

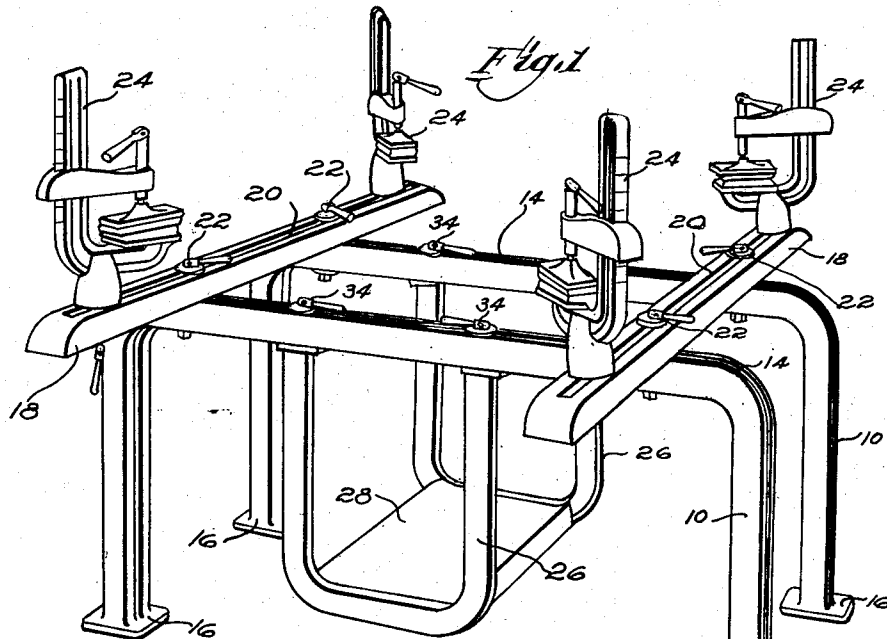
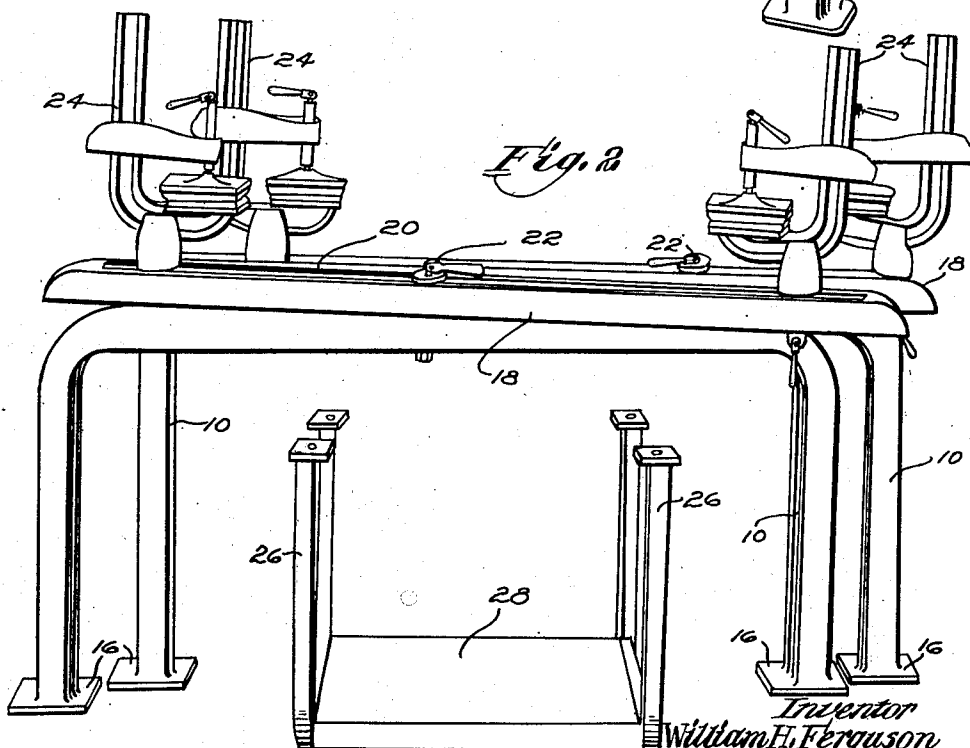
July 21, 1953

