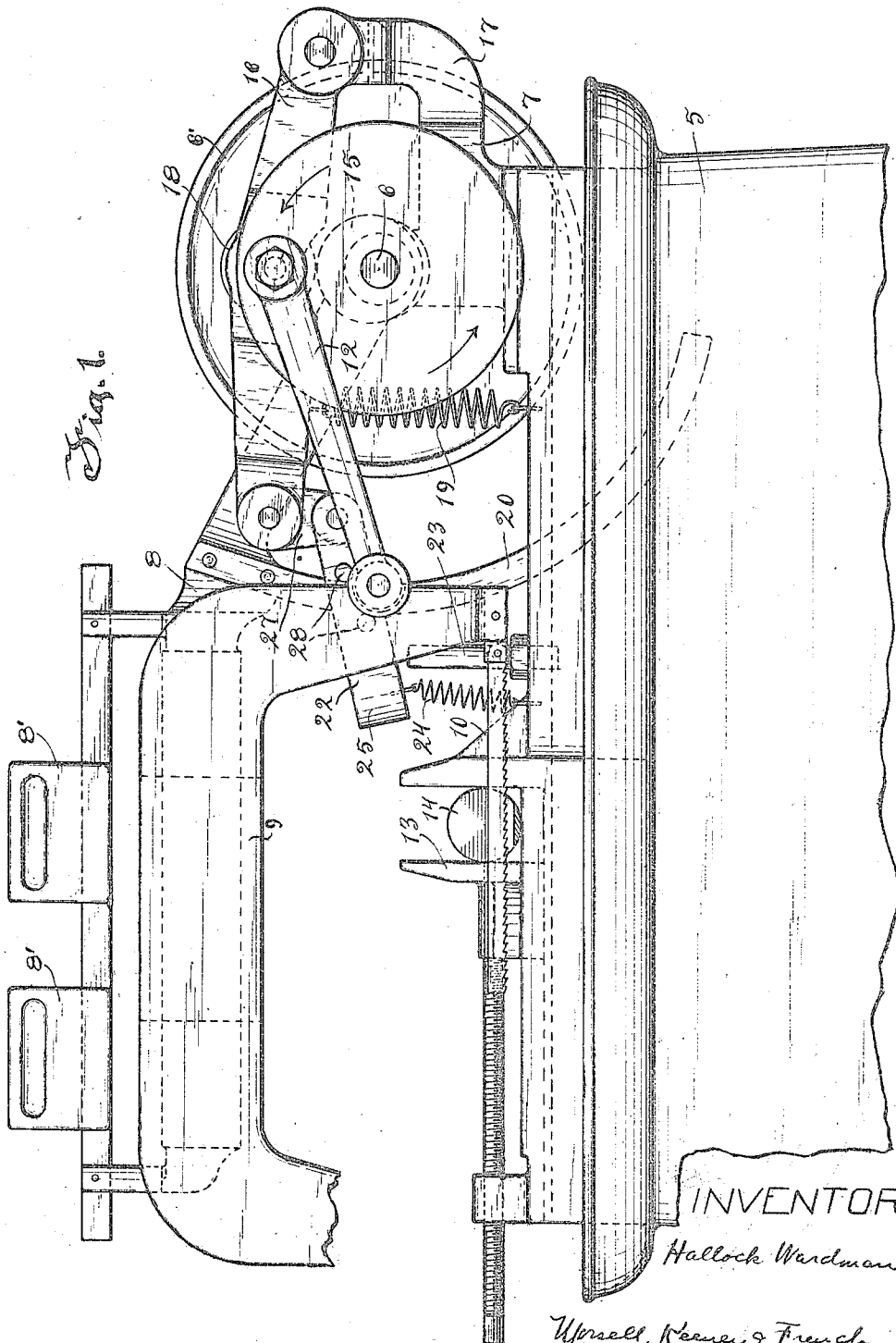


H. WARDMAN.
HACKSAW MACHINE.
APPLICATION FILED MAY 3, 1917.

1,269,883.

