

(No Model.)

3 Sheets—Sheet 1.

S. J. RANDALL.

SAW GUMMER AND SHARPENER.

No. 326,243.

Patented Sept. 15, 1885.

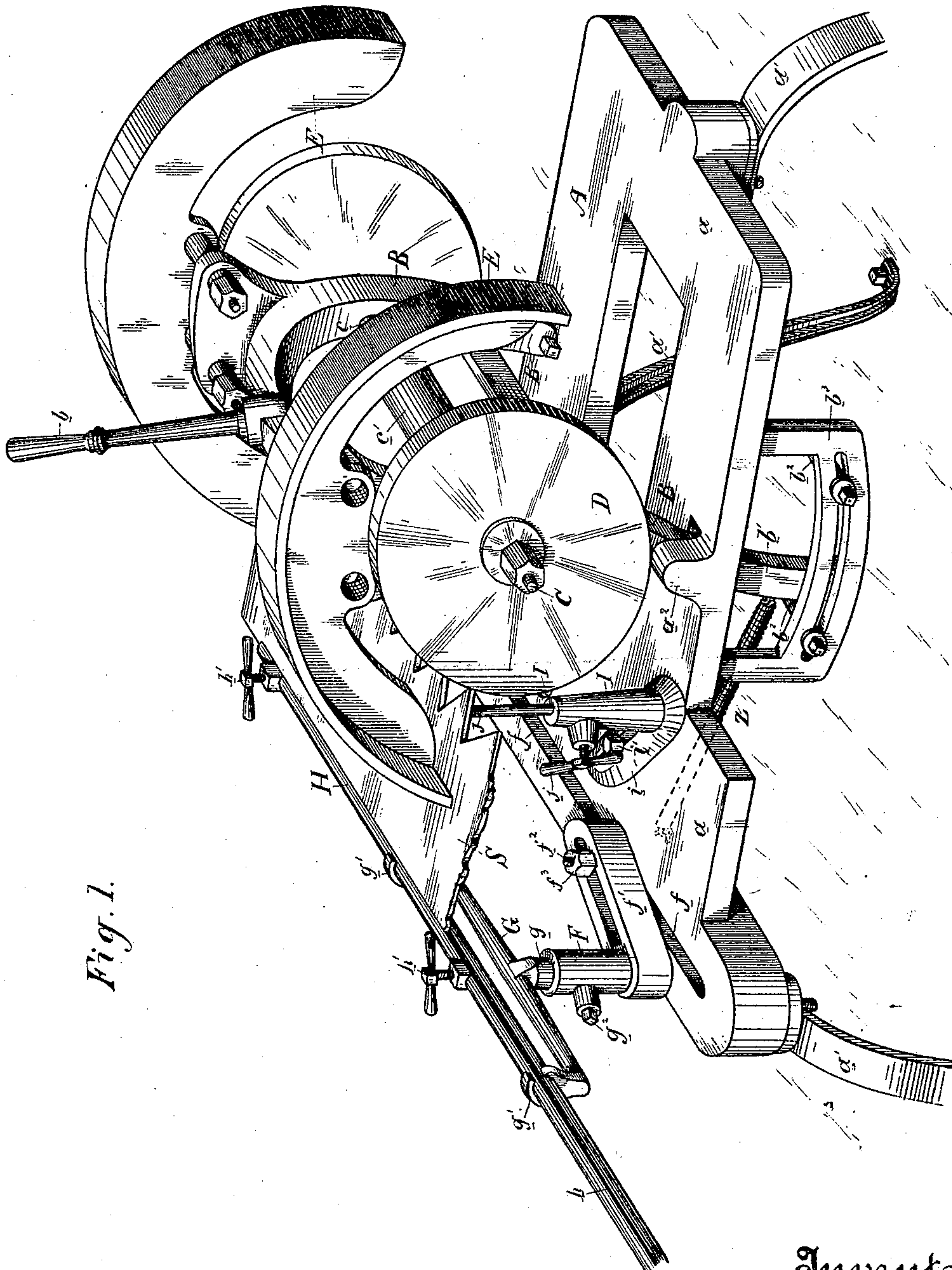


Fig. 1.

