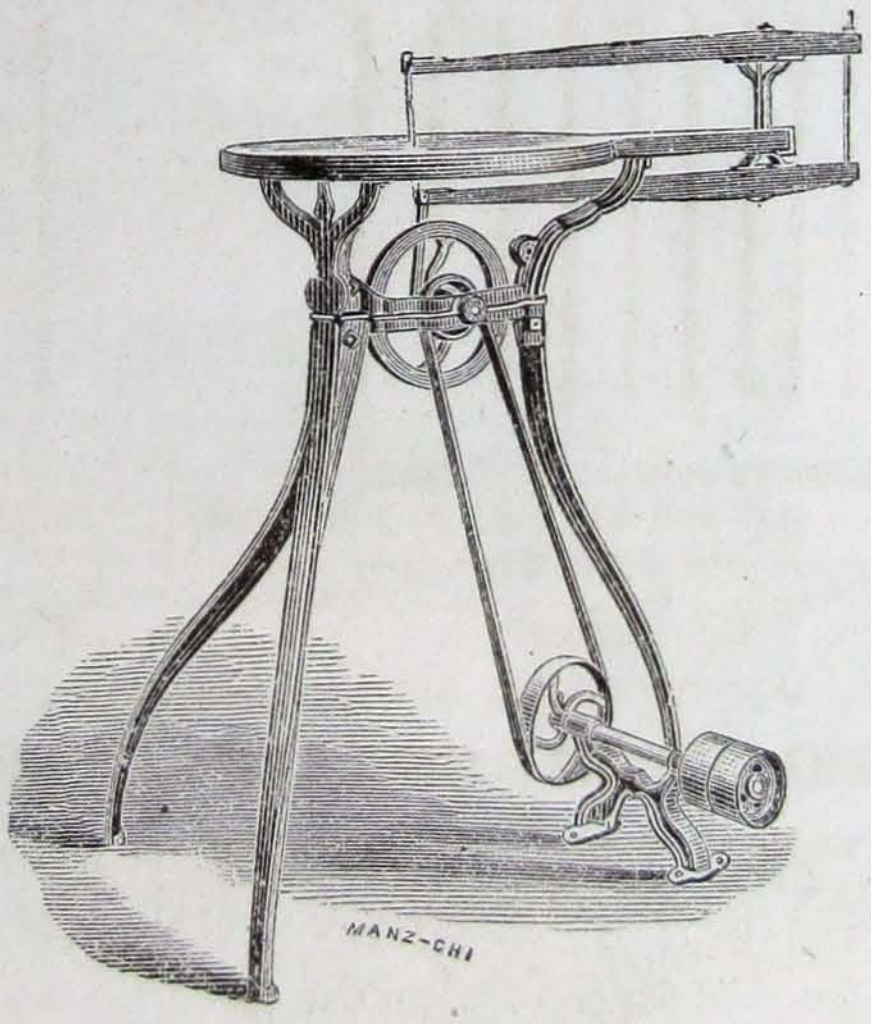
Size	1-8	3-16	1-4	5-16	3-8 inch.
Price	5c.	7c.	10c.	14c.	18c. per foot.

PATENT ANGULAR OR V BELTING.

One-half inch, two ply, stitched.....25c per foot.

FLAT BELTING.

Width	1 1-2	2 inch.
Price	15c.	20c. per foot.



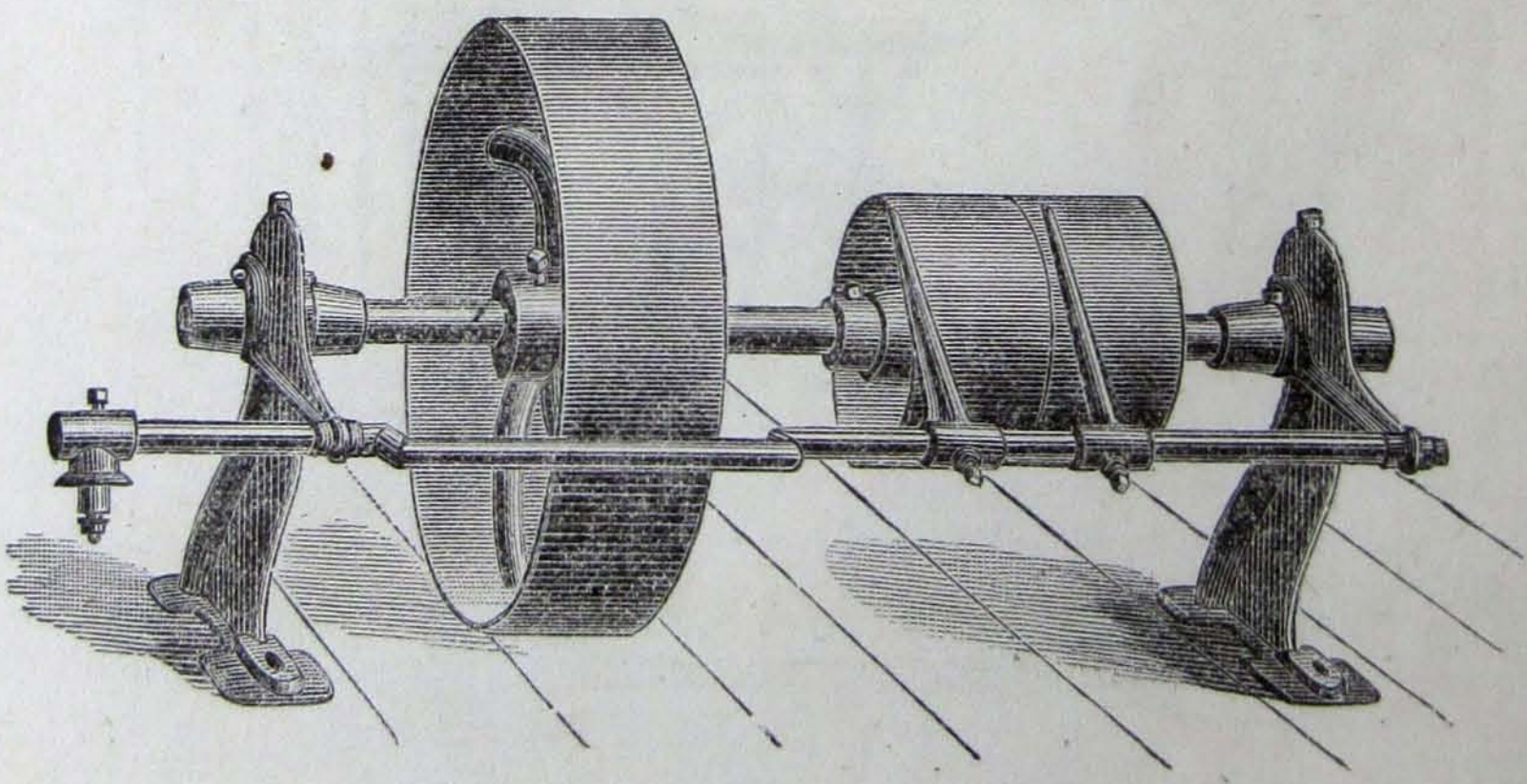
The above cut shows our No. 7 Scroll Saw arranged with a counter shaft. The price of counter shaft, including the connecting band-wheel on the machine, is $8.00. The same countershaft is also suitable for our Combined Machine. The prices of No. 7 Scroll Saw and Combined Machine, arranged with counter shaft only, (no foot-power,) are the same as for them with foot-power only.

CIRCULAR SAWS.

Henry Disston & Son's Patent Ground and Tempered Solid Teeth Circular Saws.

Diameter.	Thickness.	Size of Hole.	Price each.
1 1-2 in	24 guage	3-8 in	$ .60
2 "	23 "	3-8 "	.65
2 1-2 "	22 "	3-8 "	.70
3 "	21 "	1-2 "	.75
3 1-2 "	20 "	1-2 "	.80
4 "	19 "	3-4 "	.85
5 "	19 "	3-4 "	1.00
6 "	18 "	3-4 "	1.20
7 "	18 "	3 4 "	1.40
8 "	18 "	7-8 "	1.70
9 "	17 "	7-8 "	2.00
10 "	16 "	1 "	2.50
12 "	15 "	1 "	3.25
14 "	15 "	1 1-8 "	4.00
16 "	14 "	1 1-8 "	5.00
18 "	13 "	1 1-4 "	6.00
20 "	13 "	1 5-16"	7.50
22 "	12 "	1 5-16"	9.00
24 "	11 "	1 3-8 "	10.50
26 "	11 "	1 3-8 "	12.50
28 "	10 "	1 1-2 "	14.00
30 "	10 "	1 1-2 "	16.00

COUNTER SHAFT.--Price $15.



