March 18, 1930. E. M. PFAUSER 1,751,056

JACK

Filed June 21, 1928

Fig. 1

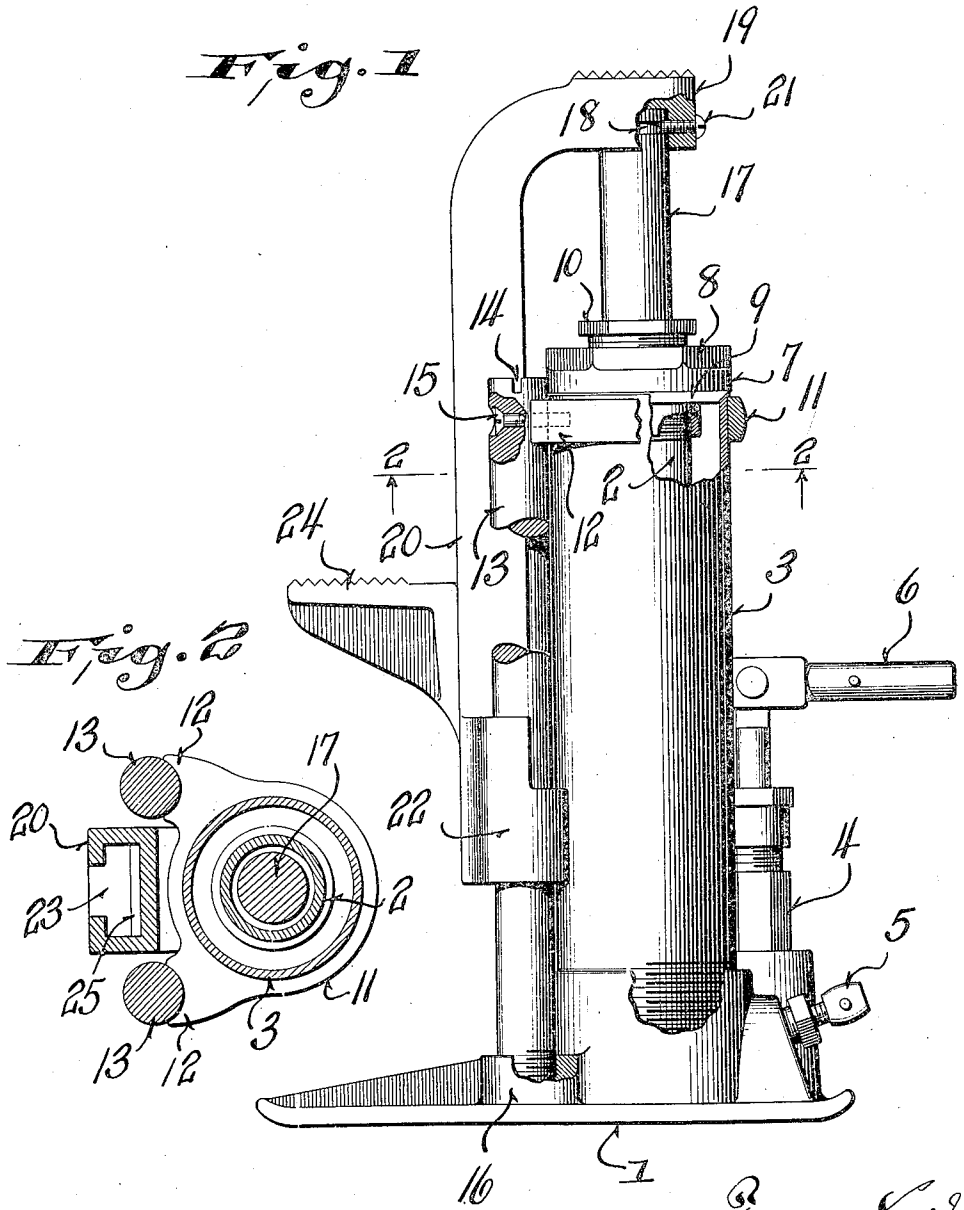


Fig. 2

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UNITED STATES PATENT OFFICE

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JACK

Application filed June 21, 1928. Serial No. 287,095.

This invention relates to jacks and is particularly directed to an hydraulic jack.

Objects of this invention are to provide a novel form of hydraulic jack in which a simple form of base casting is employed, and in which a removable reservoir and a removable cylinder are carried by the base and may be formed of tubular material and readily connected to the base in a rigid and highly serviceable manner.

Further objects are to provide an hydraulic jack in which guides are provided which are distinct from the cylinder and which slidably carry the cross head operated from the plunger, and in which the guides themselves may be readily removable to permit replacement in case of wear or damage.

