Aug. 21, 1945. J. W. SCANE 2,383,275

VEHICLE JACK

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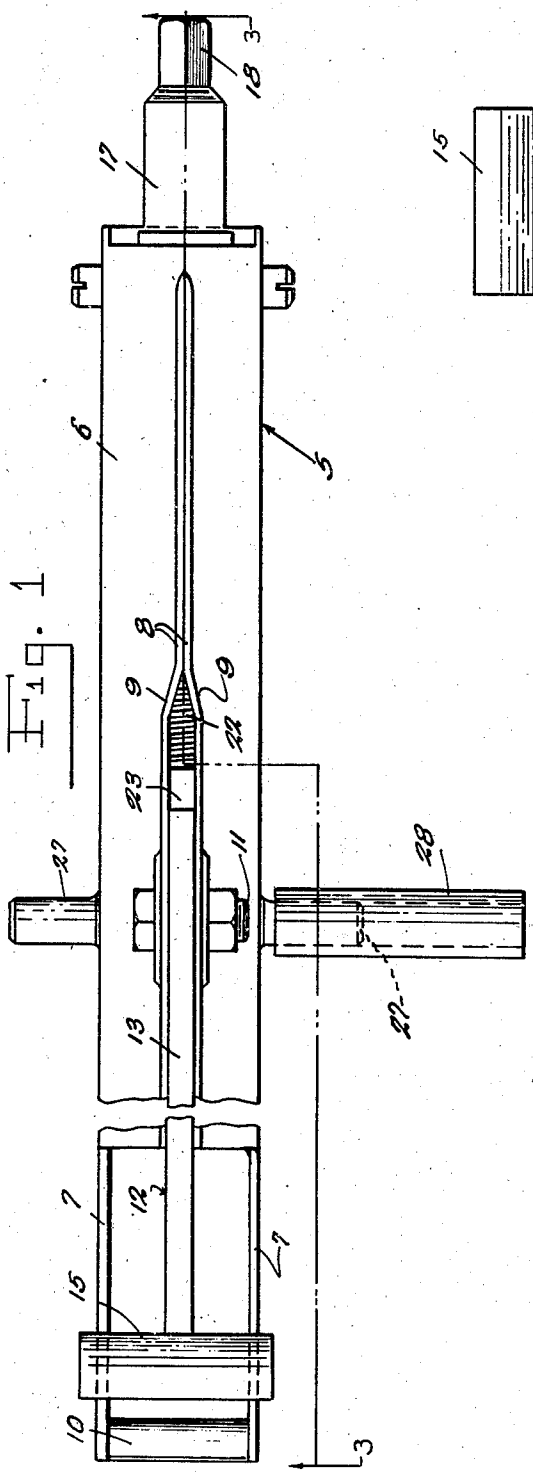


