Nov. 12, 1940. F. A. CASSIDY 2,221,231

HACK SAW FRAME

Filed Aug. 14, 1939 2 Sheets-Sheet 1

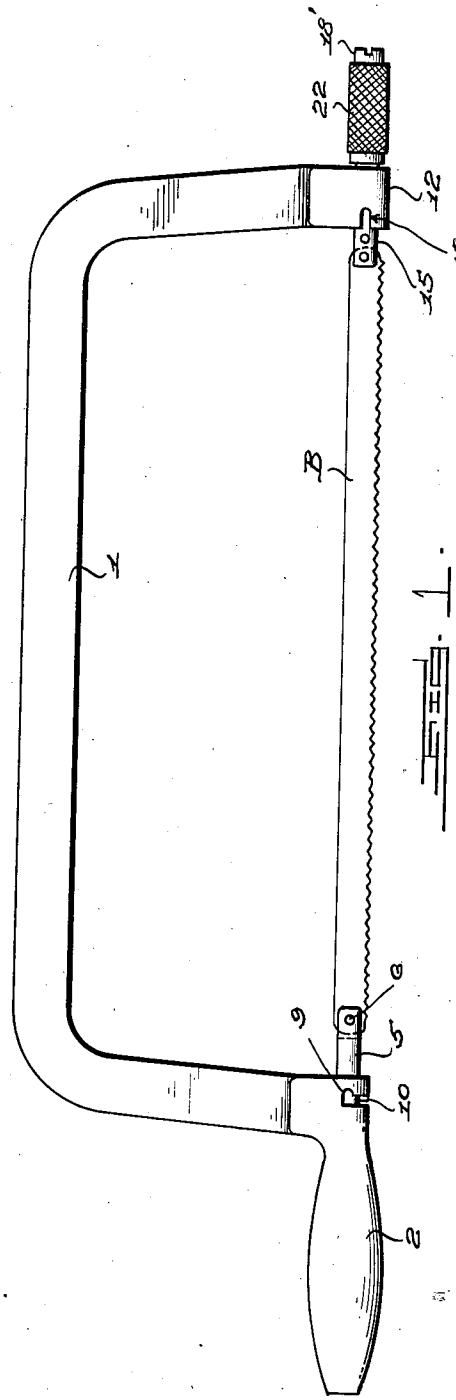


Fig. 1.

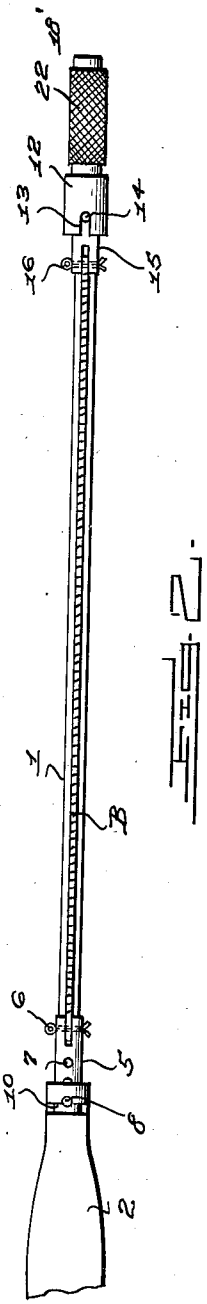


Fig. 2.

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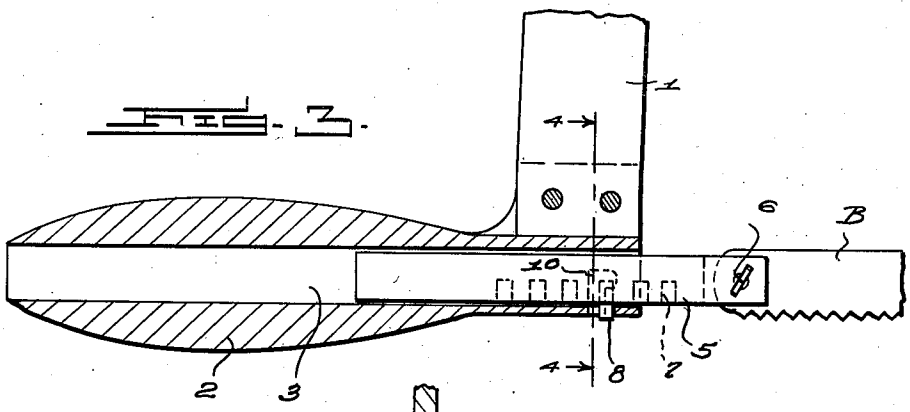


FIG. 3.

