W. J. PARSONS.

COPING SAW FRAME.

APPLICATION FILED MAR. 26, 1908.

903,495. **Patented Nov. 10, 1908.**

Fig. 1

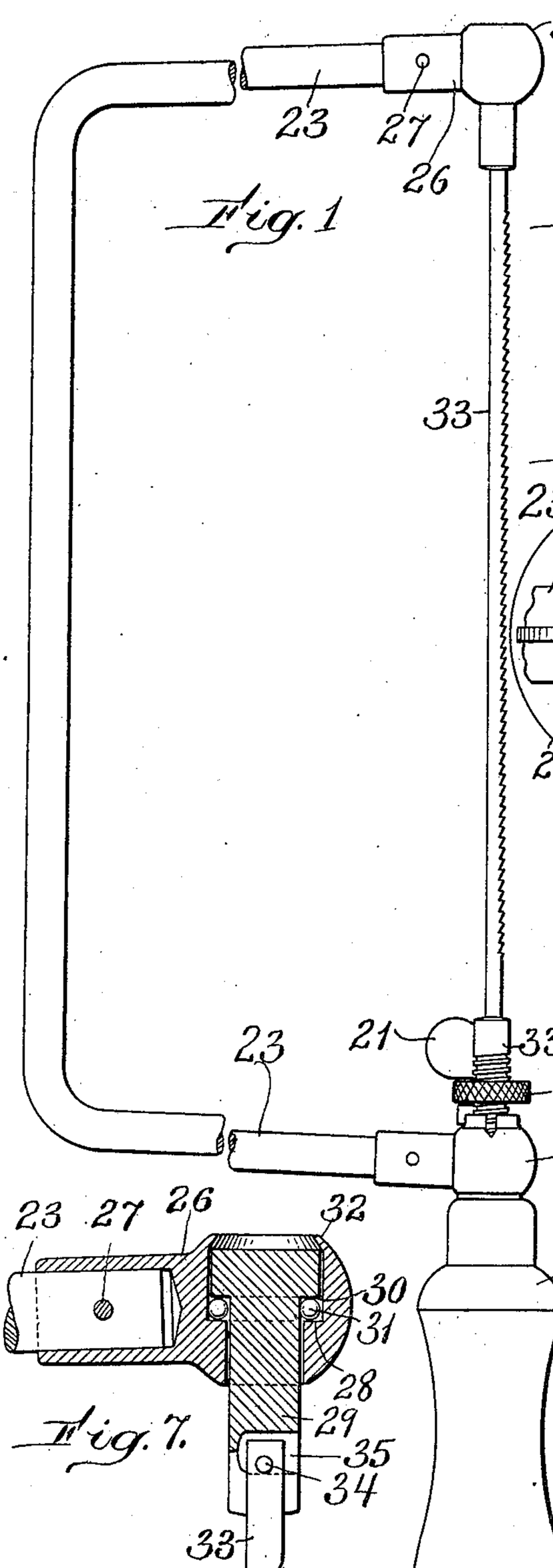


Fig. 2.

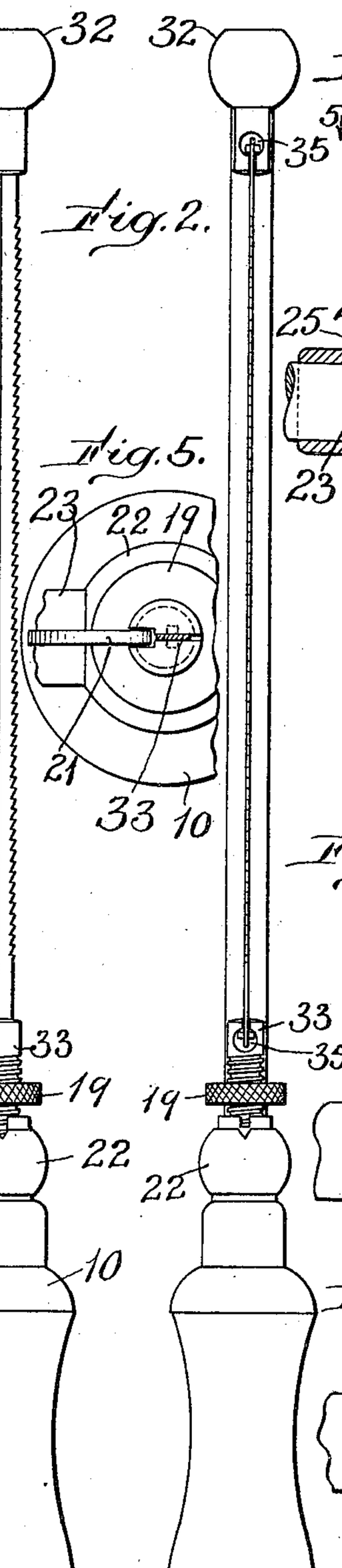


Fig. 3.

