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Patented Feb. 12, 1901.

W. G. BÜHL.
AUTOMATIC SAW SHARPENING MACHINE.

(Application filed Oct. 5, 1900.)

(No Model.)

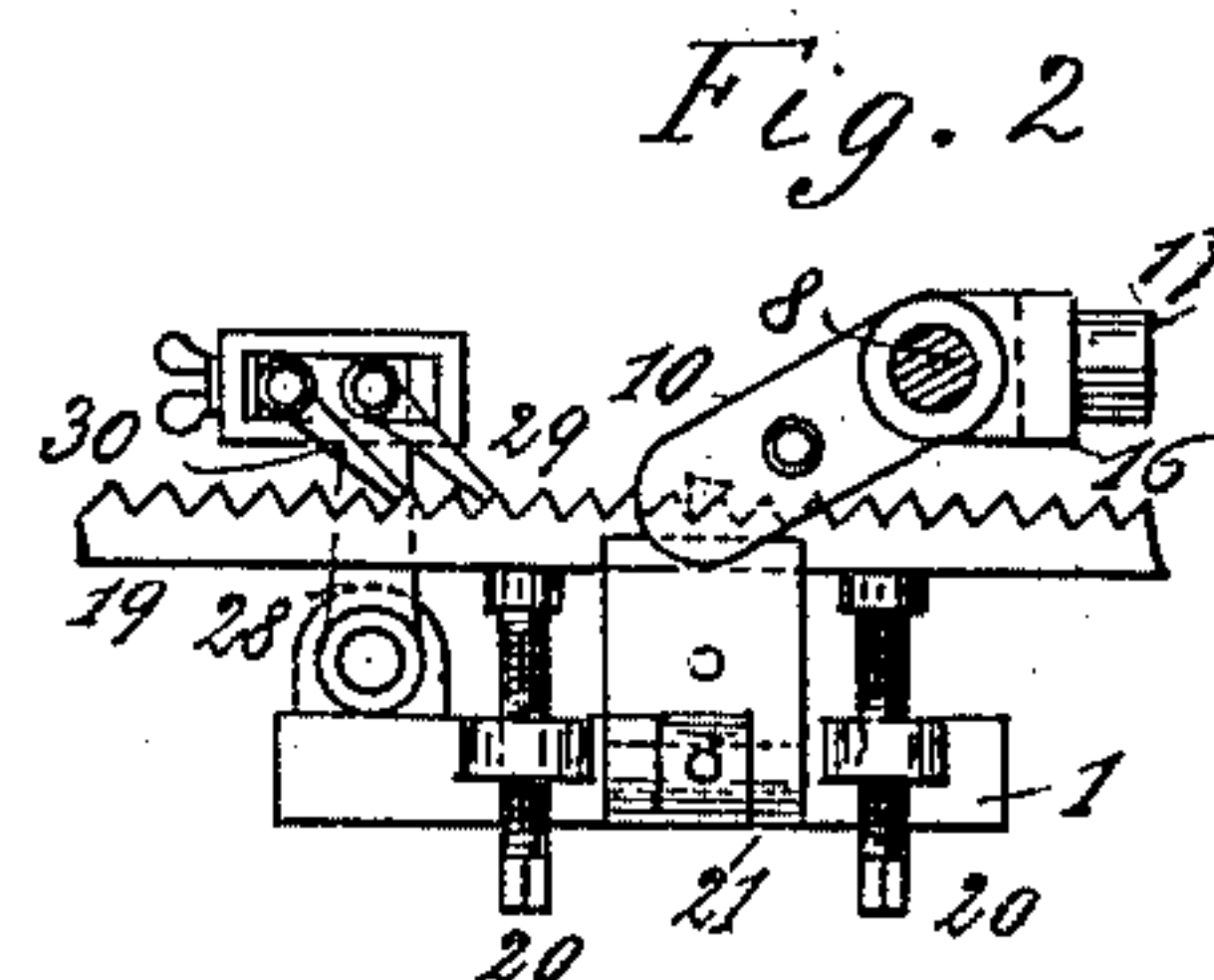
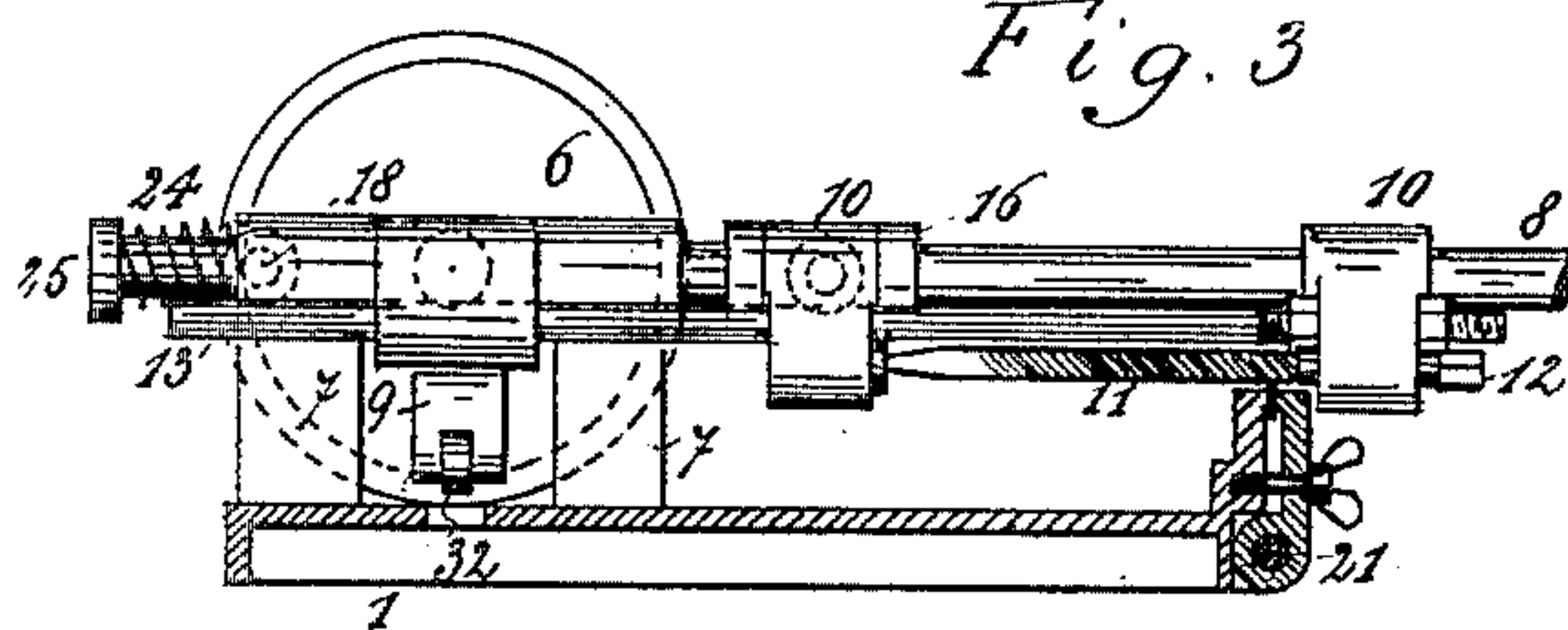