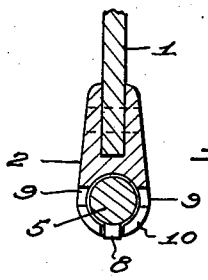


FIG. 4.

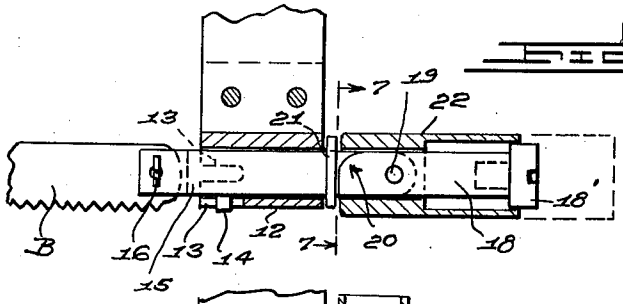


FIG. 5.

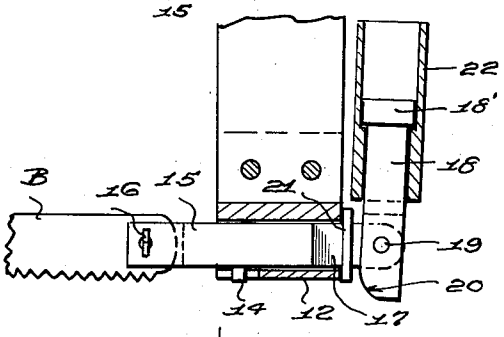


FIG. 6.

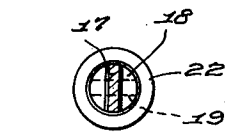


FIG. 7.

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UNITED STATES PATENT OFFICE

2,221,231

HACK SAW FRAME

Fred A. Cassidy, Pueblo, Colo.

Application August 14, 1939, Serial No. 290,069

2 Claims. (Cl. 145—33)

This invention relates to a hack saw frame, the general object of the invention being to provide means for easily and quickly changing blades or adjusting a blade to different angular positions and also to provide means whereby blades of different length may be used with the device.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a side elevational view of the invention.

Figure 2 is an edge view looking toward the blade.

Figure 3 is a sectional view through the handle part of the frame and showing the adjustable member for engaging one end of the blade.

Figure 4 is a section on the line 4—4 of Figure 3.

Figure 5 is a sectional view through the other end of the frame and showing how the other end of the blade is engaged by the holding means, this view also showing the lever assembly.

Figure 6 is a view similar to Figure 5 but showing the lever assembly in raised position.

Figure 7 is a section on the line 7—7 of Figure 5.

In these views the numeral 1 indicates the substantially U-shaped part of the frame and the numeral 2 indicates the handle part which is fastened to one end of the part 1 and said handle is provided with a longitudinally extending bore 3 therein which passes through the inner end of the handle which is flush with the inner edge of the limb of the U-shaped part 1. A circular bar 5 has a sliding fit in the bore 3 with its outer end of forked construction to receive an end of a blade B which is held in said forked end by a cotter pin 6 or the like. This bar or rod 5 has a longitudinally extending row of sockets 7 therein for selectively receiving a pin 8 and this pin is adapted to selectively engage any one of a plurality of notches 9 formed in the inner wall of a substantially semi-circular slot 10 formed in the inner end of the handle 2. Thus the bar 5 can be turned to any one of a number of different positions and held in said position by the pin 10 engaging a notch 9 and by removing the pin 8 from one hole or socket 7 and placing it in another the length of projection of the bar or rod 5 from the handle can be changed to suit the length of blade B being used with the saw.