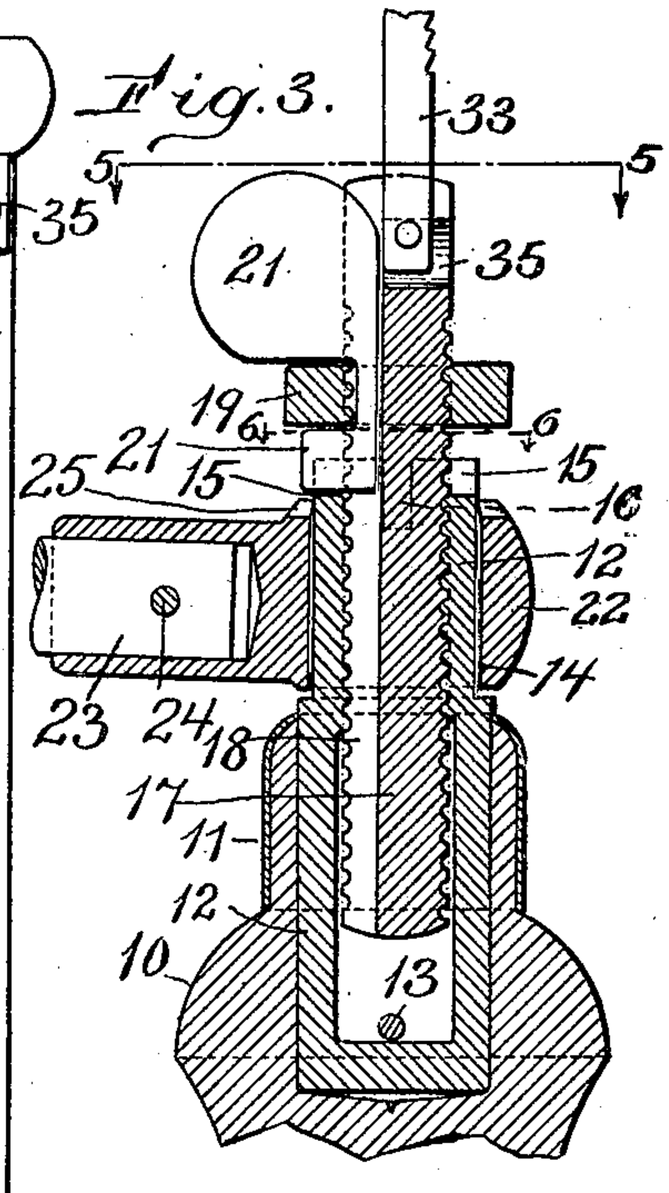


Fig. 5.

Fig. 4.

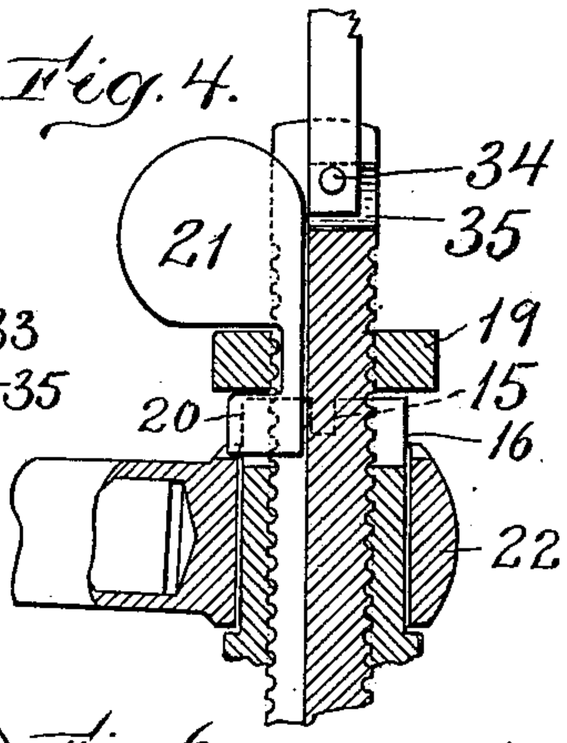
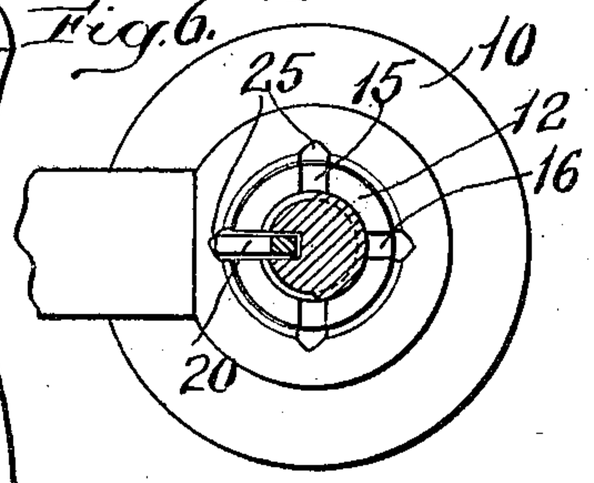


