R. C. BERRY.

POWER HACKSAW.

APPLICATION FILED JULY 1, 1907.

926,802. Patented July 6, 1909.

Fig. 1.

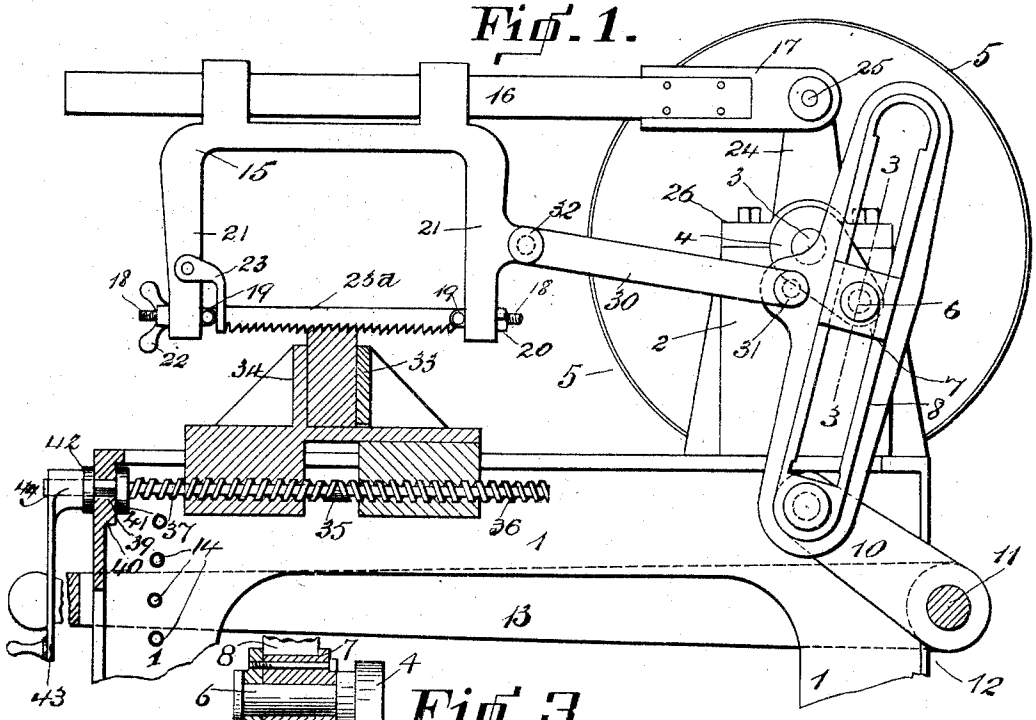

Fig. 3.

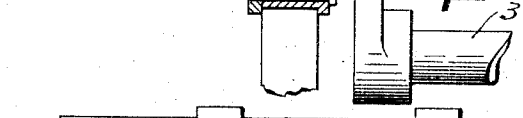

Fig. 2.

WITNESSES:

J. M. Springer

M. M. Defrees

INVENTOR

Robert C. Berry

BY

Thompson & Bell

ATTORNEY

UNITED STATES PATENT OFFICE.

ROBERT C. BERRY, OF INDIANAPOLIS, INDIANA.

POWER-HACKSAW.

No. 926,802. Specification of Letters Patent. Patented July 6, 1909.

Application filed July 1, 1907. Serial No. 381,679.

To all whom it may concern:

Be it known that I, ROBERT C. BERRY, citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Power-Hacksaws, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an improved modification of the invention described in a former application filed December 29th 1906 No. 305,018, and consists in means whereby the vise of the power-saw automatically operates to center the piece held between its jaws to be sawed with that of the center of the stroke of the saw, as hereinafter more fully set forth and particularly pointed out in the claims.

The object of this invention is to provide a simple means for varying the stroke of the saw while said saw is either in motion or at rest, to correspond to the size of the piece to be cut; also, to provide a vise of simple construction for holding the piece to be cut, sawed or severed securely, the jaws of which are arranged to coöperate to center said piece to correspond to the center of the travel or reciprocations of the saw. I attain these objects by means of the power hack-saw illustrated in the accompanying drawings in which like numerals of reference designate like parts throughout the several views.

Figure 1 is a longitudinal sectional elevational view of my invention showing the crank setting for a small piece of work and the relation of the jaws thereto; Fig. 2 is a similar view showing the crank and vise corresponding to a setting for a larger piece of work secured between the jaws of the vise; and, Fig. 3 is an enlarged broken detail sectional view showing the sliding block and the crank of the apparatus and taken along the line 3—3 in Fig. 1.

I will now proceed to describe my invention in such full, clear, and exact terms that others skilled in the art to which it appertains may be enabled to make and use the same.

