(No Model.) 3 Sheets—Sheet 1.

M. J. WHEELER.

MACHINE FOR SHARPENING SAWS.

No. 458,205. Patented Aug. 25, 1891.

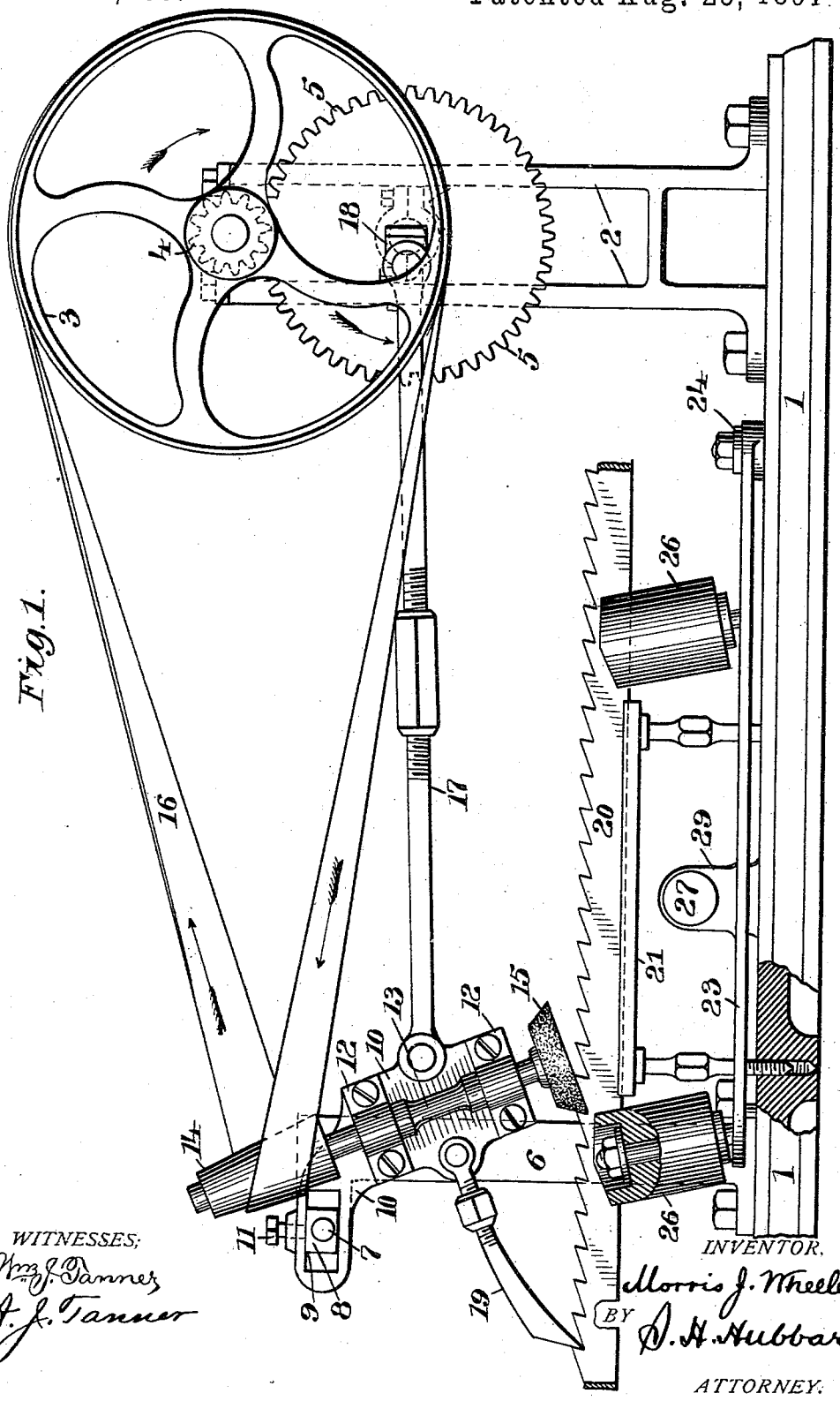

Fig. 1.