A tubular part 12 is formed at the outer end of the other limb of the frame 1 and this tubular part is in alignment with the handle and the bore of this tubular part is in alignment with the bore 3 of the handle and the inner end of the tubular part 12 has notches 13 therein for receiving a pin 14 extending laterally from a bar or rod 15 which has its projecting end forked to receive the other end of the saw blade with said end of the blade being held between the prongs of the fork by a cotter pin 16 or the like passing through holes in the prongs. The member 15 passes through the bore of the tubular part 12 and its outer end is flattened as at 17 and fits between the forked end of a lever 18 and said flattened end is pivoted to the prongs of the forked part of the lever 18 as shown at 19. One corner of the pronged part of the lever is rounded as shown at 20 for engagement with a washer 21 on the member 15 and bearing against the outer end of the tubular part 12. This lever 18 has its major portion of circular shape in cross section with its outer end enlarged as at 18' and a two-diameter sleeve 22 fits over the lever, the large internal diameter of the sleeve receiving the head 18' while the smaller diameter bore receives the part 18.

Thus when the saw blade is to be exchanged for another one or the blade is to be changed in position the lever with the sleeve 22 is moved to the position shown in Figure 6 which will permit longitudinal movement of the member 15 in a direction toward the blade and thus tension is removed from the blade and the member 5 so that the blade can be readily removed from the members 5 and 15 by removing the cotter pins and a new blade is put in position or if it is desired to change the position of the blade this can be done by rotating the members 5 and 15 and placing the pin 8 of the member 5 in a different notch 9 and the pin 14 of the member 15 in any one of the notches 13 formed in the inner end of the tubular member 12. Then after the new blade has been put in place or the original blade adjusted as desired, the sleeve 22 is pulled from the position shown in Figure 6 downwardly to a position where it forms an extension of the member 15 as shown in Figure 5. As this is done the rounded part 20 of the inner end of the lever 18, which forms a cam engages the washer 21 and thus forces the member 15 outwardly to apply

tension to the blade and when the flattened ends of the prongs of the forked part of the lever 18 engage the washer 21 the parts are held with the blade under tension. Then by moving the sleeve 22 inwardly to the position shown in Figure 5 the lever 18 is locked in this extended position and then the saw is ready for use. Then when the blade is to be exchanged for another one or the original blade moved to another position the sleeve 22 is moved outwardly as shown in dotted lines in Figure 5 and then the sleeve and the lever forced to the position shown in Figure 6 which relieves tension off from the blade to permit the blade to be removed or the parts 5 and 15 adjusted.

With this lever action the tension can be easily and quickly placed on the blade and removed therefrom.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. In a hack saw, a U-shaped frame, a handle connected to the free end of one limb of said frame having a bore passing longitudinally therethrough, the inner end of the handle having a transverse slot therein communicating with the bore and the inner wall of the slot having spaced notches therein, a bar slidably and rotatably arranged in the bore and having an end projecting from the inner end thereof and said bar having a longitudinally extending row of radial sockets therein, a pin adapted to be placed in any one of said sockets with the pin extending through the slot and adapted to engage any one of the notches, a tubular part at the free end of the other limb of the frame having spaced notches in its inner end which align with the notches of the slot in the handle, a second bar passing through the tubular part, a pin projecting radially from the second bar and adapted to engage any one of the notches in said tubular part, means for connecting the ends of a saw blade to the inner ends of said bars respectively, and means connected with the outer end of the second bar and cooperating with said other limb for moving the bar outwardly to apply tension to the blade.

2. Means for adjusting longitudinally a bar attached to an end of a hack saw blade in a tubular part of a supporting member for applying tension to the blade comprising a lever pivoted adjacent one end to the outer end of said bar and said lever having a cam part formed on said end, a washer on the bar and engaging the outer end of the tubular part when engaged by the cam and the lever is swung to horizontal position in alignment with the bar, a sleeve having a bore of two diameters through which the lever passes and said lever having a head on its outer end movable in the large part of the bore, the small part of the bore receiving the joint between the lever and the bar when the lever is in position with the saw blade under tension.

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