June 26, 1951 W. P. BILLINGS 2,558,535

PORTABLE HYDRAULIC WHEEL AND RIM JACK

Filed April 22, 1949 2 Sheets-Sheet 1

Fig. 1.

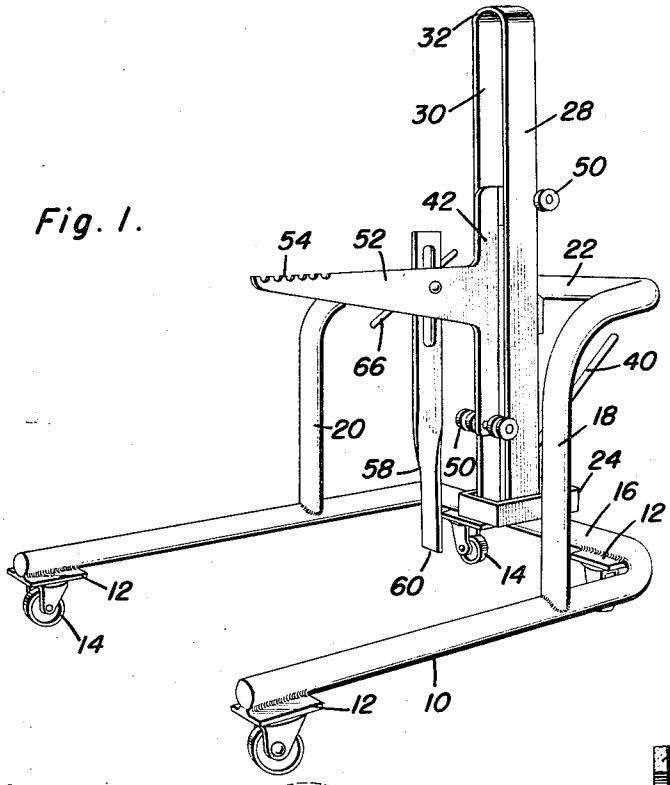
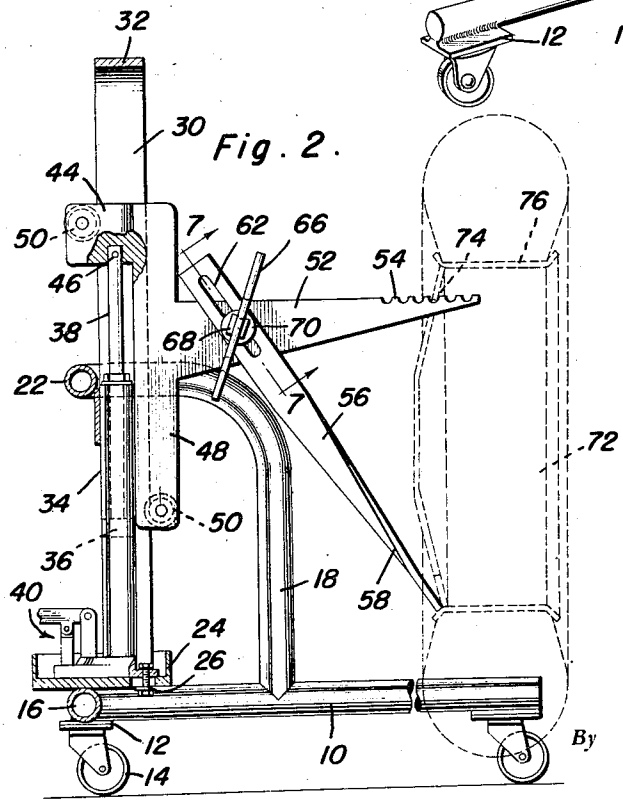



Fig. 2.



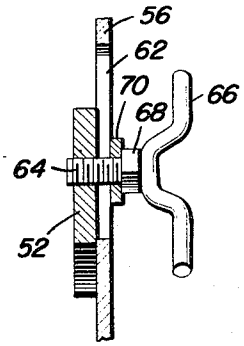




Fig. 7.

Inventor

William P. Billings

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

June 26, 1951 W. P. BILLINGS 2,558,535

PORTABLE HYDRAULIC WHEEL AND RIM JACK

Filed April 22, 1949 2 Sheets-Sheet 2

Fig. 3.

