

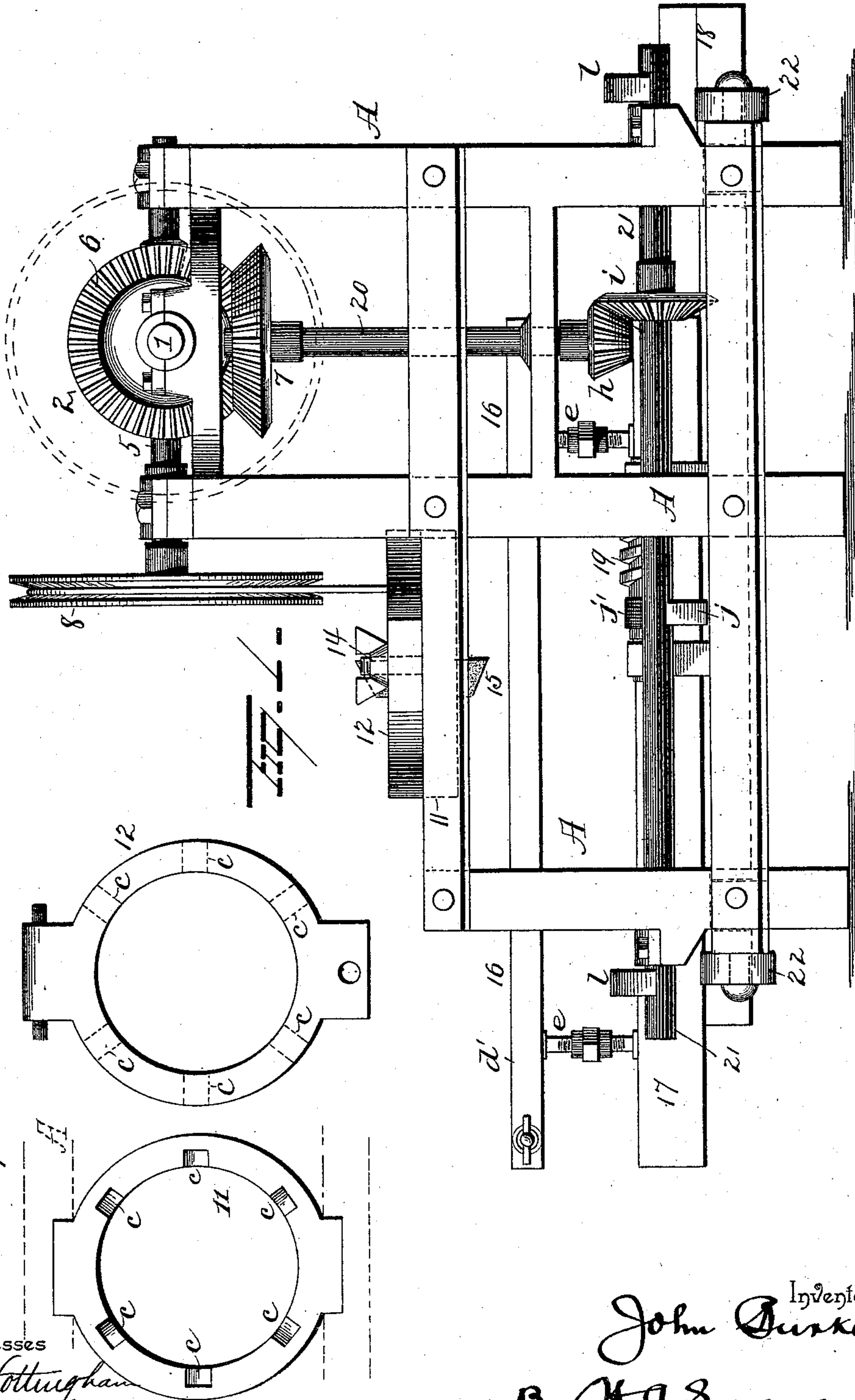
(No Model.)

3 Sheets—Sheet 1.

J. BURKE.
SAW SHARPENING DEVICE.

No. 572,470.

Patented Dec. 1, 1896.



Witnesses
E. J. Nottingham
G. F. Downing.

Inventor
John Burke
By H. A. Seymour
Attorney

(No Model.)

