April 13, 1926.

1,580,348

W. THATCHER

SCREW JACK

Filed August 28, 1925

2 Sheets-Sheet 1

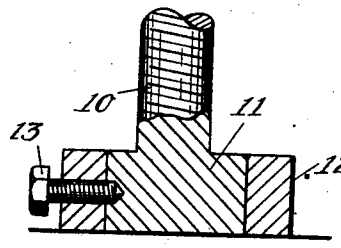


FIG. 3

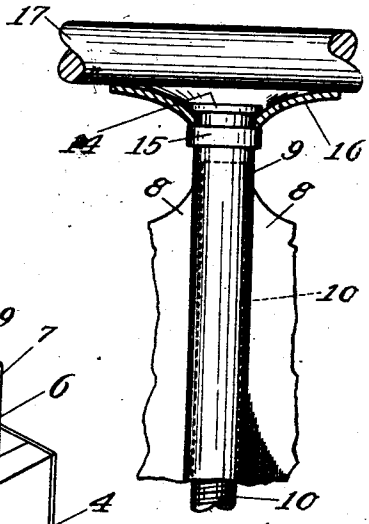


FIG. 2

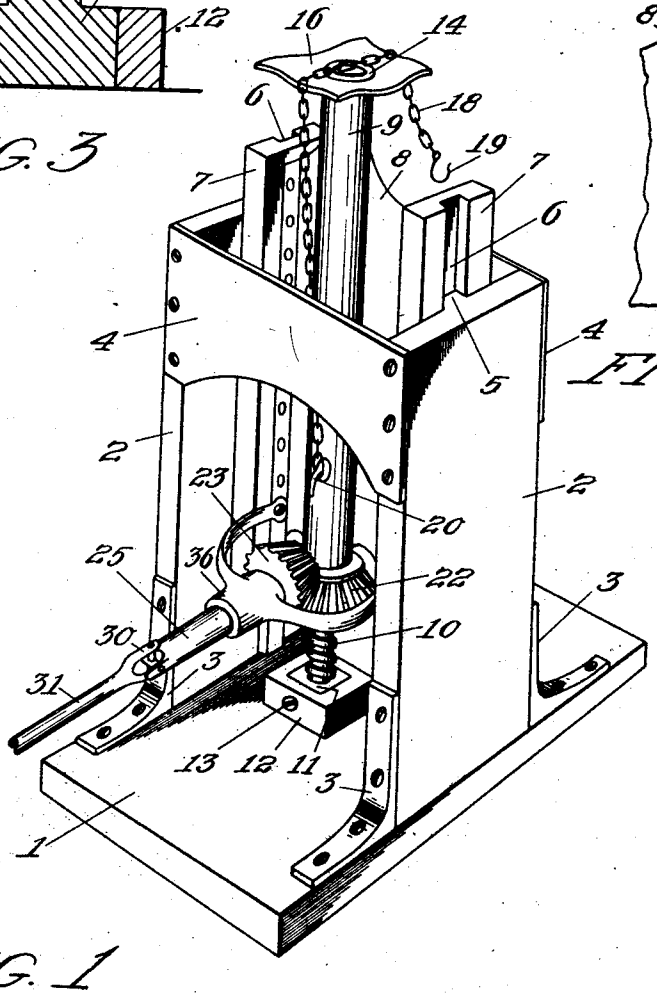


FIG. 1

WITNESS:
Gust. Hjelm

INVENTOR:
W. Thatcher

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Filed August 28, 1925 2 Sheets-Sheet 2