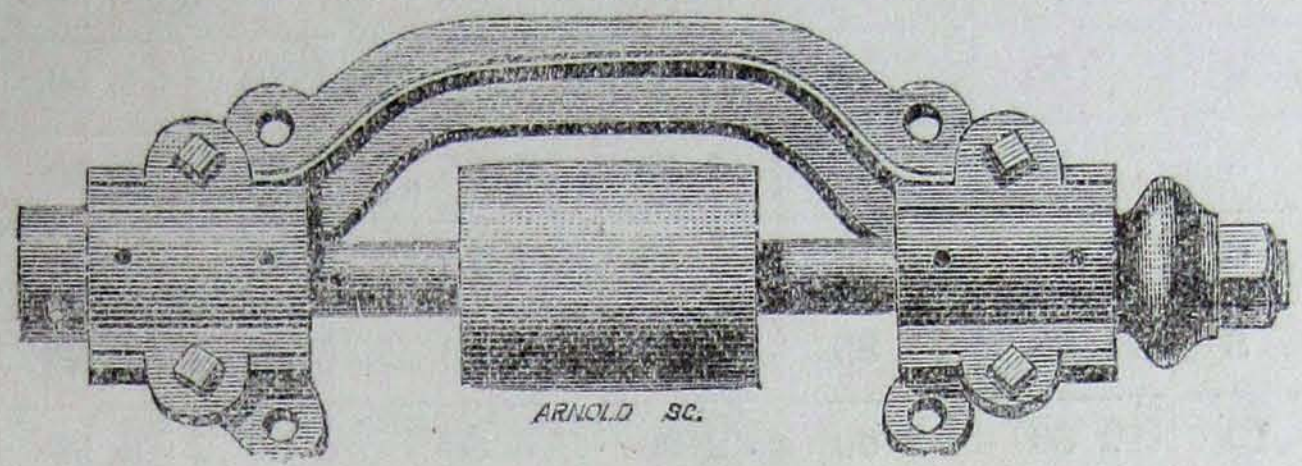
This Counter Shaft is designed for general use. It has self-adjusting bearings and a convenient shipper. The pulleys are turned true and all parts are well made. The small pulleys (tight and loose) are 8 inches in diameter and the large pulley 18 inches in diameter.

It can be used over head or on the floor as desired. This counter shaft is well adapted for driving the Saw Arbors shown in the following cuts.

SAW ARBORS.

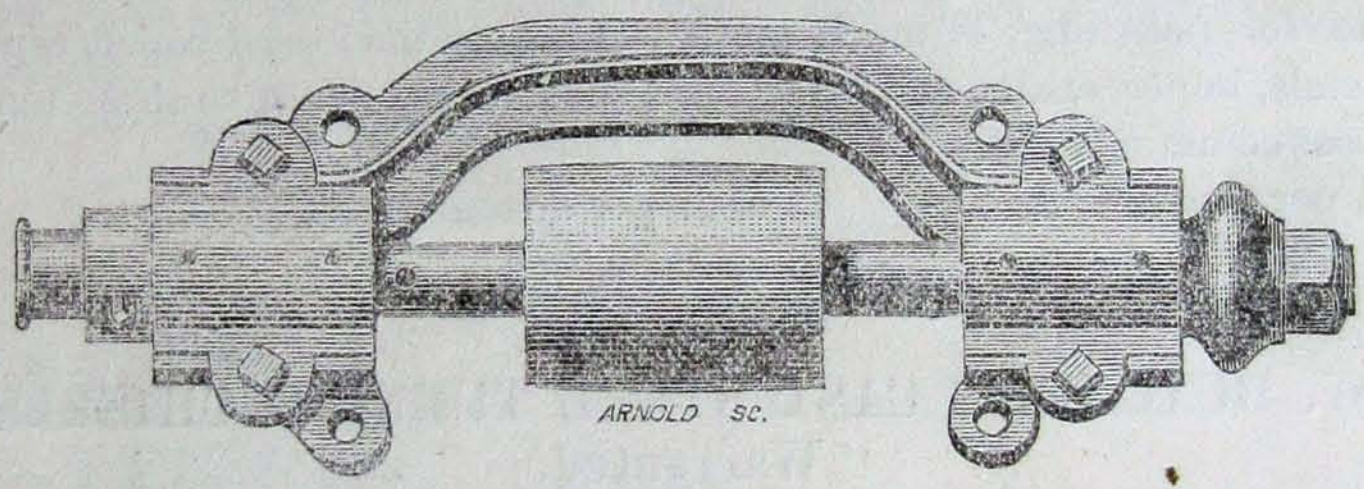
The following cuts represent two styles of Saw Arbors, one with the pulleys between, the other with the pulley outside the journals. The journals are connected by a solid casting, thus ensuring them in perfect line. These arbors are made from the best cast steel, and are fitted up in the most thorough manner.

Cut of Nos. 1, 2 and 3.



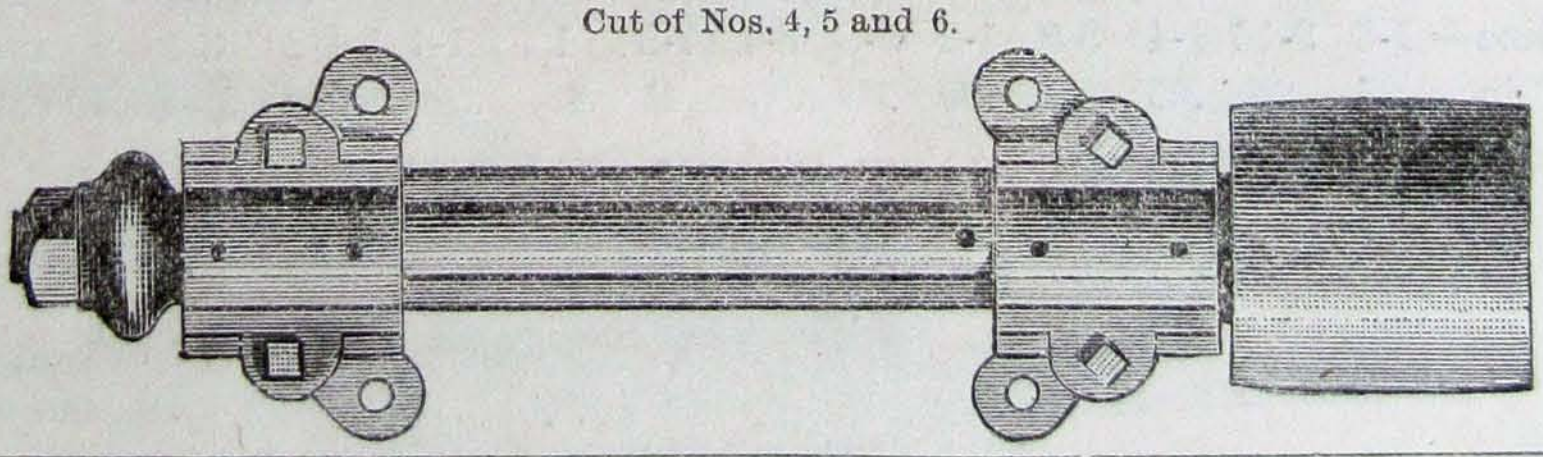
No.	Size of hole in Saw	Size of Pulley. Face.	Size of Pulley. Diameter.	Size of Saw.	Length out to out boxes	Price.
1.	¾ inch.	3 inches.	2½ inches.	6 to 10 in.	12 inches.	$ 10 00
2.	⅞ "	4 "	3 "	10 to 12 in.	14 "	12 00
3.	1 "	4½ "	3½ "	12 to 18 in.	16 "	14 00

SAW ARBOR WITH BIT COLLET ATTACHED.



The above cut shows a Bit Collet which we can furnish for $2.50. We can furnish an Old Reliable Drill Chuck, fitted to use in place of the Bit Collet, for $3.50, if ordered with the Saw Arbor. The price, if ordered afterwards, is $4.00. It is often desired to use an Auger Bit on the Saw Arbor, thus combining a Saw and Boring Machine on one table.

Cut of Nos. 4, 5 and 6.



No.	Size of hole in Saw	Size of Pulley. Face.	Size of Pulley. Diameter.	Size of Saw.	Length out to out boxes	Price.
4.	¾ inch.	2½ inches.	3 inches.	6 to 10 in.	12 inches.	$ 10 00
5.	⅞ inch.	3½ "	3½ "	10 to 15 in.	15 "	12 50
6.	1 inch.	4 "	4 "	15 to 20 in.	18½ "	15 00

PRICE LIST OF EMERY WHEELS.

Diameter of Wheels in Inches.	Thickness of Wheels in Inches.						
	1-4	3-8	1-2	3-4	1	1 1-2	2
3	45	50	60	70	80	1 00	1 20
4	65	75	85	1 05	1 25	1 50	1 85
5	85	95	1 15	1 35	1 65	2 20	2 75
6	1 15	1 15	1 30	1 70	2 15	2 90	3 75
8	1 85	1 85	2 10	2 60	3 20	4 50	5 80
10	2 60	2 60	2 90	3 80	4 60	6 50	8 50
12	2 85	2 85	3 15	4 50	5 20	7 50	9 70
14	4 60	4 60	4 60	6 20	7 75	10 50	13 50
16	5 85	5 85	5 85	7 80	9 60	13 00	17 20

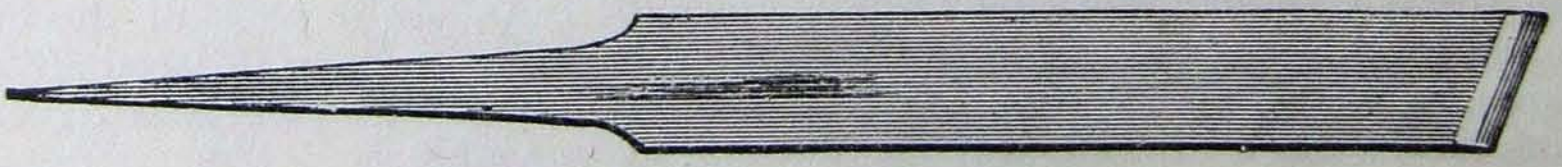
EMERY CLOTH.

