

Jan. 2, 1962

J. E. BROWN
CLAMP FOR BODY JACK

3,015,353

Filed Nov. 24, 1958

2 Sheets-Sheet 1

Fig. 1

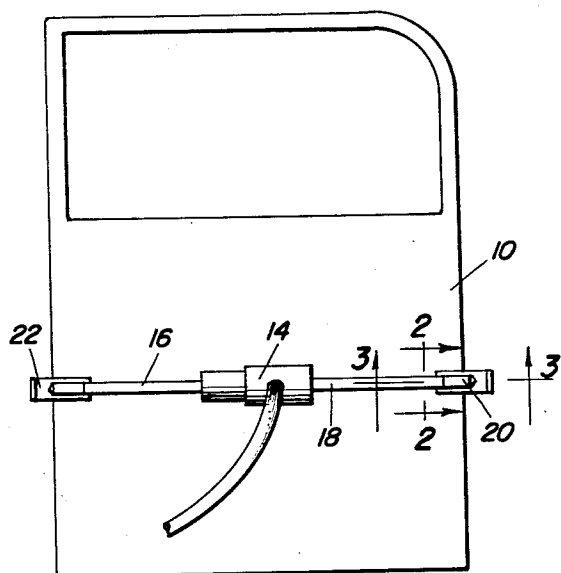


Fig. 2

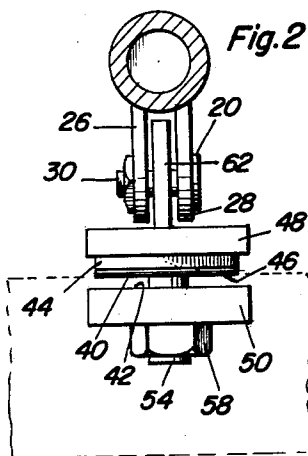
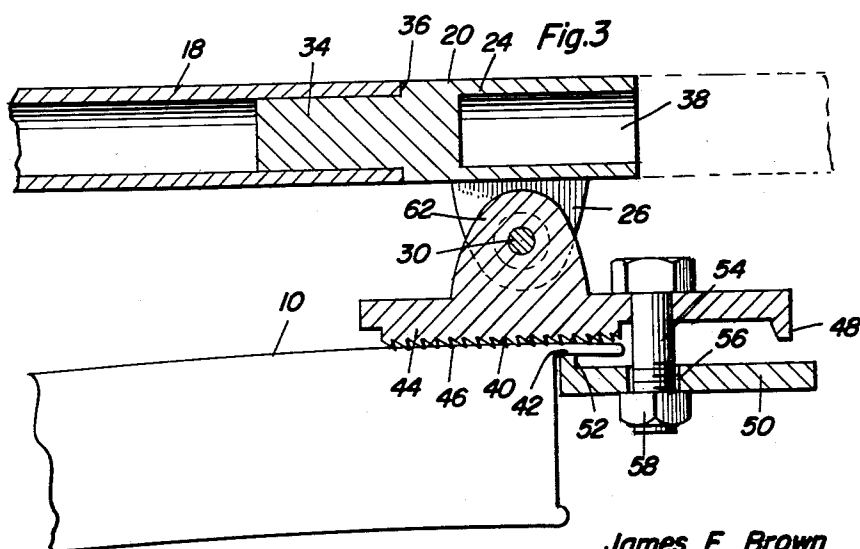