Fig. 1

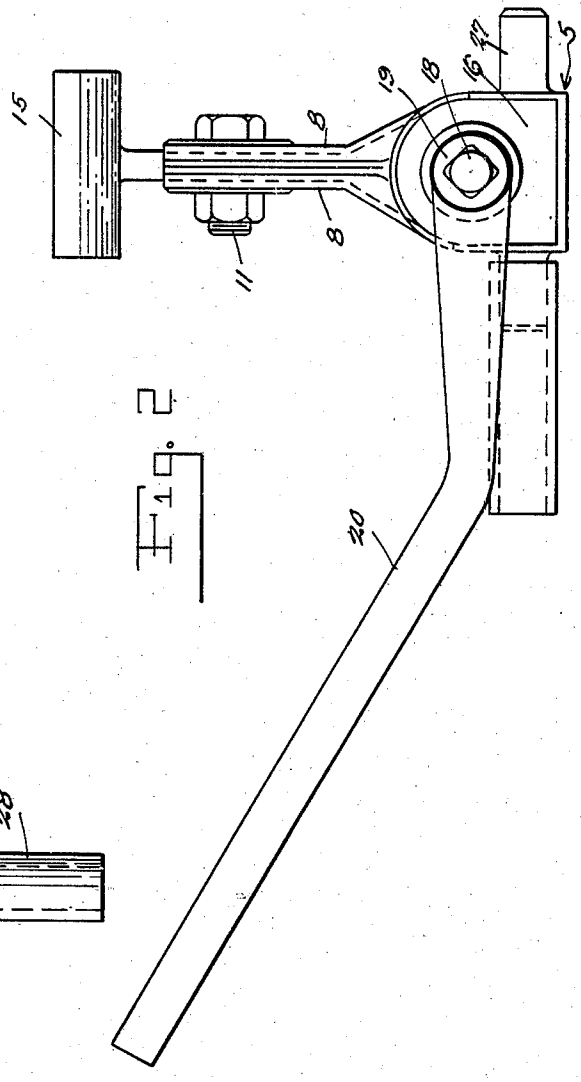


Fig. 2

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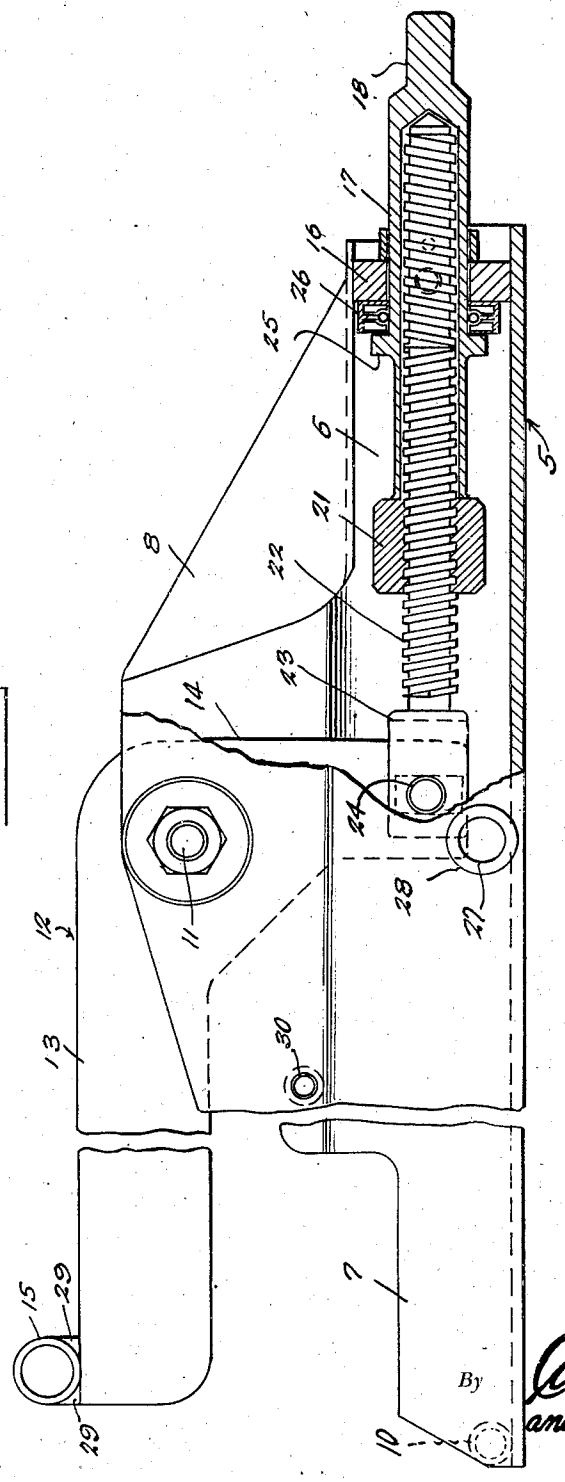
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Fig. 3