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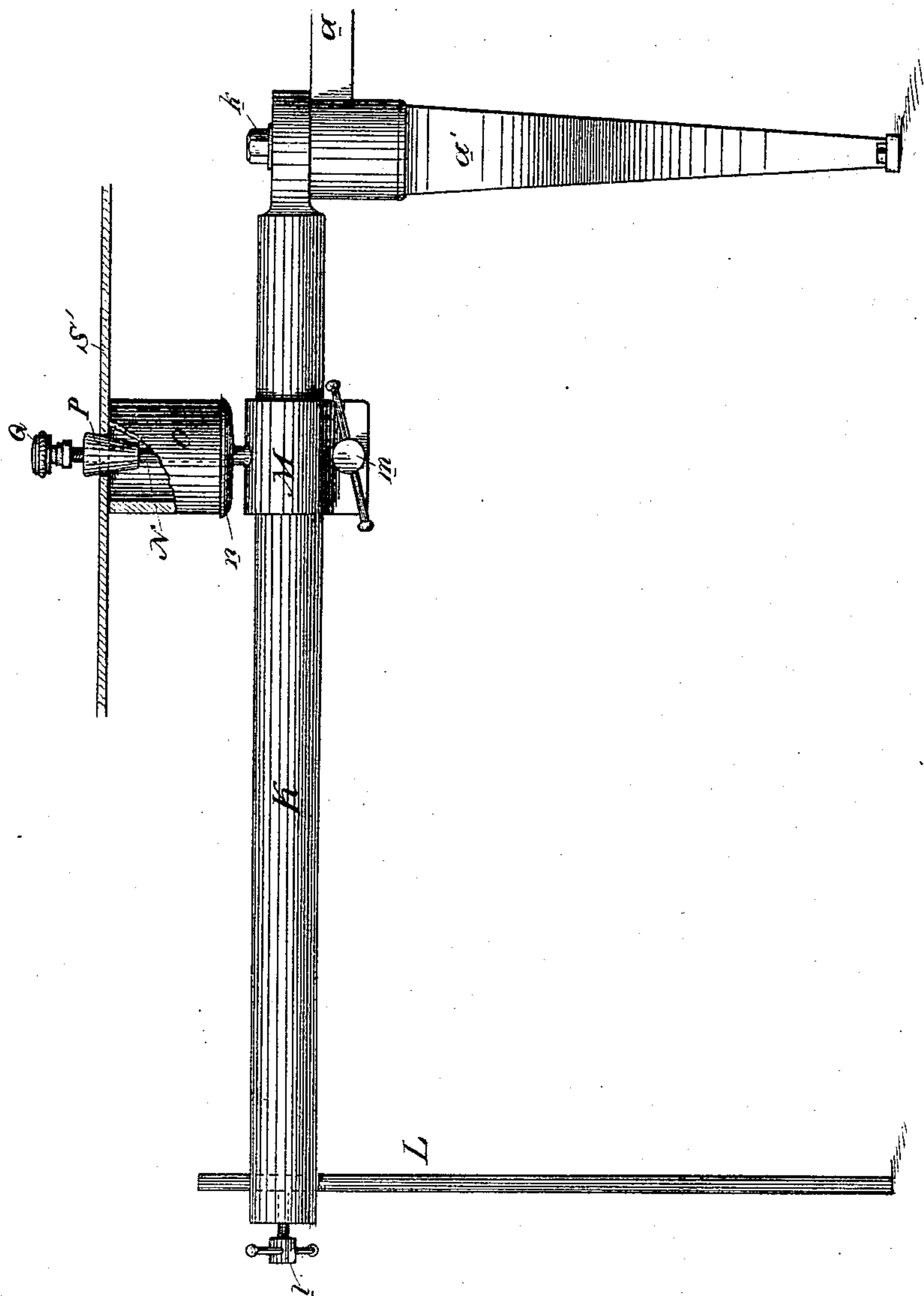
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Fig. 2.