Fig. 3



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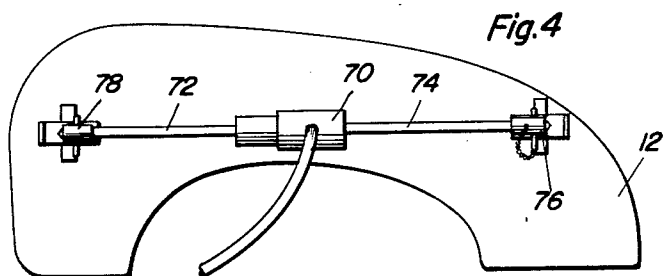
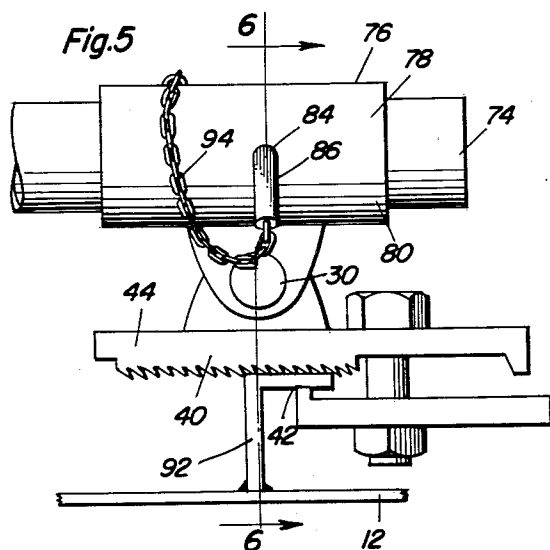
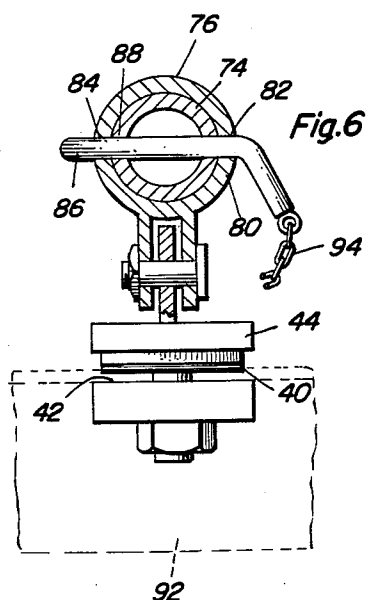
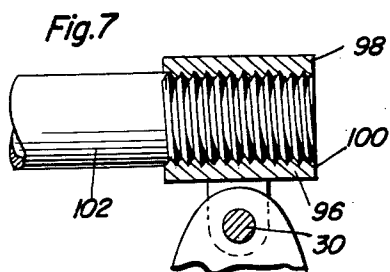
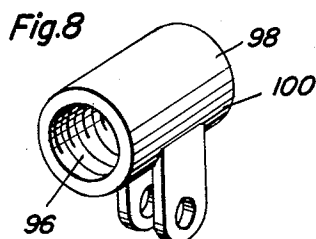
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2 Sheets-Sheet 2



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3,015,353

CLAMP FOR BODY JACK

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8 Claims. (Cl. 153—32)

This invention relates to motor vehicle repair tools and more particularly to a set of clamps for a body jack.

An object of the invention is to provide a clamp for a body jack in order to facilitate the repair of motor vehicle bodies that is, simplify body and fender work.

An object of the invention is to provide a self-leveling clamp which tenaciously attaches to a part of a motor vehicle body, for instance the door, wheel well shield and many others as will occur to those skilled in the repair of motor vehicles, without slipping or pulling. Further, the body jack clamp of this invention enables the body jack to be attached at any angle on the panel that is to be straightened.

One of the important features of the invention is found in the construction of the clamp enabling a part of the force exerted by the body jack to be used for holding the clamp firmly attached to the panel that is being straightened.

There are several manufacturers' makes of body jacks that are commercially available at the present time. Accordingly, some of the fittings that are associated with the clamps are varied slightly in order to have the clamps smoothly and rapidly attachable to different commercially available body jacks. The clamping action, though, in each instance is identical.

Other objects and features of importance will become apparent in following the description of the illustrated forms of the invention.

In the drawings:

FIGURE 1 is a side elevational view of a door having a body jack and clamps in accordance with this invention applied thereto.

FIGURE 2 is an enlarged sectional view taken on the line 2—2 of FIGURE 1.

FIGURE 3 is an enlarged sectional view taken on the line 3—3 of FIGURE 1.

FIGURE 4 is a side elevational view of a body jack showing a different application and use.

FIGURE 5 is an enlarged fragmentary elevational view showing a modification of the clamp.

FIGURE 6 is a sectional view taken approximately on the line 6—6 of FIGURE 5.

FIGURE 7 is a sectional view showing a modified fitting.

FIGURE 8 is a perspective view of the fitting in FIGURE 7.