This, for polishing, is much more serviceable than sand-paper, especially for metals, bones, shells, and other hard substances. We give three numbers, the most commonly used.

No. 1, per sheet, - - 10 cts.; per dozen sheets, - - $1 00
No. 1 1-2 " - - - 10 cts.; " " - - - 1 00
No. 2 " - - 15 cts.; " " - - 1 25

W. BUTCHER'S CAST STEEL TURNING CHISELS.

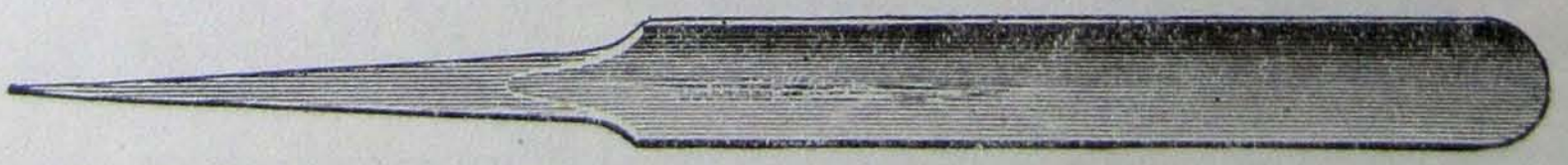
Warranted.



Size— 1-8 3-16 1-4 3-8 1-2 5-8 3-4 7-8 1 1 1-4 1 1-2 1 3 4 2 inch
Price—.25 .25 .25 .27 .30 .33 .37 .41 .48 .60 .77 .93 $1.10 each

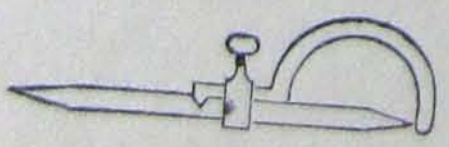
W. BUTCHER'S CAST STEEL TURNING GOUGES.

Warranted.



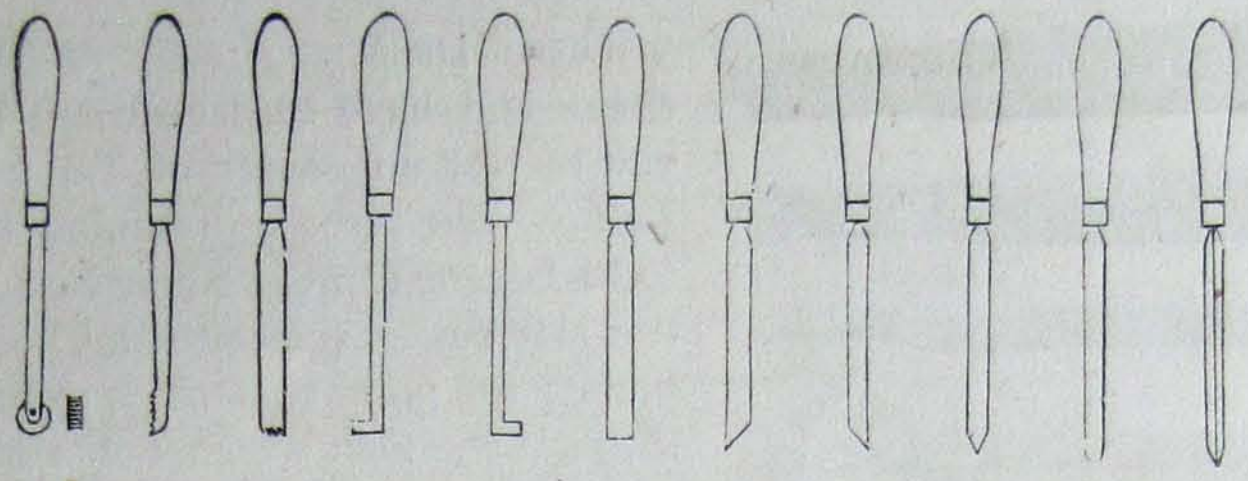
Size— 1-8 3-16 1-4 3-8 1-2 5-8 3-4 7-8 1 1 1-4 1 1-2 1 3-4 2 inch
Price—.32 .32 .32 .36 .40 .43 .51 .58 .65 .85 $1.11 $1 31 $1.60 each

TURNER'S SIZERS.



Price, - - - - - - - $2 00 each

HAND TURNING TOOLS.



1 2 3 4 5 6 7 8 9 10 11

No. 1. Milling Tool, one wheel, $1.00; extra wheels, 30c each.

Nos. 2, 3. Chasers, for cutting screws from 10 to 48 threads to the inch, 75c per pair.

Nos. 4, 5. Bent Inside Tools, for brass, ivory, hard wood, etc., 25c each.

No. 6. Flat Tools, for brass, ivory, hard wood, etc., $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$-inch, 25c each.

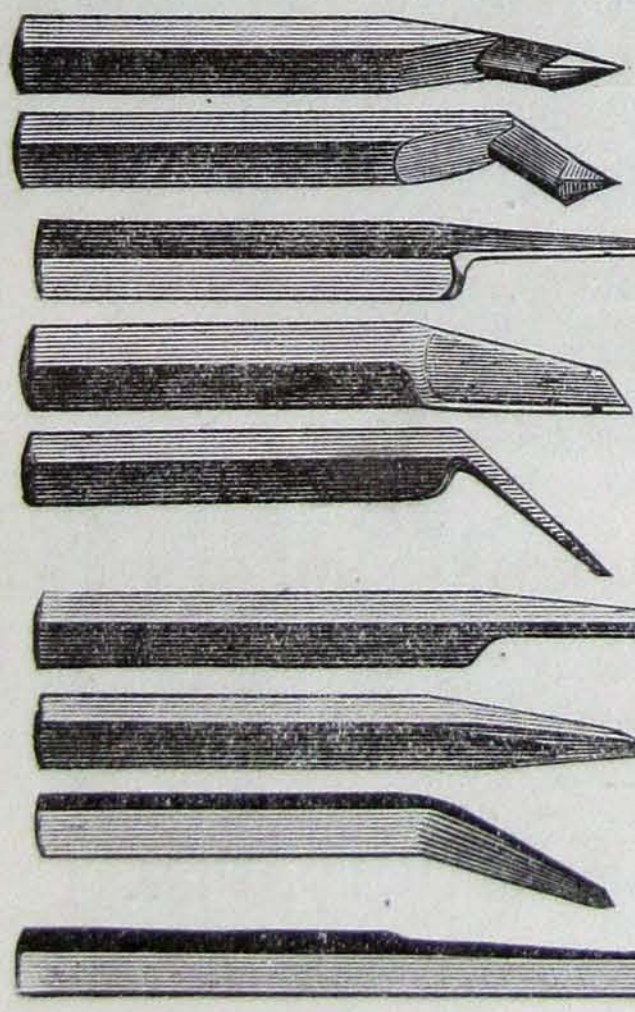
Nos. 7, 8. Side Tools, right and left, for brass, ivory, hard wood, etc., $\frac{1}{4}$, $\frac{1}{2}$ inch, 25c each.

No. 9. Point Tools, for brass, ivory, hard wood, etc., $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ inch, 25c each.

No. 10. Round Point Tools, for brass, ivory, hard wood, etc., $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ inch, 25c each.

No 11. Square Gravers, for metal, 1-8. 3-16 and 1-4inch, 25c each.

LATHE TOOLS.



Right-Hand Diamond Point.

Left-Hand Diamond Point.

Right-Hand Side Tool.

Left-Hand Side Tool.

Bent Right-Hand Side Tool.

Cut-off Tool.

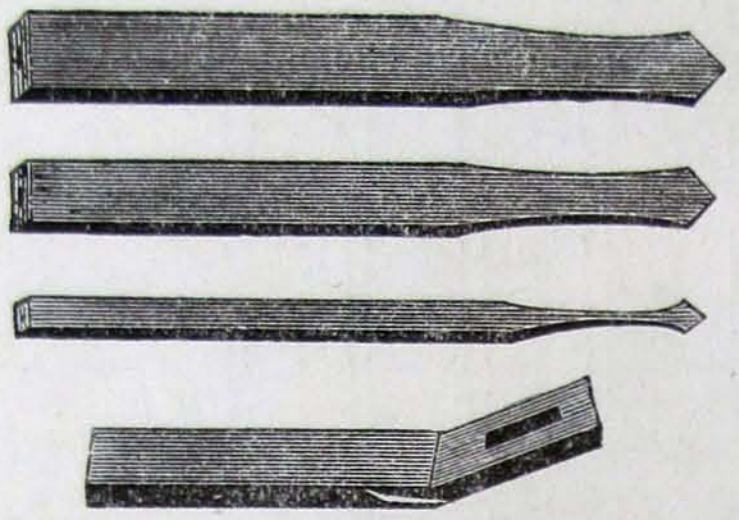
Thread Tool.

Bent Thread Tool.

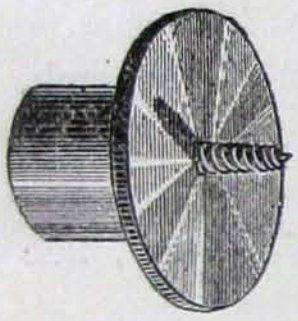
Inside or Boring Tool.

