May 25, 1965 R. J. LEWIS, SR 3,185,318

ORIENTATION JACK

Filed July 10, 1963 2 Sheets-Sheet 1

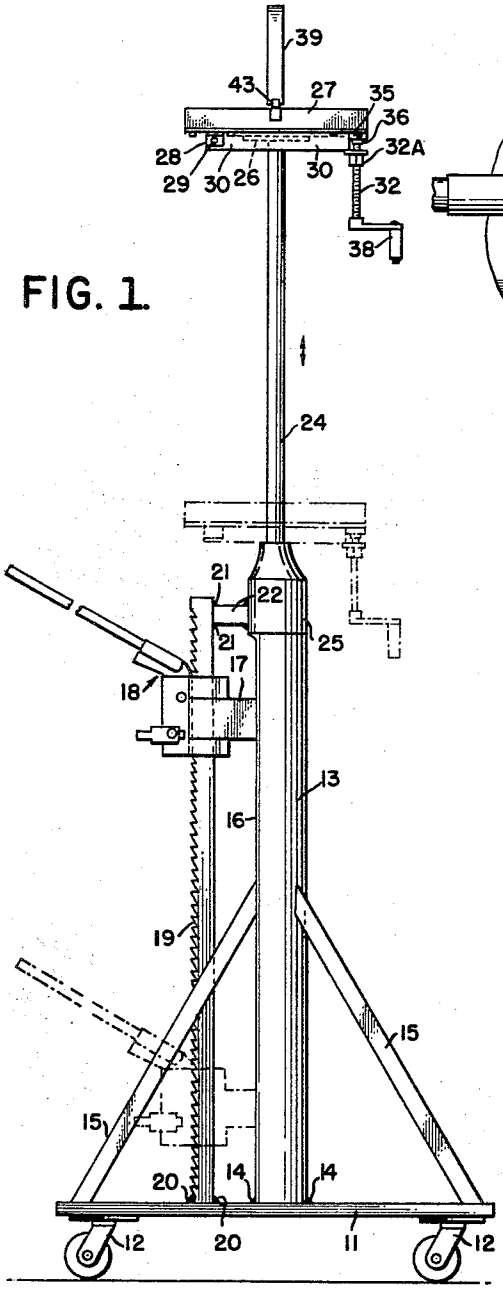


FIG. 1.

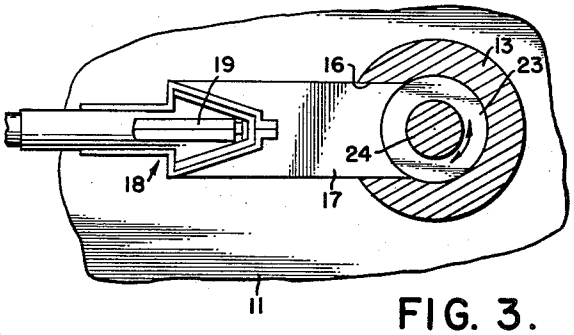
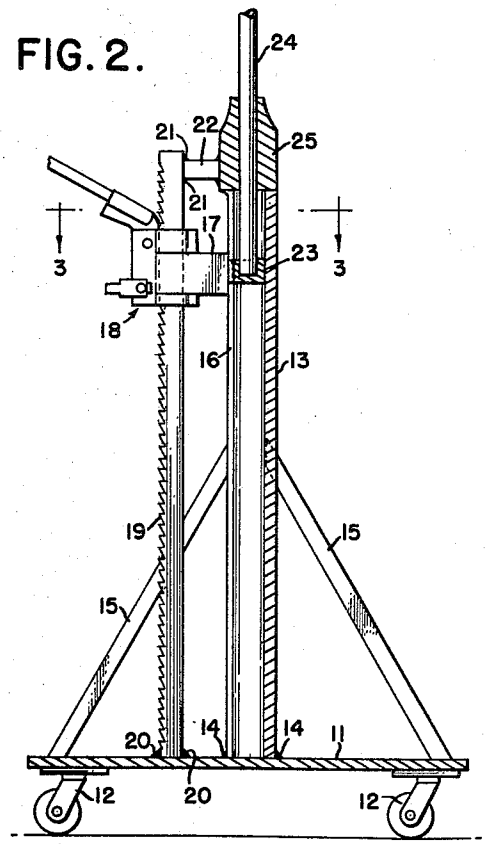


FIG. 3.

