

Feb. 27, 1951

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2,543,347

SHEET METAL WORKING TOOL

Filed Oct. 25, 1948

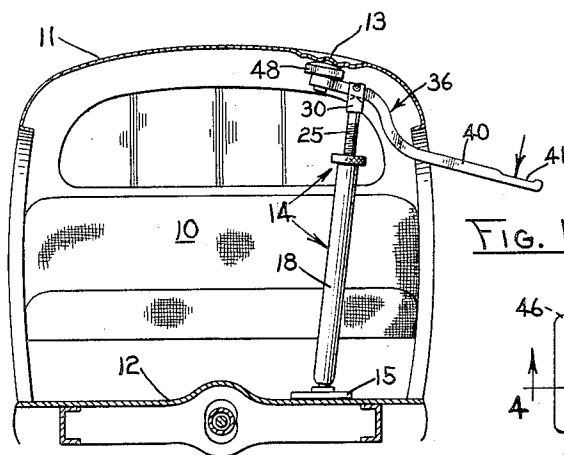


FIG. 1.

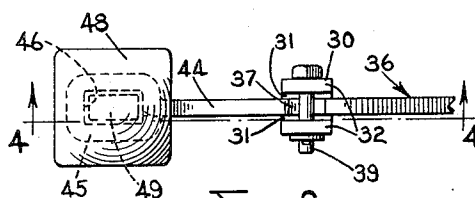


FIG. 3.