Size of Steel.....	1-4x1-2	5-16x5-8	3-8x34	inch
Price.....	30c.	30c.	40c.	each

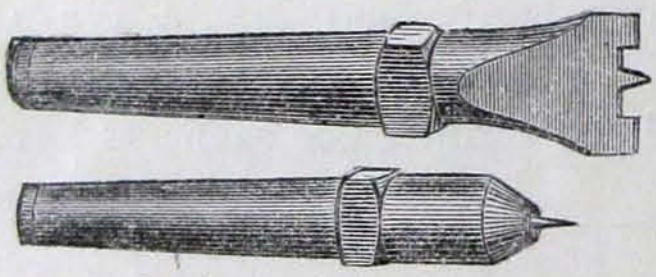
CHUCK DRILLS.



These Drills are made of Flat Tool Steel, and have center drilled in back end to rest on center of Tail Stock of Lathe. The piece represented below is to be fastened in the Slide Rest, so that the slot comes opposite the hole to be bored; the point of Drill is to be passed through the slot, which holds it steady, while the work is revolved by the Lathe. In this way a very straight and true hole may be made. We have these drills in sets of seven, suitable for drilling from $\frac{1}{8}$ to $\frac{1}{2}$ inch hole. The drills are all 5 inches long. Price per set, including holder, $2.00. Larger sizes made to order.



Screw Chuck.....$1 50 each



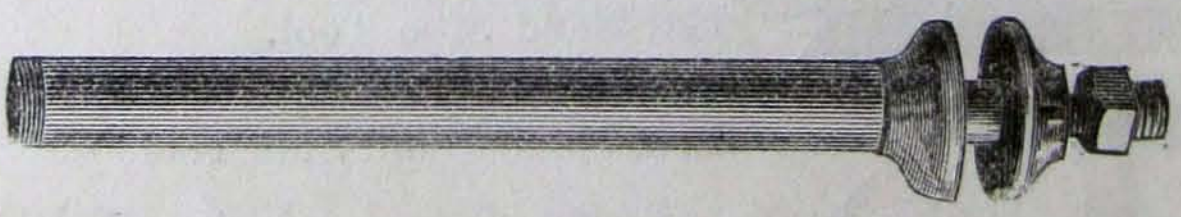
Spur Center..... 1 50 each

Cup Center..... 1 50 each

Square Center, for iron..... 1 50 each

STEEL LATHE ARBORS.

FOR HOLDING SAWS, EMERY WHEELS, ETC.



Diameter.....	1-2	5-8	3-4	inch
Price.....	$1 75	$2 50	$3 00	each

WESTCOTT'S PATENT COMBINATION LATHE CHUCK.

The advantage in these Chucks consists in not only making the jaws reversible, by which arrangement the small-sized Chucks can be used with facility in holding screws, pipes and drills, but also in making them act independently

of each other when required, as well as to act concentrically and simultaneously. Thus the jaws are both *Universal* and *Independent.* This chuck is therefore enabled to seize and hold firmly, round, oval, oblong, or other eccentric shapes, as to hold work in an eccentric position.

Fig. 1

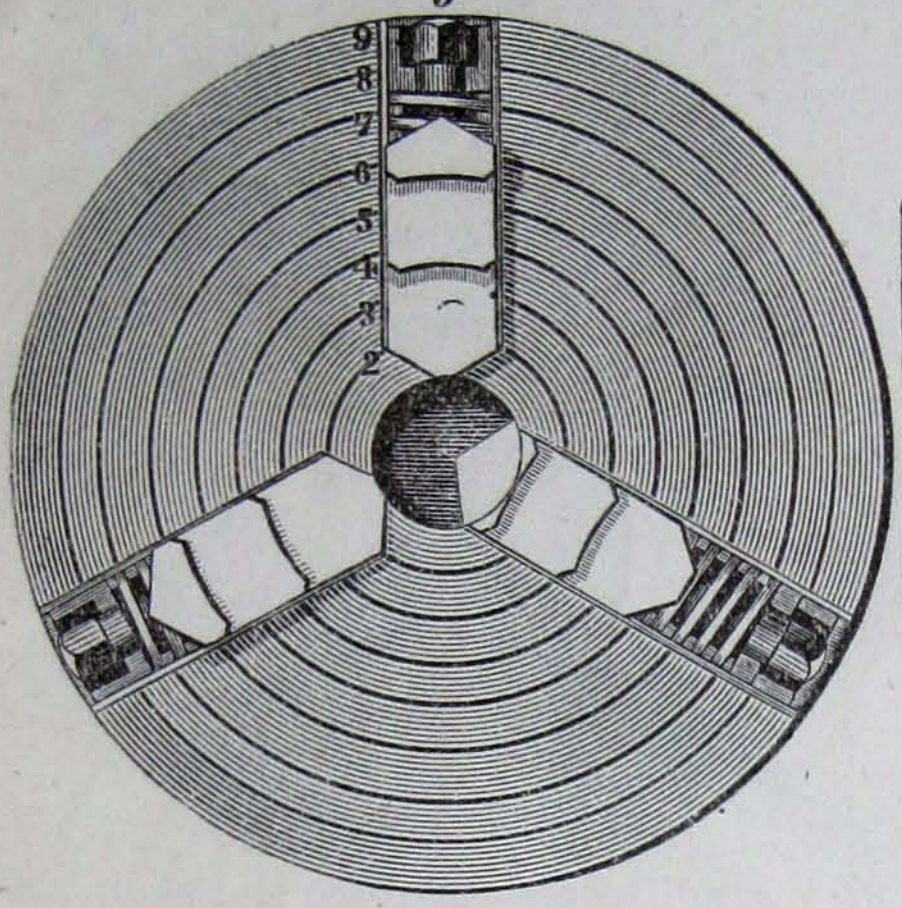


Fig. 2

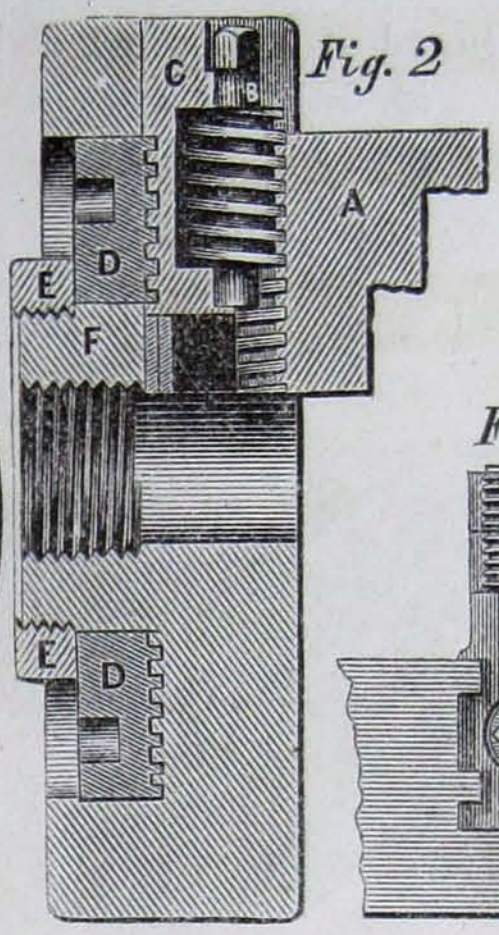


Fig. 3

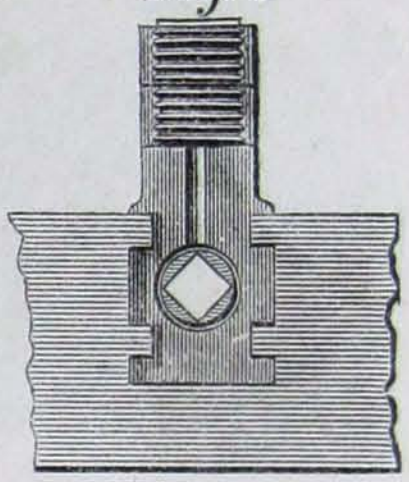


Fig. 1 is a front view of the Chuck with one of the jaws reversed.

Fig. 2 is a verticle section showing the manner in which the Ring, D engages in Box, C; also showing the position of Screw, B.

Fig. 3 is a section of the Chuck showing end of Screw, and Box C; also the strong and durable manner in which all the parts are secured to the body of the Chuck. All Screws and the Boxes carrying the Jaws are made of the best cast steel, the Jaws, Wrenches, and Scroll Rings of the best hammered iron, made for us especially for this work. The Jaws and all wearing parts are thoroughly case hardened.

Fig 4.

