Nov. 3, 1953 R. W. JOHNSON 2,657,903

CLAW HAMMER WITH ADJUSTABLE LEVERAGE FULCRUM

Filed May 12, 1950 2 Sheets-Sheet 1

Fig. 1.

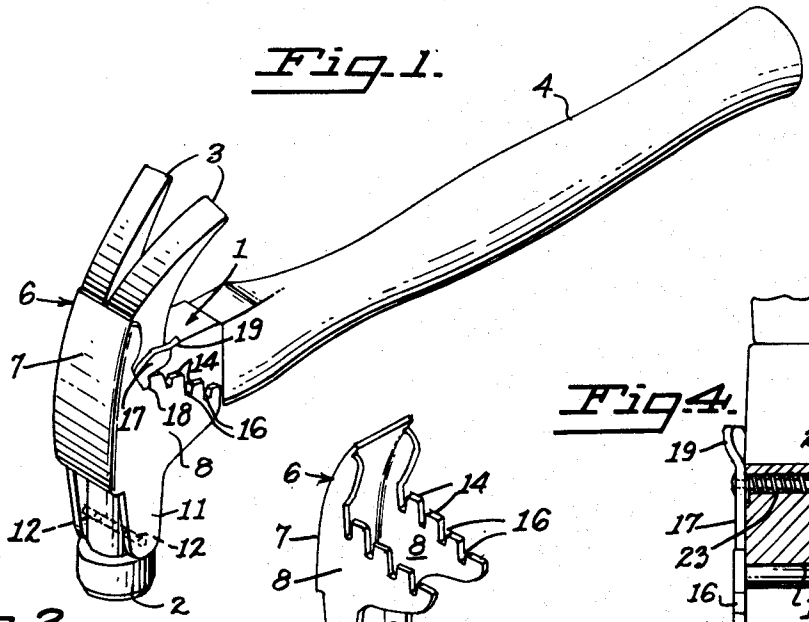


Fig. 2.

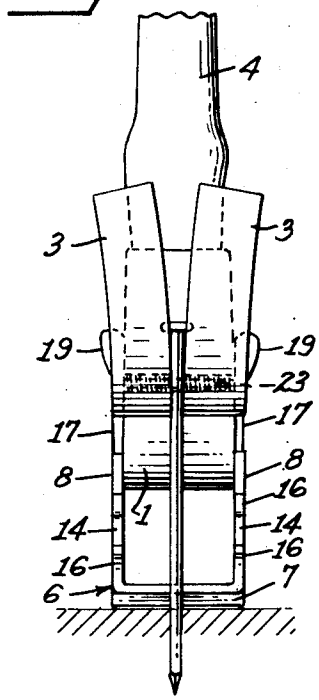


Fig. 3.

Fig. 4.

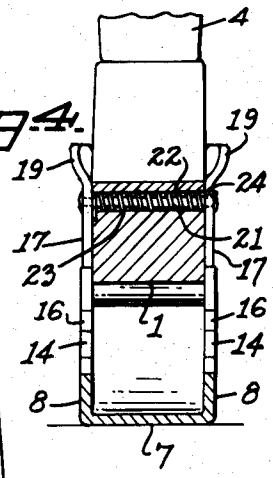
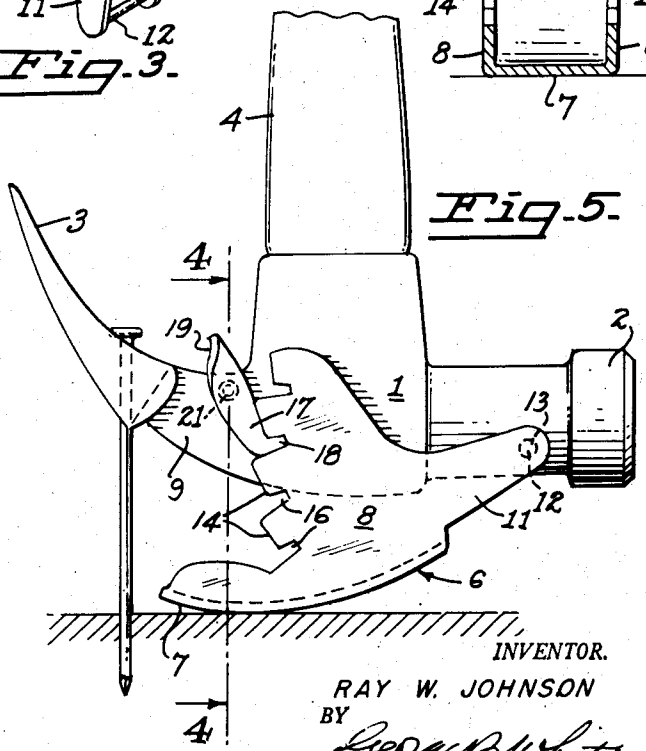


Fig. 5.