Fig. 7.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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COPING-SAW FRAME.

No. 903,495. Specification of Letters Patent. Patented Nov. 10, 1908.

Application filed March 26, 1908. Serial No. 423,343.

To all whom it may concern:

Be it known that I, WILLIAM J. PARSONS, of Montague, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Coping-Saw Frames, of which the following is a specification.

This invention relates to hand saws in which the blade is thin and flexible and is supported by means of draw bolts at each end of a back frame, a handle being connected to one end of the frame.

One of the objects of the invention is to provide an implement of this character so constructed that the frame revolves automatically without reference to the angle of the blade and in accordance with the requirements of the work, the frame being adapted, however, to be rigidly connected with the handle when desired.

Another object of the invention is to provide an implement of this character in which the saw blade is so mounted that it can rotate with the utmost freedom relatively to the back frame.

To these ends, the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings in which similar reference characters indicate the same or similar parts in all of the views, Figure 1 is an elevation of a coping saw embodying the several features of my invention. Fig. 2 is an edge view looking from the right of Fig. 1. Fig. 3 represents an enlarged detail section through the lower draw bolt and portions of the back frame and handle. Fig. 4 is a view similar to a portion of Fig. 3, but illustrating a different adjustment. Figs. 5 and 6 are respectively sectional views on lines 5—5 and 6—6 of Fig. 3. Fig. 7 is a detail sectional view taken through the upper draw bolt and portion of the back frame.

A suitable handle 10 having a ferrule 11 is formed with a recess in its end in which a metal socket 12 is secured as by a transverse pin 13, said socket being internally threaded at its outer end. Externally the outer end of the socket is reduced as at 14, and the extreme end is formed with notches 15 and recesses 16. Said notches and recesses are practical identical excepting that the recesses are deeper than the notches for a purpose which will be presently described. The draw bolt 17, which I shall hereinafter refer to as the inner draw bolt, is externally threaded to fit the screw threads formed in the outer portion of the socket 12. Said draw bolt is also formed with a longitudinal groove 18, and a nut 19 is mounted on the portion of the draw bolt which projects from the socket. A key 20 having a finger piece or wing 21 extends through the nut 19 and is mounted in the groove 18 of the draw bolt, the connection being such that rotation of the nut 19 up or down will slide the key longitudinally of the groove 18 and toward and from the notches or recesses 15 and 16.

Swiveled on the reduced outer portion of the socket 12 is a head or clamp 22, the same being formed with a socket receiving the inner end of the back frame 23, which latter is secured in place by suitable means such as a pin 24. The swiveled head or clamp member 22 is formed with notches 25 in its upper edge, said upper edge being located a little below the notched upper edge of the socket 12. The notches 25 are equally spaced and equal in number to the notches and recesses 15 and 16 for a purpose which will be presently described.

Secured to the outer end of the back frame 23 is the outer head 26, a pin 27 being preferably employed to secure these two parts together. Said head 26 is formed with a vertical opening or bearing through which the outer draw bolt extends, a shoulder 28 being formed in said head. The outer draw bolt 29 is formed with an enlarged outer end presenting a shoulder 30 between which and the shoulder 28 balls 31 are placed so as to form an antifriction bearing for the outer draw bolt. The opening in the outer head 26 is formed with a flange 32 which is swaged in after the balls 31 and the outer draw bolt 29 have been placed in position relatively to the head 26. A saw blade 33 having end pins 34 or other suitable enlargements, is secured in sockets 35 which are of a well known shape, said sockets being formed in the inner end of the outer draw bolt and the outer end of the inner draw bolt to enable a saw blade to be inserted and removed when not under tension.

To enable a saw blade to be connected with the draw bolts, the nut 19 is operated sufficiently to withdraw the key 20 above the plane of the upper end of the socket 12.