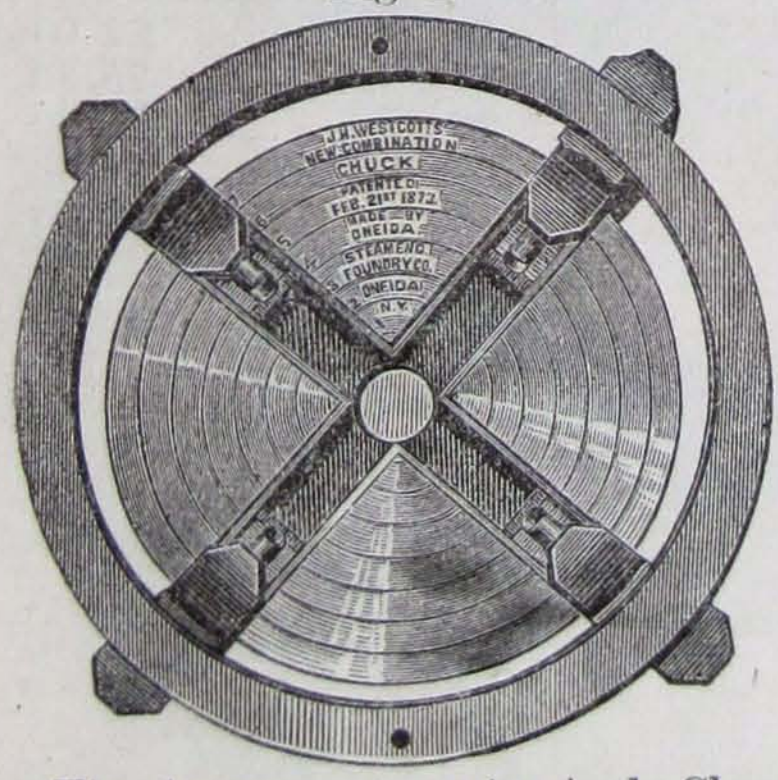


Fig. 5.

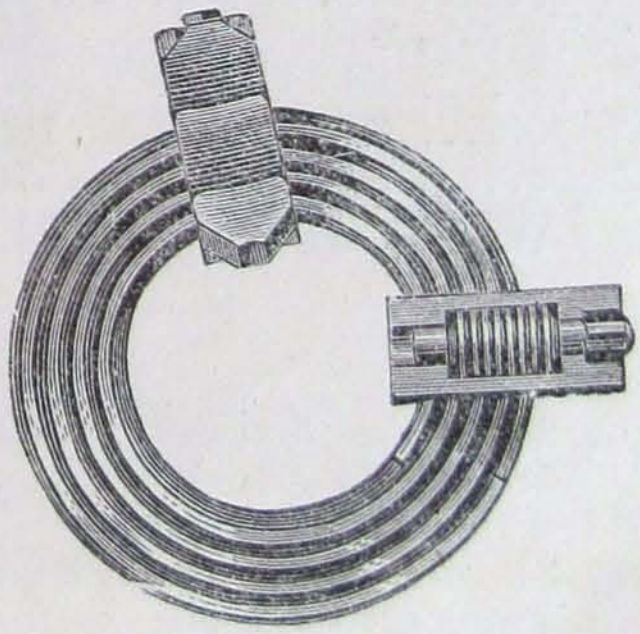


Fig. 4 represents a nine-inch Chuck holding a twelve-inch ring. In this position the ring admits of turning on face and inside.

Fig. 5 shows the inside of scroll ring with steel box, and the steel screw by using which the independent action of the Jaws is obtained. We wish to call attention to the fact that this scroll ring is not made of cast iron, but instead, is made of very superior quality of wrought iron, made especially for this purpose. There are now in use about five thousand of these Chucks, and we have never heard of the failure or breaking of a single box or scroll.

Fig. 6. Fig. 7.

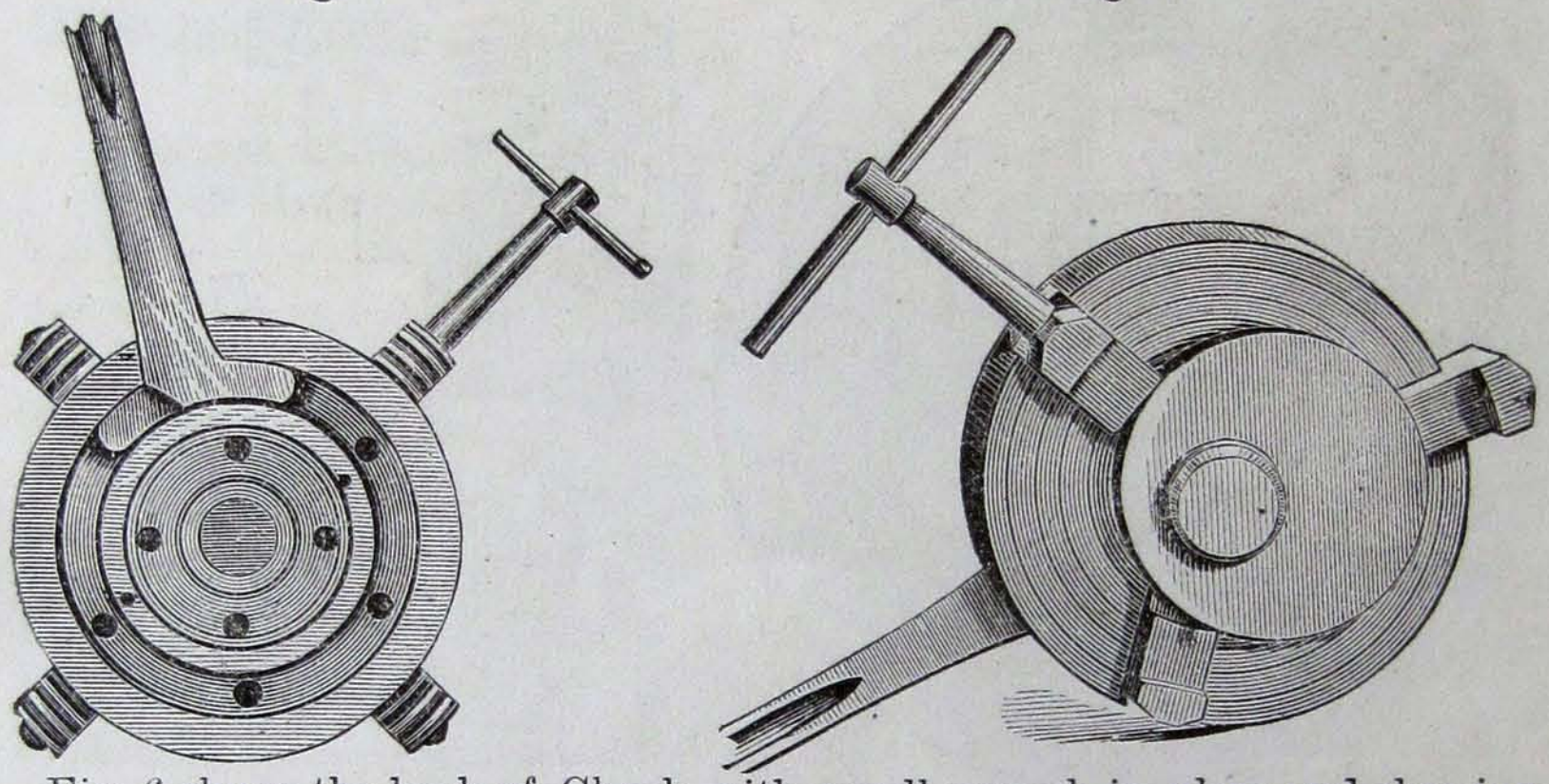
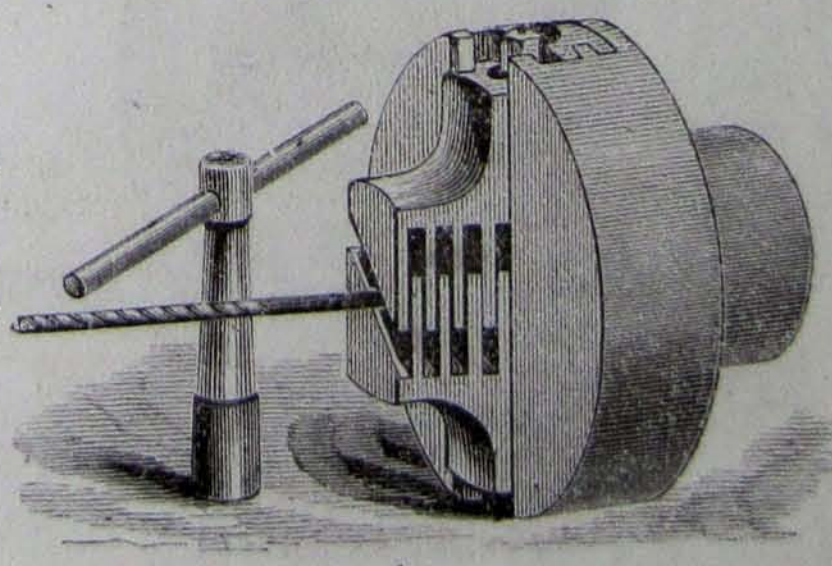


Fig. 6 shows the back of Chuck with scroll wrench in place and showing the boxes in which are imbeded the independent screws, also the key wrench attached. The scroll ring has a scroll thread cut on its back that corresponds with and engages in the thread shown on the bottom of box.

Fig. 7 shows a Chuck holding ring in eccentric position, with key and scroll wrenches attached.