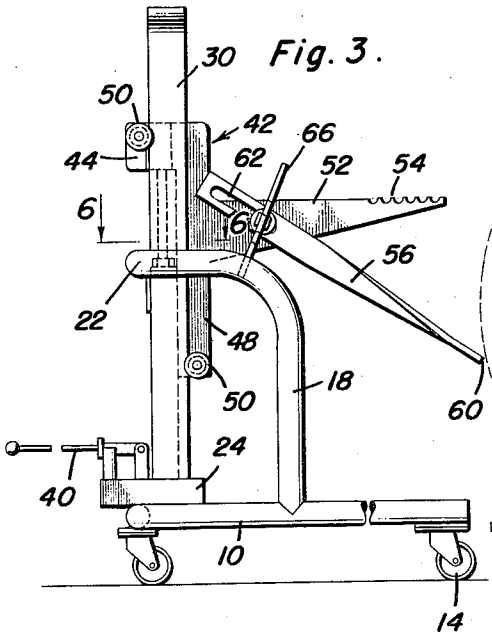



Fig. 4.

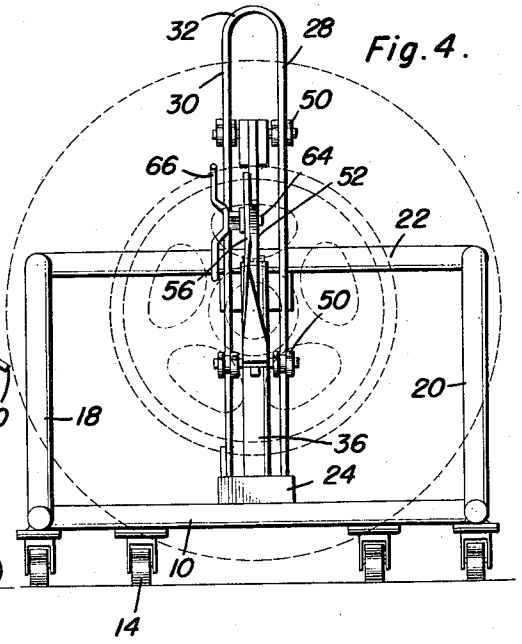
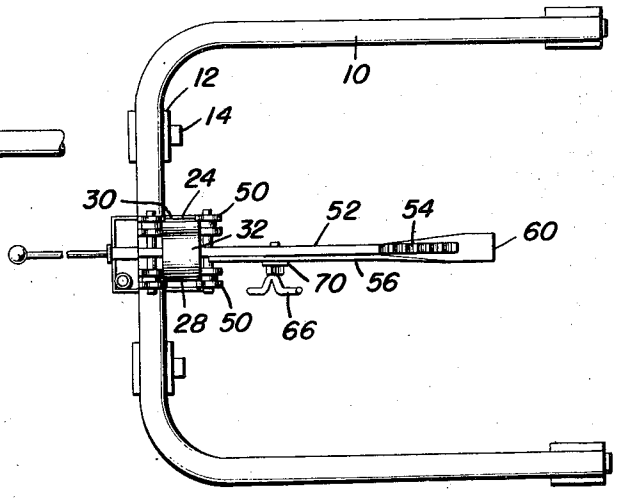



Fig. 5.



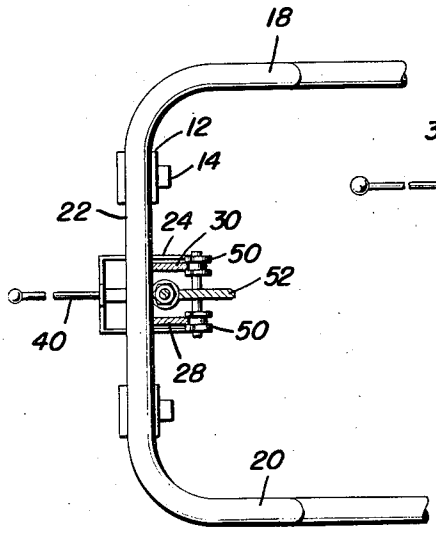




Fig. 6.

Inventor

William P. Billings

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Patented June 26, 1951 2,558,535

# UNITED STATES PATENT OFFICE

2,558,535

## PORTABLE HYDRAULIC WHEEL AND RIM JACK

William P. Billings, Asheville, N. C., assignor of one-half to H. G. Strom, Asheville, N. C.

Application April 22, 1949, Serial No. 88,992

2 Claims. (Cl. 254—2)

1

This invention relates to a hydraulic jack the primary object of which is to provide the mechanic or driver with a ready and easy means for removing and replacing heavy wheels, single or double, and rims from trucks, buses, trailers and the like.

Another important object of the invention is to provide a hydraulic jack supported upon caster wheels so that it can be easily moved from place to place, or truck to truck, in a garage or warehouse, and may be transported as a part of the truck equipment.