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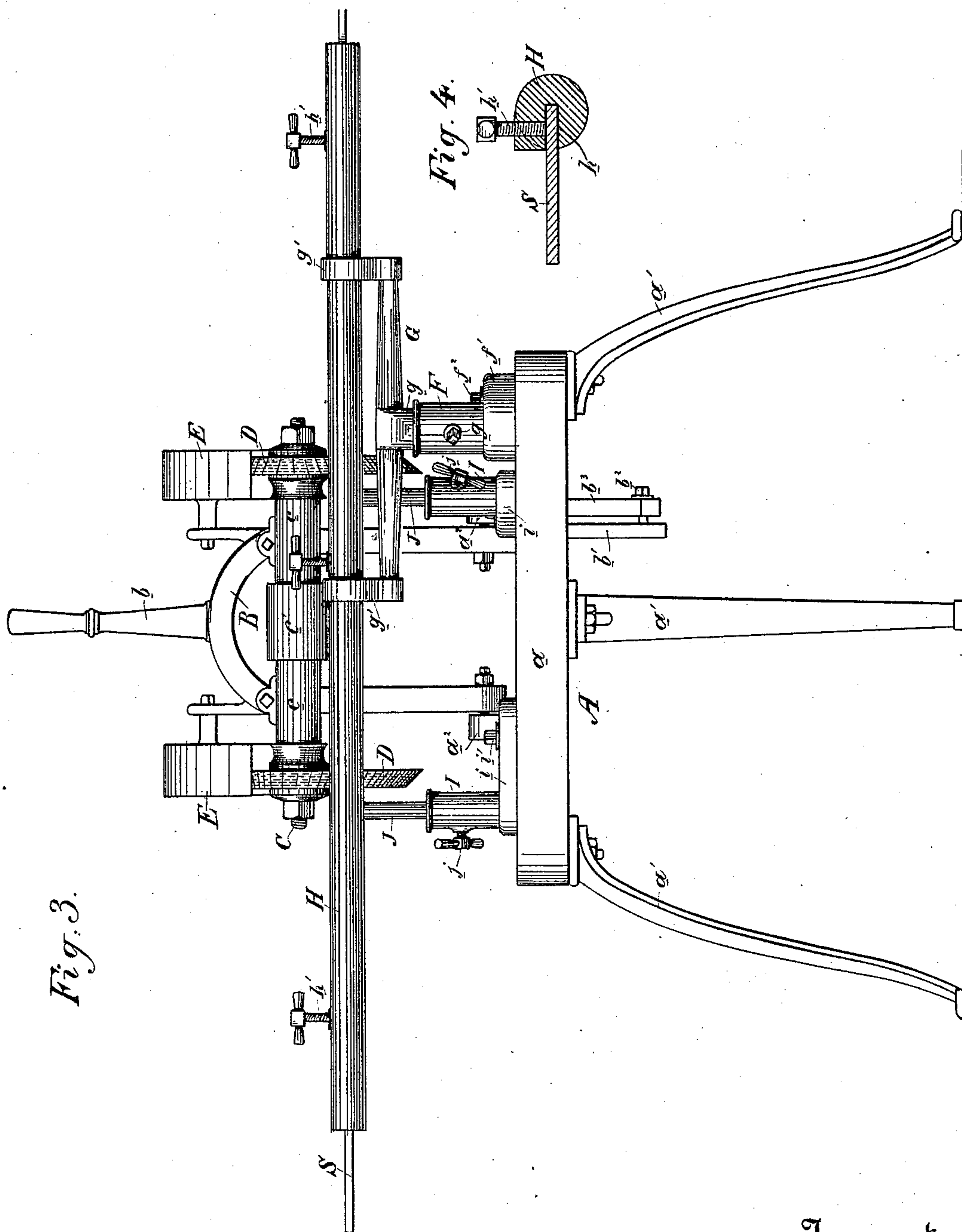
3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

SQUIRE J. RANDALL, OF MOODYVILLE, NEW WESTMINSTER, BRITISH COLUMBIA.

SAW GUMMER AND SHARPENER.

SPECIFICATION forming part of Letters Patent No. 326,243, dated September 15, 1885.

Application filed March 6, 1885. (No model.)

To all whom it may concern:

Be it known that I, SQUIRE J. RANDALL, of Moodyville, district of New Westminster, British Columbia, have invented an Improvement in Saw Grinders, Gummers, and Sharpeners; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to that class of machines for treating saws known as "grinders," "gummers," and "sharpeners;" and my invention consists in a table or stand, a swinging bracket pivoted thereto and carrying the driving-arbor with grinding-wheels, peculiarly-adjustable holders for long and circular saws, and adjustable supports for the blades of the saws.

It consists, further, in the combinations of these devices, in their peculiar and particular arrangement and construction, and in various details relating to their adjustments, all of which I shall hereinafter fully explain.

The object of my invention is to provide a machine of this class simple in its construction and effective in its operation.

Referring to the accompanying drawings, Figure 1 is a perspective view of my saw grinder, gummer, and sharpener. Fig. 2 is an elevation showing the modified parts for a circular saw. Fig. 3 is a front elevation.