THREE JAWS.				FOUR JAWS.			
Diameter.	Will hold Inside Jaws.	Price.		Diameter.	Will hold inside Jaws.	Price.	
4 inch	5 inch	$22	00	4 inch	5 inch	$25	00
6 "	8 "	26	00	6 "	8 "	32	00
9 "	12 "	34	00	9 "	12 "	42	00
12 "	15 "	44	00	12 "	15 "	56	00
15 "	18 "	52	00	15 "	18 "	64	00
18 "	21½ "	62	00	18 "	21½ "	75	00
21 "	26 "	80	00	21 "	26 "	95	00
24 "	30 "	100	00	24 "	30 "	120	00
30 "	36 "	170	00	30 "	36 "	200	00

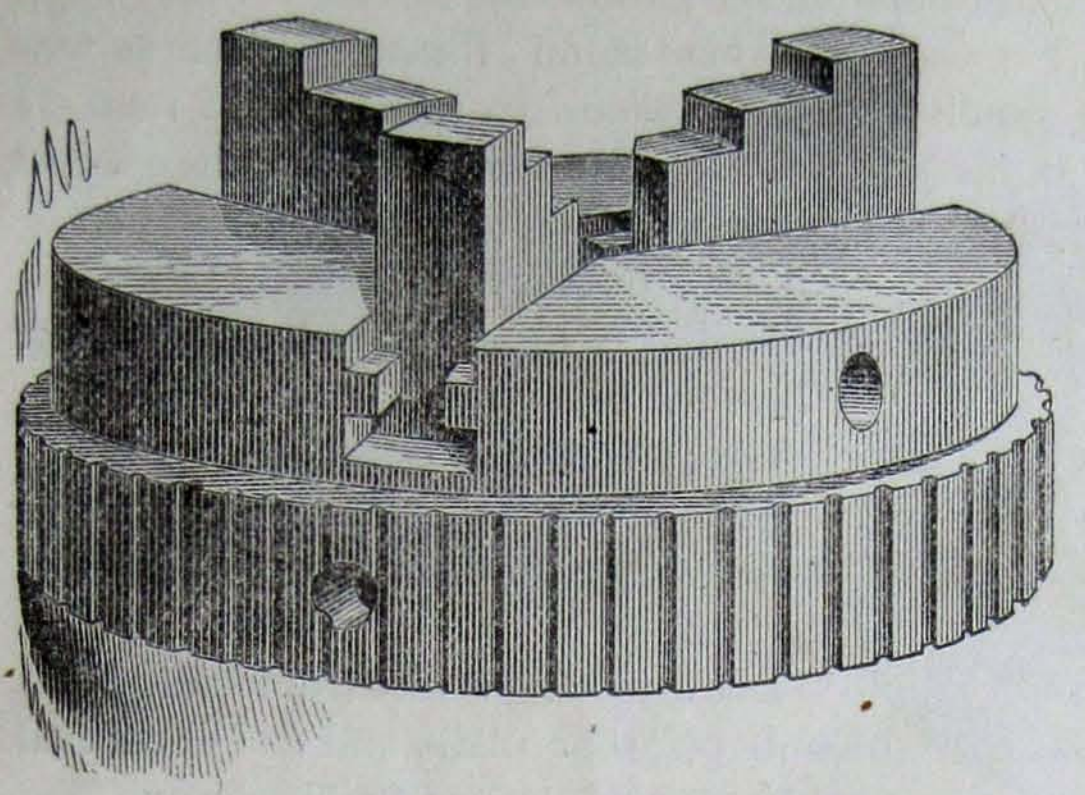
WESTCOTT'S LITTLE GIANT DRILL CHUCK.



No 1, 2½ inches diameter; holds from 0 to ½ inch.
Price, $9 00 each.

No. 2, 3½ inches diameter; holds from 0 to 1 inch.
Price, $10.00 each.

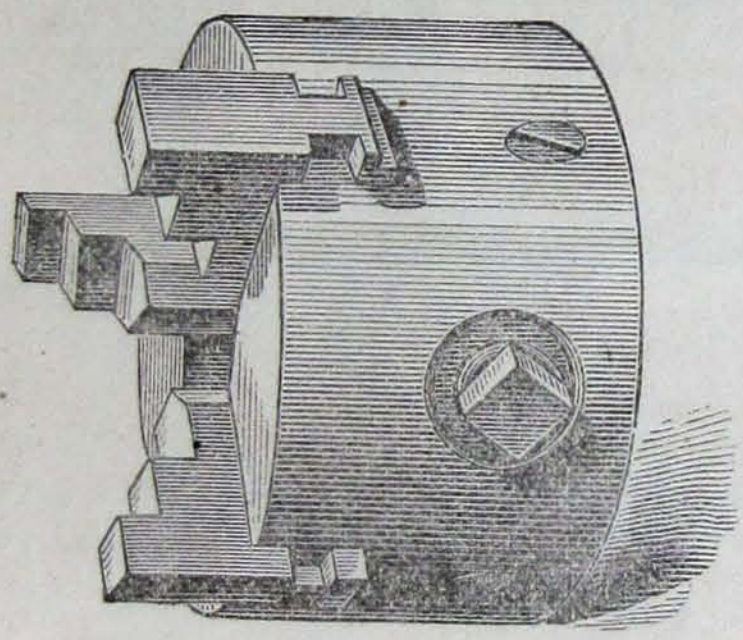
AMATEUR LEVER CHUCK.



Made only in one size 4 inches in diameter, is especially for light work and foot lathes, being very light in weight, still it is well made and of good material. It is attached to the lathe by a face plate, or can be screwed on the spindle. In ordering please say if you want No. 1 or No. 2 Jaws, those shown in the Chuck being No. 1 Jaws.

Price, with either No. 1 or No. 2 Jaws.....$7 00
Price, with two sets of Jaws..... 8 50
Levers, Screws, etc. included.

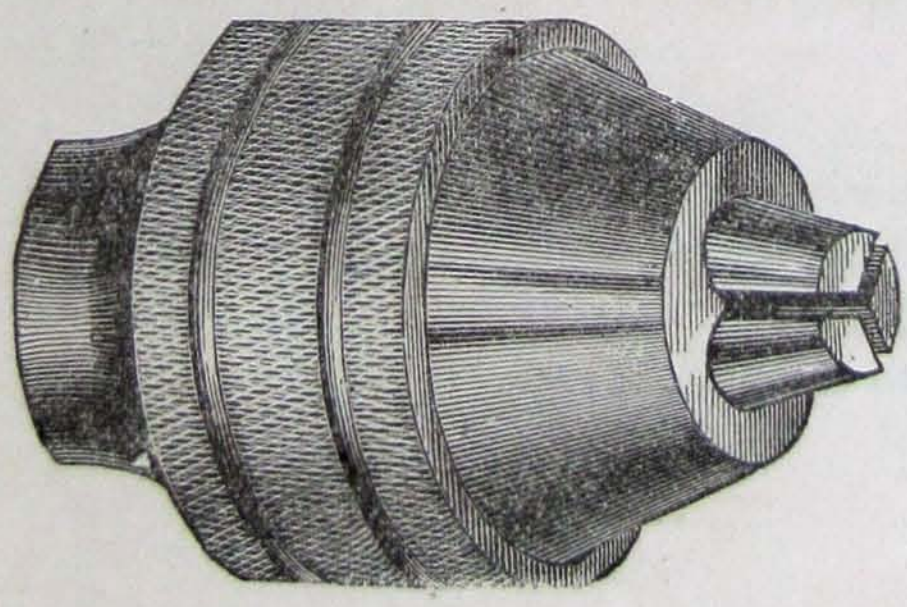
AMATEUR CHUCK.



DIAMETER, TWO INCHES.

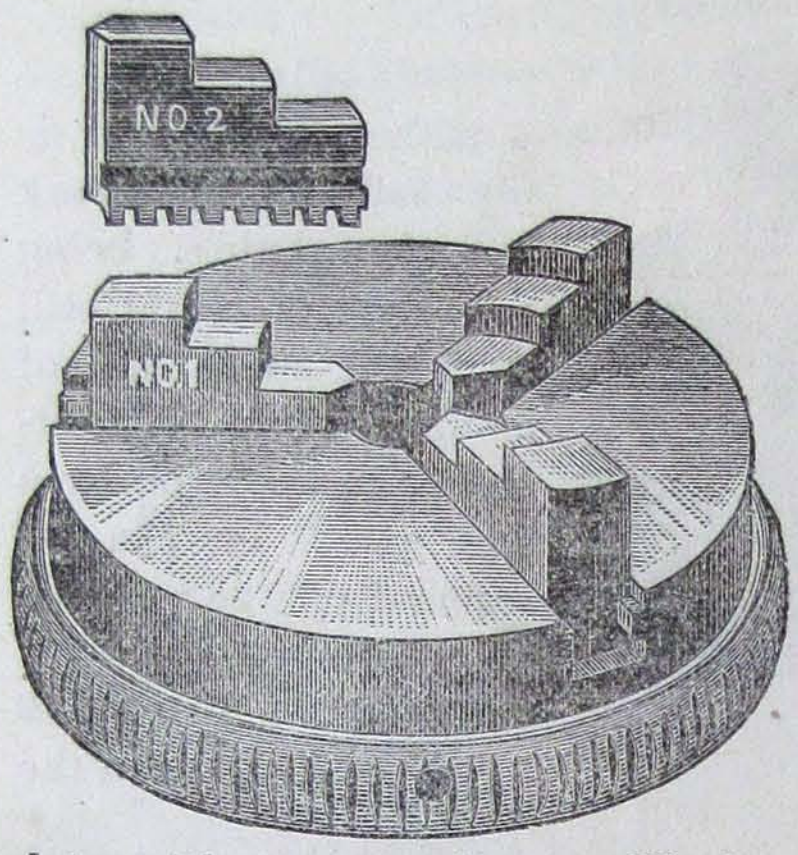
Especially adapted to Foot Lathes, and as a Drill Chuck for general machinists' and brass and wood-workers' use, it has no superior in quality or price. It can be fitted with ease to any lathe or drill machine, either with a taper plug or a face-plate, holes being tapped in the back and screws furnished with each chuck. It will hold pieces from 1 1-16 to 2 1-2 inches in diameter.....$6 00
With reverse jaws, holding drills 1-64 to 5-8 diameter..... 6 00
With both sets of jaws..... 7 00

THE ALMOND DRILL CHUCK.