Patented June 18, 1918.

3 SHEETS—SHEET 1.



INVENTOR

Hallock Wardman

Upsell, Kearney & French
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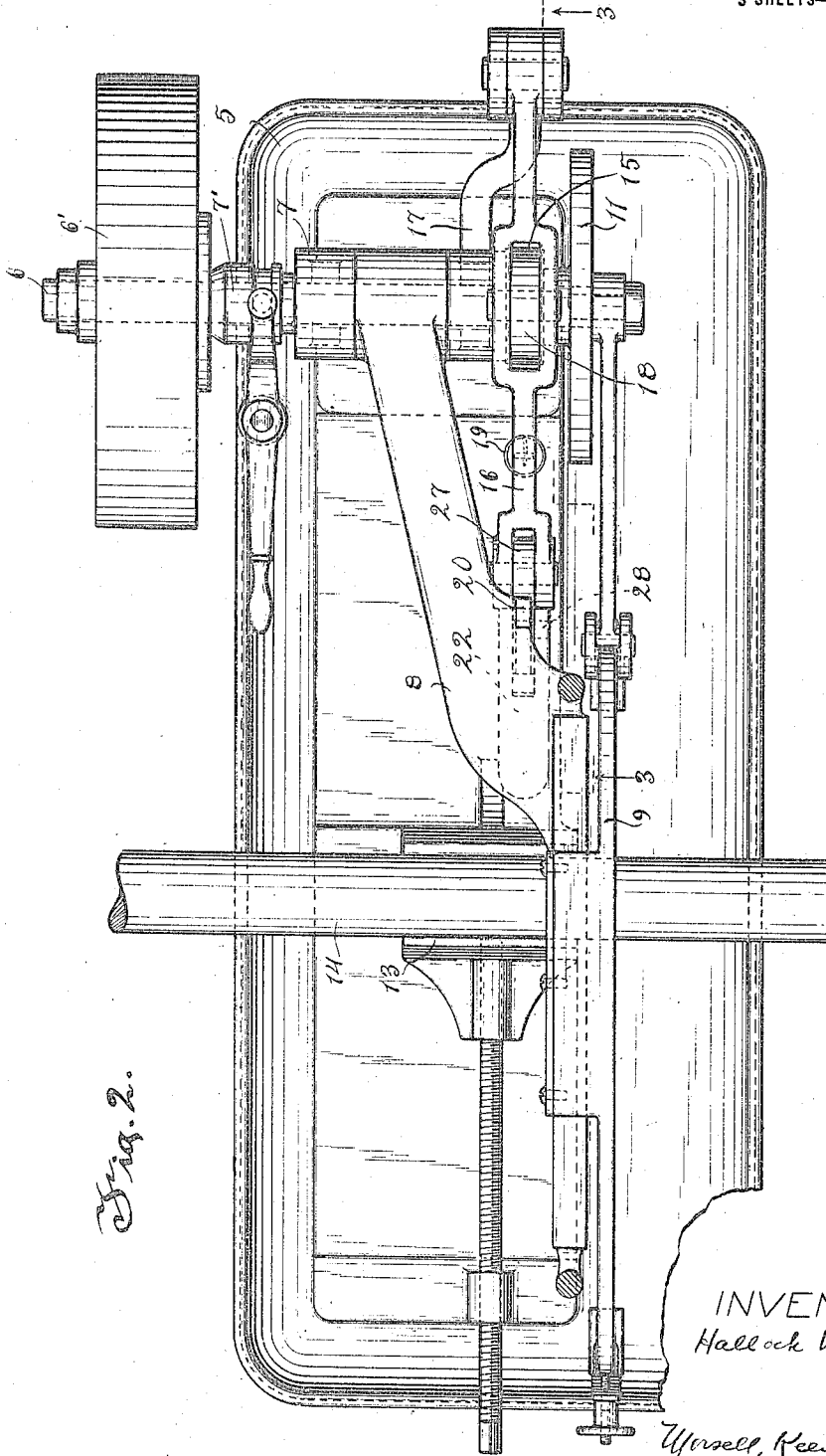


Fig. 2.

