METAL BODY WORK BALL HAMMER ASSEMBLY

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This invention relates to tools for repairing sheet metal work and particularly a combination ball hammer having a handle with a threaded stud on one end for holding a ball, picks and other tools which are particularly adapted for working door panels, quarter panels and fender panels where working space is limited.

The purpose of this invention is to provide an all-purpose ball hammer for removing dents from and repairing motor vehicle doors, panels and fenders in which parts of the tool are readily interchangeably whereby the same tool is adapted to be used for repairing different parts of a vehicle body.

With conventional tools it is usually necessary to cut out the inner panel of a door to repair the outer surface or panel as it is substantially impossible to position an anvil or hammer head so that a dent or the like may be worked out of a panel. With this thought in mind this invention contemplates a repair tool for motor vehicle bodies whereby a ball or a plurality of picks or points are adapted to be, selectively, positioned on the end of a handle and wherein the length of the handle is readily adjustable so that the device is adapted to reach substantially all points of a motor vehicle body.

The object of this invention is, therefore, to provide a universal tool for motor vehicle body repair work.

Another object of the invention is to provide a sheet metal or motor vehicle body repair tool in which a plurality of different elements are adapted to be used on a threaded stud at the end of one handle.

A further object of the invention is to provide a motor vehicle body repair tool having a plurality of handles of different patterns adapted to be threaded on one end of a handle in which the tool is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies an elongated handle having a threaded stud extending from one end with a ball and also a plurality of tools of different patterns adapted to be mounted on the threaded stud or ball positioned thereon.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:

Figure 1 is a plan view illustrating the improved sheet metal repair tool showing a ball having a point threaded in one side positioned on one end of a handle.

Figure 2 is a longitudinal section taken on line 2-2 of Figure 1 also showing a ball positioned on a threaded stud at one end of a handle.

Figure 3 is a side elevational view of a tool similar to that shown in Figures 1 and 2 showing a modification wherein the threaded stud is positioned at a right angle in relation to the axis of the handle and in which a ball and a point are shown in broken lines on the threaded stud, the intermediate portion and gripping end of the handle being broken away.

Figure 4 is a cross section through the handle of the tool taken on line 4-4 of Figure 1.

Figure 5 is a side elevational view similar to that shown in Figure 3 illustrating a further modification wherein the threaded stud is extended at an angle less than a right angle from the axis of the handle of the tool.

Figure 6 is a view also similar to that shown in Figure 3 showing a straight threaded stud extended from the end of the handle.

Figure 7 is a longitudinal section through the handle of the tool showing a threaded stud clamped in the end of the handle with a coupling element and showing a ball with a pick in one side thereof in broken lines.

Figure 8 is a detail showing the coupling of the design shown in Figure 7.

Figure 9 is a detail illustrating a ball adapted to be threaded on the end of the stud, as shown in Figures 1 and 2.

Figure 10 is a detail showing a knob adapted to be positioned in the ball shown in Figure 9.

Figure 11 is a detail showing a pick also adapted to be threaded in the ball shown in Figure 9.

Figure 12 is a view similar to that shown in Figure 11 illustrating a pick of a different design.

Figure 13 is a view showing a point adapted to be threaded in the ball shown in Figure 9.

Figure 14 is a detail illustrating a packing washer of the type used in the coupling illustrated in Figures 7 and 8.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved ball hammer or sheet metal repair tool of this invention includes a tubular handle 10 having a grip 11 on one end and a threaded stud 12 having a cylindrical base 13 secured in the opposite end, a ball 14 adapted to be threaded on the stud 12, a lock or clamp nut 15 also threaded on the stud 12, and a plurality of picks, points and knobs adapted to be threaded in the ball or threaded on the stud.

In the design shown the handle 11, which is provided with an enlarged end 16 is formed with an elongated slot 17 in which a flat section 18 of the tubular handle 10 is positioned and, particularly as illustrated in Figure 2, the handle or grip 11 is secured to the flat section 18 with bolts 19 on the ends of which nuts 20 are positioned, the nuts being positioned in counterbores 21 of the grip. The heads 22 on the opposite ends of the bolts are also positioned in countersunk recesses 23 in the side of the grip whereby the heads and nuts are positioned flush with the surface of the grip. The opposite end of the handle 10 is provided with a cramped section 24 by which the base of the threaded stud 12 is secured in the end of the handle.

The ball 14 is formed with a threaded socket 25 that is adapted to receive a stud 12 and also a threaded socket 26 that is adapted to receive a threaded shank 27 of a point 28, a similar shank 29 of a knob 30, a similar shank 31 of a point 32 or a similar shank 33 of a pick 34. A lock or jam nut 35 is provided for retaining the parts in position in the socket of the ball.

In the design illustrated in Figure 3 a stud 36 having a threaded end 37 is secured in the end of a tubular handle 38, similar to the handle 10 and the handle is provided with a grip 39 that is secured thereto with bolts 40, similar to the bolts 19.

A similar tool is illustrated in Figure 5 in which a stud 41 having a threaded section 42 is secured in a tubular handle 43, the handle being provided with a grip 44, similar to the grip 11.

In the design illustrated in Figures 7 and 8 a stud 45 having a threaded end 46 is secured in a threaded nipple 47 and the nipple is mounted on the end of a tubular handle 48 with a coupling 49, the handle being provided with a grip 50 and the grip being secured to the handle with bolts 51 similar to the bolts 19. In this design the coupling 49 is provided with an annular flange 52 that coats with an annular ridge 53 on the end of the tubular handle.
handle 48 and as illustrated in Figures 8 and 14 a packing ring 54 may be positioned between the ends of the nipple 47 and tube 48 forming the handle. The end of the tube 48 forming the ridge or flange 53 may be provided with serrations 55, as shown in Figure 7.

With the parts formed in this manner a tool is provided in which a ball, knob, point or pick may be positioned on the end of an elongated handle and using the different forms of threaded studs the tools which provide anvils, may be extended straight ahead of the handle or from sides thereof and may be positioned at different angles in relation to the handle.

By this means it will be possible to reach substantially any point in a motor vehicle door, fender, or body. It will be understood that tools of different shapes and designs may be provided in addition to the tools or parts illustrated and described.

It will also be understood that other modifications, within the scope of the appended claims, may be made in the design and arrangement of parts without departing from the spirit of the invention.

What is claimed is:

1. In a ball hammer, the combination which comprises an elongated tubular handle having a coupling nut loosely mounted on one end thereof, a nipple connected to said handle by said coupling nut, a threaded stud secured within said nipple and extended from one end thereof, a ball having two threaded sockets therein positioned with one of said sockets threaded on the threaded stud of the handle, and a tool providing an anvil threaded in the other threaded socket of the ball.

2. In a ball hammer, the combination which comprises an elongated tubular handle having a coupling nut loosely mounted on one end thereof, a nipple connected to said handle by said coupling nut, a threaded stud secured within said nipple and extended from one end thereof, a ball having two threaded sockets therein positioned with one of said sockets threaded on the threaded stud of the handle, a tool providing an anvil threaded in the other threaded socket of the ball, and locking means for securing the parts in positions.

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