INVENTOR.
RAY W. JOHNSON
BY
George B. White
ATTORNEY

Nov. 3, 1953 R. W. JOHNSON 2,657,903

CLAW HAMMER WITH ADJUSTABLE LEVERAGE FULCRUM

Filed May 12, 1950 2 Sheets-Sheet 2

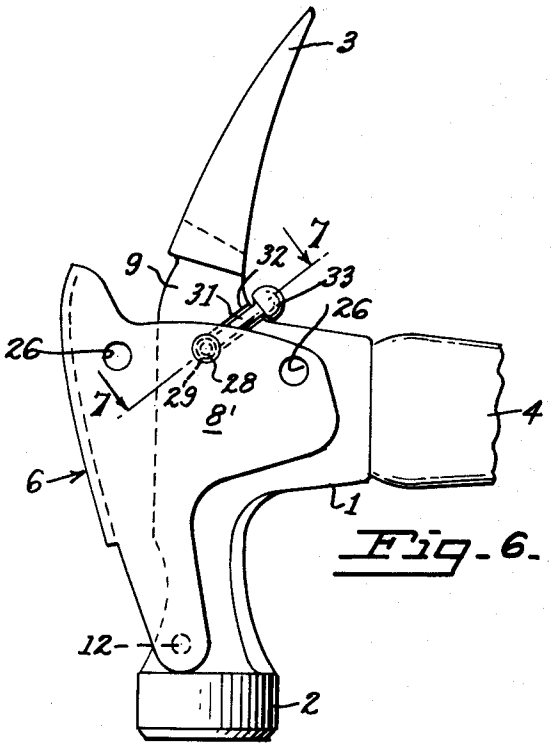


Fig. 6.

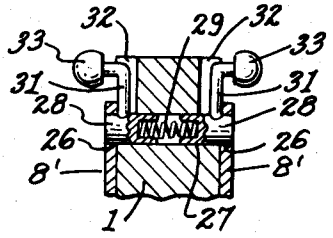


Fig. 7.

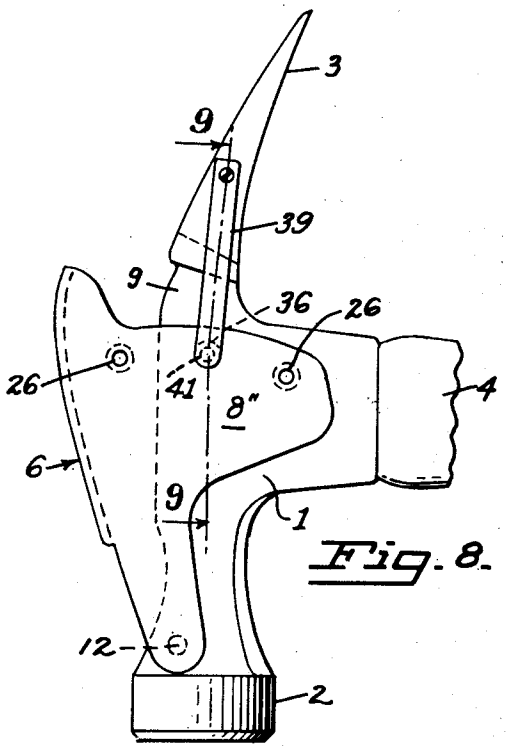


Fig. 8.

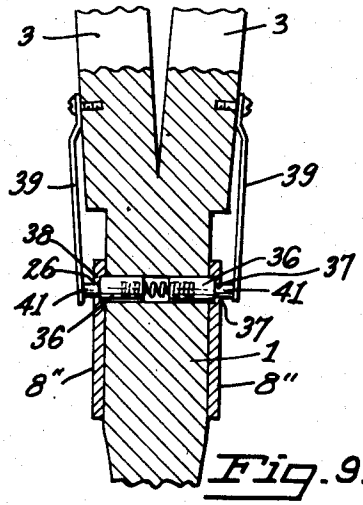


Fig. 9.

INVENTOR.
RAY W. JOHNSON
BY George B. White
ATTORNEY

Patented Nov. 3, 1953

2,657,903

UNITED STATES PATENT OFFICE

2,657,903

CLAW HAMMER WITH ADJUSTABLE LEVERAGE FULCRUM

Ray W. Johnson, Turlock, Calif., assignor to Le Tourneau, Inc., Longview, Tex.

Application May 12, 1950, Serial No. 161,629

3 Claims. (Cl. 254—26)

1

This invention relates to claw hammers with adjustable leverage fulcrum for the nail extracting movement of the claw.