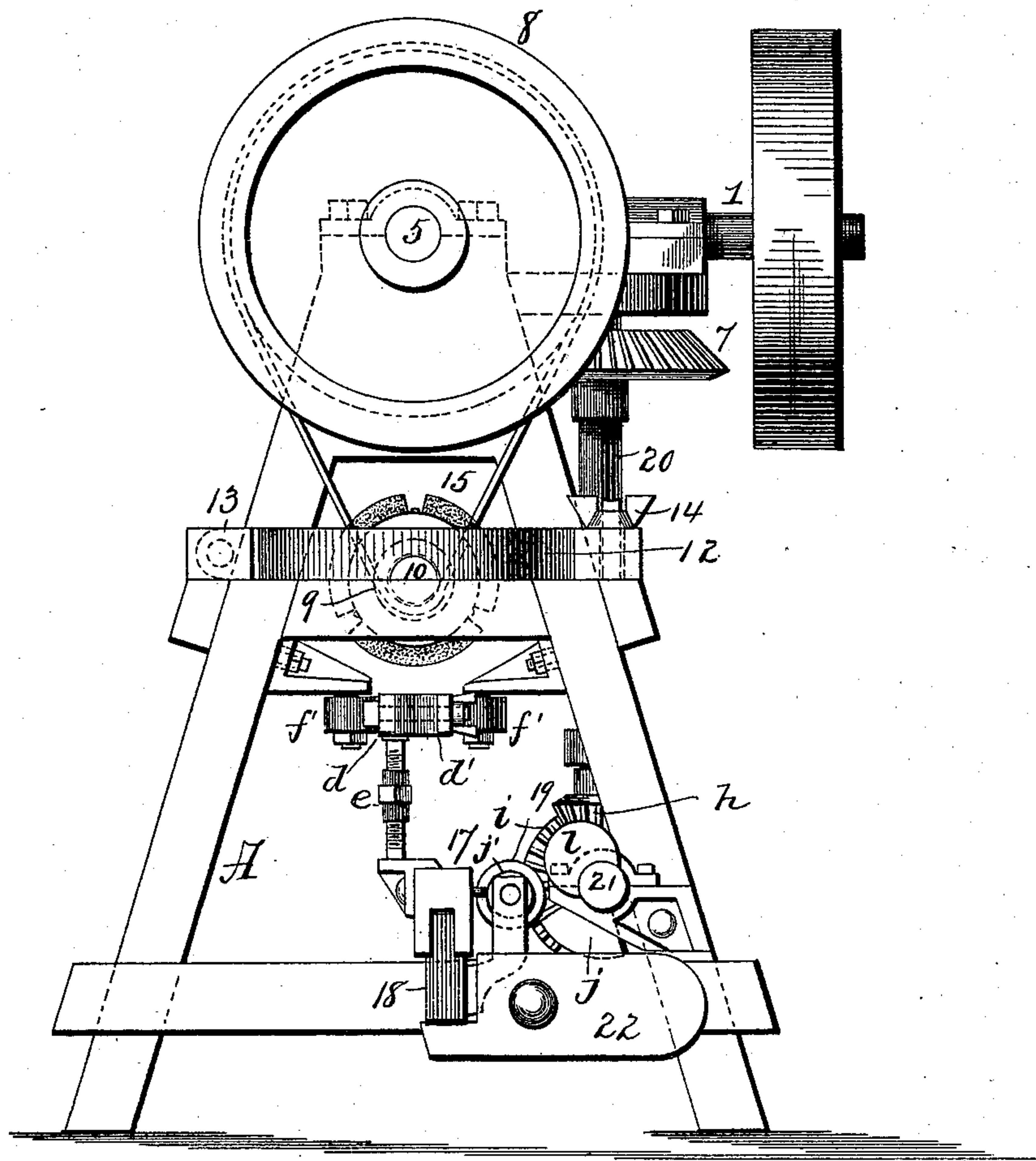
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Fig. 2.