FIG. 2.



INVENTOR
R. J. LEWIS, SR.

BY Albert J. Kramer

ATTORNEY

May 25, 1965 R. J. LEWIS, SR 3,185,318

ORIENTATION JACK

Filed July 10, 1963 2 Sheets-Sheet 2

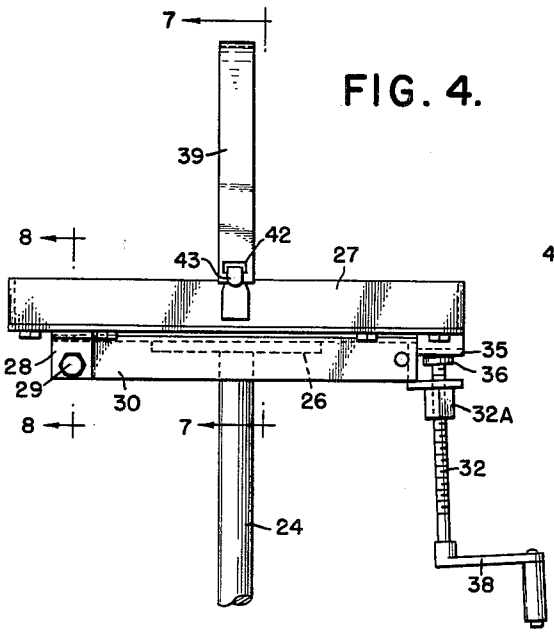


FIG. 4.

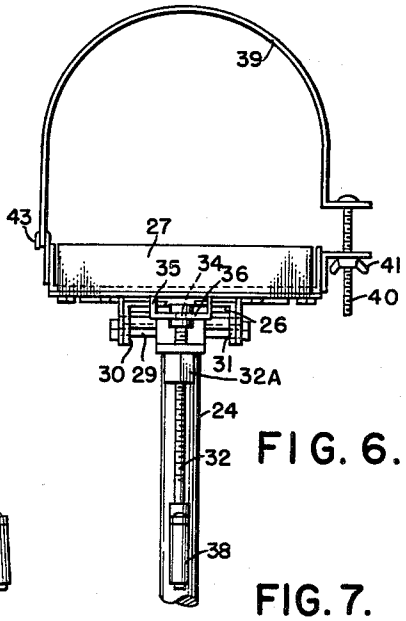


FIG. 6.

FIG. 7.

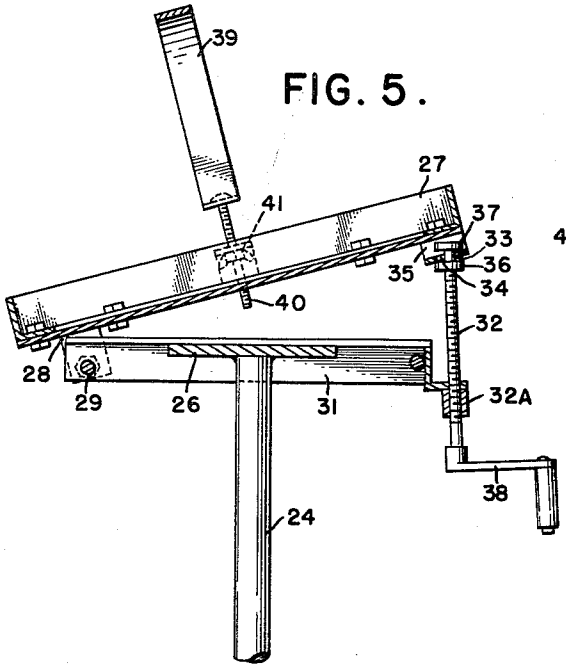


FIG. 5.