This will leave the handle and the inner draw bolt free to be relatively rotated so as to project the inner draw bolt to enable a saw blade to have its ends slipped into the sockets 35 of the two draw bolts. By then rotating the parts in the reverse direction so as to draw the inner draw bolt into the socket 12, the saw is put under proper tension. When the latter point has been reached, the nut 19 is operated so as to project the key 20 into one of the notches 15. This locks the inner draw bolt relatively to the socket 12 which in turn is secured in the handle 10. But the back frame is free to swing around since the swiveled head or clamp 22 is not locked. Therefore the necessity of stopping work to change the angle of the blade in the frame when operating in various directions is obviated, the handle however, being at the same time locked so that it cannot turn backward off the inner draw bolt when in use. But as stated, two of the notches in the outer end of the socket 12 are deeper to form recesses 16. The number of such notches, however, is not essential. One deep recess alone will be sufficient. When it is desired that the back frame shall be locked relatively to the inner draw bolt and handle, the nut 19 is first actuated to withdraw the key 20 from the shallow notch 15 and then the draw bolt is rotated until the key is in line with the deeper notch or recess 16. At the same time, the back frame is swung around so that one of the notches 25 will be also in line with the key. When the latter is forced down into such notch 25, all of the parts are locked so that there can be no relative rotation, and the implement can then be actuated like an ordinary hack saw. By simply raising the key again out of the deeper recess and turning it and the inner draw bolt into line with the notch 15 and throwing the key down into the latter, the back frame is free to swivel or rotate entirely around the saw blade, or the latter to be rotated relatively to the said back frame. The ball bearing in the outer draw bolt permits of this free rotative movement, although the saw blade is at the time under considerable tension.

I claim:—

1. A sawing implement comprising a handle having a socket projecting from one end thereof, a back frame mounted to rotate on the projecting portion of said socket, an inner draw bolt adjustably mounted in said socket, means whereby a saw blade may be connected with said inner draw bolt, means for rotatably connecting said saw blade with the outer portion of the back frame, and means whereby said socket may be locked or released relatively to the back frame.

2. A sawing implement comprising a handle having a socket projecting from one end thereof, a back frame mounted to rotate on the projecting portion of said socket, said back frame having a rotatively mounted draw bolt at its outer end, an inner draw bolt fitting said socket and having a screw thread connection therewith, and means whereby said socket may be locked relatively to the back frame and may be released therefrom.

3. A sawing implement comprising a handle having a socket projecting from one end thereof, a back frame mounted to rotate on the projecting portion of said socket, the end of said socket having notches or recesses, an outer draw bolt rotatably connected with the back frame, an inner draw bolt having a screw thread connection with said socket, and means coacting with the recesses in the end of the socket whereby the draw bolt may be locked to rotate with said socket.

4. A sawing implement comprising a handle having a socket projecting from one end thereof, a back frame mounted to rotate on the projecting portion of said socket, the end of said socket having notches or recesses, the portion of the back frame which is mounted on said socket being formed with a notch or recess, an outer draw bolt rotatably connected with the back frame, an inner draw bolt having a screw threaded connection with the socket, and means coacting with the notches or recesses of the socket and swiveled portion of the back frame to lock the inner draw bolt and socket against rotation relatively to the back frame.

5. A sawing implement comprising a handle having a socket, an inner draw bolt adjustably mounted in said socket, a back frame swiveled on said socket and having an outer draw bolt at its outer end, means for locking and unlocking the swiveled portion of the back frame relatively to said socket, and means for holding a saw under tension between said draw bolts while the latter are unlocked and free to revolve relatively to the frame.

6. A sawing implement comprising a handle having a socket, an inner draw bolt screw-threaded in said socket and having a longitudinal groove, said socket having recesses of varying depths in its outer end, a back frame swiveled on the outer portion of said socket and having a rotatably mounted draw bolt at its outer end, a key mounted in the groove of the inner draw bolt, and a nut for sliding said key in said groove, the swiveled portion of the back frame having stop members adapted to be engaged by said key.

7. A sawing implement comprising a handle having a socket, an inner draw bolt screw-threaded in said socket and having a longitudinal groove, said socket having recesses of varying depths in its outer end, a back frame having a swiveled head mounted on the outer portion of the socket,

the upper side of said swiveled head being formed with notches adapted to register with the recesses in the end of the socket, a draw bolt rotatably carried by the outer end of the back frame, a key mounted in the groove of the inner draw bolt, and means for shifting said key in said groove.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLIAM J. PARSONS.

Witnesses:
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