W. H. FERGUSON
APPLIANCE FOR POSITIONING AUTOMOBILE BODY
PARTS FOR REPAIR OPERATIONS THEREON

2,646,101

Filed Sept. 2, 1949

2 Sheets-Sheet 1



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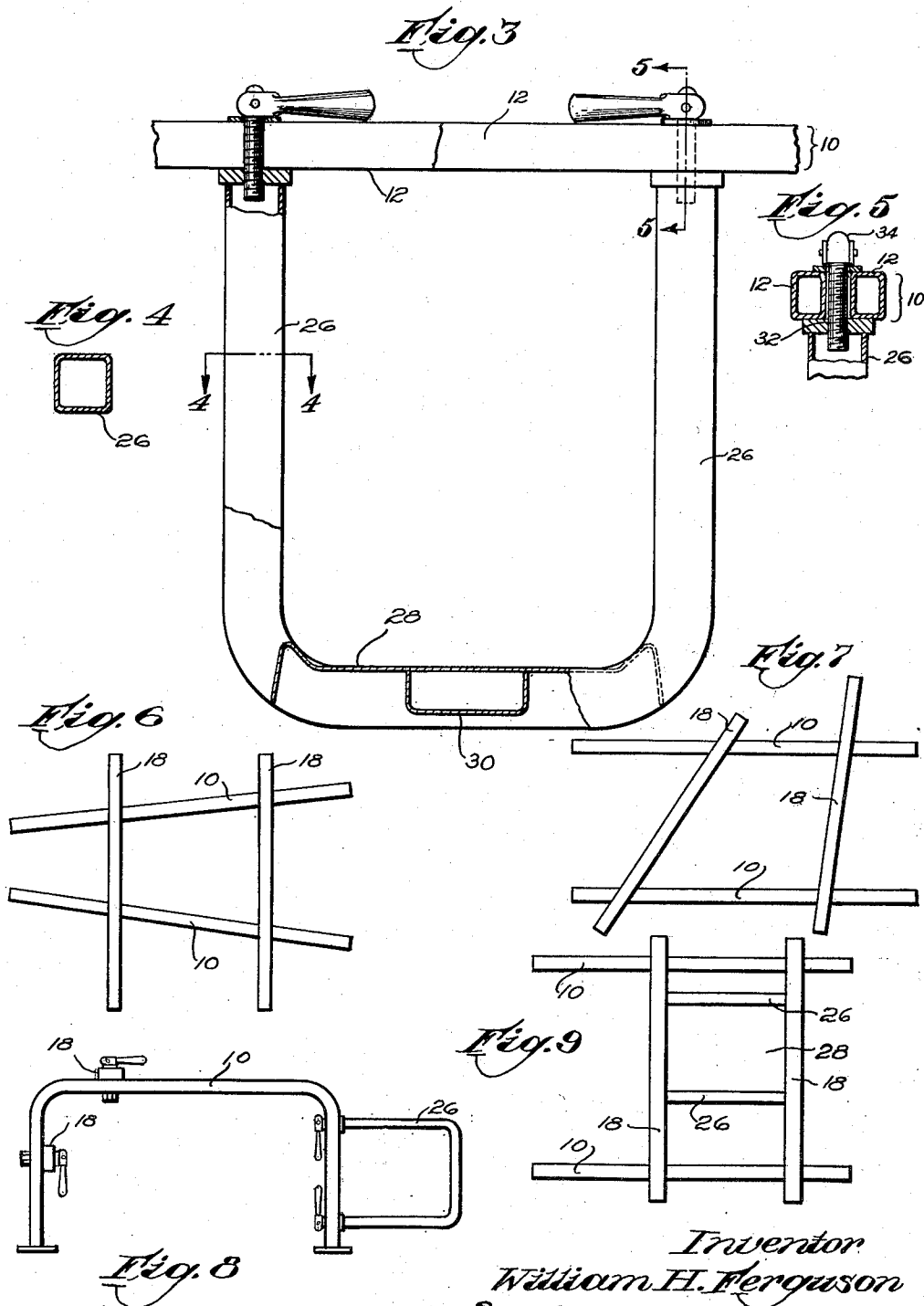
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UNITED STATES PATENT OFFICE

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APPLIANCE FOR POSITIONING AUTOMOBILE BODY PARTS FOR REPAIR OPERATIONS THEREON

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4 Claims. (Cl. 153—32)

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This invention relates to a device for positioning automobile frame and body parts while they are being worked upon to recondition them, being a device of the general type disclosed in my Patent 2,275,894. The object is to provide an appliance more particularly useful in smaller shops and for occasional use which will be relatively cheap for the user to buy, and which may be compactly stowed away while not in use so as not to occupy valuable space, but which will be capable of acceptably performing a wide range of operations with a convenience approximating that of a more elaborate device.