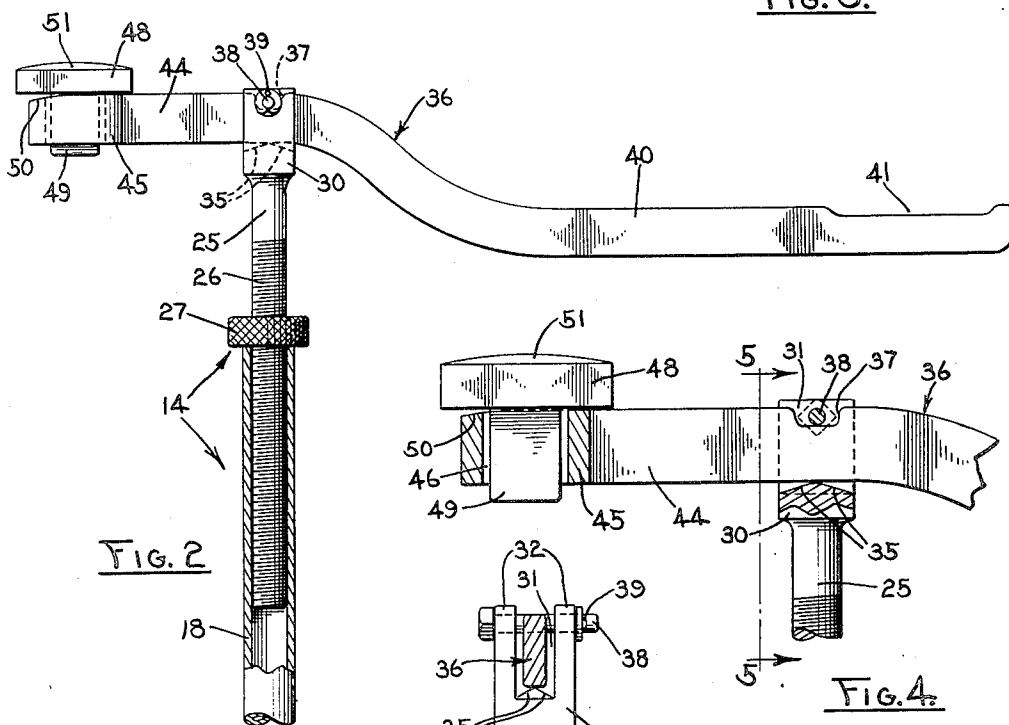


FIG. 2

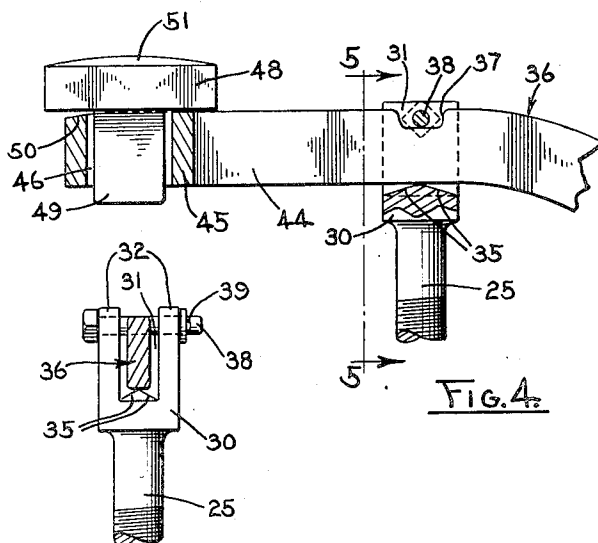


FIG. 4.

FIG. 5.

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UNITED STATES PATENT OFFICE

2,543,347

SHEET METAL WORKING TOOL

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Application October 25, 1948, Serial No. 56,284

1 Claim. (Cl. 153—32)

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This invention relates to sheet metal working tools and more particularly to an automobile body bucking tool adapted to aid in the straightening of dented turret tops of automobiles and the like.

In the repairing of dented turret tops of automobiles, sheet metal working tools are employed to bend the sheet metal outwardly to approximately its original position and for thereafter hammering or dinging the sheet metal into a smooth condition approximating its original shape. This work is usually done in a body and fender repair shop and in these shops improvised tools are employed for bending the turret top outwardly to approximately its original shape. The usual practice is to utilize an automobile jack or the like and a plurality of blocks to give the jack the desired height and by manipulating the jack against the inner side of the turret top, to force the sheet metal dented portion outwardly. No suitable tool has been available for use in performing this repair operation.

Another step in the repairing of a dented portion of an automobile turret top is the smoothing of the sheet metal after it has been bent outwardly to its approximate original shape. This is usually accomplished by one workman holding a buck, usually in the form of a large block of metal, against the inner side of the dented portion of the turret top and another workman hammering or dinging the outer surface thereof. This practice is quite unsatisfactory in that the workman holding the buck against the inner side of the top cannot maintain it accurately in position nor exert sufficient pressure to prevent inward bending of the metal while it is being dinged. Another objection to this method of smoothing the sheet metal is that the services of two workmen are required to perform the operation.

Therefore, it is an object of the present invention to provide a sheet metal working tool for forcing an inwardly bent portion of a turret top outwardly to its approximate original form and for backing the bent sheet metal portion while the sheet metal is dinged for final smoothing the metal.

Another object of the invention is to provide a body bucking tool which may be positioned and actuated from the exterior of the body of the automobile whereby only one workman is required for the dinging operation.

Another object of the invention is to provide a tool of the type described that is economical to manufacture and in which the buck thereof is

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conveniently movable and held for bending the damaged portion of the turret top and for backing the sheet metal during the dinging operation.

A still further object of the present invention is to provide a body tool having a buck member in which the angular tilt of the buck member is automatically regulated to conform the attitude of said member to the surface of a work piece engaged.

Other objects and advantages of the present invention will become apparent from the following description taken in connection with the accompanying drawing in which,

Fig. 1 is a vertical transverse sectional view through an automobile body having a turret top showing a tool of the present invention located therein and in position for bending a dented portion of the turret top thereof outwardly.

Fig. 2 is a somewhat enlarged elevational view of the tool with a tubular supporting member thereof partially in axial section.

Fig. 3 is a fragmentary top plan view of the tool.

Fig. 4 is a fragmentary vertical sectional view of the top portion of the tool taken along line 4—4 in Fig. 3.