A further object of the invention is to provide a jack of the character described which is relatively simple in design and construction, easy to operate, sturdy, and efficient for its intended purposes.

These, together with various ancillary objects and features of the invention which will later become apparent as the following description proceeds, are attained by the device, a preferred embodiment of which has been illustrated by way of example only in the accompanying drawings, wherein:

Figure 1 is a perspective view of the jack;

Figure 2 is a central vertical sectional view through the jack shown in Figure 1;

Figure 3 is a side elevational view of the jack;

Figure 4 is a rear elevational view of the jack looking from the left in Figure 3;

Figure 5 is a top plan view of the jack;

Figure 6 is a sectional view taken on the line 6—6 of Figure 3; and

Figure 7 is a sectional view taken on the line 7—7 of Figure 2.

Specific reference is now made to the drawings. In the several views in the accompanying drawings and in the following specification similar reference characters indicate corresponding elements throughout.

Indicated generally at 10 is a substantially U-shaped frame, preferably of steel pipe construction carrying by means of welded plate supports 12 a plurality of caster wheels 14 preferably at the free ends of the frame and at the tubular portion 16. Welded to the legs of the frame adjacent the tubular portion is a pair of pipe uprights 18 and 20 interconnected at their top ends by a substantially U-shaped laterally extending pipe frame 22.

Secured as by welding to the tubular portion 16 and centrally thereof is a substantially rectangular box-like member 24 and secured to the bottom of the member by means of bolts 26 are

2

vertical spaced plates 28 and 30 interconnected at their top ends as at 32.

Carried on the member 24 is a hydraulic cylinder 34 between the plates 28 and 30, the cylinder having a piston 36 and a rod 38 attached thereto and slidable therein. Carried by the member 24 and operatively associated with the cylinder 34 is a conventional lever mechanism 40 for raising and lowering the piston rod 32.

Extending between the plates 28 and 30 is an L-shaped plate 42, the shorter leg 44 of which is pivotally secured as at 46 to the upper end of the piston rod 38. Adjacent the free ends of the leg 44 and the longer leg 48 pairs of rollers 50 are rotatably carried which are provided with grooves for engaging both the inner and outer longitudinal edges of the plates 28 and 30 as shown clearly in the drawings.

Extending laterally from and preferably integral with the leg 48 is a plate 52 which is tapered towards its free ends, the upper edge adjacent the free end having spaced gripping teeth 54.

A further plate or rod 56 is provided which is twisted as at 58 to provide a perpendicular free edge 60. This plate 56 is provided with a longitudinal slot 62 and extending through a threaded aperture in the plate 52 and the slot is a screw 64 carrying a handle 66. Interposed between the handle and the plate 56 is a head 68 and a washer 70. Thus it will be seen that the plate 56 is rotatably and longitudinally adjustable upon the plate 52.

In practical operation, the jack is moved to the truck on the wheels 14. The legs of the frame 10 straddle a particular wheel 72. The lever 40 is then actuated to raise the plate 52 to be in alignment with one of the upper conventional recesses 74 of the rim 76. The jack is moved inwardly so that the gripping teeth 54 engage the rim at the recess 74. Thereafter, the plate 56 is loosened by the handle 66 and positioned at its free end 60 through a selected one of the lower recesses of the rim, as shown in dotted lines in Figure 2. Further pumping of the lever 40 will accordingly raise the rim and associated wheel as desired.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is here in shown and described a

preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A portable hydraulic wheel and rim jack comprising a substantially U-shaped frame having legs interconnected by a tubular portion, caster wheels carried by said frame, spaced vertical plates secured to the tubular portion of said frame, a hydraulic cylinder secured between said plates, a piston and piston rod slidable in said cylinder, lever means carried by said tubular portion for operating the piston and piston rod, an L-shaped bar having a vertical leg and horizontal arm, said horizontal arm extending between said plates and secured to said piston rod, rollers carried by said horizontal arm and said vertical leg engaging the free longitudinal edges of said spaced plates, a laterally extending



tapered plate carried by said vertical leg adapted to be received in an upper recess of a wheel rim, a further plate having one end adapted to be received in a lower recess of a wheel rim, and means for adjustably retaining said further plate on said lateral tapered plate.

2. The combination of claim 1, wherein said adjustable retaining means includes a longitudinal slot in said further plate, and a screw having a handle thereon and extending through said slot and through a threaded aperture provided in said lateral tapered plate.

WILLIAM P. BILLINGS.


## REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 2,490,233 | Schildmeier | Dec. 6, 1949 |