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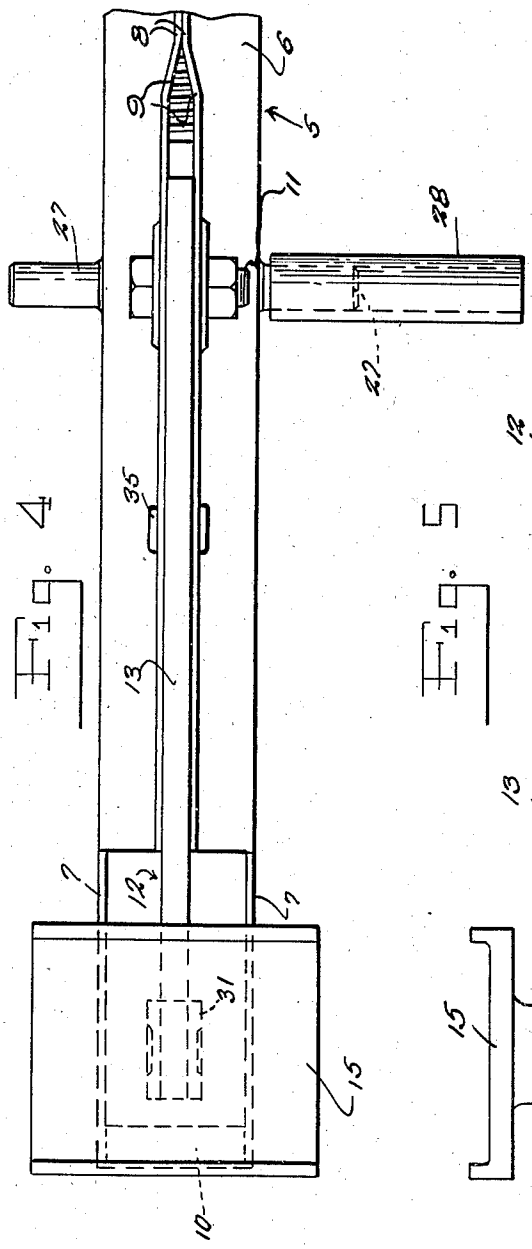


Fig. 4

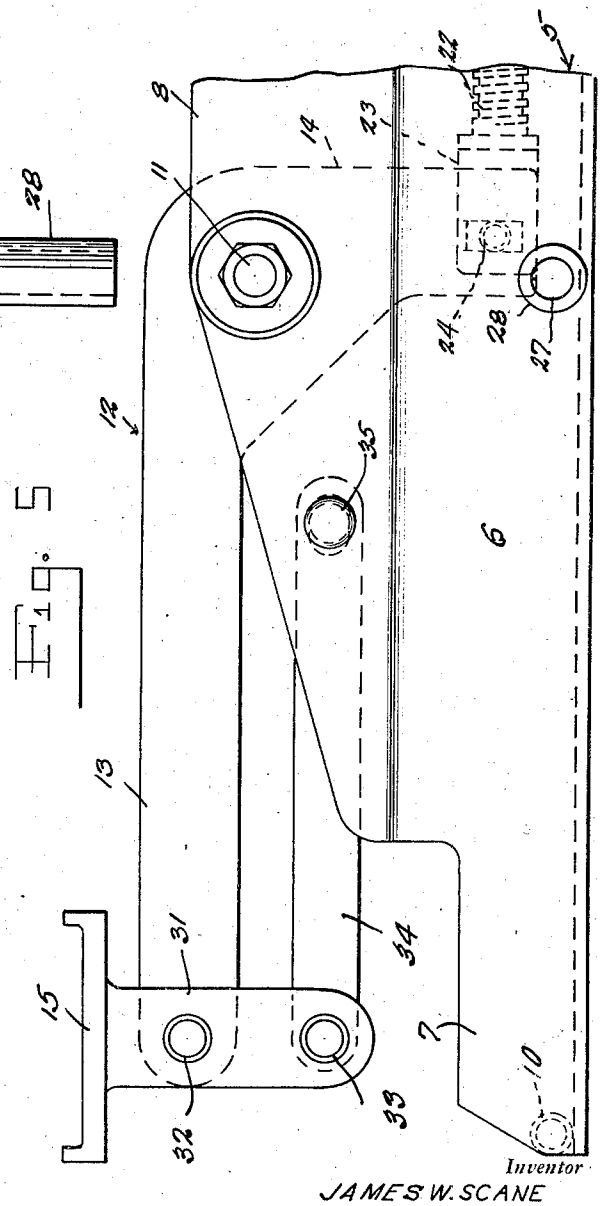


Fig. 5

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VEHICLE JACK

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Application January 25, 1945, Serial No. 574,485

5 Claims. (Cl. 254—126)

This invention relates to improvements in vehicle jacks of the type shown in my U. S. Letters Patent 2,360,624, dated October 17, 1944.

The primary object of the present invention is to generally simplify and improve the construction of the vehicle jack disclosed in my above-mentioned patent.

More specifically, the present invention aims to provide a jack of the above kind which embodies a minimum number of parts arranged to provide for convenient and efficient operation, and which includes a base which is of durable form although constructed of sheet metal to avoid excessive weight.

Another object of the invention is to provide, in a jack of the above kind improved means to facilitate location of the jack with respect to the part of the vehicle to be engaged by the lifting lever.

