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2,178,308

DENT REMOVER

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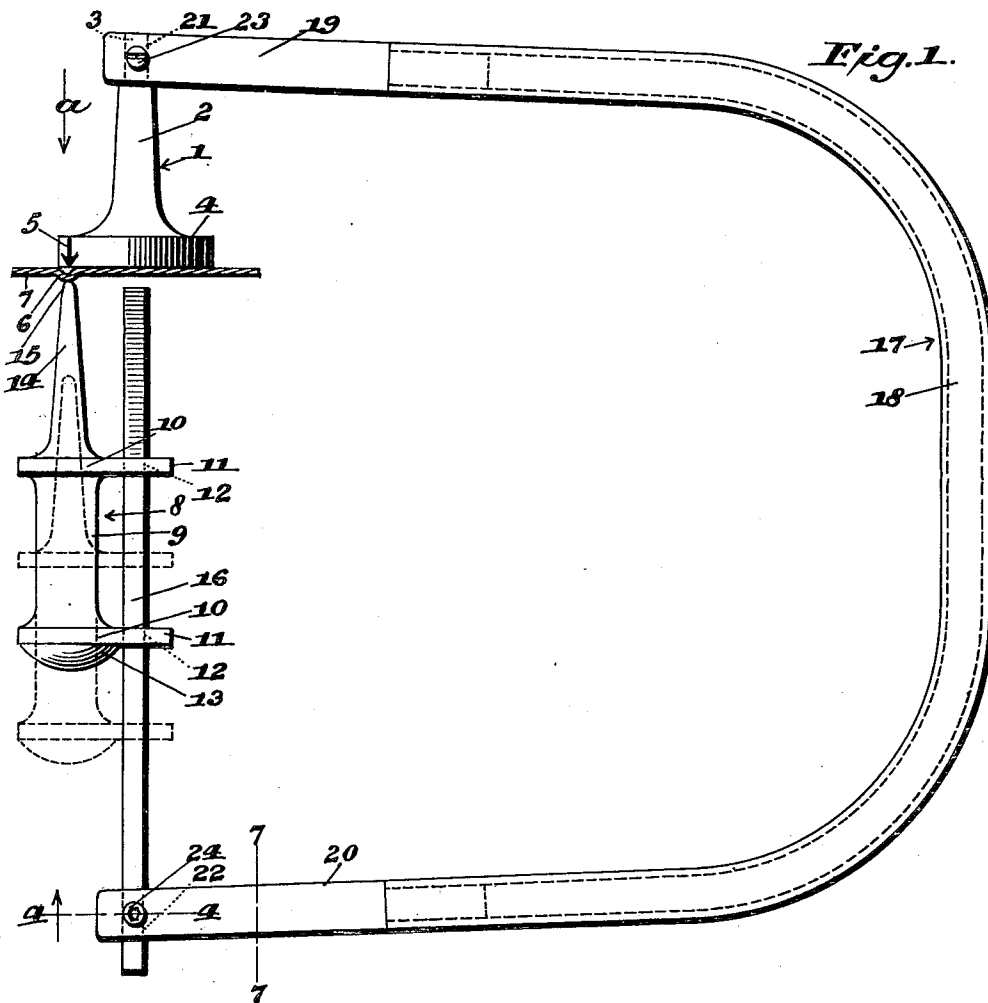


Fig. 2.

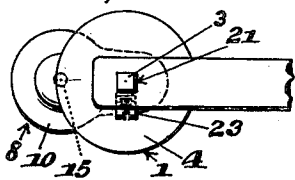


Fig. 3.

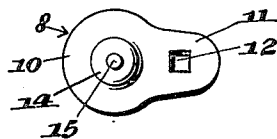


Fig. 4.

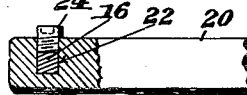


Fig. 5.