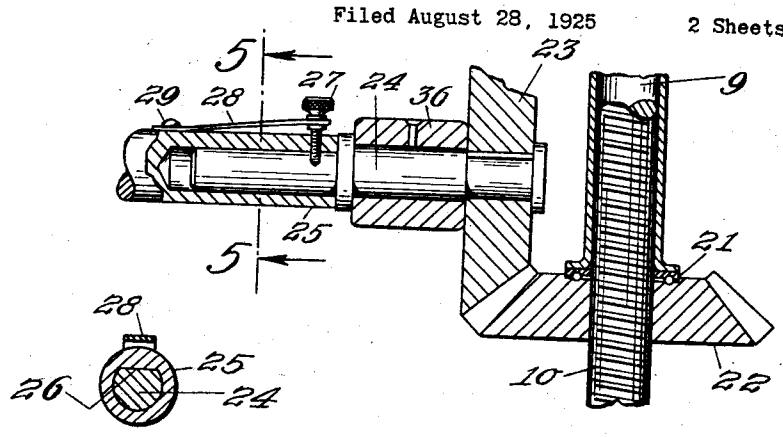


FIG. 5

FIG. 4

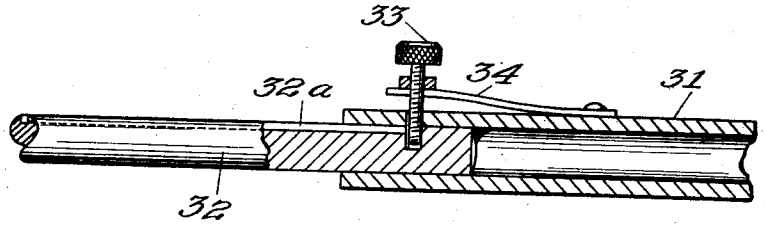


FIG. 6

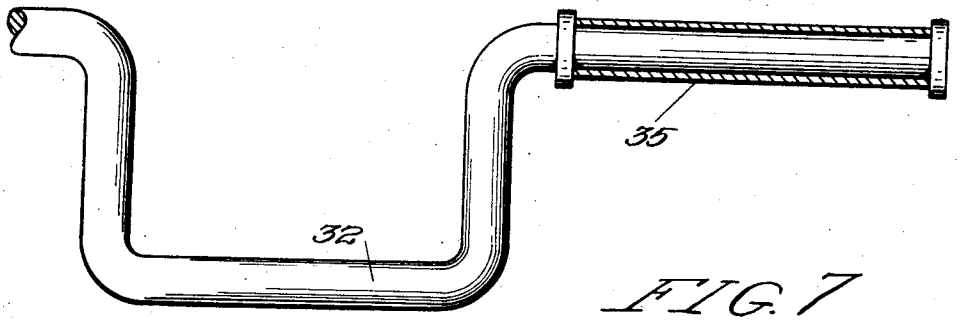


FIG. 7

WITNESS:
Gust. Hjelm

BY

INVENTOR:
W. Thatcher
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ATTORNEY

Patented Apr. 13, 1926. 1,580,348

UNITED STATES PATENT OFFICE.

WALTER THATCHER, OF CHICAGO, ILLINOIS.

SCREW JACK.

Application filed August 28, 1925. Serial No. 53,111.

To all whom it may concern:

Be it known that I, WALTER THATCHER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Screw Jacks, of which the following is a specification.

This invention relates to improvements in screw jacks designed for manual operation, the construction of the jack being such that it is capable of employment in quarters ordinarily difficult of access. A further object is to provide a jack that is easy to operate, that is compact in assembly and that can be manufactured at a minimum cost.

With the foregoing and other objects in view the invention consists in the combination and arrangement of parts to be hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings which form a part of this application and in which—

Fig. 1 is a perspective view of the jack, part of the operating handle being eliminated.

Fig. 2 is a fragmentary sectional view showing the jack under a load.

Fig. 3 is an enlarged fragmentary sectional view showing the means for locking the stationary screw shaft at its base.

Fig. 4 is an enlarged fragmentary sectional view showing the power transmission mechanism between the handle and riser.

Fig. 5 is a cross section taken on line 5—5 of Fig. 4.

Figs. 6 and 7 are sectional detail views of the operating handle.

Like reference characters denote corresponding parts throughout the several views.

The present jack is intended primarily for use as an automobile jack. It is so constructed that it may be operated by a person in a standing position, that it may be applied to the axle, springs or other part of the vehicle even though the wheels are up to the hubs in mud, sand or water. The jack comprises a base whereupon uprights are supported that carry slides connected to a riser operative over a stationary screw shaft that is bevel-gear-connected to the operating handle.