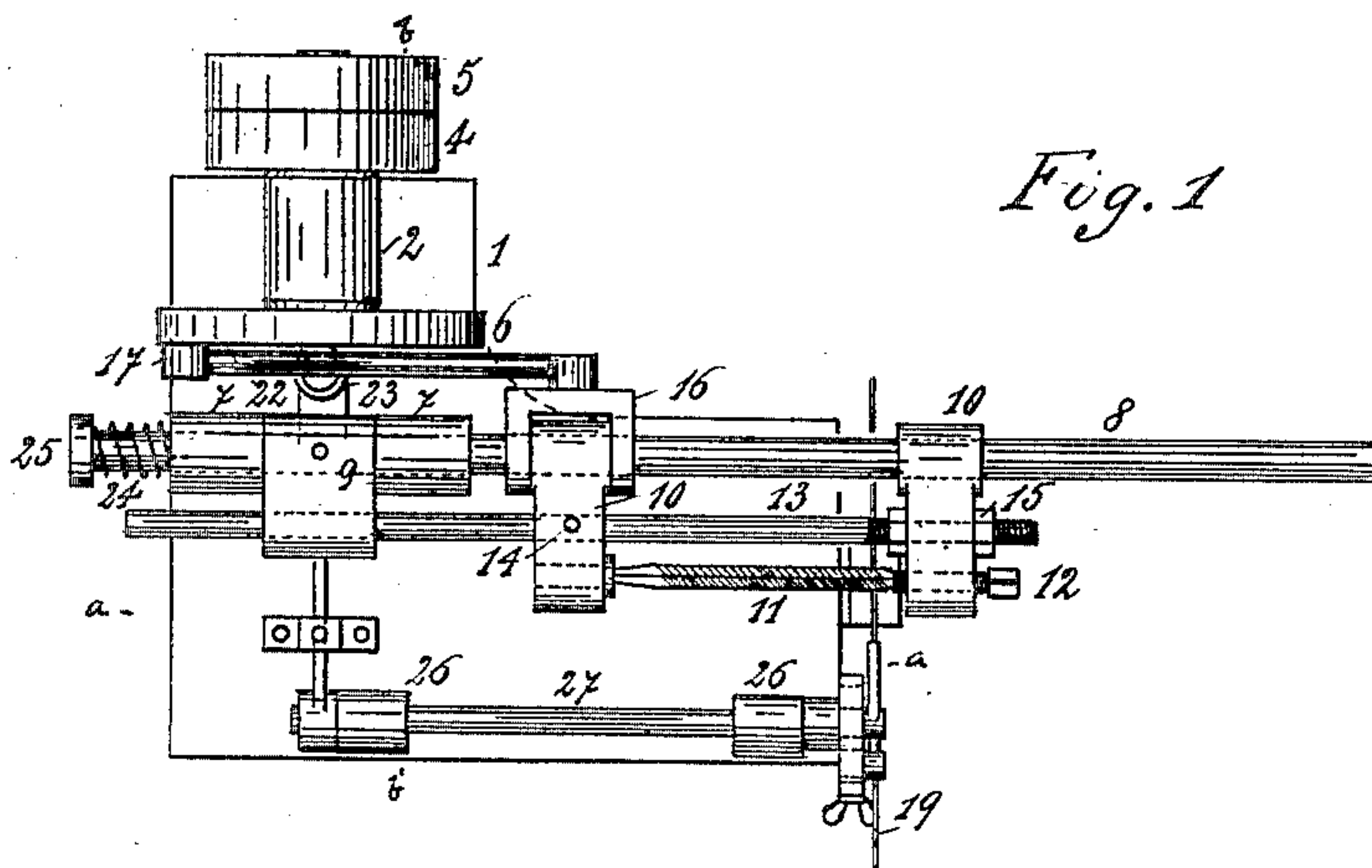
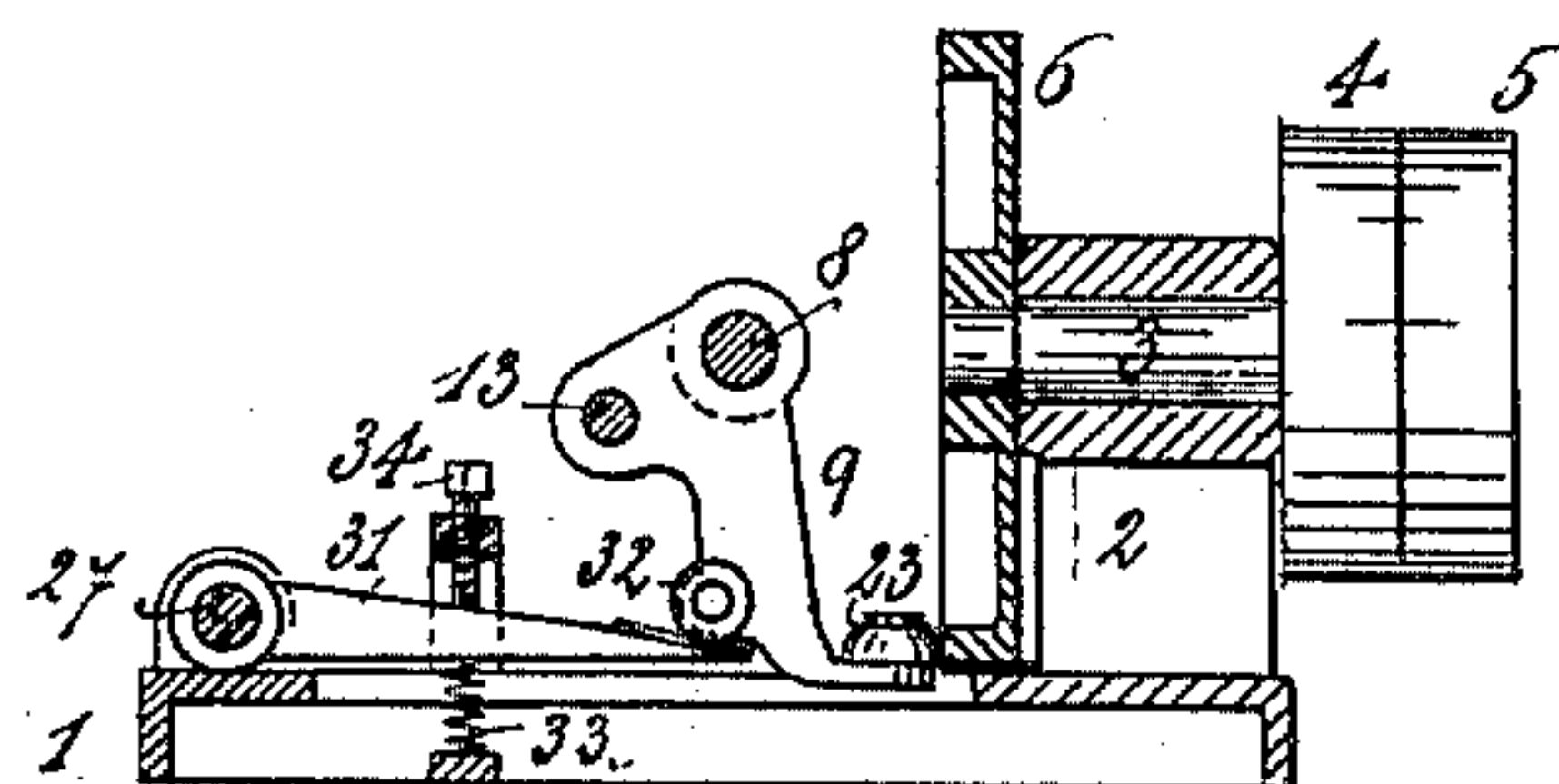