The nail extracting effort on ordinary hammers is considerable, and the range of size and length of nails that can be pulled up is limited. The range of the nail pulling movement of such hammer is not sufficient to withdraw a longer nail from the wood and a piece of wood is commonly wedged under the curved portion of the claw or under the top of the hammer in order to effect the withdrawal of such nails. Even shorter nails are frequently bent while withdrawn by such claw hammers.

An object of my invention is to provide a claw hammer with a fulcrum element which is adapted to straddle the head of the hammer, is pivoted near the striking end of the hammer head, and provided with adjustable catch device near the base of the claw for holding the fulcrum member in adjusted positions, and which compactly complements the bearing top and sides of the hammer when in inoperative position so that it does not interfere with the normal manipulation of the hammer; the elevation of said fulcrum element to adjusted distances from said head effectively increases the leverage and straightens the pull of the claw.

I am aware that some changes may be made in the general arrangements and combinations of the several devices and parts as well as in the details of the construction thereof without departing from the scope of the present invention as set forth in the following specification, and as defined in the following claims; hence I do not limit my invention to the exact arrangements and combinations of the said device and parts as described in the said specification, nor do I confine myself to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, reference is had to the accompanying drawings for the illustrative embodiment of the invention, wherein:

Fig. 1 is a perspective view of a hammer with my fulcrum element attached thereon in collapsed position.

Fig. 2 is an end view of the head of my hammer, the fulcrum element being in elevated position, in engagement with a nail.

Fig. 3 is a perspective detail view of my fulcrum element.

Fig. 4 is a sectional view through the head of the hammer and said fulcrum element, the section being taken on the lines of 4—4 of Fig. 5.

2

Fig. 5 is a side view of the hammer showing my fulcrum element in elevated position.

Fig. 6 is a side view of a modified form of my fulcrum device on a hammer.

Fig. 7 is a sectional view, the section being taken on the lines 7—7 of Fig. 6.

Fig. 8 is another modified form of my fulcrum device on a hammer, and

Fig. 9 is a sectional view, the section being taken on the lines 9—9 of Fig. 8.

In the first illustrative embodiment of my invention, shown in Figs. 1 to 5 inclusive, the head 1 of the hammer has its usual striking end 2 and a pair of claws 3, and is provided with the usual handle 4. A fulcrum element 6 is of generally channel shaped cross section, the top 7 of which fits over the usual top of the head 1, and sides 8 of which straddle the hammer head 1. The hammer head 1 is preferably cut back to form a recess 9 as shown in Fig. 5, so that in its inoperative position the fulcrum element 6 fits into the recess 9 and complements the normal contour of the hammer head 1 and is out of the way of the usual manipulation of the hammer.

Each side 8 of the fulcrum element 6 has an ear 11 extended from the side edge thereof farthest from the claws 3 and in a direction opposite to the direction in which the claws 3 extend. A pivot pin 12 is fixed to each ear 11 and is journalled in a transverse hole 13 through the head 1 adjacent the base of the striking end 2 of the hammer. The fulcrum element 6 swings about a pivot axis near the striking end of the hammer and away from the claws 3 at its swinging end, and thus the bearing top 7 is in a natural position to present a comparatively large bearing surface for the rocking action required to pull a nail.

Along the side edge of each side 8 of the fulcrum element 6 nearest to the claws 3 are formed a series of teeth 14 by separating notches 16, which are arranged on an arc generally centered on the axis of the pivot pin 12. On each side of the head 1 of the hammer and at the base of the claws 3 is a pawl 17, which has a prong 18 fitting into the respective notches 16 between the teeth 14, and which is shaped to fit over the contour of a tooth 14. The outer end of each pawl 17 has a finger piece 19 thereon for engagement by the thumb or finger of the user of the hammer for withdrawing the pawl 17 from the tooth 14 and releasing the fulcrum element 6. The pawls 17 are fixed on the opposite ends of a pivot shaft 21 in a transverse hole 22 in the hammer head 1 at

about the base of the claws 3. A coil spring 23 is located in said hole 22 around said pivot shaft 21 and has one end thereof anchored in the wall of the hole 22 and its other end 24 in the adjacent pawl 17 so as to normally urge the pawls 17 into engagement with the teeth 14.

The embodiment of my invention shown in Figs. 6 and 7 differs from the first described form in the releasable catch device, which in this form includes a plurality of recesses or holes 26 spaced along an arc centered about said fulcrum axis of the pivot 12 on each side 8', and adjacent the base of the claws 3. A transverse hole 27 in the hammer head 1 is located at the same radial distance from the axis of said pivot pin 12 as the radius of the arc on which said recesses 26 are located, so that the latter can be aligned with said transverse hole 27 selectively. A pair of opposed plunger catch pins 28 are in the opposite ends of the transverse hole 27 and are cupped at their inner ends to accommodate a coil spring 29 therebetween. This coil spring 29 urges the catch pins 28 outwardly and into the aligned recesses 26 to hold the fulcrum element 6 in adjusted position.