Fig. 4 is a cross-section through the saw, its holder H, and a vertical section through screw h' .

A is the table or stand, consisting of the top a and legs a' .

B is a bracket or swinging frame of an approximately inverted-U shape, having an upwardly-extending handle, b . The legs of the bracket are pivoted to small lugs a^2 on the stand, whereby the bracket is adapted to move or swing back and forth on an arc through a vertical plane. One leg of the bracket is provided with an extension, b' , which projects below the pivotal line, and is limited by two studs or bolts, b^2 , set in a slotted arc, b^3 , secured to the stand. These bolts form stops, which may be adjusted in their slotted seat to approach or separate from each other, whereby the arc through which the bracket B is adapted to move may be shortened or increased, as may be desired.

A spring, Z, secured under the top a and to the extension b' , serves to hold the bracket back.

Mounted in bearings c on the bracket B is the arbor or shaft C, which carries on each end the grinding or emery wheels D. These are partially inclosed by the curved guards E. The center of the arbor carries a pulley, c' , from which a driving-belt (unnecessary herein to show) extends, whereby the arbor is rotated and the emery-wheels driven.

The top a of the stand is provided with a longitudinal slot, f , along its front. Over this rests a perforated cylinder or socket, F, the foot f' of which is slotted and receives a bolt, f^2 , which passes down through the slot f and takes a nut, f^3 . The socket may therefore have a rotary movement, with the bolt as a center, a linear movement on the bolt, and a linear movement with said bolt along the front of the stand.

G is a holder, consisting of a bar having a downwardly-extending leg, g , at its center, and upwardly-extending arms g' , having curvilinear faces, at its ends. The leg g fits down in the socket F, and is set by a screw, g^2 . The holder has therefore a rotary adjustment on its leg and a vertical linear adjustment in the socket.

H is a long bar which rests within the arms g' of the holder G, and is adapted to have a longitudinal adjustment therein. In the inner face or side of the long bar H is made a longitudinal groove, h , in which the back of the saw S is inserted, whereby the said bar becomes the saw-holder. The saw may move longitudinally in its groove, and is held or fixed in any desired position by the set-screws h' , which pass into the bar and bear upon the saw-blade.

I I are sockets somewhat similar to F, having slotted feet i , which receive a set-bolt, i' , passing into the stand. These sockets have therefore a rotary movement on their bolts, and also a linear movement by reason of their slotted feet.

In the sockets are fitted spindles J J, which may be vertically adjusted and fixed in a desired position by means of set-screws j . These spindles form supporters for the front

or inner portion of the saw-blade, and are for this purpose adjusted upwardly under the saw to support it.

Thus far the description has related to the manipulation of a long or gang saw.

In Fig. 2 I show the manner of handling a circular saw. The socket F, holder G, and saw-holder H are removed, and in place is substituted the bar K, one end of which receives a bolt, k , which passes down through the slot f in the top a , whereby said bar may have a rotary adjustment, and also a movement across the front of the stand, in a manner similar to the movement of the socket F. The outer end of the bar K is supported by a supplementary leg, L, which is set by a screw, l , in the end of the bar. Upon bar K is seated a spring or split sleeve, M, set by a screw-bolt, m . From this sleeve extends upwardly a spindle, N, having a disk, n , near its foot.

Pivoted or mounted on the spindle is a cylinder, O, the base of which rests on disk n . The circular saw S' rests upon top of the cylinder O, which forms a bearing for it.

Upon the top of spindle N is an inverted cone, P, which passes down into the central hole of the saw and forms a pivot-bearing for the saw. By reason of its conical shape it is adapted to fit the central apertures of different diameters. The cone is fixed by means of a nut, Q, threaded on top of the spindle and bearing down on top of the cone.

The operation of my machine is as follows: Referring to Fig. 1, in which the long or gang saw S is shown, it will be seen that said saw may be put in any suitable position for grinding, gumming, or sharpening. It can be adjusted longitudinally by its own movement in its grooved seat, by the movement of the long bar in its holder, and by the movement of the socket F, which carries these several parts. It can be adjusted to any inclination through a vertical arc by reason of the long bar turning in its bearings, and it can be adjusted vertically by raising the holder G in its socket. Its remaining adjustments are in an arc through a horizontal plane by reason of the holder G turning in the socket F, and the movement of said socket on its securing-bolt as a center, and, finally, a movement in a horizontal plane to or from the bracket by reason of the socket F moving on its slotted foot. The adjustments of the circular saw shown in Fig. 2 are as follows: a rotary movement on the conical bearing, a horizontal movement to or from the bracket by reason of the sleeve M sliding on the bar K, and a movement across the stand, being carried by the bar K moving in the slot f .

