

May 16, 1933.

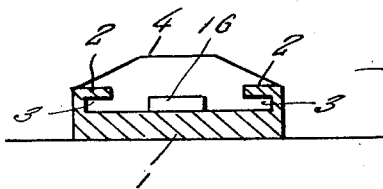
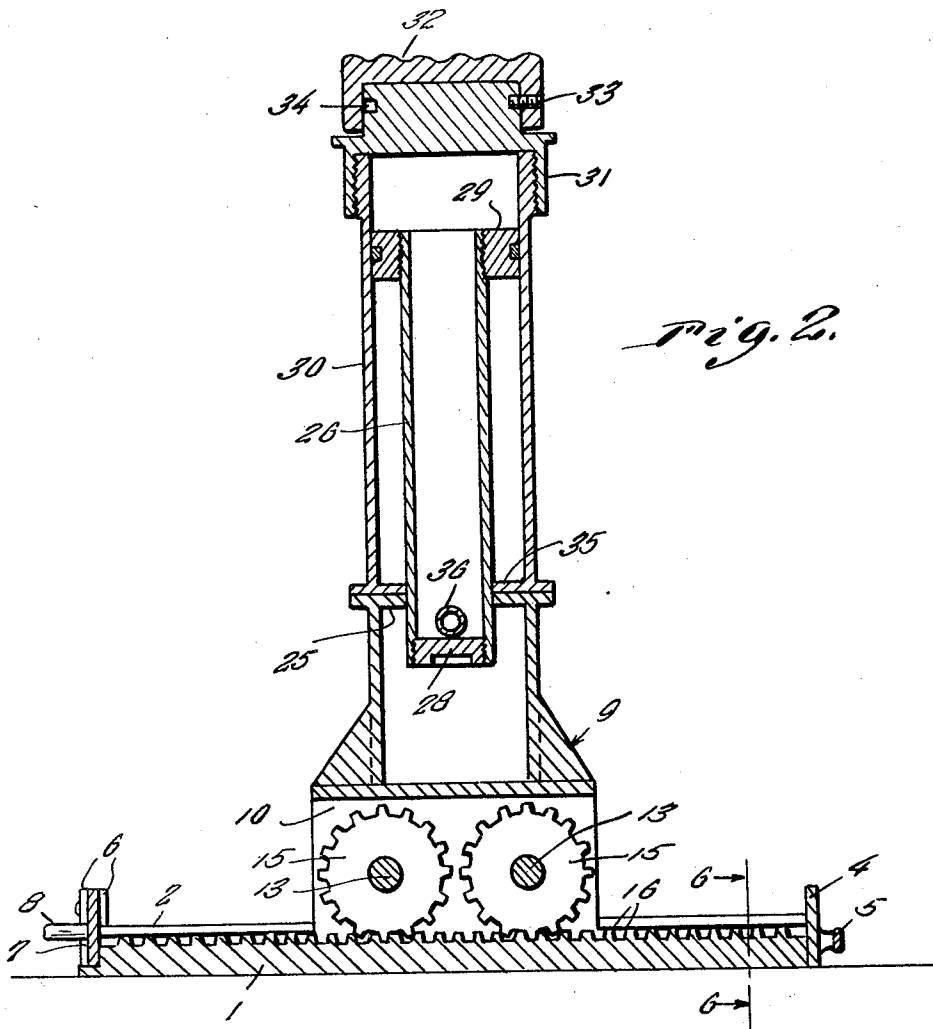
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1,908,793

JACK

Filed Nov. 29, 1932

3 Sheets-Sheet 2



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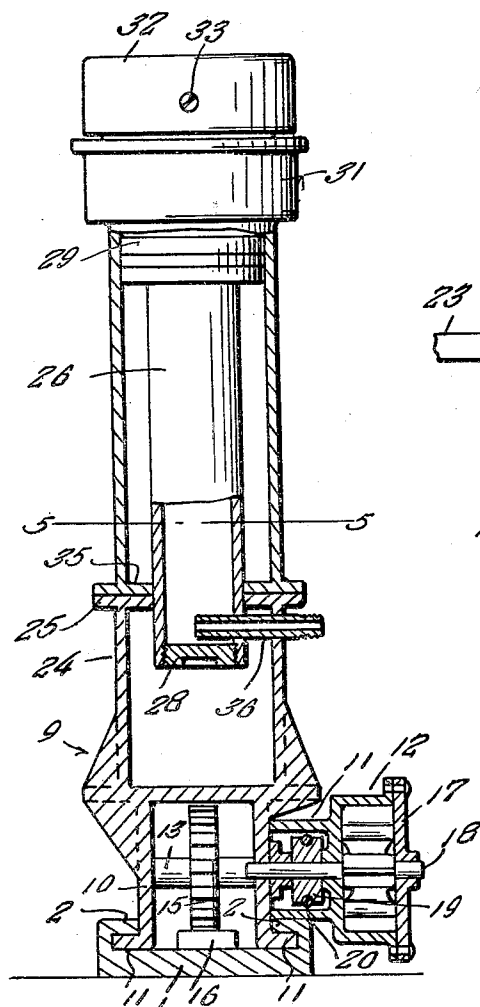


Fig. 3.

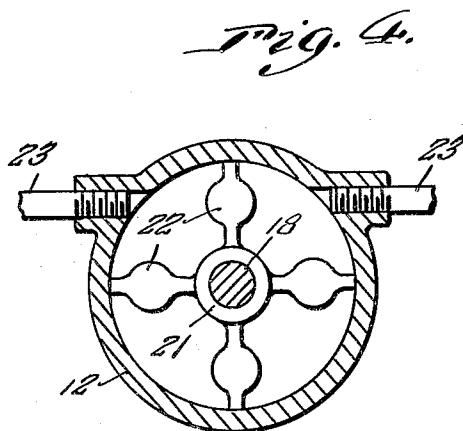


Fig. 4.