More specific objects and features of the invention will become apparent from the following description when considered in connection with the accompanying drawings, and the invention consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the drawings and claimed.

In the drawings, wherein like reference characters indicate corresponding parts throughout the several views:

Figure 1 is a top plan view of a vehicle jack constructed in accordance with the present invention.

Figure 2 is an end elevational view thereof looking toward the left of Figure 1, together with a ratchet wrench engaged with the thrust sleeve forming part of the screw means for actuating the lifting lever.

Figure 3 is a view of the jack shown in Figure 1, partly broken away, partly in side elevation, and partly in longitudinal section, the plane of section being substantially on the line 3—3 of Figure 1.

Figure 4 is a fragmentary top plan view illustrating a modification of the jack shown in Figures 1 to 3, inclusive, and

Figure 5 is a side elevation of the construction shown in Figure 4.

Referring in detail to the drawings, the present jack includes an elongated base 5 comprising a strip of metal having side portions bent upwardly and shaped to provide a hollow housing 6 and spaced vertical flanges 7 at one end of said housing, together with adjacent flanges 8 rising from the housing 6 centrally between the sides of the latter. At one end of the housing 6, the flanges are secured together in contiguous relation by welding or the like, while said flanges are offset laterally, as at 9, so as to be in spaced parallel relation at the other end of the housing 6. A section of pipe 10 may be interposed between the flanges 7 at the adjacent end of the base and secured in place by welding or the like to reinforce the construction.

Pivoted at the juncture of its arms between the spaced portions of the flanges 8, as at 11, is a lifting lever 12 of bell crank form including a longer arm 13 projecting beyond one end of the housing 6 above the flanges 7, and a shorter arm 14 depending into the housing 6. A lift member 15 is carried by the free end of arm 13 for engagement with the vehicle part to be lifted.

Secured in the end of housing 6 at that end of the base 5 remote from the free end of lever arm 13 is a thrust block 16 in which is journaled a rotatable thrust sleeve 17. One end of sleeve 17 projects beyond the end of housing 6 and terminates in a polygonal end portion 18 for engagement in the socket 19 of a ratchet wrench including an operating lever 20. At its other or inner end, the thrust sleeve 17 is provided with a nut 21 that may be welded to or formed integral with said thrust sleeve. An operating screw 22 has an end portion freely rotatable in the bore of sleeve 17 and is provided at its inner end with a longitudinally slotted head 23 which straddles the lower end of the lever arm 14 and is loosely pivoted to the latter, as at 24. Screw 22 has threaded engagement in the nut 21 so that, upon rotation of sleeve 17 and nut 21, screw 22 is adjusted longitudinally so as to rock the lifting lever 12 and thereby raise or lower the vehicle part beneath which the lift member 15 is engaged, depending upon the direction of rotation of said sleeve 17 and nut 21. It will be seen that the sleeve 17 and screw 22 are disposed axially of the housing 6 parallel with the bottom of the base 5. Sleeve 17 has an external annular thrust flange 25, and a thrust bearing 26 is interposed between this flange and the block 16 to insure free rotation of sleeve 17 even though a load is imposed upon the arm 13 of lever 12.

In operation, the socket of the ratchet wrench is engaged with the end 18 of sleeve 17, and oscillation of the lever 20 of the ratchet wrench will effect rotation of sleeve 17 and nut 21 in the desired direction. Rotation of sleeve 17 in one direction will cause screw 22 to move outwardly of sleeve 17 so as to rock lever 12 for raising the vehicle part. On the other hand, reverse rotation of sleeve 17 will effect movement of

screw 22 into sleeve 17 so as to rock lever 12 in the opposite direction and lower the vehicle part resting upon the lift member 15. The ratchet wrench 19, 20 may be of any conventional type that is either reversibly applicable to the end 18 of sleeve 17 or that embodies means for reversibly driving its socket 19. As the specific construction of the ratchet wrench forms no part of the present invention, its construction need not be disclosed herein in detail.

In order to facilitate location of the jack with respect to the part of the vehicle to be engaged by the lift member 15, studs 27 are rigidly fixed to opposite sides of the base 5 by welding or the like so as to project laterally from said base. A length of pipe or tubing 28 is provided, either end of which may be telescopically engaged over the desired one of the studs 27, and this length of pipe or tubing 28 is of such length as to contact the adjacent wheel of the vehicle at its outer end when the base of the jack is properly situated to engage the lift member 15 with the part of the vehicle to be lifted. It will be apparent that the length of pipe or tubing 28 is selectively engageable with either desired stud 27 so that the jack may be effectively employed at either side of the vehicle. This arrangement takes the place of the pivoted arms 31 of my above-mentioned patent and constitutes a desirable improvement thereover.

