

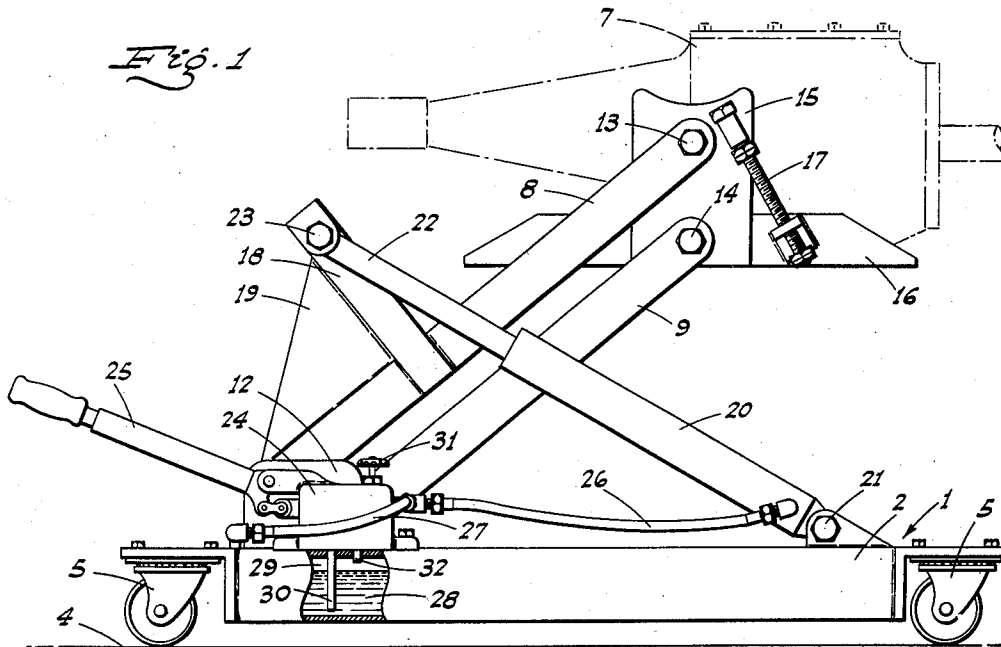
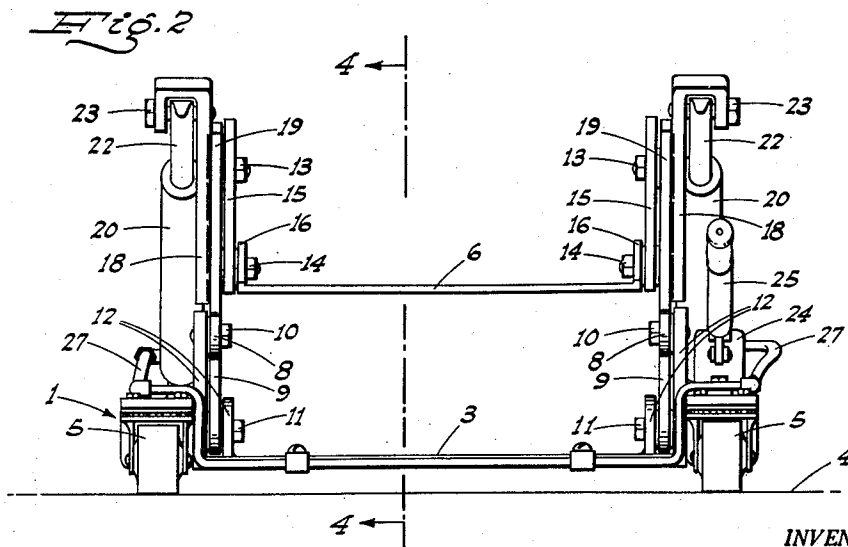
Sept. 29, 1959

E. WOLF
MECHANIC'S JACK

2,906,497

Filed Jan. 28, 1957

2 Sheets-Sheet 1



INVENTOR.
Edward Wolf
BY *Webster & Webster*
ATTYS.