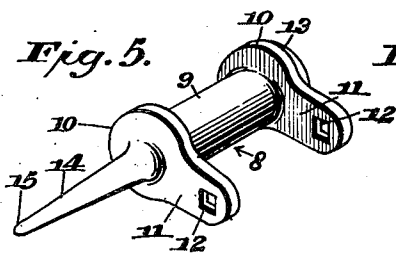


Fig. 6.

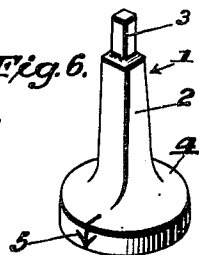


Fig. 7.



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DENT REMOVER

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4 Claims. (Cl. 81-15)

This invention relates to improvements in dent removers, the primary and most important use of the tool being in the removal of dents from automobile fenders and other body parts. It is common knowledge that persons engaged in this kind of work use a variety of differently shaped tools, respectively for the purposes of getting out dents of various depths and configurations.

The expertness with which the workman uses these tools depends in a large measure on his confining the blows to the high spots (which are the indentations when viewed from the right side) because if he strikes the blow beside the high spot he will be confronted with the double duty of undoing his own faulty work.

Generally experience over a considerable period of time is necessary for a workman to reach that perfection in removing dents and the like that will enable him to call himself an expert. With the not infrequent shortages of labor, it becomes necessary some times for the customer to accept a job which is not as good as it might have been had a more experienced worker done it than the one who is here supposed to have lacked the necessary experience. With this premise in mind, the objects of the invention are as follows:

First, to provide a tool for removing dents from automobile fenders and the like, which enables striking a blow with precision upon the high spot, thereby utilizing every blow for the removal of the indentation.

Second, to provide a tool of the foregoing character which has an indicating mark which enables the workman to aim his blows directly at the indentation on the reverse side of a fender without actually seeing either the indentation or looking at said reverse side.

Third, to provide a tool which will enable a workman who has had only a little experience in the removal of dents, to turn out a job which will compare favorably with the work of an expert according to the old and current system of tool usage.

Other objects and advantages will appear in the following specification, reference being had to the accompanying drawing, in which:

Figure 1 is a plan view of the dent removing tool.

Figure 2 is an elevation of a portion of the tool as though viewed in the direction of the arrow *a*.

Figure 3 is an end elevation of the hammer.

Figure 4 is a detail cross section taken on the line 4-4 of Figure 1.

Figure 5 is a detail perspective view of the hammer.

Figure 6 is a detail perspective view of the dolly or anvil.

Figure 7 is a cross section taken on the line 7-7 of Fig. 1.

In carrying out the invention provision is made of a dolly or anvil 1, the shank 2 of which terminates in a cross-sectionally non-circular stem 3. That end of the shank 2 opposite to the stem 3 is enlarged into a head 4. This head has a conspicuous index mark 5 in the form of an arrow. This index mark is intended to be registered with the dent 6 in the fender or body part 7 preparatory to hammering upon the dent from the inside for its removal.

A hammer 8 coacts with the anvil 1. This comprises a body 9 which merges into flanges 10. The body 9 is long enough between the flanges to provide an adequate hand grip. The flanges have as one of their purposes to serve as guards for the ends of the fish which grips and wields the hammer. Each of the flanges has an extension 11, and each of the extensions has a non-circular hole 12.

One end of the hammer has a convexity 13 which serves as a roughing hammer. The other end of the hammer has a tapering point 14 which has a small but rounded extremity 15. It is this point which is adapted to strike the dent 6 with which the index mark 5 was previously registered. This blow of the hammer is imparted to the anvil 1 and the dent 6 is eventually levelled.