The adjustments of the blade-supporting spindles J J are obvious, as is also the swinging of the bracket carrying the emery-wheels.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a saw grinder, gummer, and sharpener, the inverted-U-shaped bracket B, the legs of

which are pivoted to a stand or table, one of said legs having an extension, b' , and the wheel-carrying arbor C, mounted in said bracket, in combination with the slotted arc b^3 on the stand, and the adjustable limiting-stops b^2 in said arc, between which the extension b' of the bracket plays, substantially as and for the purpose herein described.

2. In a saw grinder, gummer, and sharpener, the table or stand A, having a slotted arc, b^3 , with the adjustable limiting-stops b^2 , in combination with the inverted-U-shaped bracket B, having a handle, b , and legs pivoted to the top of the stand or table, one of said legs having an extension, b' , playing between the stops b^2 , the spring Z, secured to the stand and to the extension, and the grinding-wheel-carrying arbor C, mounted in the bracket, substantially as herein described.

3. In a saw grinder, gummer, and sharpener, the vertically and rotary adjustable holder G and the socket F, in combination with the longitudinally and rotary adjustable grooved bar H, mounted in the holder and adapted to receive and hold the saw-blade, substantially as herein described.

4. In a saw grinder, gummer, and sharpener, the socket F, mounted on a table or stand, and the holder G, having leg g fitted in the socket and set by a screw, g^2 , and curvilinear-faced arms g' , in combination with the longitudinally-grooved bar H, mounted in the arms g' , and adapted to receive and hold the saw-blade, substantially as herein described.

5. In a saw grinder, gummer, and sharpener, the socket F, adapted to be adjusted in the arc of a circle and to various places on the stand or table on which it is mounted, in combination with the holder G, having leg g fitted in the socket, and arms g' , and the longitudinally-grooved bar H, mounted in the arms and carrying the saw-blade, substantially as herein described.

6. In a saw grinder, gummer, and sharpener, the stand or table A, having an elongated slot, f , in its top, and the socket F, having a slotted foot, f' , and a bolt, f^2 , passing through it and the slot f , in combination with the holder G, having leg g fitted in the socket and set by a screw, g^2 , and arms g' on its ends, and the longitudinally-grooved bar H, mounted in the arms and carrying the saw-blade, substantially as herein described.

7. In a saw grinder, gummer, and sharpener, the stand or table A, the swinging bracket B, pivoted to the stand and adapted to move forward and back through an arc in a vertical plane, and the arbor C, mounted in the bracket and carrying the grinding-wheels D, in combination with the adjustable socket F, the vertically and rotary adjustable holder G, and the longitudinally and rotary adjustable grooved bar H, carrying the saw-blade, all arranged and adapted to operate substantially as herein described.

8. In a saw grinder, gummer, and sharpener, the stand or table A, having a top, a , with

a longitudinal slot, f , in its front, the swinging bracket B, pivoted to the top a , and the arbor C, mounted in the bracket and having grinding-wheels D, in combination with the socket 5 F, having a slotted foot, f' , the bolt f^2 , passing through said foot, and the slot f in the top a , the holder G, having arm g' on each end, and leg g fitted in the socket and set by a screw, g^2 , and the longitudinally-slotted bar H, mount- 10 ed in the arms g' and carrying the saw-blade, substantially as herein described.

9. In a saw grinder, gummer, and sharpener, the adjustable grooved bar H, adapted to receive the back of the saw-blade, in combination with the adjustable spindles J J, adapted to support its front, the sockets I I, and set-screws j , substantially as herein described. 15

10. In a saw grinder, gummer, and sharpener, the combination of the table or stand A, the swinging handled bracket B, pivoted to the 20 stand, and carrying the wheel-driving arbor C, the adjustable socket F on the stand, the adjustable holder G in the socket, the adjustable longitudinally-grooved bar H in the holder and carrying the saw-blade, and the ad- 25 justable spindles J J, adapted to support the front or inner portion of the saw-blade, substantially as herein described.

In witness whereof I have hereunto set my hand.

SQUIRE J. RANDALL.

Witnesses:

A. J. MOUAT,

R. H. H. ALEXANDER, Jr.