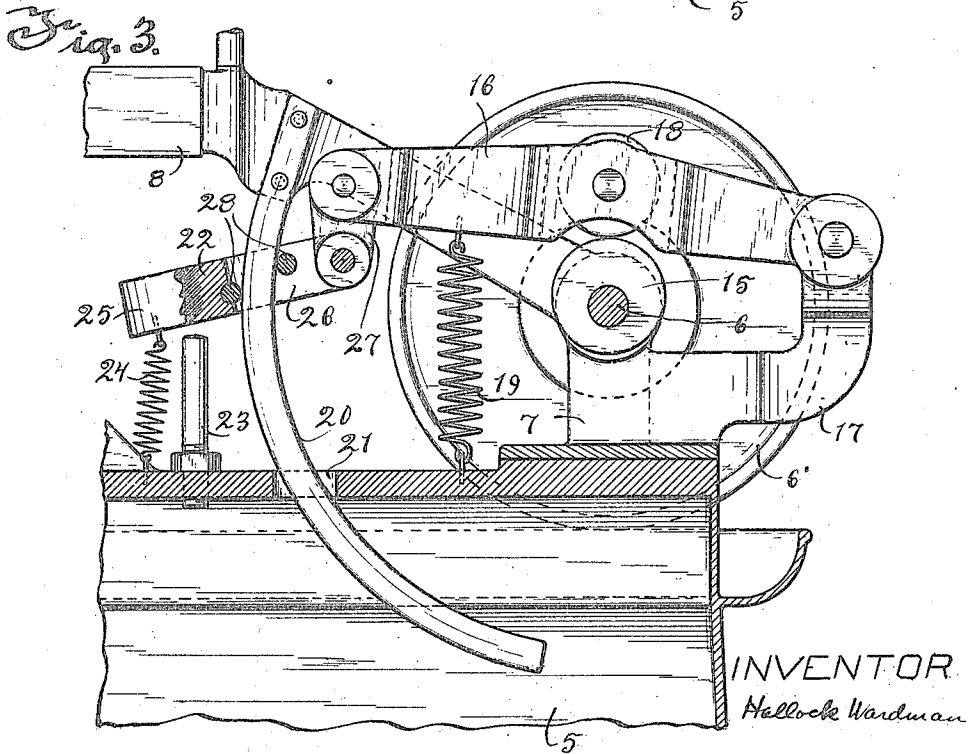
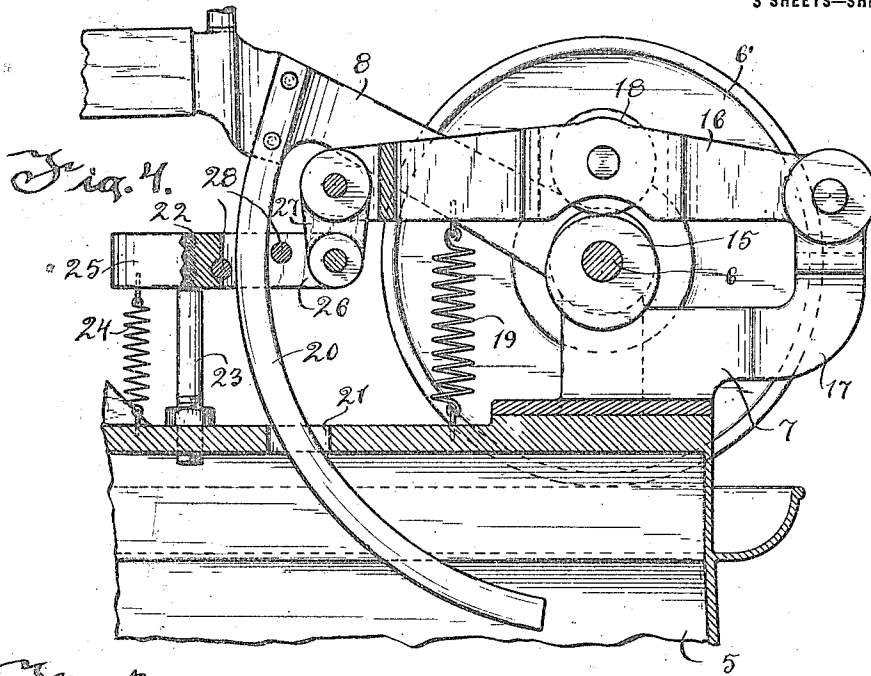
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UNITED STATES PATENT OFFICE.