The supporting frame 1 of the machine may be of any suitable form of construction and the same is provided with a journal-box bearing 2 in which the crank-shaft 3 is journaled and supported, and on the end of this shaft is secured a crank 4, and on the opposite end a belt-pulley 5 which is provided to revolve the crank-shaft 3. A crank-pin 6 is permanently secured at the end of said crank 4 in any suitable manner and on the said crank-pin is mounted a crank-pin-box 7 which is composed of opposing similar halves or pieces securely bolted together to be removable from said crank-pin and link and said box has its bore adapted to fit the crank-pin 6.

The box 7 is adapted to fit and to slide longitudinally in the slot of the slotted swinging-link 8 which latter is pivotally mounted to swing or rock on its supporting-pin 9 carried by the lever-arm 10.

The lever-arm 10 is keyed or otherwise secured on the shaft 11 which latter is mounted in a bearing 12, and on the outer projecting end of said shaft is keyed or otherwise secured the lever 13 whereby the position of the pin 9 and consequently that of the link 8 relatively to the crank 4 is varied at pleasure either while the machine is in motion or at rest. The lever 13 is secured in any position or any of its set positions by a locking-pin which is passed through a bore in said lever which bore is adapted to register with any one of the bores 14 to which it is set, which bores are arranged in arc of a circle.

A saw-frame 15 is made to traverse on its swinging guide 16 secured on the arm 17 which guide is adapted to swing downwardly to carry the said saw-frame with it to maintain the saw thereof in contact with its work while the latter is being sawed or severed. Securing screws 18 are secured on end saw-holders 19 whereby the saw 23^a is secured and held in proper tension between the depending arms 21 of the saw-frame 15 by the screw nut 20 and the thumb-nut 22. The steadying-finger 23, pivoted to one of the depending arms 21 of the saw-frame 15, prevents the saw 23^a from turning and maintains it in a vertical position. The arm 17 is pivotally mounted on the top end of the upright 24 by a pin 25. The upright 24 is formed integral on the top of the cap 26 of the journal-box-bearing 2.

A connecting-rod 30 is connected at one end to the connecting-pin 31 and at its opposite end to the saw-frame 15 by a connecting-pin 32, so that with each oscillation or swing of the link 8 the said saw frame will make a stroke corresponding in length to the position of the link 8 relatively to its crank 4.

The stroke of the saw-frame 15, it is obvious, is modified absolutely by the link 8 and the position of the latter, and conse-

quently by the position of the pivotal supporting-pin 9 relatively to the axis of the crank, and the position of this pin is quickly set by means of the setting lever 13 previously described.

The vise is composed of the opposing traversing jaws 33 and 34, both of which are arranged to recede and approach by means of the right and left hand screw 35 having the right hand screw threads 36 and the left hand screw threads 37 both of which are of equal pitch and consequently move or traverse each of the jaws 33 and 34 equally from a fixed center point.

The screw 35 is provided with a neck portion 39 which is journaled in a suitable bearing 40 formed in the frame 1 and the said screw is prevented from moving longitudinally in either direction by the retaining collars 41 and 42.

In Fig. 1, it will be observed, that a comparatively thin piece of material is held between the jaws 33 and 34 of the vise to be sawed or severed. The pivotal-pin 9 is moved to the position shown in this figure by means of the setting lever 13 which latter is secured in this position to impart the maximum length of stroke to the saw-frame that the size of the material held in the vise will permit without causing the depending arms 21 to contact the material to be sawed or severed.

Fig. 2 illustrates the setting for a larger piece of material held between the jaws 33 and 34 of the vise to be cut or severed. The pivotal-pin 9 is moved, as before, to the position shown in this figure by the lever 13 which latter is secured in the same manner as before, to impart the maximum length of stroke to the saw-frame 15 and its saw 23^a that the size of the material to be cut or severed will permit. The stroke imparted to the saw in the latter case will be much shorter than in the former case but will play equally on each side of the piece to be cut or will be equally divided over it.

I claim:—

1. In a power driven saw, the combination with a reciprocating saw-frame, a crank arm, a crank pin rigidly secured to said arm, and a slotted swinging link pivotally mounted at one of its ends, of a crank block bored to fit said pin and fitted in said slotted link to slide therein, a rod connecting said swinging link and said reciprocating saw frame, a carrying pin on which said slotted link is pivoted, and means for supporting said carrying pin whereby the position of the latter pin may be adjusted in position nearer to or farther from the axis of said crank to control the motion of said swinging link.

2. In a power driven saw, the combination with a reciprocating saw frame, a crank arm, a crank pin rigidly secured to said arm, and a slotted swinging link pivotally supported at its lower end, of a crank block bored to fit said pin, and fitted in said slotted link to slide therein, a rod connecting said swinging link and said saw frame, a swinging link carrying pin on which the lower end of said slotted swinging link is pivoted, an arm carrying said swinging link carrying pin, a shaft, a lever connected to said shaft, and means for securing said lever in position at any point of its sweep to adjust said carrying pin in position to control the stroke of said swinging link.

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

ROBERT C. BERRY.

Witnesses:
THOMPSON R. BELL,
J. M. SPRINGER.