Sept. 29, 1959

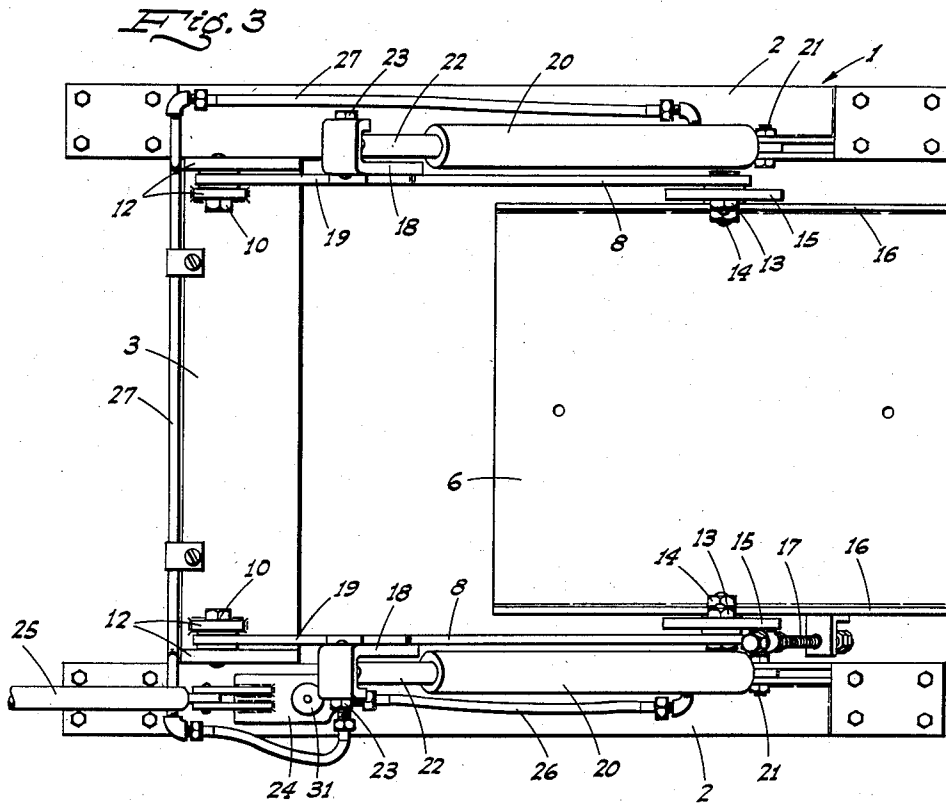
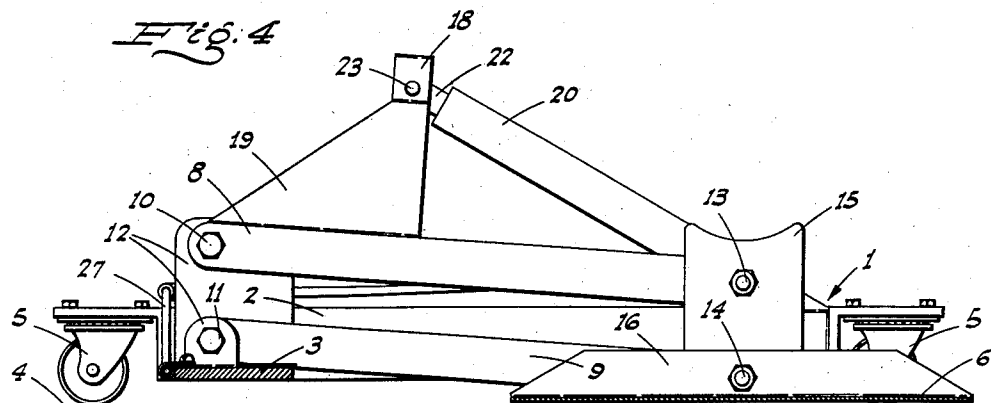
E. WOLF

2,906,497

MECHANIC'S JACK

Filed Jan. 28, 1957

2 Sheets-Sheet 2



INVENTOR.
Edward Wolf
BY *Webster & Webster*
ATTYS.

1

2,906,497

MECHANIC'S JACK

Edward Wolf, Stockton, Calif.

Application January 28, 1957, Serial No. 636,696

3 Claims. (Cl. 254—10)

This invention is directed to, and it is a major object to provide, a novel floor-type mechanic's jack; the purpose of such jack being to vertically movably support—from below, and for the purpose of aiding in the removal or replacement of—automotive parts, such as transmissions, differentials, front and rear axle units, pinion gear housings, wheel hubs, crank cases, and the like.

Another important object of the present invention is to provide a mechanic's jack, as above, which is extremely low-level when in lowered position, so that it can then be readily and conveniently manipulated beneath a motor vehicle, and especially the automotive part to be removed; this being of particular advantage when the device is used as a transmission jack.