The reference numeral 1 denotes the base provided along opposite lateral edges with the uprights 2 connected to the base by the angular supports 3 and to each other by the plates 4. Each upright is formed with a centrally disposed longitudinally extending rib 5 that seats in the longitudinal groove 6 formed in each of the slides 7 and forms a guide for said slide in its movement. A web 8 connects each slide 7 and the riser 9 which latter member encompasses the stationary screw shaft 10 the base 11 of which rests upon the base 1 and is received in the block 12 to which it is secured by the set screw 13.

The riser 9 at its upper end receives, between its terminal flange 14 and collar 15 the head 16 that receives the load 17, said head preferably having its edges notched or fluted to receive a chain 18 that is sometimes used and that carries the hook 19 at one end and is secured to the hook 20 as its opposite end, said hook 20 being fast to the riser.

The lower end of the riser is supported upon a platform 21 arranged upon ball bearings carried by the bevel gear 22 operatively arranged upon the screw shaft 10, said bevel gear being in mesh with the bevel pinion 23 the shaft 24 of which is received in and releasably connected to the socket member 25, said socket member and shaft 24 having meeting flat faces 26 and being connected together by the screw 27 yieldingly retained in position by the flat spring 28 secured at one end to said socket member by the pin 29.

The socket member is connected by the universal joint 30 to the tubular link 31 that at its opposite end receives one end of the crank 32 formed with groove 32^a and releasably secured thereto by the screw 33 and spring 34, said crank 32 being provided with a tubular hand grip 35. A yoke 36 mounted upon the shaft 24 has its ends secured to the web or slides to hold said shaft and the pinion 23 in place. In operation the head 16 is placed beneath the load when the riser is in lowered position upon the screw shaft, or the hook 19 may be placed in engagement with the load with the chain 18 passed over the head as shown in Fig. 1. Rotation of the crank 32 will now rotate the bevel pinion 23 and bevel gear 22 which will travel over the screw shaft 10 and cause the riser 9 and slides 7 to travel upward over said shaft 10 thus raising the load. Rotation of the crank in the opposite direction will lower the load when desired.

What is claimed is:—

1. In a jack, a base, uprights carried thereby, a stationary shaft upon said base, slides

operatively engaging said uprights, a riser encompassing said shaft, connection between said slides and shaft, a head carried by said riser, and manually operable means connecting said shaft and riser for actuating the latter.

2. In a screw jack, a base, uprights carried thereby, a stationary shaft upon said base, slides operatively engaging said uprights, a riser encompassing said shaft, a head for said riser, connection between said slides and shaft, a chain connected to said riser for engagement with said head, a hook carried by said chain, and manually operable means connecting said shaft and riser for actuating the latter.

3. In a screw jack, a base, uprights carried thereby, a stationary screw shaft upon said base, slides operatively engaging said uprights, a riser encompassing said screw shaft, a head for said riser, a bevel gear operatively arranged upon said screw shaft in supporting engagement with said riser, a shafted bevel pinion in mesh with said bevel gear, a yoke connecting said bevel pinion shaft and the aforesaid slides, a crank handle, and connection between said handle and the shaft of said bevel pinion.

4. In a screw jack, a base, uprights carried thereby, oppositely disposed ribs formed upon said uprights, a stationary screw shaft upon said base, means for securing the lower end of said screw shaft to said base, slides engaging said uprights and formed with grooves receiving said ribs, a riser encompassing said screw shaft, a head for said riser, a bevel gear operatively arranged upon said screw shaft in supporting engagement with the lower end of said riser, a chain carried by said riser, a hook at one end of said chain, a shafted bevel pinion in mesh with said bevel gear, a yoke connecting said bevel pinion shaft and the said slides, a crank handle, and connection between said handle and the shaft of said bevel pinion.

In testimony that I claim the foregoing as my own I have hereto affixed my signature.

WALTER THATCHER.