Fig. 5 is a fragmentary vertical sectional view through a top portion of the tool taken along line 5—5 in Fig. 4.

Referring to the details of the drawing and particularly to Fig. 1, an automobile body is shown generally at 10 having a turret top 11 and a floor 12. The turret top is illustrated as having an inwardly bent portion 13 which is characteristic of a common injury to turret tops. A tool or buck of the present invention is indicated generally by the reference number 14 and positioned in the automobile body 10 in a location for manually bending the dented portion 13 of the turret top outwardly thereby.

The details of the tool are illustrated in Figs. 2 to 5 inclusive, and in Fig. 2 the tool is illustrated as having a foot 15 made in the form of a metal plate circular, rectangular or of any other suitable form, and ball 16 secured centrally thereto and upwardly extended therefrom.

The tool is provided with a substantially erect tubular post 18 which has a plug 19 welded thereon at 20 near the lower end thereof with a short length of tube extending therebelow. The ball 16 is located within the lower end of the tube 18 and the end of this tube is spun or crimped annularly inwardly at 21 forming a ball socket in confining relation to the ball.

The ball 16 and the socket formed in the

lower end of the post 14 comprise an articulate connection of the post to the foot 15 whereby the post is supported on the foot for universal movement. Although such a support for the post is advantageous, the post may be secured to the foot in any other desired manner, even as by welding the post rigidly thereto without departing from the spirit or the scope of the present invention. It is also to be understood that the foot may be dispensed with entirely and the post rested directly on a supporting means, such as the floor 12, support blocks, or other suitable supporting member.

A rod 25 having peripheral screw-threads 26 formed therein is telescopically received into the upper end of the tubular member 18. A knurled nut 27 is screw-threadedly received on the rod 25 in abutting relation with the outer end of the tubular post 18 whereby the longitudinal extension of the rod 25 and of the tubular post 18 may be regulated by rotating the nut 27. The upper end of the rod 25 is provided with an integral pivot block 30 which is slotted downwardly at 31 from the upper end thereof forming a bifurcated yoke or clevis 32. The bottom of the slot 31 is formed into an upwardly extending, centrally disposed, pyramidal or conical shaped projection 35.

A lever 36, of the first class, made of a length of bar metal, rests between its ends on the vertex of the projection 35 and is adapted to rock both longitudinally and transversely thereon. A recess 37 is formed inwardly from the upper edge of the lever 36 opposite the point where the lever rests on the projection 35. A headed pin 38 extends through the two legs of the yoke 32 and also through the recess 37. A cotter pin 39 is employed to hold the pin in position thereby retaining the lever in the slot 31 for longitudinal and transverse rocking movement on the projection 35.

The lever 36 is located on the projection 35 with a longer manually operable end 40 thereof formed with a hand grip portion 41 adjacent the outer end thereof. Said longer end 40 is preferably downwardly offset to permit convenient extension thereof outwardly from the car body 10, as through an open door or window. The shorter end 44 of the lever 36 is bent into the form of a longitudinally located loop 45 forming a vertically extending socket 46 therethrough. A dolly block 48, in the form of a substantially rectangular metal member, is provided with an integral downwardly extending rectangular shank 49 which extends downwardly into the socket 46 with a loose fit therebetween whereby the dolly block is rested upon the upper surface of the lever 36 and may rock thereon. The upper outer surface of the loop 45 is formed arcuately at 50 to facilitate this rocking motion of the dolly block 48. The upper surface of the dolly block 48 is preferably formed to a convex arcuate shape 51 whereby it will conform somewhat with the interior curvature of the turret top of an automobile. So mounted on the lever 36, the dolly block is conveniently and easily removed for the substitution of dolly blocks of other sizes, weights, and configurations.