An additional object of the invention is to provide a mechanic's jack, of the type described, which includes a pan or platform—for supporting the automotive part—mounted by means of a novel, power cylinder actuated linkage assembly for movement between a lowered on-floor position and a raised above-floor position.

A further object of the invention is to provide a mechanic's jack, as in the preceding paragraph which is constructed in a manner, including a novel frame, which permits the automotive part to be placed on—or removed from—the platform without obstruction when said platform is in lowered position.

A still further object of the invention is to provide a mechanic's jack which—under manual control—can be raised from lowered position to a selective height above-floor and then releasably maintained in such position.

It is also an object of the invention to provide a mechanic's jack which is designed for ease and economy of manufacture, and safe convenient use.

Still another object of the invention is to provide a practical, reliable, and durable mechanic's jack, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a side elevation of the jack as in use; the platform being in raised or above-floor position.

Fig. 2 is a rear end elevation of the jack, with the platform in a raised position, but slightly lower than shown in Fig. 1.

Fig. 3 is a plan view of the jack, with the parts in the position shown in Fig. 2.

Fig. 4 is a longitudinal sectional elevation of the jack taken on line 4—4 of Fig. 2, but with the platform in substantially fully lowered position.

Referring now more particularly to the drawings and to the characters of reference marked thereon, the jack comprises a horizontal U-shaped frame, indicated generally at 1; such frame including—in rigid relation—transversely spaced, longitudinal side beams 2 which project

2

forwardly from an under-slung or extremely low-level rear cross beam 3. The frame 1—which is disposed only a short distance above the floor 4—is supported for movement along the latter, by outboard caster wheel units 5 mounted at the corners of such frame.

A rectangular pan or platform 6 is of a size, and disposed, so that it may occupy a position—for up or down movement—between the vertical longitudinal planes of the side beams 2; the forward edge of said platform 6 being adjacent the front of the frame 1. The platform 6, which is adapted to support an automotive part, such as a transmission 7, from below, is mounted in connection with the horizontal U-shaped frame 1 for movement between a lowered, floor-engaging position (see Fig. 4) and a raised, above-floor position (see Fig. 1), as follows:

Adjacent but slightly inwardly of each side beam 2 there is a longitudinally extending set of parallel links, each set including an upper link 8 and a lower link 9. At their rear ends the links 8 and 9 of each set are pivoted, at 10 and 11, respectively, to a rigid perpendicular mount 12 on the frame 1 adjacent the corresponding rear corner.

At their forward ends the links 8 and 9 of each set are pivoted, as at 13 and 14, respectively, to a corresponding perpendicular attachment plate 15 which faces laterally inwardly. The platform 6 is formed with integral upstanding side flanges 16, and the lower portion of each attachment plate 15 lies closely adjacent the outside of the related flange 16 centrally between the front and rear edges of said platform 6.

The bolt which forms the pivot 14 extends through the adjacent flange 16, providing also a pivot for the latter; the two pivot bolts 14 being aligned transversely of the device. The platform 6, while thus pivotally mounted or suspended, is prevented from tilting relative to the attachment plates 15 by means of a combination stay and adjustment screw 17 which extends diagonally, and in connection, between one of said plates 15 and a forward lower point on the corresponding side flange 16.

By adjusting the screw 17 the platform 6 can be set to a true horizontal position or slightly canted downwardly or upwardly at the front, as working conditions may require.

The upper link 8 of each set of the parallel links is fitted—intermediate its ends, and in right-angle relationship—with an upstanding lever arm 18 stabilized by a gusset plate 19.

A fluid pressure actuated power cylinder 20, preferably of hydraulic type, is disposed in longitudinal relation above each side beam 2, and each such cylinder is pivoted at its forward closed end, as at 21, to the related side beam 2 adjacent the front end of the latter.

Each power cylinder 20 extends from its pivot 21 at a rearward and upward diagonal, and the piston rod 22 which projects from the upper end of the cylinder is pivotally connected, as at 23, to the upper end of the corresponding lever arm 18.

When the power cylinders 20 are contracted, the sets of parallel links 8 and 9 occupy a down-position, with the platform 6 in floor engagement (see Fig. 4). Upon simultaneous energization of the power cylinders 20 the piston rods 22 thrust rearwardly, and the force thus applied to the lever arms 18 is transmitted—much in the manner of a bellcrank—to the corresponding set of parallel links 8 and 9, causing the same to swing upwardly and rearwardly. This raises the platform 6 from the lowered position, as in Fig. 4, to a selected raised position, as—for example—in Fig. 1.