An abutment finger 31 extends from each catch pin 28 into a socket 32 in the side of the hammer head 1 and beyond the adjacent edge of the side 8' of the fulcrum element 6, and abuts against the insides of said sides 8' to hold the catch pins 28 in place. A button 33 extends outwardly from each finger 31 to facilitate the manipulation of the catch for releasing the fulcrum element 6. By pressing the buttons 33 inwardly of the sockets 32 of the hammer head 1 the catch pins 28 are withdrawn from the opposite recesses 26 and the fulcrum element 6 is free to be adjusted to a selected elevation.

The embodiment of my invention shown in Figs. 8 and 9 differs from the previously described embodiment in that each catch pin 36 in this form has a reduced end 37 extending through the recess 26 and the shoulder 38 on each catch pin 36 abuts against the side 8'' of the fulcrum element 6.

On each side of the claws 3 is anchored an end of a spring finger 39 which extends alongside the hammer and over the side 8'' of the hammer head 1. Each spring finger 39 has at its free end a button 41 extended toward and aligned with said transverse hole 27 so as to bear against the reduced ends 37 of the adjacent catch pins 36. Thus by manually pressing the free ends of the spring fingers 39 together the catch pins 36 are pushed into the transverse hole 27 and the fulcrum element 6 can be adjusted to a selected elevation.

My fulcrum device can be easily applied to ordinary type of hammers without in any way interfering with the usual functions of the hammer. When increased leverage is needed for pulling a nail out of an object, the catch device is quickly released from the fulcrum element, and the latter is swung to the selected elevation, where it is reengaged by the catch device and is held securely in the adjusted position. The device is strong, it furnishes positive and extensive bearing surface on an arc in the direction of the claws, and it is operated with ease and without bending the nails. It is also to be noted, that the bearing area of the fulcrum element on the work remains offset from the center of the handle on the head in the direction of the claws, in other words, the bearing point of the fulcrum element in all positions is

located between the center line of the handle and the claws.

I claim:

1. In a claw hammer having a head and a pair of claws, a fulcrum element including a bearing wall fitting over said hammer, a pair of side flanges fitting over the opposite sides of the hammer, a pair of ears extended from each flange in a direction generally opposite the direction in which the claws extend and being pivoted on said head, a plurality of detents at the sides of said flanges nearer to said claws, and a releasable catch device on said hammer for selectively engaging said detents, the sides and top of said hammer underlying said fulcrum element being recessed, said fulcrum element fitting into said recessed top and sides to complement the contour of the hammer in inoperative position of said fulcrum element.

2. In a claw hammer having a head and a pair of claws, a fulcrum element of generally channel shaped cross section, a pivotal connection between said fulcrum element and said head at the end of said fulcrum element farthest from said claw, a plurality of arcuately spaced detent recesses formed along the sides of the fulcrum element nearer to said claw, said hammer having a transverse hole therethrough located on the arc of spacing of said recesses, a pair of plunger catches slidable in the respective ends of said hole, a coil spring pressing said catches outwardly and into the respective registering recesses, an abutment on each plunger abutting against the respective sides of said fulcrum element to limit the outward movement of said plunger catches, and manipulable finger elements for applying inward pressure on said plunger catches for releasing said fulcrum element.

3. In a claw hammer having a head and a pair of claws, a fulcrum element of generally channel shaped cross section, a pivotal connection between said fulcrum element and said head at the end of said fulcrum element farthest from said claw, a plurality of arcuately spaced detent recesses formed along the sides of the fulcrum element nearer to said claw, said hammer having a transverse hole therethrough located on the arc of spacing of said recesses, a pair of plunger catches slidable in the respective ends of said hole, a coil spring pressing said catches outwardly and into the respective registering recesses, an abutment on each plunger abutting against the respective sides of said fulcrum element to limit the outward movement of said plunger catches, a resilient finger along each side of said hammer having the end thereof nearer the claws anchored on the hammer, and having its other end in registry with the adjacent plunger catch, and an abutment on said registering end of each finger for abutting against the end of the adjacent plunger catch to transmit releasing pressure thereto.

RAY W. JOHNSON.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
856,097	Palmer	June 4, 1907
922,568	Eddy	May 25, 1909
1,531,014	Maclure	Mar. 24, 1925
2,541,372	McLean	Feb. 13, 1951

FOREIGN PATENTS

Number	Country	Date
337,626	Germany	June 6, 1921