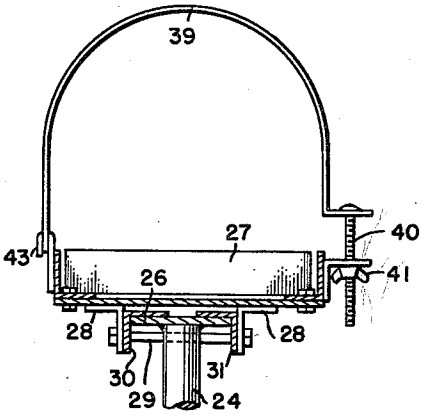
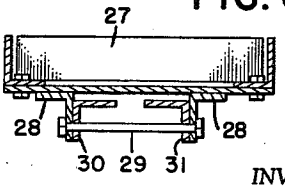


FIG. 8.



INVENTOR
R. J. LEWIS, SR.

BY Albert J. Kramer

ATTORNEY

United States Patent Office

3,185,318
Patented May 25, 1965

1

3,185,318

ORIENTATION JACK

Rufus James Lewis, Sr., R.F.D. 1, Warsaw, N.C.

Filed July 10, 1963, Ser. No. 294,090
5 Claims. (Cl. 214—1)

This invention relates to jacks and it is more particularly concerned with jacks for use in lifting and orienting heavy units and parts involved in the repairing of motor vehicles such as transmissions, differentials, etc.

The general object of the invention is the provision of an improved form of jack for the purpose indicated comprising a novel combination of elements to form a simple, effective and rugged device.

A specific object of the invention is the provision of such a novel arrangement of elements that provides a portable, yet firm, support for heavy loads and controllable movements in various directions for the load while so supported.

Another object of the invention is the use of a combination of elements that can be easily assembled and which are not likely to get out of working order during long periods of use.

These objects and still further objects and advantages of the invention will appear more fully from the following description considered together with the accompanying drawing.

In the drawing:

FIG. 1 is a front elevational view of an embodiment of the invention.

FIG. 2 is a longitudinal sectional view of the lower portion of the embodiment.

FIG. 3 is a cross-sectional view along the line 3—3 of FIG. 2 on a larger scale.

FIG. 4 is an enlarged view of the upper portion of FIG. 1.

FIG. 5 is a view similar to FIG. 4 showing the tray member in a tilted position.

FIG. 6 is a side elevational view of the portion shown in FIG. 4.

FIG. 7 is a sectional view along the line 7—7 of FIG. 4.

FIG. 8 is a sectional view along the line 8—8 of FIG. 4.

Referring to the drawing with more particularity the embodiment of the invention illustrated therein comprises a base 11 of a generally square shape mounted on casters 12.

A hollow post 13 is secured to the base 11 by welds 14 to form a rigid connection with the frame. The post 13 is further secured in place by diagonal struts 15 welded in place between the base frame and the post.

One side of the post 13 is provided with a longitudinal opening 16 through which projects the lifting arm 17 of a conventional mechanical jack 18 of the rack and pawl type. The rack element 19 of the jack is mounted in a vertical position adjacent the opening 16 and is attached by welds 20 at the bottom to the base 11 and by welds 21 to a spacer bar 22 at the top of the post just above the opening 16.

To the lifting arm 17 there is secured by welding a socket 23 aligned with the longitudinal axis of the post 13 for the purpose of removably receiving and rotatably supporting the lower end of a shaft 24. The shaft normally projects upwardly through the upper end of the post. A guide collar 25 is secured to the upper end of the post to slidably engage and laterally support the shaft.