In the embodiment of Figures 1 to 3, inclusive, the lift member 15 is in the form of a short length of pipe disposed across and centrally welded to the free end of lever arm 13, as at 29. Due to the cylindrical form of the member 15 in this embodiment, free change in angular relation between the lever arm 13 and the vehicle part engaged by the member 15 will be had. Also, in this embodiment, the flanges 8 are preferably rigidly connected by a spacing sleeve and rivet, as at 30, adjacent the flanges 7 and the top of the adjacent end of housing 6.

In the embodiment of Figures 4 and 5, the lift member 15 is in the form of a channel plate carried by the upper end of a lever 31 which is pivoted intermediate its ends to the free end of lever arm 13, as at 32. The lever 31 depends below the lever arm 13 and has its lower end pivoted at 33 to the forward end of a link 34 whose rear end is pivoted to and between the flanges 8, as at 35. Pivot 35 is located directly above the adjacent portion of housing 6 and forwardly of and below the pivot 11 of lever 12. Link 34 coacts with lever 31 so as to maintain the lifting plate 15 horizontal at all times, regardless of the position of lever arm 13. This arrangement is preferred where the jack is to be engaged with a part of the vehicle which is rounded and would not remain upon a lift member of the form shown in Figure 1. Otherwise, the construction of Figures 4 and 5 is identical with that of Figures 1 to 3, inclusive, and remaining parts of both forms that are similar are indicated by like reference numerals.

From the foregoing description, it is believed that the construction and operation, as well as the advantages of the present invention, will be readily understood and appreciated by those skilled in the art. It will be seen that the present jack involves a minimum number of compact parts which are so arranged as to insure ready and efficient operation. The base is so formed of sheet metal as to be of light weight and capable of economical manufacture. Minor changes in details of construction illustrated and described are contemplated, such as fairly fall within the spirit and scope of the invention as claimed.

What I claim is:

1. A vehicle jack comprising an elongated base adapted to lie on the ground along one side of the vehicle wheel, a stationary thrust block carried by one end of the base, a thrust sleeve journaled in said thrust block and disposed parallel with and above the bottom of the base, said thrust sleeve having a polygonal outer end to facilitate the application of a wrench thereto for turning the same, a nut rigid with the inner end of the thrust sleeve, an operating screw having threaded engagement in the nut and movable within the thrust sleeve, a thrust bearing between the thrust sleeve and the thrust block, a lifting lever of bell crank form pivoted on the base upon an axis transverse to the latter, said lifting lever including an arm projecting toward the end of the base opposite that at which the thrust block is located and a shorter arm depending adjacent the inner end of the operating screw, and a pivotal connection between said operating screw and the second-named arm of said lifting lever.

2. The construction defined in claim 1, in combination with a cylindrical lift member disposed across and centrally fixed upon the free end of the first-named arm of said lifting lever.

3. The construction defined in claim 1, in combination with a lever pivoted intermediate its ends to the free end of the first-named arm of said lifting lever and projecting above and below the latter, a channel lift plate rigid with the upper end of said last-named lever, and a link disposed beneath the first-named arm of the lifting lever and pivoted at one end to the base adjacent the pivot of the lifting lever and at its other end to the lower end of said second-named lever for maintaining the lift plate in a horizontal position.

4. The construction defined in claim 1, wherein the base comprises an elongated sheet of metal having side portions bent upwardly and shaped to form a horizontal hollow housing and flanges projecting upwardly from the housing centrally between the sides of the latter, said thrust block and screw being arranged in said housing, said flanges having portions secured together and other portions spaced apart, the lifting lever being pivoted to and between the portions of the flanges which are spaced apart.

5. The construction defined in claim 1, in combination with horizontal studs rigid with and projecting laterally from opposite sides of the base, and a tubular member adapted to be selectively telescoped over either desired one of said studs, said tubular member being of greater length than the studs and adapted to contact the inner side of the adjacent vehicle wheel to facilitate positioning of the jack with respect to the part of the vehicle to be engaged by the lifting lever.

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