Nov. 22, 1938. E. M. JACK 2,137,742

HACKSAW

Filed Dec. 4, 1936

Fig. 1.

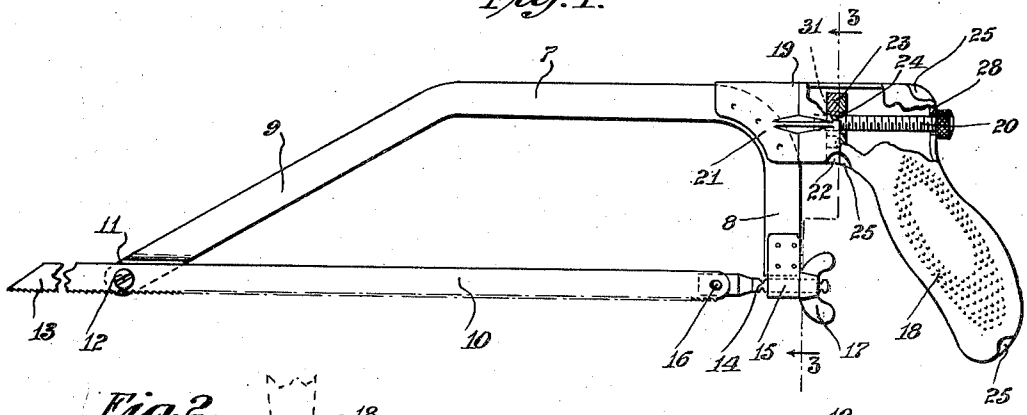


Fig. 2.

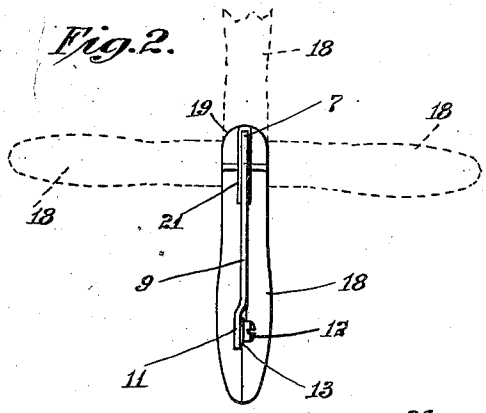


Fig. 3.

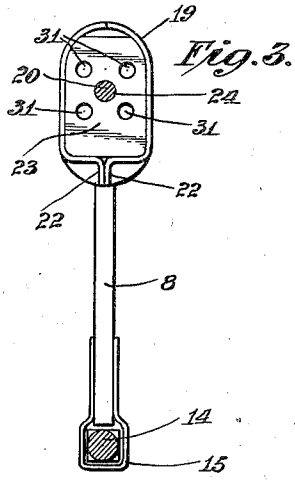


Fig. 4.

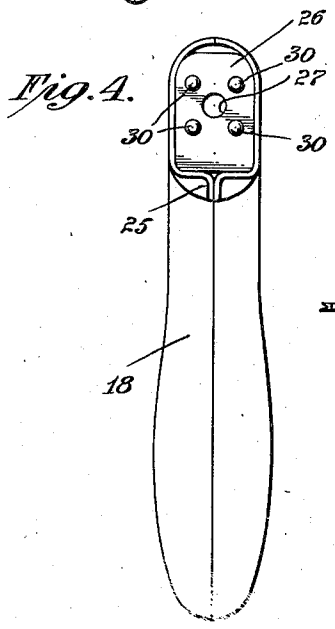
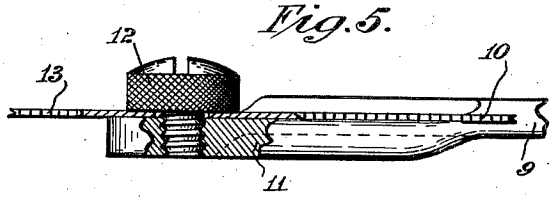


Fig. 5.



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UNITED STATES PATENT OFFICE

2,137,742

HACKSAW

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Application December 4, 1936, Serial No. 114,143

1 Claim. (Cl. 145—108)

The main object of this invention is to provide a construction which is simple but more convenient to use under varying conditions.

One object is to provide a frame which may be conveniently used in various places by specially shaping the outer end.