My invention will be well understood by reference to the following description of the illustrative embodiment thereof, shown by way of example in the accompanying drawings wherein:

Fig. 1 is a perspective showing the device in position for use;

Fig. 2 is a perspective showing the parts disassembled and stacked together;

Fig. 3 is a front elevation on a larger scale of a portion of Fig. 1 with parts broken away;

Figs. 4 and 5 are sections on lines 4—4 and 5—5 of Fig. 3 respectively; and

Figs. 6, 7, 8 and 9 are diagrammatic views illustrating different relative arrangements of the parts.

Referring now more particularly to Fig. 1 of the drawing, the machine there shown embodies two independent, rigid frames 10 of generally inverted U-form. As seen in Figs. 3 and 5 these frames may be formed from two angular tubes 12 secured together in slightly spaced relation to define between them a slot 14 which preferably extends as shown throughout the length of the crossbar of the U and down the legs. The bottoms of the legs are provided with enlarged feet 16 on which each individual frame can stand up in stable position. The tops of the frames are at a convenient location for working on parts secured thereto. Otherwise expressed, they are bench high. Cooperating with these frames 10 I provide a pair of rigid beams 18 of the general form of that shown in the patent above referred to or in my Patent 2,311,042, the beams having longitudinal slots 20 throughout their length. When the U-frames 10 are stood up side by side the beams may be laid crosswise upon the same and secured by clamping bolts 22 which pass through the slots in the beams and in the frames at the points of intersection. These points may be taken anywhere within the length of the slots and the beams may be secured either to the hori-

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zontally extended portions of the frames or to the vertically extending portions or legs. The slots also adjustably accommodate work holding clamps 24 as in my patents above referred to.

I also provide a pair of smaller U-shaped frames 26 of lesser length and altitude than the frames 10, and the latter substantially rigid. These frames, as seen in Fig. 4, may be conveniently formed of angular tubes, and their cross members corresponding to the bases of the U's may be connected to provide a jacking platform, herein shown as a metal floor plate 28 braced by a channel 30. The ends of the legs of these smaller frames have flat surfaces formed to seat on the large frames 10 to be clamped thereagainst to support the smaller frames therefrom. Herein the ends of the frames have tapped openings 32 (Fig. 3) to receive bolts 34 passing through the slots 14 in the main frames 10.

A characteristic use of the mechanism would be to support the member to be operated on at the upper side of the main frames 10, say by securing it to the beams 18 by means of the clamps 24 adjustably mounted thereon, as shown, and to operate upon the same by means of a jack, the base of which rests upon the jacking platform 28. Although the side frames 10 are separate units light and portable, there is thereby provided a rigid structure as against the strains set up by the operation of the jack, so as to effectively exert the force of the jack on the work as desired.

When the smaller frames with their jacking platform are separated from the larger frame, the unit may be stored in a small space or even hung up. The large frames 10 and the beams 18 may be stacked up, as seen in Fig. 2, say against the wall or in some relatively narrow space, or they may be hung up out of the way. If the frames 10 and beams 18 are assembled as a rectangle, then by slightly loosening the bolts without disassembling the parts, the rectangle may be collapsed to an oblique parallelogram until the frames 10 are arranged in side by side relation for storage in a limited space.

The frames 10 are individual elements which may be easily picked up by one man and the two arranged in any desired relative position. They need not necessarily be parallel when in use. In Fig. 6 I have diagrammatically shown them arranged in converging relation defining with the two beams 18 secured thereto a trapezoid. In Fig. 7 the frames 10 are parallel but the beams 18 secured thereto are not. Within limits the tops of the frames 10 and the beams

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18 may be assembled in any form of quadrilateral. Moreover, one or both beams 18 might be assembled along the legs of the frames 10 for instance to provide a support lower than the tops of the frames.

The smaller frame carrying the jacking platform may be assembled with the U-shaped frames 10, so that the smaller U's 26 of the former are in the same plane as the larger U's or bridging from one to another. Thus the small assembly might be turned 90° from the position shown in Fig. 1, the spacing of frames 10 being accommodated to suit the width of the small U's 26. It might be desirable to cradle a piece of work across the two U's 26 and this may be done with the piece extending either transversely to or parallel to the main frames 10. In Fig. 1 the jacking platform is shown suspended from the lower sides of the cross-bars of the main frames 10. However, the jacking platform might be suspended from the beams 18 to provide a unit which in turn would be supported from the frames 10 as shown diagrammatically in Fig. 9. This arrangement might be desirable when a particularly large base for the mechanism as a whole was desired. Thus in the figure we may consider the frames 10 as positioned substantially at the extremities of the slots in the beams 18. The platform could be suspended anywhere along the length of the beams and to indicate this the figure shows it at one side of centre. The beams 18 are also shown arranged at unequal distances from the centre line of the two frames 10.