This Chuck will center and hold drills with a firm grip, and is one of the best chucks in the market.
To hold 0 to 3-16.....$5 00
To hold 0 to 5-16..... 5 00
To hold 0 to ¼..... 8 00

CHAMPION CHUCK.



This is an illustration of a new Chuck, made in three sizes, 2 inch, 2½ and 3 inches in diameter, to operate by hand or lever, and designed specially for foot and light power Lathes.

It is very light, but still very strong, the shell being made of malleable iron, tough, strong and durable.

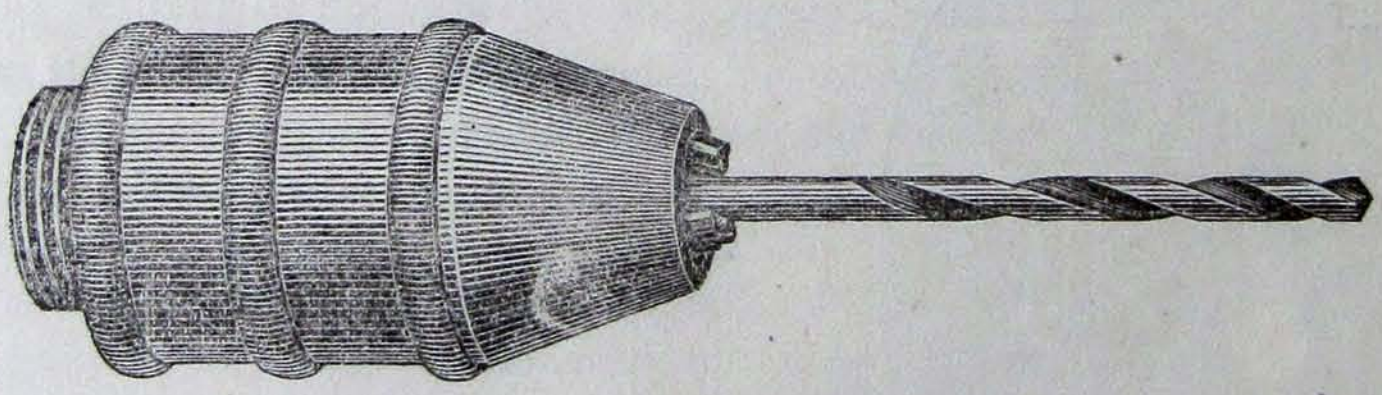
Jaws of steel, with steps in the usual form, either No. 1 or No 2, or both, if desired.

Back piece of cast iron, screwed to hub of front plate, and either reamed with taper hole, or fitted to receive face plate, with screws to fasten. Workmanship first-class in every particular.

Price (including Levers and Screws),

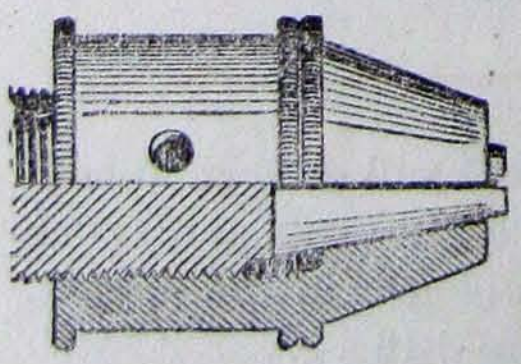
With either No. 1 or No. 2 Jaws, 2-inch, $4 50; 2½-inch, $5 00; 3-inch, $5 50
With both sets of Jaws, " 5 75; " 6 25; " 6 75

BEACH PATENT DRILL CHUCK.



No. 0, holding from 0 to ⅛-inch diameter (for jewelers), - - $ 8 00
" 1, " " 0 to ¼ " " - - - - - - 8 00
" 2, Stetson's Improved, holding from 0 to ⅜ inch diameter, - 8 50
" 3, holding from 1-6 to ½-inch diameter, - - - - - 10 00
" 4, " " 3-16 to ⅝ " " - - - - - 11 00

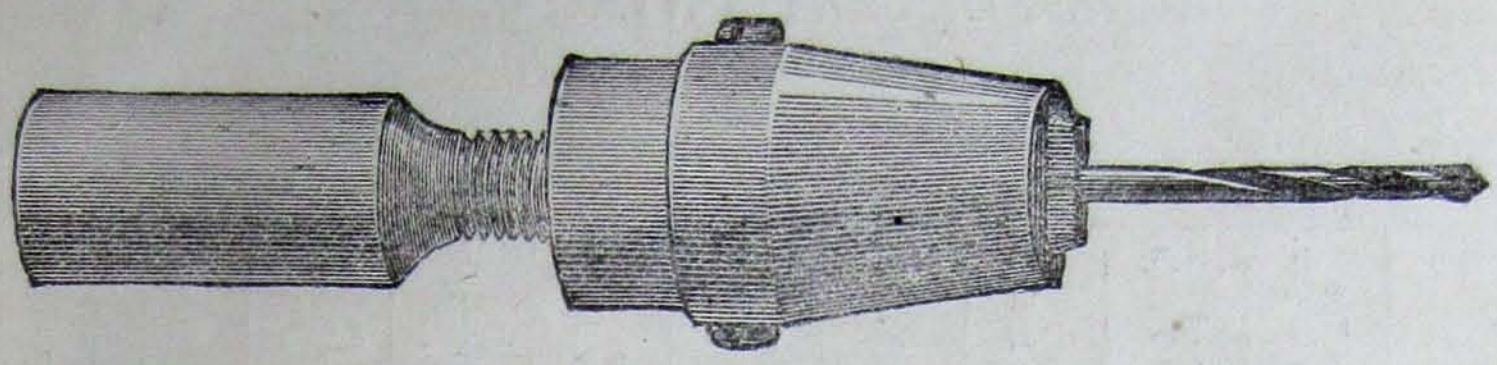
OLD RELIABLE SELF-CENTERING DRILL-CHUCK.



This is a strong and cheap chuck. Cut gives a cross sectional view, showing its inner construction.

To hold 1-16 to ⅜ $3 00
To hold 0 to ⅛, brass 75

STAR CHUCK.

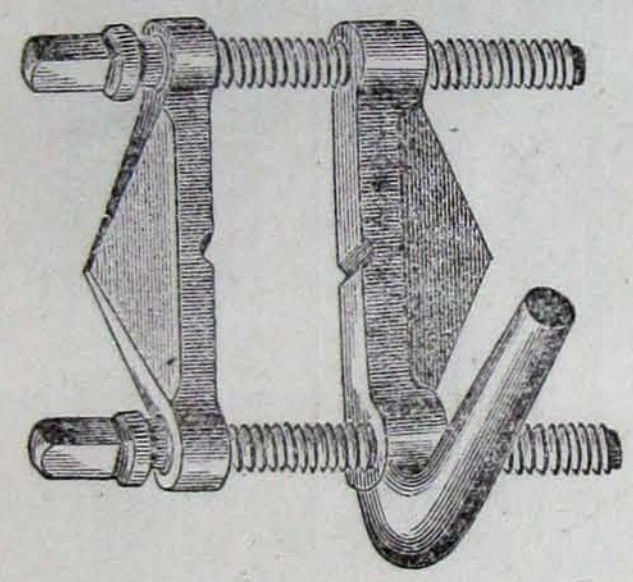


No. 1, with Shank ½ inch in diameter and 2 inches long, holds Drills from 1-64 to ⅛ inch. Price, $1.25 each.

No. 2, with Shank ⅝ inch in diameter and 3½ inches long, holds Drills from 1-32 to ¼ inch. Price, $2 00 each.

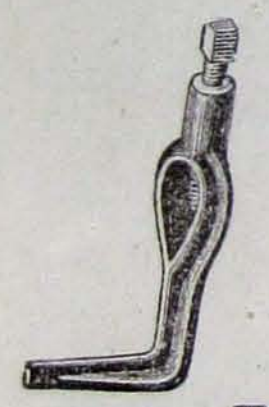
These Chucks are simple in construction, strong and durable, and warranted to hold the MORSE TWIST DRILLS firmly without danger of breaking. The Shanks (or Mandrels) are centered so they can easily be fitted to any lathe desired. The above cut represents No. 1 full size (except in length of Shank)

LATHE DOGS.



STEEL CLAMP DOG.