Another object is to provide a construction in which the blade extends beyond the frame so that the saw can be used in places not ordinarily accessible for hack saws.

Another object is to provide a construction in which the handle can be set at various angles to facilitate the use of the saw in various positions.

Fig. 1 is a side view of a hack saw embodying my invention.

Fig. 2 is an end view showing in dotted lines different positions to which the handle may be adjusted.

Fig. 3 is a sectional view on the plane of the line 3—3 of Fig. 1.

Fig. 4 is an inner end view of the handle.

Fig. 5 is an enlarged detail sectional view showing the method of securing the outer part of the blade.

The frame is preferably formed of a flattened bar with a main longitudinal portion 7, an inner end 8 extending substantially at right angles thereto and an outer end 9 extending at an obtuse angle to the main portion 7. The blade 10 may be of any suitable construction and is, of course, supported at two points remote from the portion 7. One point is secured to an offset portion 11 at a tip of the frame where it is detachably fixed by means of a broad headed screw 12 which minimizes the bending of the blade at this point. The blade preferably extends a substantial distance beyond the tip of the frame so that it can be used in places not accessible to the blade inside of a frame.

The offset portion 11 of the tip and the broad headed screw 12 securely hold the blade against lateral vibration. The opposite end of the blade is secured to the inner arm 8 of the frame by means of a slide 14 which passes through a guide 15 which is secured to the arm 8. This slide 14 has a hook-like projection 16 to which the end of the blade is attached. The slide 14 is screw threaded and provided with a clamp screw 17 by means of which the blade may be tightened.

The handle preferably consists of a main portion 18 and a base or socket portion 19. Each of these portions is preferably formed of two pieces and they are connected together by means of a screw 20. The base 19 is connected to the frame in line with the portion 7. The parts of the handle may be of sheet metal, die cast metal or molded composition.

The socket portion 19 has side flanges 21 which are welded or riveted to the frame. The edges may also be welded or otherwise secured together at 22. The plate 23 secured in the end of the socket 19 has a seat 24 for the screw 20. The two parts of the handle are suitably connected together at points such as 25, 25 by welding or otherwise. The plate 26 is inserted in the end of the handle by welding or otherwise and provided with a passage 27 for the screw. The thumb end of the handle is also provided with a passage 28 for the screw. By loosening the screw the grip portion of the handle can be turned about the screw as an axis to bring it to the most convenient portion with respect to the blade for any special use.

In order to more certainly prevent the grip portion of the handle from being turned unintentionally I may provide one or more interfitting projections and recesses such as 30 and 31 respectively. When these are employed it is necessary to loosen the screw 20 sufficiently to permit the projections and the recesses to be disengaged before the grip portion of the handle can be turned with respect to the socket portion and the attached frame.

It will be seen that the construction in some respects resembles hack saws now in use. The tapering of the nose of the frame, the extension of the blade, the method of attachment of the blade to the tip of the frame and the adjustable features of the handle, however, distinguish this construction radically from those of the prior art. The construction is also inexpensive to manufacture and the blade can be readily attached and detached.

While I have shown the invention as applied to a type of rigid frame it should be understood that it may be embodied in frames of the conventional extension type.

I claim:

In a hack saw, a frame having a main arm with angular portions for supporting a blade remote from the axis of the main arm, a socket member adjacent the main arm in near alignment therewith and forming an extension thereof, a closure plate for said socket formed with a central threaded opening, a handle having a socket portion in alignment with the said socket member, a plate forming a closing wall for said socket portion, said plate having a central opening in alignment with the central opening in the

socket member, projections on one plate around its central opening and recesses in the other plate in alignment with the projections, said handle having a hand grip portion extending at an angle to and outwardly from the handle socket portion, a screw extending through the aligned central openings in the socket members and having one end seated in the central threaded socket opening and its other end passing freely through the handle socket member to the exterior thereof, a knurled head finger piece on the exterior end of said screw in engagement with the hand grip for actuating the screw, said screw forming a swivel support for the handle and forming clamping means for fastening the handle to the frame thereof whereby said handle is adapted to turn about an axial line which extends substantially longitudinally of the main frame arm, said projections and recesses being adapted to coact to prevent rotation of the handle when the screw is tightened.

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