WITNESSES:
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A. J. Tanner

INVENTOR.
Morris J. Wheeler
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(No Model.) 3 Sheets—Sheet 2.

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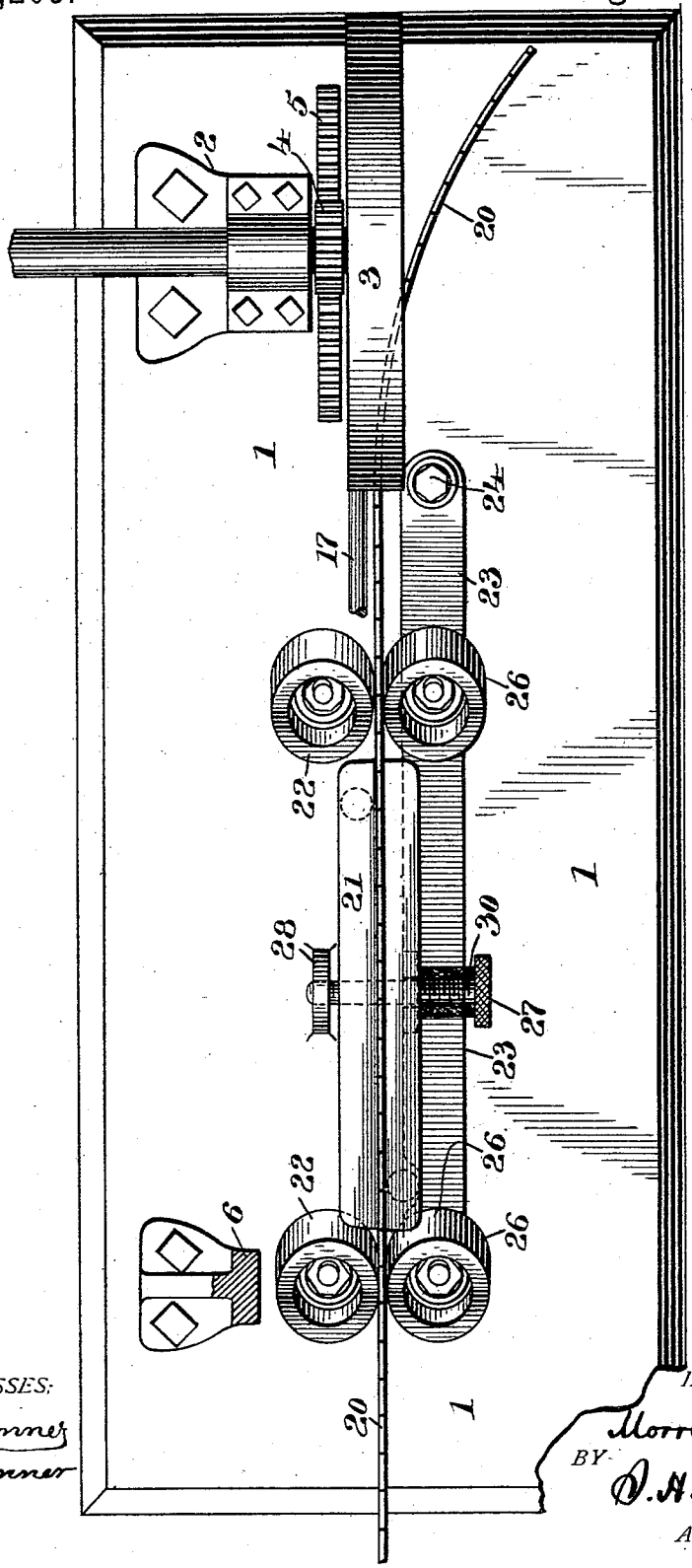

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

M. J. WHEELER.

MACHINE FOR SHARPENING SAWS.