HALLOCK WARDMAN, OF RACINE, WISCONSIN.

HACKSAW-MACHINE.

1,269,883.

Specification of Letters Patent. Patented June 18, 1918.

Application filed May 3, 1917. Serial No. 166,231.

To all whom it may concern:

Be it known that I, HALLOCK WARDMAN, a citizen of the United States, and resident of Racine, in the county of Racine and State of Wisconsin, have invented new and useful Improvements in Hacksaw-Machines, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 The invention relates to hack-saw machines and more particularly to an efficient and simple construction for raising the saw on the return stroke combined with the other parts of the machine.

15 Heretofore a movable toothed dog has been used in conjunction with a stationary dog and their associated mechanism for raising the saw on the return stroke and holding it raised until the cutting stroke is made but this construction is objectionable because of the excessive wear upon the dogs necessitating frequent removal and because of the difficulty in adjusting the dogs to vary the rise of the saw. To obviate these 25 difficulties I have devised a construction for raising and holding the saw raised until the cutting stroke in which there is a minimum of wear on the parts accomplishing this function and a simple means for varying 30 the raise of the saw.

The invention further consists in the several features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

35 In the drawings:

Figure 1 is a side view of the machine, parts being broken away;

Fig. 2 is a plan view of the machine;

40 Fig. 3 is a section taken on the line 3—3 of Fig. 2, showing the mechanism during the cutting stroke of the saw;

Fig. 4 is a section similar to Fig. 3 showing the mechanism during the return stroke of the saw.

45 The machine consists of a frame 5, a drive shaft 6 journaled in a bearing bracket 7 mounted on the frame and driven from drive pulley 6' through a clutch device 7', a guide and supporting frame 8 journaled 50 on said shaft, means comprising weights 8' carried by the frame 8 for regulating the depth of cut of the saw, a saw frame 9, a saw 10 removably carried by said frame 9, means consisting of a disk 11 and a link 12 55 pivotally secured at one end to the saw frame 9 and pivotally and eccentrically

mounted on the disk 11 to reciprocate the saw and its frame back and forth in the frame 8 to make the cut on the rotation of the drive shaft, a work holding device 13 60 on the frame 5 for holding the work 14 in position, and means for raising and holding the saw raised during its return stroke.

The means for raising and holding the saw raised on its return stroke consists of a 65 cam 15 mounted on the drive shaft 6, a lever 16 pivotally secured at one end to an arm 17 on the bracket 7 and carrying a cam roller 18 intermediate its ends for engaging the cam 15, said lever pressed against the 70 cam by means of a spring 19 connected to said lever and to the machine frame 5, a quadrant shaped arm 20 carried by the saw guide 8 and movable through a slot 21 in the frame 5, and means carried by the lever 75 16 for gripping said arm 20 to raise the saw.

This gripping means consists of a block 22, normally yieldingly held against a support and stop 23, adjustably mounted on 80 the frame 5, by a spring 24 connected to the end 25 of the block and to the machine frame, said block having a forked end 26 pivotally connected to a link 27 pivotally connected to the free end of the lever 16. 85 The adjustable stop 23 forms means for varying the height of the raise of the saw on its return stroke by causing the gripping device to act sooner or later on the arm 20. The block 22 is provided with gripping pins 90 28 passing through its forked portion and between which the arm 20 passes, said pins being angularly disposed with respect to each other.