A non-circular shaft 16 provides the guide and support for the hammer 8. This shaft occupies the matching holes 12 in the extensions 11. The shaft 16 is axially aligned with the anvil 1. Both the shaft and the anvil are secured to a yoke 17. The main body 18 of this yoke comprises a tube of any desired cross section, bent into the form of a U. Cold-rolled steel inserts 19, 20 are fixed in the open ends of the tubular body 18, being welded or otherwise permanently secured in any preferred way. The virtual extremities of these inserts have axially registering holes 21, 22. These holes are non-circular to match the cross section of the stem 3 and shaft 16, and when the latter are inserted they will not be able to turn. But in order to fix the anvil and the shaft use is made of a capscrew 23 to fix the former and a set screw 24 to secure the latter. The set screw is of that type which has a hexagonal wrench hole and by loosening the set screw the shaft 16 can be adjusted as may be desired and needed.

The operation is readily understood. The part 7 does not necessarily comprise a fender; it might be some other part of an automobile, or might

consist of some other metal plate which has the dent 6 that is to be removed. The tool is held either vertically or horizontally, depending upon the location of the dent 6. The latter is spotted, so to speak, by registering the arrow 5 with it.

The hammer may be slidably positioned upon the guide 16 in any one of four angular positions, the cross section of said guide being square. Sometimes dents occur in such places which are awkwardly reached by the device with the hammer 8 in its farthest out position shown in Fig. 1. The hammer is then set in some other one of the three remaining quarter positions, thus to more conveniently reach the dent. The anvil 4 is reset correspondingly in order to reposition the index mark 5, and by observing the latter the operator will know where the unseen hammer point is striking.

It will be an easy matter for the workman to locate the index mark in reference to the dent, and then remove the tool just a little farther in the direction of the dent to cover it with the head 4 of the anvil. The axis of the hammer 8 is so spaced from the shaft 16 that successive blows will be delivered to the head 4. It may first be necessary to employ the roughing hammer 13, this to be followed up by use of the finishing point 15.

In order to carry out these uses it is only necessary to adjust the shaft 16 and set the hammer 8 successively in its two positions to obtain the effect. The yoke is now firmly held in position so that the head 4 remains in covering relationship to the dent 6 whereupon the hammer 8 is wielded by the workman until the dent is removed. The workman will know that the blows are being struck upon the unseen dent 6 in proximity to the index mark 5, and by carefully watching the work he will soon be able to virtually efface the dent in readiness for any desired finishing operation.

I claim:

1. A dent removing tool comprising a hammer having a body, striking means on at least one end of the body, spaced flanges on the body having lateral extensions with registering holes therein, a shaft fitted through the holes and providing a guide for the sliding of the hammer, an anvil of an area to be within range of the striking means and receive the blows of the ham-

mer, a yoke having registering holes in its ends, means securing the shaft in one of the holes, and means affixing the anvil in the other hole.

2. A dent remover comprising a yoke, a shaft affixed to one end of the yoke and extended inwardly of the yoke, an anvil attached to the other end of the yoke and having a head confronting the adjacent end of the shaft, a hammer, and means on the hammer slidably connected to the shaft and offsetting the hammer from the shaft so that its striking point is at the approximate margin of the head, said means including flanges on the hammer spaced apart to afford a guarded handhold.

3. A dent remover comprising a yoke, guide means attached to one end of the yoke and extending inwardly of the yoke toward its other end, a hammer slidably carried by the guide means, said hammer being in offset relationship to the guide means and angularly movable therearound into various operating positions, and an anvil having a head with a marginal index mark, said anvil being carried by the other yoke end with its head in confronting relationship to the hammer, and being angularly adjustable to match its index mark with the hammer operating position.

4. A dent remover comprising a yoke having a non-circular hole in one of its ends, guide means carried by the other yoke end having a cross sectional shape identical with the hole and being directed inwardly of the yoke towards said one end, a hammer having at least one extension positioned laterally thereof, said extension having a hole matching and containing the guide means for slidable movement of the hammer in a position offset from the guide means, the matching non-circular shapes of the guide means and extension hole permitting angularly locating the hammer around the guide means in any one of several working positions, an anvil having a periphery substantially coextensive with the axis of the hammer, said periphery having an index mark adapted to match one hammer position, and a stem on the anvil fitting the non-circular hole thus to permit successively matching the hammer in others of its various working positions.

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