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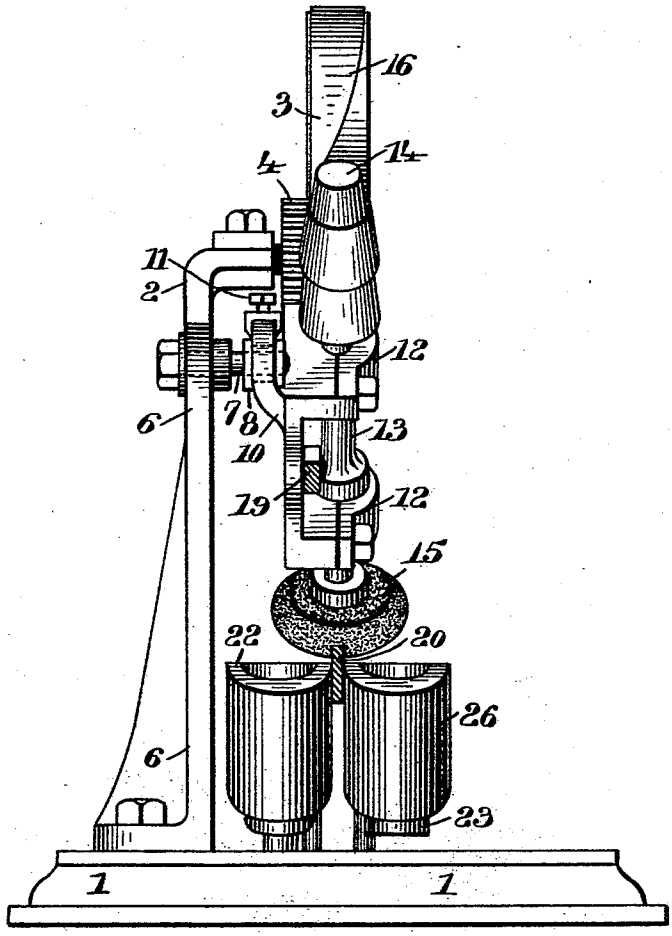

Fig. 3.

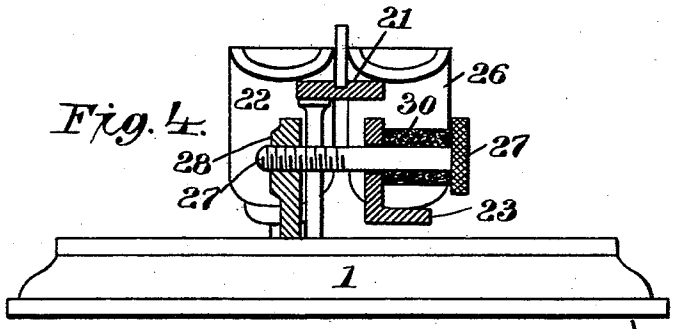

Fig. 4.

WITNESSES

Wm. J. Tanner

A. J. Tanner.

INVENTOR

Morris J. Wheeler

by his attorney

D. H. Hubbard

UNITED STATES PATENT OFFICE.

MORRIS J. WHEELER, OF BRIDGEPORT, CONNECTICUT.

MACHINE FOR SHARPENING SAWS.

SPECIFICATION forming part of Letters Patent No. 458,205, dated August 25, 1891.

Application filed March 5, 1891. Serial No. 383,842. (No model.)

To all whom it may concern:

Be it known that I, MORRIS J. WHEELER, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Grinding Saws; 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.

This invention relates to certain new and useful improvements in machines for grinding saws, and more particularly band-saws and the like; and it has for its objects to provide a machine whereby the teeth may be presented to and acted upon by a grinding-wheel of emery or similar material, and whereby the saw may be automatically fed forward to effect the desired operation upon each tooth and to bring the succeeding tooth in proper position to be ground; and with these ends in view my invention consists in the construction and combination of elements hereinafter fully and in detail explained, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and method of operation, I will describe the same in detail, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation; Fig. 2, a plan view, but with certain parts broken away; Fig. 3, an end elevation looking from the left of Fig. 1; Fig. 4, a detail section on the line *y y* of Fig. 2.

Like numerals refer to the same parts in each of the several figures.

The base 1 of the machine, which may be of any ordinary construction, bears a standard 2, in which is journaled a band-wheel 3, the shaft of said band-wheel being driven from any convenient source of power. The band-wheel shaft carries a small gear 4, which meshes with and drives a larger gear 5, which has a bearing in the standard 2, just referred to.