With the construction thus described, 95 when power is transmitted to the shaft 6, the rotation of said shaft will, through the disk 11 and link 12, move the saw frame 9 and its saw 10 back and forth across the work. On its cutting stroke the weight of 100 the guide frame 8 with its weight 8' and the saw frame 9 holds the saw 10 against the work and the saw frame is moved in its guide 8 toward the drive shaft 6, the gripping means not interfering in any way 105 with this operation as the roller 18 on the lever 16 is against the lower part of the cam 15 and the block is held to its support 23 by the spring 24. On the return stroke of the saw, the cam 15 raises the lever 16 110 thereby tilting and raising the block 22, as shown in Fig. 3 and thus bringing the pins

28 into frictional gripping engagement with the quadrant arm 20 and raising the frame 8 and saw frame 9 to raise the saw from cutting engagement with the work and maintaining these parts in raised condition during the return stroke. The height to which the saw is raised is regulated by the height of the stop 23 above the frame. By lowering the stop 23 the end 25 of the block 22 is tilted down thus bringing the pins 28 nearer the quadrant arm with the result that they will grip this arm quicker and raise it higher than when the block is in the position shown in Fig. 4; and by raising the stop 23 the block will be tilted to move the pins 28 downwardly so that it takes a longer time for them to engage the arm with the result that the saw will be raised a less distance from the work. This adjustment is made to depend upon the kind of work the saw is to cut.

I am aware that the details of construction herein shown and described are capable of modification and change and any construction coming within the scope of the appended claims I deem to be within the spirit of my invention.

What I claim as my invention is:

1. In a hack saw machine, the combination, with a saw and its supporting frame, a drive shaft, a saw guiding frame swingingly mounted on said drive shaft, and means connected to the drive shaft and saw supporting frame for driving the saw, of means for raising the saw on its return stroke comprising a cam mounted on the drive shaft, a lever actuated by the cam, a quadrant arm carried by the saw guide frame, a block swingingly suspended from said lever, and gripping members carried by the block for frictionally engaging opposite sides of said arm.

2. In a hack saw machine, the combination, with a support, a saw carrying frame, a drive shaft, a saw guiding frame swingingly mounted on said drive shaft, and

means connected to the drive shaft and saw supporting frame for driving the saw, of means for raising the saw on its return stroke comprising a cam mounted on the drive shaft, a swinging lever actuated by the cam, a quadrant arm carried by the saw guide frame, a swinging block, a link pivotally connecting said block with said lever, a spring connected to the free end of the block and to said support, and pins carried by the block for engaging the arm.

3. In a hack saw machine, the combination, with a support, a saw carrying frame, a drive shaft, a saw guiding frame swingingly mounted on said drive shaft, and means connected to the drive shaft and saw supporting frame for driving the saw, of means for raising the saw on its return stroke comprising a cam mounted on the drive shaft, a swinging lever actuated by the cam, a quadrant arm carried by the saw guide frame, a swinging block, a link pivotally connecting said block with said lever, an adjustable support for the block, a spring connected to the free end of the block and to said support, and gripping members carried by the block for engaging the arm.

4. In a hack saw machine, the combination, with a support, a saw carrying frame, a drive shaft, a saw guiding frame swingingly mounted on said drive shaft, and means connected to the drive shaft and saw supporting frame for driving the saw, of means for raising the saw on its return stroke comprising a swinging lever, means for actuating said lever, a quadrant arm carried by the saw guide frame, a block swingingly suspended from said lever, means for normally holding the block in inoperative position, and means on the block for wedgingly frictionally engaging opposite sides of said arm.

In testimony whereof I affix my signature.

HALLOCK WARDMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."