As the power cylinders 20 are of single-acting type, and as they are arranged to be held in any extended position, in the manner as hereinafter described, the platform 6

can likewise be safely and effectively held in an automotive part supporting position a selective distance above-floor. The control of the power cylinders 20 is accomplished in the following manner:

A manual, hydraulic pump 24 is mounted on the rear end portion of one of the side beams 2, and such pump includes an actuating hand lever 25. With actuation of the hand lever 25 the pump 24 is caused to feed oil through conduits 26 and 27 to said power cylinders 20; there being a quantity of such oil, as shown at 28, contained in a reservoir chamber 29 formed in the side beam 2 on which the pump 24 is mounted, and which pump includes a pick-up tube 30 which depends into said reservoir chamber 29.

A valve 31 is interposed between the pump 24 and the conduits 26 and 27; the valve in one position permitting the pump to force oil from the reservoir chamber 28 through said conduits to the power cylinders 20, but in another position bleeding the oil back from said cylinders through such conduits and into the reservoir chamber 29 through a discharge tube 32. Thus, by the simple expedient of manipulating the hand lever 25, or operating the valve 31, the jack can be caused to raise the platform 6, or to lower it, respectively.

With the described mechanic's jack it can—when in its lowered, low-level position—be readily run beneath a motor vehicle and the platform 6 then raised to the necessary height to receive a transmission 7 or the like as detached from such vehicle; the platform 6 then being partially lowered and withdrawn, with the transmission thereon, out from beneath the vehicle. Thereafter, the platform is fully lowered—i.e. into floor engagement—so that the transmission can be readily slid off onto the floor for subsequent handling. To return and replace the transmission, or other automotive part, the above described operation is merely repeated, but in reverse. All of this is accomplished with the utmost convenience, and with safety.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. A mechanic's jack comprising a U-shaped low-level frame supported for movement along a floor and comprising side beams and a cross beam connecting the side beams at their rear end, a platform of a width to fit between the side beams, a pair of vertically spaced parallel links on each side of the platform located in a vertical plane between such side of the platform and the adjacent side beam, power means mounted on the frame to the side of the platform and operatively connected to the links to actuate the same, means pivotally mount-

ing the links at their rear end on the frame adjacent the rear end thereof, means pivoting the links at their forward end in supporting connection with and above the platform at said side thereof; the power means being arranged so that the platform can be lowered to the floor, and means included in part with the link pivoting means for adjusting the platform lengthwise relative to a horizontal plane and so that the platform remains in such adjusted position with any setting of the links.

2. A mechanic's jack comprising a U-shaped low-level frame supported for movement along a floor and comprising side beams and a cross beam connecting the side beams at their rear end, a platform of a width to fit between the side beams, a pair of vertically spaced parallel links on each side of the platform located in a vertical plane between such side of the platform and the adjacent side beam, power means mounted on the frame to the side of the platform and operatively connected to the links to actuate the same, means pivotally mounting the links at their rear end on the frame adjacent the rear end thereof, a flange upstanding from said side of the platform, an attachment plate upstanding from and overlying the flange on the outside, a pivotal connection between the forward end of the upper link and the attachment plate, a pivotal connection between the forward end of the lower link, the attachment plate and the flange, and a longitudinally adjustable member extending diagonally between and connected to the attachment plate and the flange.

3. A mechanic's jack comprising a U-shaped low-level frame supported for movement along a floor and comprising side beams and a cross beam connecting the side beams at their rear end, a platform of a width to fit between the side beams, a pair of vertically spaced parallel links on each side of the platform, each pair being located in a common vertical plane between such side of the platform and the adjacent side beam, means pivotally mounting the links at their rear ends on the frame adjacent the rear end thereof, means pivoting the links at their forward ends in supporting connection with the platform at said side thereof, an arm rigid with and upstanding from at least one of the upper links intermediate its ends, a gusset plate extending along and secured to a portion of the upper edge of at least one of the upper links and engaging the arm, and a power cylinder pivotally connected at one end to the upper end of at least one of the arms outwardly thereof and at the other end on the adjacent side beam adjacent the forward end thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

1,819,378	Nilson	Aug. 18, 1931
2,495,143	Simmonds	Jan. 17, 1950
2,495,144	Simmonds	Jan. 17, 1950
2,512,150	Geren	June 20, 1950
2,583,114	Monteith	Jan. 22, 1952
2,583,216	Hoffman	Jan. 22, 1952
2,785,807	Prowinsky	Mar. 19, 1957