No. 1.	1¾	inch	between	Screws.....	$1 50
" 2.	2¼	"	"	"	2 00
" 3.	2¾	"	"	" ..	2 50
Price per set of three					5 50

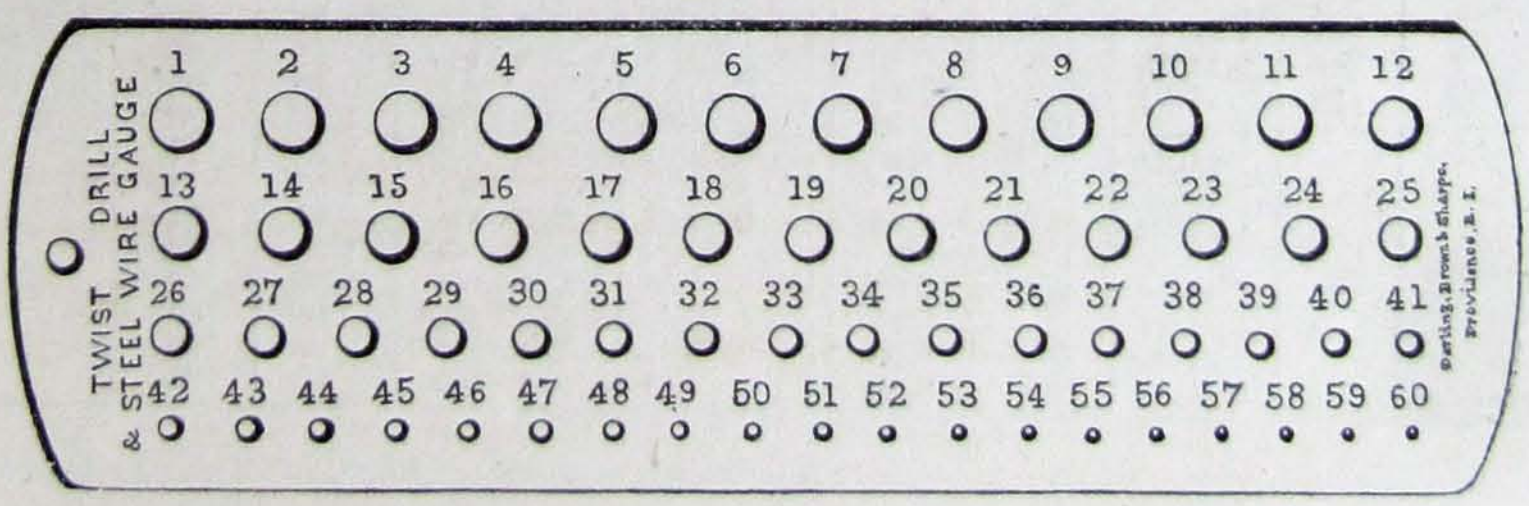


COMMON DOG:

¼	inch - - - - - - - - - -	25c.
⅜	" - - - - - - - - - -	25c.
½	" - - - - - - - - - -	25c.
¾	" - - - - - - - - - -	35c.
1	" - - - - - - - - - -	35c.
1¼	" - - - - - - - - - -	50c.
1½	" - - - - - - - - - -	50c.

TWIST DRILL AND STEEL WIRE GUAGE.

Price, $2.50.



MORSE PATENT TWIST DRILLS.

TAPER SHANKS.

No. 4, $2 50. No. 3, $2 00. No. 2, $1 55. No. 1, $1 30.

Sockets for American Taper.	Diameter of Drills.	Length in Inches.	Price Each,
	1-4	6⅛	$ 60
	9 32	6¼	65
	5-16	6⅜	70
	11-32	6½	75
	3-8	6¾	80
	13-32	7	85
	7-16	7¼	90
	15-32	7½	95
	1-2	7¾	1 00
	17-32	8	1 10
	9-16	8¼	1 20
	19-32	8½	1 30
	5-8	8¾	1 40
	21-32	9	1 50
	11-16	9¼	1 60
	23-32	9½	1 70
	3-4	9¾	1 85
	25-32	9⅞	2 00
	13-16	10	2 15
	27-32	10¼	2 30
	7-8	10½	2 45
	29-32	10⅝	2 60
	15-16	10¾	2 75
	31-32	10⅞	2 90
1		11	3 00
1	1-32	11⅛	3 20
1	1-16	11¼	3 40
1	3-32	11½	3 60
1	1-8	11¾	3 80
1	5-32	11⅞	4 00
1	3-16	12	4 20
1	7-32	12⅛	4 40
1	1-4	12½	4 50
1	9-32	14⅛	4 65
1	5-16	14¼	4 80
1	11-32	14⅜	5 00
1	3-8	14½	5 20
1	13-32	14⅝	5 40
1	7-16	14¾	5 60
1	15-32	14⅞	5 80
1	1-2	15	6 00
1	17-32	15⅛	6 30
1	9-16	15¼	6 60
1	19-32	15⅜	6 90
1	5-8	15½	7 20
1	21-32	15⅝	7 50
1	11-16	15¾	7 80
1	23-32	15⅞	8 10
1	3-4	16	8 40
1	25-32	16⅛	8 60
1	13-16	16¼	8 80
1	27-32	16⅜	9 00
1	7-8	16½	9 20
1	29-32	16½	9 35
1	15-16	16½	9 50
1	31-32	16½	9 65
2		16½	9 80

No. 5, $4 00. No. 4, $3 50. No. 3, $3 00. No. 2, $2 50. No. 1, $2 20. No. 2, $1 80.

STRAIGHT SHANKS.

Diameter of Drills.	Length in inches.	Price per Dozen.	Price Each.
1-16	2½	$1 00	09c
5-64	2⅝	1 10	10
3-32	2¾	1 20	11
7-64	2⅞	1 30	12
1-8	3	1 45	13
9-64	3⅛	1 60	15
5-32	3¼	1 80	16
11-64	3⅜	2 00	18
3-16	3½	2 20	20
13-64	3⅝	2 40	21
7-32	3¾	2 65	23
15-64	3⅞	2 90	26
1-4	4	3 15	28
17-64	4⅛	3 40	30
9-32	4¼	3 65	32
19-64	4⅜	3 90	35
5-16	4½	4 20	37
21-64	4⅝	4 50	40
11-32	4¾	4 80	42
23-64	4⅞	5 10	45
3-8	5	5 40	48
25 64	5⅛	5 70	50
13-32	5¼	6 00	53
27-64	5⅜	6 40	55
7-16	5½	6 80	59
29-64	5⅝	7 20	63
15-32	5¾	7 50	65
31-64	5⅞	7 75	67
1-2	6	8 00	70

NUMBERED SIZES BY STUBS' STEEL WIRE GAUGE

Numbers by Gauge.	Length in Inches	Price per Dozen.	Price Each.
1 to 5	4	$2 35	22c
6 to 10	3 11-16	2 25	21
11 to 15	3 1-2	2 10	20
16 to 20	3 1-4	1 95	19
21 to 25	3 1-16	1 75	17
26 to 30	2 13-16	1 55	15
31 to 35	2 5-8	1 40	14
36 to 40	2 7-16	1 25	12
41 to 45	2 1-4	1 10	10
46 to 50	2 1-16	95	09
51 to 60	1 3-4	95	09
61 to 70	1 1-2	90	08

Parties ordering Taper Drills will please state whether *Morse* or *American Taper* is desired.

STEEL SOCKETS FOR TAPER SHANK DRILLS.

MORSE TAPER SOCKET.

No. 1. Holds 1-4 to 19-32 in.,	inclusive,	$1 20
No. 2. Holds 5-8 to 29-32 in.,	"	1 80
No 3. Holds 15-16 to 1 1-4 in.,	"	2 50
No 4. Holds 1 9-32 to 2 in.,	"	4 00

AMERICAN TAPER SOCKET.

No. 1. Holds 1-4 to 15-32 in.,	inclusive,	$1 35
No. 2. Holds 1-2 to 21-32 in.,	"	1 50
No. 3. Holds 11-16 to 7-8 in ,	"	2 00
No. 4. Holds 29-32 to 1 1-4 in.,	"	3 50
No. 5. Holds 1 9-32 to 2 in.,	"	4 00

PRICES OF DRILLS PER SET.

Set of Taper Shank Drills, $\frac{1}{4}$ to 1 in. varying by 16ths	$ 20 00
Set of Taper Shank Drills, $\frac{3}{8}$ to $1\frac{1}{4}$ in. varying by 16ths	34 50
Set of Taper Shank Drills, $\frac{3}{8}$ to $\frac{3}{4}$ in. by 32ds, $\frac{3}{4}$ to $1\frac{1}{4}$ in by 16ths	42 00
Set of Taper Shank Drills, $\frac{3}{8}$ to $\frac{3}{4}$ in. by 32ds, $\frac{3}{4}$ to 2 in. by 16ths	131 00
Set of Taper Shank Drills, $\frac{3}{8}$ to 2 in. by 32ds	240 00
Set Drills, Straight Shanks, 1 16 to $\frac{1}{2}$ in. by 64ths, mounted	10 00
Set Drills, Straight Shanks, 1-16 to $\frac{1}{2}$ in. by 32ds, mounted	5 40
Set Drills, from 60 to $\frac{3}{8}$ in , mounted	9 90
Set Drills, Steel Wire Gauge, from No 1 to 60, mounted	8 10
Half Set Drills, alternate Nos. from 1 to 60, mounted	4 30
Jewelers' Set of 36 Drills, No. 30 ($\frac{1}{8}$ in.) to No. 65, Steel Wire Gauge, mounted in a Mahogany case with cap	4 25

How to Order Machines—See Page 6.