Usually the jacking platform will be suspended in vertically depending position from the lower side of the horizontal frame-work formed by the cross bars of U-frames 10 and beams 18. However, the unit might be erected on the upper side and a jack operated therewith in the manner of a pillar press. In Fig. 8 I have diagrammatically shown (in side elevation) the jacking platform located in a vertical plane rather than in a horizontal plane, the smaller frames 22 being secured to the legs of the main frames 10. One of the beams 18 is shown opposite thereto to form a cooperative abutment while the other is secured across the top of the two frames. Some jobs which could not be otherwise conveniently handled might be handled by assembling the parts in this manner. The legs of the frames will stand considerable strain. The extremities might be chained together or otherwise braced by extraneous means if the load were very heavy.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, as is in fact clear in several matters from the description itself. Reference is to be had to the appended claims to indicate those principles of the invention exemplified by the particular embodiment described and which I desire to secure by Letters Patent.

I claim:

1. A device for positioning automobile frame and body parts while they are being worked upon comprising a pair of independent rigid frames, self-contained and individually portable, the frames being substantially bench high and having the form of an inverted U, the terminals of the legs of the U being such as to permit each frame to stand thereon in stable position, a pair of smaller rigid U-shaped frames of lesser length and altitude than the first mentioned frames, a

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jacking platform rigidly connecting the cross members of the smaller frames, the terminals of the legs of the smaller frames being formed to seat on the first mentioned frames with a substantial area of contact to prevent relative rocking movement and means for clamping the smaller frames to the larger with said terminals bearing on the latter to support the smaller frames in rigid relation to the larger.

2. A device for positioning automobile frame and body parts while they are being worked upon comprising a pair of independent rigid frames, self-contained and individually portable, the frames being substantially bench high and having the form of an inverted U, the crossbar of the U and at least the adjacent portions of its legs throughout the major portion of their height being of substantially uniform cross section, the terminals of the legs of the U being such as to permit the frame to stand thereon in stable position, the portion of the U which is above recited as of substantially uniform cross section having a substantially continuous slot throughout its length, a pair of smaller rigid U-shaped frames of lesser length and altitude than the first mentioned frames, a jacking platform rigidly connecting the cross members of the smaller frames, the terminals of the legs of the smaller frames being formed to seat on the first mentioned frames over a substantial area of contact and clamping bolts adapted to enter in selected positions along the slots and engaging the said terminals of the smaller frames to draw the said frames firmly against the former, and rigidly to secure the smaller frames and the jacking platform carried thereby in selected positions around the periphery of the first mentioned frames.

3. A device for positioning automobile body and frame parts while they are being worked upon comprising a pair of rigid beams having longitudinal slots throughout substantially their entire length and a unitary cooperating member comprising a pair of rigid U-shaped frames the cross members of which are connected by and rigidly support a jacking platform adapted to withstand the thrust of a jack, the ends of the legs of the U's having flat bearing surfaces of substantial extent to seat on said beams bridging the slot therein and elements of clamping devices located substantially centrally of said bearing surfaces and cooperating with complementary clamping elements bearing on the opposite faces of the beams to draw said surfaces firmly against the beams to secure the frames in rigid relation to the beams, the two elements making connection through the slots for clamping the surfaces against the beams.

4. A device for positioning automobile frame and body parts while they are being worked upon comprising a pair of independent rigid frames, self-contained and individually portable, the frames being substantially bench high and having the form of an inverted U, the terminals of the legs of the U being such as to permit each frame to stand thereon in stable position, at least the cross member of the U being slotted throughout its length and a pair of rigid beams having longitudinal slots substantially throughout their length providing for the application of clamping bolts through the slots of the beams and the frames respectively for assembly of the beams and the cross members of the U's as an elevated horizontal frame-work, a pair of smaller rigid U-shaped frames of lesser length and altitude than the first mentioned frames, the ter-

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minals of the legs of the smaller frames being formed to seat over a substantial area on the lower surfaces of either the first mentioned frames or the beams to be clamped thereagainst to support the smaller frames rigidly therefrom, 5 the cross bars of the smaller frames providing for the support of a jacking platform extending between the same which, when the smaller frames are clamped in position, is suspended beneath the upper surface of such horizontal frame- 10 work.

WILLIAM H. FERGUSON.

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