6 is another standard at the other end of the bed. From it projects outwardly a shaft 7, bearing a slide-block 8, which latter rests within a slot 9 in a head 10, which by means of this connection is pivoted to the standard. A set-screw 11 holds the block in its adjusted position.

12 are bearings arranged upon the surface of the head 10, and in these is mounted a spindle or arbor 13, bearing a coned pulley 14 at its top and a grinding-wheel 15 at its lower end.

16 is a belt or band, which may be elastic, whereby the pulley 14 is driven from the band-wheel 3. A connecting-rod 17 has one end pivoted to the head 10 and the other cranked to the gear 5 by means of a slide-box 18, whereby the throw or feeding movement of the connecting-rod may be varied. On the side opposite to the connecting-rod the head 10 has pivoted thereto a pawl 19, whose point engages the teeth of the saw. The saw itself is denoted by the number 20.

Secured upon the bed or base is a guide 21, provided with a longitudinal groove, in which the back of the saw may rest and is supported. At each end of this guide a roller 22 is journaled upon the bed, with its axis oblique to the surface of the latter. 23 is a bar fulcrumed to the bed at 24. It carries a pair of rollers 26, which are adapted to co-operate with the rollers 22, so as to grasp the saw firmly from each side. The rollers may be adjusted as to their grasp upon the saw by means of a set-screw 27, which passes through a lug 29 on the bar 23 and the lug 28 on the bed. A cushion 30, of rubber, may be arranged upon this screw to make the grasp of the rollers slightly yielding, if desired.

The operation of my invention is as follows: The saw to be sharpened is first placed in the guide, and the rollers are then adjusted by means of the set-screw, so that the back of the saw-blade is held between them and is also supported by the guide. Then by means of the slide-box connection on the gear 5 the connecting-rod is adjusted so as to impart to the swinging head a movement which shall be in proper proportion to the length of the saw-teeth. When this has been done, the grinding-wheel 15 is started.

In Fig. 1 I have shown the parts in the position in which the grinding-wheel is at the farthest forward point of its movement and is in full engagement with a tooth—that is, its periphery is grinding the face of one tooth

and its lower flat surface is grinding the back of the next tooth. From this point the connecting-rod draws the head, and with it the wheel, backward and upward in the arc of a circle out of contact with the tooth, and likewise the pawl 19 is drawn backward over the tooth with which it is engaged until it engages with the face of the next tooth by dropping over it, when as the connecting-rod swings the head backward to the position shown at Fig. 1, the pawl pushes the saw along, and as it moves forward the grinding-wheel descends into contact with a fresh tooth. The rollers are set at an angle for the purpose of keeping the saw from rising out of the clamp, their rotation tending to draw it downward.

By means of this machine a band-saw may be placed in position and then left to be ground, since the machine is automatic both as to the grinding and the feeding of the saw.

I claim—

1. In a machine of the character described, the combination, with the clamp for holding the saw, of the standard, the swinging head fulcrumed to said standard, the arbor carrying the grinding-wheel and journaled in said head, a band and band-wheel for driving the arbor, and a feeding-pawl carried by the head and engaging and adapted to feed the saw.

2. The combination, with a clamp for holding the saw, of the swinging head, the arbor journaled in said head and carrying the grinding-wheel, a feeding device carried by said head and adapted to operate the saw, a band-wheel and band for driving the arbor, and a pitman connected with and adapted to impart to the head a swinging movement, substantially as and for the purpose set forth.

3. In a machine for grinding saws, the combination, with the grinding-wheel, of the saw-guide, the clamping and feeding rollers having their axes oblique to the bed of the machine, and means for clamping said rollers against the saw-blade.

4. In combination with the grinding-wheel, the saw-guide, the rollers 22, journaled upon the, bed with their axes oblique to the surface thereof, the bar 23, carrying the rollers 26, adapted to co-operate with the rollers 22, and the clamping-screw whereby the grip of the rollers upon the saw-blade is effected and controlled.

In testimony whereof I affix my signature in presence of two witnesses.

MORRIS J. WHEELER.

Witnesses:
S. H. HUBBARD,
M. C. HINCHCLIFFE.