In the accompanying drawings two of the numerous applications of the invention are illustrated. Accordingly, door 10 and shield 12 diagrammatically represent a selection of body parts and panels which may be straightened with a body jack and pair of clamps such as disclosed herein. Referring first to FIGURES 1-3, body jack 14 is intended to be purely conventional in its internal construction, operation and over-all make-up. It has two bars 16 and 18 protruding from opposite ends thereof and is adapted to be operated in the manufacturer's suggested manner. The invention provides clamps 20 and 22 at the ends of bars 16 and 18, and each of these clamps is identical. Clamp 20 is shown in detail in FIGURES 2 and 3. It is made of a fitting 24 having a pair of ears 26 and 28 welded or otherwise rigidly secured thereto. The ears are parallel and have aligned openings through which

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pivot bolt 30 is passed. The body of the fitting is constructed of a stud 34 adapted to fit into the hollow bar 18. Shoulder 36 separates stud 34 from the remainder of the body and constitutes a land against which the outer extremity of hollow bar 18 seats. There is a bore 38 in the opposite end of the body and having a longitudinal axis which is in alignment with the longitudinal axis of the stud 34. The bore 38 is adapted to receive another bar.

The clamping action is obtained between jaws 40 and 42. Jaw 40 is made of a plate 44 having serrations 46, teeth or other markings or scorings thereon to enhance the frictional gripping action between jaw 40 and in this instance, door 10. Flange 48 is at one end of plate 44 and constitutes a stop should it come in contact with plate 50. Plate 50 has a flange 52 at right angles to plate 50 and has an outer surface adapted to contact a part of door 10 (FIGURE 3) thereby forming the other jaw 42.

Bolt 54 is passed through a pair of aligned openings in plates 44 and 50, one of the openings 56 being enlarged to enable plate 50 to swivel or tilt slightly on the bolt. The bolt has a head at one end and a nut 58 at the other end in contact with plate 50. Flange 48 is spaced, as shown in FIGURE 3, from plate 50 a distance greater than the spacing between the jaws 42 and 40 to enable the plate 50 to be tilted against 48 whereby the jaws 42—40 are spread for easy insertion of the door flange. The pivot 30 is passed through a bracket 62 that is fixed to plate 44 thereby pivotally associating the fitting 20 with the jaw 40. As shown in FIGURE 3, the nut and bolt 54—58 are shown in a loosened position to permit the flange on door 10 to be easily slipped between plates 44 and 50. Before the jack is applied, nut 58 is tightened whereby the flange on 10 is gripped between the plates, and plate 50 pivots about point 42 until it abuts flange 48. Generally, it is necessary to tighten nut 58 by hand only. Accordingly, if thrust is applied by jack 14, it will tend to slightly turn jaw 40 clockwise since it is pivoted by pivot 30 to the fitting. This pivotal or rocking movement of jaw 40 clinches the serrated surface 46 on the door 10 as the teeth 46, especially on the right side of 44 as seen in FIGURE 3, dig into the surface of 40.

In FIGURE 4 there is a conventional body jack 70 provided with bars 72 and 74. Clamps 76 and 78 are identical in construction and are secured to the outer ends of the bars 72 and 74. Clamp 76 is shown in detail in FIGURES 5 and 6. It is made of a fitting 78 connected with jaws 40 and 42. The only difference, aside from the use on shield 12, between the clamp in FIGURE 5 and the clamp in FIGURE 3 is in fitting 78. It is made of a collar 80 having a bore completely through it. A pair of aligned holes 82 and 84 are in collar 80 to accommodate pin 86. The pin is passed through these aligned holes and aligned openings 88 in bar 74 thereby operatively connecting the clamp 76 with the bar 74. Collar 80 is attached to plate 44 by means of an assembly of ears and pivot pin 30 just as the embodiment in FIGURE 3.

In use with a fender shield, a small bracket 92 is soldered or otherwise secured to the shield 12 thereby providing a member on which jaws 40 and 42 may grip. After the repair is completed, bracket 92 is removed.

In this embodiment of the invention the pin 86 is used showing another possible manner of attaching the body jack bars to the clamps. In order to prevent inadvertent loss of the pin 86, a chain 94 is attached at one end to the pin and is attached at the other end to collar 80.