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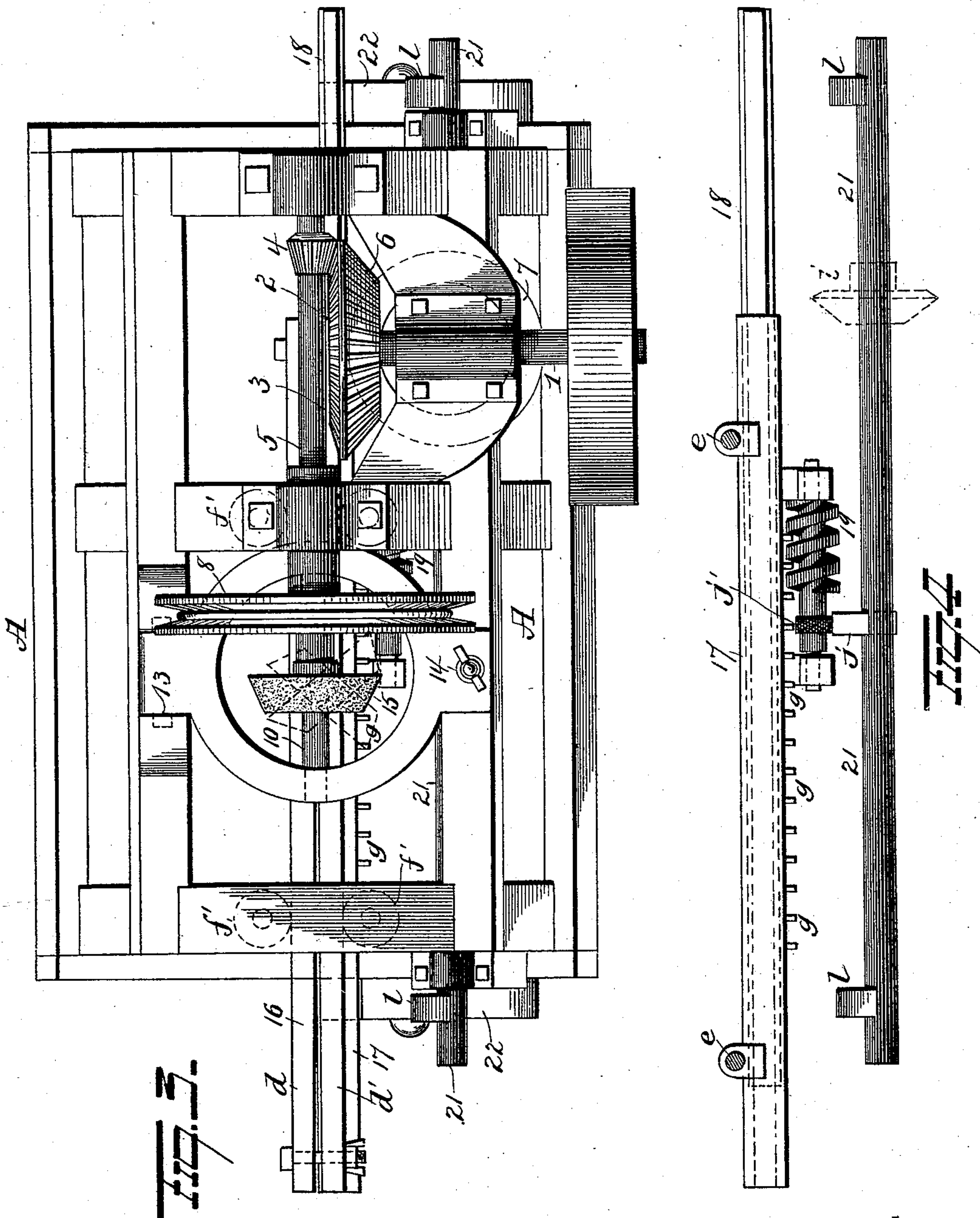
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UNITED STATES PATENT OFFICE.

JOHN BURKE, OF JANESVILLE, WISCONSIN.

SAW-SHARPENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 572,470, dated December 1, 1896.

Application filed March 27, 1896. Serial No. 585,079. (No model.)

To all whom it may concern:

Be it known that I, JOHN BURKE, a resident of Janesville, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Saw-Sharpening Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in saw-filing machines, the object of the same being to provide devices which will hold the saw steadily in position for filing, automatically remove the saw from the file, feed it forward a distance equal to the width of one tooth, and again bring the saw into contact with the file, and so throughout the entire length of the saw.

My invention consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of my improved machine. Fig. 2 is a view in end elevation of same. Fig. 3 is a plan view. Fig. 4 is a detached view of the mechanism for feeding the saw toward the file, and Fig. 5 is a detached view of the file-holding yoke.

A represents the frame of the machine, one end of which is slightly higher than the other end for carrying the file-operating wheels and shafts. Mounted in the extended portion is the drive-shaft 1, which can be driven either by power or crank and is provided on its inner end with the double miter-pinion 2. One face of this pinion 2 is provided with teeth 3, which mesh with the pinion 4 on horizontal shaft 5, while the outer face 6 of said pinion 2 has teeth which mesh with the bevel-pinion 7. The horizontal shaft 5 is mounted in bearings on the top of the frame and carries at one end the pulley 8, which latter carries a belt engaging the pulley 9 on the file-arbor 10.

The file-arbor 10 is mounted in a yoke composed of two parts 11 and 12, the lower part 11 of which is rigidly secured to the frame, while the upper section 12 is hinged at 13 and locked at its opposite side 14 by a set-screw or other equivalent device. The meeting faces of the sections 11 and 12 are provided with a plurality of bearings *c*, arranged in

pairs, whereby the arbor 10 can be adjusted at any angle, so as to bring the cutting edge of the file in proper relation to the teeth of the saw for giving them the proper bevel. This adjustment is accomplished by elevating the end of section 12 of the yoke and placing the shaft in the proper bearings *c*, after which the upper section of the yoke should be locked, as before described.