Operation

In the use of the tool to aid in the straightening and smoothing of dented portions of a turret top or other portion of an automotive body, the tool may be used in the manner illustrated in Fig. 1. The foot 15 is located on the floor 12 of the

automobile body 10 with the tubular post 18 tiltably supported thereon. This tiltable relation between the foot 15 and the tubular member 18 allows the foot to rest on the floor of the automobile body regardless of unevenness of the floor and allows the tubular member to be located angularly thereto for the proper location of the dolly block against the dented portion of the turret top. This further facilitates the imparting of desired forces to the top at angles best suited to the effective removal of dents.

The dolly block 48 is located against the dented portion 13 of the turret top 11 with the longer portion 40 of the lever 36 extending exteriorly of the body of the automobile either through a door opening or through a window opening. The nut 27 is adjusted to raise or to lower the pivot block 30 whereby the proper height and angularity of the lever portion 40 may be obtained for the most advantageous operation.

The operator, by forcing downwardly on the lever portion 40, moves the dented portion of the turret top outwardly to the desired approximate original position thereof by forces transmitted thereto by the dolly block 48. This outward bending operation may be repeated at a number of locations until the top is bent outwardly to its approximate original shape. The tool may be used to aid in smoothing the dented metal by locating the tool, approximately as shown in Fig. 1 against the dented portion 13 and by applying downward pressure on the lever portion 40, moving the dolly block forceably upwardly against the inner surface of the turret top. A single operator, because the tool is operated exteriorly of the body of the automobile can, without aid, ding or hammer the outer surface of the dented portion smoothing it to approximately its original form while pressing the dolly block 48 outwardly against the inner surface of the dented portion. In the use of the tool in the smoothing operation, the dolly block 48 is readily held in its most effective position forceably against the inner surface of the turret top in buck relation to the sheet metal for the hammer smoothing thereof.

In the operation of the tool to bend the dented portion of the turret top outwardly and during the smoothing operation, the dolly block is provided with a relative rocking motion on the loop 45 and automatically tilts to an even contacting position against the inner surface of the dented portion of the turret top. The dolly block is permitted to rock both longitudinally and transversely on the shorter lever portion 44 whereby it will have even contact against the dented portion of the turret top.

The lever 36, being supported on the pyramidal projection 35 in the pivot block 30, permits pivotal motion of the lever for forceably moving the dolly block 48 against the inner side of the turret top and also permits the lever to rock transversely and longitudinally allowing the dolly block 48 further to adjust its attitude in conformity to the inner surface of the dented portion.

From the foregoing description, it will be observed that a body metal working tool has been devised in which a dented portion of a turret top of a car or other portion thereof can be conveniently urged to approximately its original shape and in which the buck or dolly block thereof may be conveniently held against the inner surface of the dented portion while being

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hammered during the smoothing operation by a single workman. It will also be seen that a tool has been devised which automatically accommodates itself in attitude to an engaged surface and which is conveniently forced against a dented portion with even contact thereagainst.

Although I have herein shown and described my invention in what I have conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of my invention, which is not to be limited to the details disclosed herein, but is to be accorded the full scope of the claim so as to embrace any and all equivalent devices and structures.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

A body tool comprising a base plate having a ball upwardly extended therefrom, a substantially vertical tubular post having socket in the lower end thereof mounted on the plate for universal movement by engagement of the ball and socket, a screw-threaded rod telescopically received in the upper end of the tubular supporting member, a nut threadedly received on the screw-threaded rod and in abutting relation with the upwardly extended end of the post adjustably regulating the telescopic relation of the post and rod, said rod being slotted inwardly from the upper end thereof

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forming a bifurcated yoke and the bottom of the slot being provided with an upwardly extending projection, a lever rockingly rested between its ends on the projection within the yoke, means for preventing withdrawal of the lever from the yoke, said lever having a vertically located socket formed in one end thereof, and a dolly block supported on the end of the lever formed with the socket and having a shank extending downwardly and loosely into the socket, said lever having an arcuate surface on which the dolly block is rested whereby said dolly block is free to rock relative to the lever in the plane of the lever.

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