2

To the top of the shaft 24 there is rigidly secured by welding or otherwise, a horizontal plate 26 forming with angle bars 30 and 31 a platform. The angle bars are welded to opposite sides of the plate. A tray 27 overlies the platform and is tiltably supported on it at the rear with brackets 28 hinged by means of a pin bolt 29 to the angle bars 30 and 31. The front of the tray is supported by a vertical lead screw 32 threadedly engaging a boss 32A secured to the front of the bars 30 and 31. The upper end 33 of the screw 32 passes through an aperture 34 of a yoke 35 secured to the bottom of the tray. Flanges 36 and 37 are secured to the screw on either side of the aperture. The lower end of the lead screw is provided with a crank handle 38 by means of which it can be rotated manually for the purpose of tilting the tray.

A strap clamp 39 is attached to the top of the tray for releasably securing to it an article carried thereby, such as, a transmission, differential, etc. The clamp includes a clamping bolt 40 on one side with a wing nut 41 to adjust pressure of the strap against the part to be handled. The other end is provided with an aperture 42 which can be quickly engaged and disengaged with a hook 43 on the other side of the tray.

The device as a portable unit can be moved into any desired or necessary position for removing or replacing, for example, a transmission or differential, from a motor vehicle or other such machinery by virtue of the ability of the device to provide horizontal movement with the casters in all directions, vertical movement with the lifting jack, rotatable movement by virtue of the socket between the lifting arm and the shaft, and the tilting movement furnished by the mounting of the tray 27 on the plate 26.

Having thus described my invention, I claim:

1. The combination comprising a hollow post, portable means supporting the post in a vertical position, said post having a longitudinal open slot on one side, a tray member above the post, a support member extending through the slot from the exterior of the post, means for moving the support member along the slot, means laterally supported by the post for rotatably connecting the tray member to the support member and means for selectively tilting the tray member and holding it in tilted positions relative to the post.

2. The combination as defined by claim 1 and a clamp carried by the tray for releasably securing to it articles of different sizes and shapes.

3. A jack device comprising a hollow post, means supporting the post in a vertical position for horizontal movement on a horizontal surface, said post having a longitudinal open slot on one side, a shaft coaxially disposed in the post, a socket within the post for receiving the lower end of the shaft, a collar at the upper end of the post for slidably engaging and laterally supporting the shaft, means connected to the socket through the slot for raising and lifting the socket on the interior of the post, a normally horizontal tray member carried by the rod on the exterior of the post, and means for tilting the tray member relative to the shaft.

4. A jack device as defined by claim 3 in which the means connected to the socket comprises a vertical rack, a horizontal arm slidably mounted on the rack and means for vertically moving the arm along the rack and for holding it in selected positions thereon.

5. A jack device comprising a rigid base member, casters attached to the base member for supporting and

translating it on a horizontal surface, a hollow post secured to the base member, said hollow post having a longitudinal opening on one side, an arm disposed through the opening, means for moving the arm vertically and for rigidly supporting it at selected positions relative to the post, a socket carried by the arm for movement therewith along the longitudinal axis of the post, a vertical shaft having its lower end removably seated in and rotatable relative to said socket, said shaft extending upwardly through the upper end of the posts, a collar secured to the upper end of the post in slidable contact with the shaft for supporting it laterally, a horizontal platform rigidly secured to the top of the shaft, a tray carried by the platform, said tray being hinged to the

platform at one end and a lead screw between the other end of the tray and the platform for adjusting the angular portion of the tray relative to the platform and holding it in the adjusted position.

References Cited by the Examiner

UNITED STATES PATENTS

1,397,925	11/21	Engel	254—111
1,410,380	3/22	Daniels	254—133
2,395,411	2/46	Kittel.	
2,523,734	9/50	Stephenson.	
2,852,229	9/58	Gross	254—134

HUGO O. SCHULZ, *Primary Examiner.*