The file 15 can be an emery-wheel, or, if desired, it can be composed of a metal body with curved file-sections secured thereon, but in any event the file is located centrally within the yoke in a position to engage the teeth of a saw carried in the clamp 16. The clamp 16 is composed of two jaws *d d'* of a length sufficient to grasp and support a saw-blade throughout its length, the jaw *d* being supported on the extensible and adjustable legs *e*, carried by the feed-bar 17. The other jaw *d'* is secured to the jaw *d* by bolts and thumb-nuts, and the two parallel jaws thus arranged are supported laterally and move endwise between the guiding and clamping rollers *f'*, carried by the frame.

By making the legs *e* extensible the clamp can be adjusted after the saw has been placed therein to bring the teeth of the saw into proper position with relation to the file. The feed-bar 17 is slotted on the lower face and rests and moves on the guide-bar 18, carried by the frame. This guide-bar 18 is held on the frame against longitudinal movement, but is free, as will be hereinafter described, to be elevated, so as to elevate the feeding-bar and clamp so as to carry the saw up to the file. The feed-bar 17 is provided on one side with teeth *g*, which latter are engaged by the worm 19, mounted in bearings carried by the guide-bar 18. This worm is rotated by the mechanism, to be now described, which operates to move the feed-bar longitudinally a distance equal to the width of one saw-tooth.

The bevel-pinion 7 is secured to the vertical shaft 20, the lower end of which carries the smaller bevel-pinion *h*. This pinion *h* meshes with the larger pinion *i* on shaft 21 and rotates the latter continuously when the machine is in operation. This shaft 21 carries a segment *j*, which latter engages at each rotation of the shaft a rubber wheel *j'* or other suitable device on the worm 19. Thus it will

be seen that with each revolution of shaft 21 the segment *j* engages the rubber wheel *j'* and by frictional contact therewith gives the worm a partial revolution, thus moving the feed-bar with the clamp thereon a suitable distance forward. The distance moved should be equal to the width of a single tooth, and hence the amount of movement can be regulated by employing segments of different sizes.

The shaft 21 also carries the cams *l*, which latter are arranged to strike the long arms of the pivoted levers 22 once at each revolution of the shaft. The levers 22 are pivoted to the main frame A, with their short arms resting under the guide-bar 18, and hence when the cams *l* strike the long ends of levers 22 and depress them the shorter ends bear up against the under side of the guide-bar and elevate same, and also the feed-bar and clamp carried on the guide-bar.

In the operation of the device the saw is clamped between the jaws and the parts adjusted to bring the teeth in contact with the file when the saw is elevated. The cams *l*, acting on the levers 22, raise the saw in contact with the file, and the file, acting on the tooth, sharpens same. As the cams ascend the short ends of the levers are depressed by the weight of the guide and feed bars, clamp, and saw, all of which parts descend by gravity until the saw-teeth are below the file, and when the saw is in this or its lowered position the segment acting on the rubber wheel on the worm-shaft turns the latter and moves the saw forward one tooth. The saw is again elevated by the mechanism described to bring the next tooth into contact with the file, and so on throughout the entire length of the saw.

It is evident that numerous slight changes might be made in the general form and arrangement of parts shown and described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not limit myself to the precise details of construction shown, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a saw-filing machine the combination with a clamp and means for moving same, of a yoke having a plurality of bearings, a file-arbor adapted to be mounted in any one pair of said bearings, a file secured on said arbor and means for rotating said arbor.

2. In a saw-filing machine the combination with a clamp and means for moving the same to feed the saw, of a two-part yoke having a plurality of bearings, an arbor adapted to be mounted in any one pair of said bearings, means for locking the two parts of the yoke together, means for rotating the arbor and a file secured on said arbor.

3. In a saw-filing machine the combination with a rotary file of a clamp, extensible legs supporting the clamp and means for feeding the clamp toward and away from the saw and means for moving it longitudinally.

4. In a saw-filing machine, the combination with a file, of a feed-bar, means for intermittently moving the feed-bar longitudinally, means for intermittently and automatically moving it vertically, and a saw-clamp carried by said feed-bar.

5. In a saw-filing machine, the combination with a file, a feed-bar and a clamp, of a worm and shaft, a friction-wheel on the worm-shaft, a rotary shaft, and a segment carried by the rotary shaft and adapted to engage the friction-wheel on the worm-shaft.

6. In a saw-filing machine the combination with a file, a clamp and a feed-bar, the clamp and feed-bar being secured together of means for moving the feed-bar longitudinally, a rotary shaft, cams thereon, and levers resting under the feed-bar and cams and operated by the latter for moving the feed-bar and clamp vertically, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN BURKE.

Witnesses:

J. H. WATSON,
HENRY SCOFIELD.