Reference is now made to FIGURES 7 and 8. The clamp 96 is the same in all respects to clamps 20 and 76 with the exception of fitting 98. The fitting is made of an internally threaded sleeve 100 connected by a set of ears and pivot pin 30 to the jaw plate (not shown) identical to jaw plate 44. Bar 102 is threaded into the threaded bore

of sleeve 100, this being another possible manner of connection between the jack bars and the clamp.

The use and operation of the embodiment of the invention in FIGURES 4 and 7 insofar as the clamping action and gripping and self-aligning are concerned, are the same as described in connection with the embodiment of FIGURES 1-3.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. For use with a body jack that has at least one axially movable bar, a clamp adapted to engage a part of the motor vehicle body which is to be straightened, said clamp tightened on the body in response to axial movement in one direction of said bar and having a fitting adapted to connect with said bar, a pair of jaws, one of said jaws constructed of a plate having a serrated gripping surface, means pivotally securing said plate to said fitting, the other of said jaws constructed of a plate having a jaw surface opposing the serrated jaw, and means connecting said plates.

2. For use with a body jack that has at least one axially movable bar, a clamp adapted to engage a part of the motor vehicle body which is to be straightened, said clamp tightened on the body in response to axial movement in one direction of said bar and having a fitting adapted to connect with said bar, a pair of jaws, one of said jaws constructed of a plate having a serrated gripping surface, means pivotally securing said plate to said fitting, the other of said jaws constructed of a plate having a jaw surface opposing the serrated jaw, and means connecting said plates, said plate connecting means including a bolt attached to one of said plates and loosely connected with the other of said plates.

3. For use with a body jack that has at least one axially movable bar, a clamp adapted to engage a part of the motor vehicle body which is to be straightened, said clamp tightened on the body in response to axial movement in one direction of said bar and having a fitting adapted to connect with said bar, a pair of jaws, one of said jaws constructed of a plate having a serrated gripping surface, means pivotally securing said plate to said fitting, the other of said jaws constructed of a plate having a jaw surface opposing the serrated jaw, and means connecting said plates, said plate connecting means including a bolt attached to one of said plates and loosely connected with the other of said plates, a stop attached to one of said

plates and adapted to contact the other of said plates, said stop being spaced from said other of said plates a distance greater than the normal spacing between said jaws so that upon application of force by the body jack, said one of said plates is rocked slightly to enhance the gripping action of the serrated surface against the part of the body that is being straightened.

4. The combination of claim 3, wherein said means pivotally connecting said fitting and one of said plates including ears attached to said fitting and said one of said plates, and a pivot bolt connected with said ears and having a longitudinal axis approximately transversely arranged with respect to the longitudinal axis of said bar.

5. An adapter clamp for a conventional body jack comprising a fitting, a pair of jaws, said jaws including jaw plates, means loosely connecting said jaw plates with the jaws confronting and spaced from each other, one of said jaw plates having an ear attached thereto, means pivotally connecting said ear to said fitting.

6. An adapter clamp for a conventional body jack comprising a fitting, a pair of jaws, said jaws including jaw plates, means loosely connecting said jaw plates with the jaws confronting and spaced from each other, one of said jaw plates having an ear attached thereto, means pivotally connecting said ear to said fitting, a stop connected between said jaw plates and located on the side of said jaw plates, pivotal connecting means opposite to said jaws.

7. An adapter clamp for a conventional body jack comprising a fitting, a pair of jaws, said jaws including jaw plates, means loosely connecting said jaw plates with the jaws confronting and spaced from each other, one of said jaw plates having an ear attached thereto, means pivotally connecting said ear to said fitting, a stop connected between said jaw plates and located on the side of said jaw plates, pivotal connecting means opposite to said jaws, the spacing between said stop and one of the jaw plates being in excess of the spacing between said jaws.

8. A jack comprising a bar, a clamp adapted to grip a piece of material to be straightened, said clamp comprising two gripping members, one of which is connected to the bar by a means permitting it to tilt relative to said bar and the other is connected to said one member by means permitting relative movement between the two members, said one member having a friction surface for gripping the material and said clamp being automatically tilted and tightened on the material in response to its axial movement by the bar.

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