

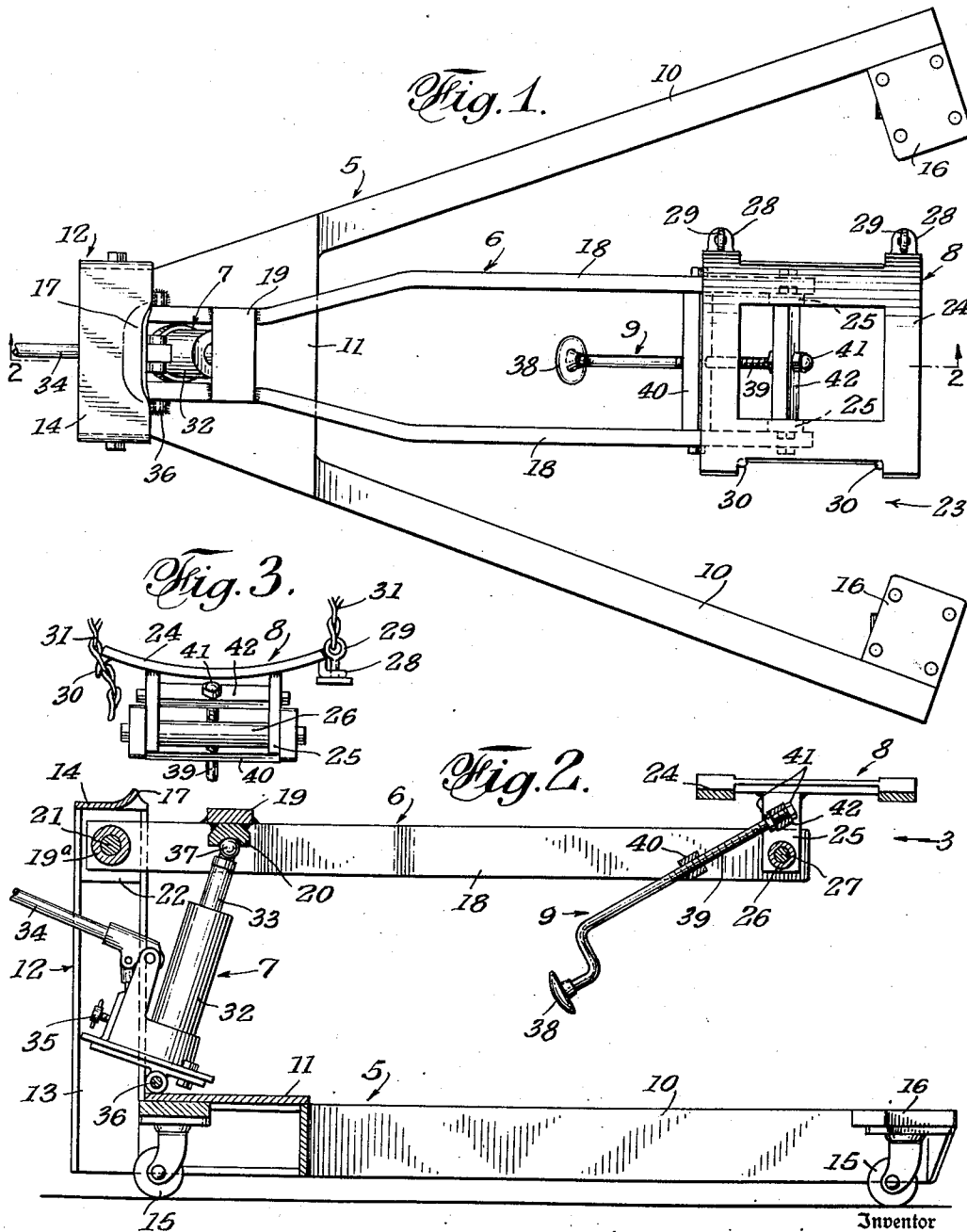
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V. L. HAMLIN

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AUTOMOBILE TRANSMISSION HANDLING JACK

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VINTON L. HAMLIN

C. G. Stratton

Attorney

UNITED STATES PATENT OFFICE

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AUTOMOBILE TRANSMISSION HANDLING
JACKVinton L. Hamlin, Sherman Oaks, Calif., assignor
to The Cleveland Pneumatic Tool Company,
Cleveland, Ohio

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1 Claim. (Cl. 214—1)

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This invention relates to a jack device for handling automobile transmissions, although the same is as readily adapted to handle other similarly heavy units under like conditions.

Automobile transmissions can be removed for repair only from beneath. Transmissions, and particularly automatic transmissions, are quite heavy. The handling of the same, when being removed and installed, subject the mechanic to bodily strains that frequently result in irreparable damage.

An object of the present invention, therefore, is to provide a novel jack device that is adapted to be moved to a position beneath a transmission, be adjusted to receive the same, be lowered to clear the chassis from which the transmission is removed, and to be removed from beneath said chassis—all without subjecting the mechanic to undue bodily strains. The present device, of course, has equal facility for replacing a transmission after removal.

Another object of the invention is to provide a jack device of the character indicated that is formed to have a stable base the elements of which are widespread to allow a working position between them during removal and replacement of a transmission.

A further object is to provide a jack device, as indicated, with a separately adjustable transmission-supporting cradle whereby the same can be adjusted to a transmission and then adjusted to properly balance the same while the device is being moved.

The invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawings merely show and the following description merely describes one embodiment of the present invention, which is given by way of illustration or example only.

In the drawings, like reference characters designate similar parts in the several views.

Fig. 1 is a top plan view of a transmission-handling jack according to the present invention.

Fig. 2 is a longitudinal sectional view, as taken on line 2—2 of Fig. 1.

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Fig. 3 is an end view, as seen in the direction of arrow 3 of Fig. 2.

The transmission-handling jack that is illustrated comprises, generally, a base 5, an arm 6 movable in a vertical plane with respect to said base, a jack unit 7 for effecting said movement, a cradle 8 carried on the end of said arm, and means 9 for adjusting said cradle relative to the arm.

The base 5 is a sturdy fabricated structure that comprises angularly diverging elongated and horizontal members 10 that are joined by a plate 11 at their converging ends, and an erect frame 12 at said converging ends. Said frame comprises a pair of spaced channel members 13 connected at the top by a plate 14. The base 5 is caster-wheel-mounted for movability, three wheels 15 being provided, one beneath plate 11 and the other two being secured to inwardly extending pads 16 on the diverged end of members 10. It is evident that the frame is readily movable in all directions on its wheels and, to facilitate pulling the same from beneath an automobile chassis, plate 14, at its edge directed toward the diverging ends of members 10, is upwardly turned to form a convenient hand-hold 17.

Arm 6 comprises a pair of horizontally-spaced bars 18 that are connected at one end by a spacer tube 19a and, adjacent said tube, by a sturdy bridge member 19 to the bottom of which is affixed a cup member 20. A horizontal pivot rod 21 extends through the tube 19 between channel members 13 immediately beneath plate 14. Blocks 22 in said channels mount the pivot rod.

Bars 18, beyond bridging member 19, are slightly diverged and then extend parallel to each other to the end of the arm, terminating short of the end of the diverging base members 10.

The arm 6 is adapted to move on its pivot rod 21 in a vertical plane so that its free end can be adjusted from a position between a space 23 between members 10 to any position thereabove and even to a level above that of pivot rod 21. The arm can thus be adjusted through an angular range approximating 60°.

The cradle 8 comprises a transversely curved plate 24 that spans across and above bars 18 of arm 6, a pair of depending lugs 25 that extend between said bars, a spacer tube 26 for said lugs, and a horizontal pivot rod 27 extending through said tube and also serving to connect the bar ends. One side of the cradle is provided

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with ears 28 for eye-bolts 29 and the other with elongated projections 30. Chains 31 are connected to the eye-bolts and are adapted to be trained around a transmission or like device on the cradle and hooked onto projections 30 to firmly hold such a device firmly on the cradle.

The jack unit 7 is generally conventional, comprising a cylinder 32, a ram 33, a jack handle 34 for extending the ram, and a release valve 35 for releasing the ram. In the present case, the jack unit is mounted on a horizontal pivot bar 36 on base 5 and ram 33 is provided with a spherical end 37 engaged in the socket of cup member 20. Thus as the ram extends or contracts, the jack unit automatically adjusts itself on pivot bar 32. The angular change in the disposition of the jack unit is relatively small during raising and lowering of arm 6.

The means 9 comprises a crank handle 38 on the end of a threaded shank 39 that extends through a bar 40 pivotally carried between arm bars 18, and is held against endwise movement by nuts 41 in a pivoted bar 42 extending between lugs 25. Means 9 is thus adapted to adjust the cradle 8 on its pivot rod 27 independently of the adjustment of arm 6. The threaded shank 39 is self-locking in bar 40 and said adjustment is maintained except when crank handle 38 is operated.

The above-described device, with the arm 6 lowered, is readily moved to a position to bring the cradle beneath a transmission. The jack unit 7 is then operated to elevate arm 6 toward the transmission. Then, from a position between members 10, a mechanic can adjust the cradle to the transmission by means 9. Chains 31 are then applied and the holding bolts for the transmission are removed. The arm 6 is then lowered to lower the transmission to clear the chassis and, if desired, the cradle can be adjusted to balance the transmission thereon. Finally, the jack is rolled on its wheels from beneath the chassis. Replacement of the transmission is as easily effected. It will be noted that at no time does the mechanic support any of the weight of the transmission, the same being borne entirely by the present efficient device.

While the invention that has been illustrated and described is now regarded as the preferred

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embodiment, the construction is, of course, subject to modifications without departing from the spirit and scope of the invention. It is, therefore, not desired to restrict the invention to the particular form of construction illustrated and described, but to cover all modifications that may fall within the scope of the appended claim.

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

A jack of the character described, comprising a wheel-borne base having a pair of diverging horizontal members and an erect frame at the end where said members meet, an arm on a horizontal pivot carried by said frame, a jack unit for moving the free end of said arm in a vertical plane between a position between said diverging members and a position above the pivot thereof, a horizontal pivot on the free end of said arm, a cradle carried by said pivot, and separate adjusting means for adjusting said cradle on its pivot in the plane of movement of the arm, said latter means comprising a crank having a threaded shank, a pivotal bar on and arranged transversely of the arm and through which said shank passes, a second pivotal bar extending transversely of and carried by the cradle, and abutments on said shank on each side of the latter bar.

VINTON L. HAMLIN.

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