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

WILHELM GOTTLIEB BÜHL, OF BARMEN, GERMANY.

AUTOMATIC SAW-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 668,089, dated February 12, 1901.

Application filed October 5, 1900. Serial No. 32,094. (No model.)

To all whom it may concern:

Be it known that I, WILHELM GOTTLIEB BÜHL, a subject of His Majesty the Emperor of Germany, residing at Haspelerstrasse 1, in the city of Barmen, in the Province of Rhenish Prussia, Germany, have invented a new and useful Improvement in Automatic Saw-Sharpening Machines, of which the following is a full, clear, and exact specification, such as will enable others skilled in the art of such machines to make and use the same.

My invention has for its object an automatic machine by which belt-saws are sharpened with saw-files, the manner in which such file is fastened and moved forming one important part of my invention and the construction of the mechanism for transporting the saw being a further improvement, so that by both constructions, which are closely connected together, as will hereinafter be seen, a sharpening-machine is produced which is simple in construction but effective in working.

In the accompanying drawings, Figure 1 is a top view of the complete machine; Fig. 2, a face view of the same; Fig. 3, a vertical section along line *a a* of Fig. 1; Fig. 4, a vertical section along line *b b* of Fig. 1.

Like numerals of reference are used to designate like parts in the drawings.

1 is the framework or bed of the machine, from which extends vertically upward a bracket 2, in which is journaled a shaft 3, to the rear end of which are fitted a fixed and a loose pulley 4 5. The other end of said shaft carries a crank-disk 6. In a right angle to the bracket 2 on the bed 1 of the machine are arranged two brackets 7, in which a round bar 8 is fitted so that it can turn therein. The space between said brackets is engaged by the hub of a downward-directed arm 9, which surrounds said bar 8 and which is fastened upon the bar 8. On the latter are arranged two arms 10, which may be moved on said bar and also rocked therewith. Between the ends of these arms is secured the saw-file 11 by means of a screw 12. Both arms are held rigidly in position by a rod 13, running parallel to bar 8 through the lever 9 and both arms, and being fixed to the inner one by a set-screw 14 and to the outer one by the nuts 15. The inner arm is embraced by a fork 16, from which leads a connecting-rod 17 to the

crank-bolt 18, and it will now be understood that by the said means the file will be moved in longitudinal direction in order to sharpen the saw 19. The latter is supported by adjustable bolts 20 and held firmly in position or stiffened, respectively, by a vise 21 of any known construction.

In both end positions of the file-stroke the same is moved sidewise, the brackets 7 forming the fulcrum for the rocking movement. This movement will be obtained by a projection 22, fitted on the crank-disk 6, which actuates at the proper moment—that is, when the file has finished its stroke—on an antifriction-roller 23, pivoted to the lever 9, and causes it to turn. By means of rod 13 arms 10 are, together with bar 8, turned and the file removed from the saw. The turning of bar 8 has caused also a stretch of a coiled spring 24, fixed with one end to the bracket 7 and with the other end to a ring 25, seated on the end of bar 8. At the beginning of its stroke the file is forced down into the saw by said spring being stretched in the described way.

The means for feeding the saw may be understood from the following: In suitable bearings 26 of bed 1 is guided a shaft 27, to the front end of which is keyed an arm 28, which carries on its head a pawl 29, which may be adjustable by a screw and which engages the saw. To the head of said arm is pivoted a second pawl 30, which comes in action when a tooth in the saw is lacking, and the first pawl can therefore alone not feed the saw. The other end of shaft 27 is fitted with a lever 31, having a slanted end upon which actuates an antifriction-roller 32, so that, together with the lifting of the saw-file, arm 31 is forced down and the saw fed forward. A spring 33 is arranged to push arm 31 back in its normal position, while a set-screw 34 serves to adjust the feeding stroke.

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

1. In a saw-sharpening machine the combination of a saw supporting and holding device of a revolved crank-disk with a horizontal bar, arms adapted to slide thereon and hold the file, of a rocking lever fixed to said bar and actuated by said disk and of a rod connecting said lever and said bars, of a

spring fitted to the rear of said bar for the purpose described and set forth.

2. In a saw-sharpening machine the combination of a saw-supporting device, a revolved crank-disk and a horizontally-guided bar, a lever-arm fixed thereto, of a shaft carrying an arm with two pawls and an arm with

a slanted end and a roller forming part of the lever-arm and an adjusting-screw 34 for the purpose described and set forth.

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