A further object of this invention is to provide a novel form of hydraulic jack in which the cylinder and reservoir are formed, as stated, of tubular material distinct from the base and in which the tubular reservoir is locked in place by means of the cylinder head.

Further objects are to provide a very simple form of hydraulic jack which may be manufactured with a minimum of cost and which requires extremely simple operations for its production.

An embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a side elevation of the view with parts broken away and in section;

Figure 2 is a sectional view on the line 2—2 of Figure 1.

Referring to the drawings, it will be seen that the jack comprises a base portion 1 into which a cylinder 2 and a reservoir 3 are adapted to be screwed. The cylinder and reservoir are each formed of seamless tubing and the base, as will be noted, is of relatively small height and may be easily machined as distinguished from the hydraulic jacks in which the cylinder is cast integral with the base. The base carries a pump 4 and a relief or by-pass valve 5. The pump is operated in any suitable manner as by means of the projecting lever 6 adapted to removably receive an elongated handle.

The cylinder head 7 is provided with a wrench receiving portion 8 and is threaded upon the upper end of the cylinder 2. It is provided with a bevelled face 9 which contacts with the correspondingly bevelled upper end of the reservoir 3, as shown in Figure 1, so that the reservoir is locked in place by the cylinder head. If desired, the reservoir may not be screwed into the base but may be merely fitted thereon and locked down by the cylinder head. At all events, it is locked in place rigidly by the cylinder head.

The cylinder head carries a gland 10. Further it is to be noted that the cylinder is surrounded by a ring 11 which is provided with projecting portions 12. These projecting portions 12 are recessed to receive the upper ends of the guides 13. Preferably, a pair of guides are employed, although obviously one may be used if required.

The upper ends of the guides are notched, as indicated at 14, to receive a screw driver or similar implement and are transversely apertured. Screws 15 pass through these transverse apertures and are screwed into the projecting portions 12 of the ring 11 to thus securely lock the guides in place adjacent their upper ends. The lower ends of the guides are threaded and are received in the apertured threaded bosses 16 cast integrally with the base 1.

The plunger 17 projects through the cylinder head and is provided with a groove 18 adjacent its upper end. The upper end of the plunger is received in the apertured head 19 of a cross head, such cross head being provided with a downwardly extending portion 20. A set screw 21 extends through the head 19 and into the groove 18, to thus lock the cross head to the upper end of the plunger. The cross head is provided with a pair of guiding ears 22 which surround the guides or rods 13. The rods are preferably formed of cylindrical material although obviously they may have other contours, if desired.

The portion 20 is provided with a channelled portion 23 (see Figure 2) within which the inner portion of a shoe 24 is received. This shoe is thus slidably locked to the cross head and is provided with any suitable means for securing relative adjustment between the shoe and the cross head. For instance, the

shoe may interlock with teeth 25 (see Figure 2) formed inside the channel 23 of the cross head, so that the shoe may be adjusted up or down upon the portion 20.

It is to be noted particularly that the casting for the base is extremely simple and is readily machined. There are no difficultly accessible portions of any part of the jack. The tubular reservoir and cylinder may be made from stock material, and also the guides and plunger may be made from standard or stock material. Thus, the manufacture of the jack is simplified and the cost of production reduced.

Although the invention has been described in considerable detail, such description is intended as illustrative rather than limiting as the invention may be variously embodied and as the scope of such invention is to be determined as claimed.

I claim:

1. An hydraulic jack comprising a base, a pump carried by said base, a reservoir supported from said base, a cylinder carried by said base, a cylinder head threaded upon the upper end of said cylinder and contacting with and locking the upper end of said reservoir in place, a plunger projecting through said cylinder head, a guide carried by said base and projecting upwardly parallel to said cylinder, a member surrounding said cylinder and locked to the upper end of said guide, and a cross head secured to the upper end of said plunger and having a portion paralleling the cylinder and guided by said guide.

2. An hydraulic jack comprising a base, a tubular cylinder and a surrounding tubular reservoir supported from said base, a cylinder head screwed upon the upper end of said cylinder and engaging the upper end of said reservoir, a pump carried by said base for supplying fluid to said cylinder, a plunger projecting through the cylinder head, a cross head carried by said plunger and having a downwardly extending portion paralleling said cylinder and provided with slides, a ring-like member surrounding the upper end of said reservoir and having socket portions, guides carried by said base and seated and secured within the socket portions of said ring, said guides cooperating with the slides of said cross head, and a supporting member carried by said cross head.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

EDWARD M. PFAUSER.