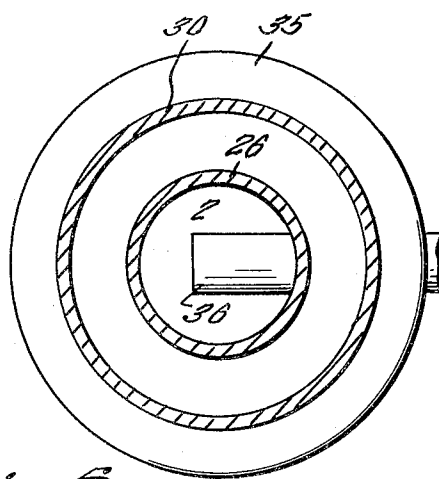


Fig. 5.

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UNITED STATES PATENT OFFICE

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JACK

Application filed November 29, 1932. Serial No. 644,897.

The present invention relates to new and useful improvements in jacks and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character embodying a novel construction, combination and arrangement of parts through the medium of which objects, after the same have been raised, may be shifted horizontally, thus providing a tool which is particularly desirable for certain kinds of work such, for example, as replacing derailed street and railroad cars.

Another important object of the invention is to provide a jack of the aforementioned character embodying a novel construction and arrangement of fluid actuated means for shifting the jack horizontally, together with fluid actuated means for elevating the jack.

Other objects of the invention are to provide a jack of the character described which will be simple in construction, strong, durable, highly efficient and reliable in use, compact, light in weight, and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

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

Figure 2 is a view in vertical section, taken substantially on the line 2—2 of Figure 1.

Figure 3 is a view in vertical section, taken substantially on the line 3—3 of Figure 1.

Figure 4 is a vertical sectional view, taken substantially on the line 4—4 of Figure 1.

Figure 5 is a horizontal sectional view, taken substantially on the line 5—5 of Figure 3.

Figure 6 is a view in vertical transverse section, taken substantially on the line 6—6 of Figure 2.

Figure 7 is a view in vertical longitudinal section through the pulley unit.

Figure 8 is a detail view in elevation, looking at one end of the track.

Figure 9 is a detail view in top plan of the track.

Referring now to the drawings in detail, it will be seen that the embodiment of the present invention which has been illustrated comprises a track 1 of suitable material, preferably metal, said track having formed integrally therewith a pair of raised, inwardly extending, opposed flanges 2, providing channels 3. On one end of the track 1 is a stationary stop 4 from which a handle 5 extends. Ears 6 rise from the other end of the track 1 at one side thereof and pivotally mounted between said ears is a gate 7 having a handle 8 projecting therefrom. The adjacent end portion of the track 1 is formed or recessed to accommodate the gate 7 in closed position, as illustrated to advantage in Figures 1, 2, 7 and 8 of the drawings.

The reference numeral 9 designates generally the base of the jack, said base including a substantially U-shaped lower portion, the legs 10 of which terminate, at their lower ends, in out-turned flanges 11 which are slidably engaged in the channels 3 beneath the flanges 2 of the track 1. It will thus be seen that the base 9 is mounted for horizontal sliding movement on the track 1.

Mounted on one side of the base 9 is a pulley housing 11 on the outer side of which is provided an integral rotor casing 12. Spaced, rotary shafts 13 traverse the substantially U-shaped lower portion of the base 9 and extend through the housing 11. Grooved pulleys 14 are fixed on the shafts 13 in the housing 11. Gears 15 are fixed on the shafts 13 in the base 9 and are in mesh with rack teeth 16 which rise from the track 1.

The outer side of the rotor casing 12 is closed by a removable plate 17. Journaled centrally in the casing 12 and extending through the housing 11 between the pulleys 14 is a shaft 18. A grooved pulley 19, similar to the pulleys 14, is fixed on the shaft 18 in the housing 11. An endless belt 20 is crossed and trained over the pulleys 14 and 19 in a manner to operatively connect the pulleys 14 to the pulley 19 for actuation

thereby in the same direction. A rotor 21 is fixed on the shaft 18 in the casing 12. The blades of the rotor 21 have formed thereon enlargements 22 constituting weights. Fluid
 5 conducting pipes 23 extend substantially tangentially into the upper portion of the rotor casing 12 from opposite directions. The conduits 23 are connected with a suitable source of fluid under pressure (not shown)
 10 by valved means (also not shown) through the medium of which the rotor 21 may be driven in either direction.

Rising from the base 9 of the jack is a tubular standard 24 having a top 25 thereon.
 15 The top 25 is provided with a central opening in which is fixed a tubular stem 26, the lower portion of which extends into the tubular standard 24. The lower end of the stem 26 is closed by a plug 28. The upper
 20 end of the tubular stem 26 is open and mounted thereon is a ring-equipped piston 29.

Mounted for vertical reciprocation on the piston 29 and the stem 26 is a cylinder 30 having a cap 31 threadedly mounted on its
 25 upper end and closing said cylinder at said upper end. A work engaging head 32 is rotatably mounted on the cap 31, said head being retained in position through the medium of a screw 33 mounted in said head and
 30 engaged in a groove 34 which is provided therefor in the cap 31. The lower end of the cylinder 30 is closed, as at 35, said bottom 35 having a central opening therein which accommodates the stem 26. When
 35 in lowered position, the cylinder 30 rests on the tubular standard 24. A nipple 36 extends from the lower end portion of the stem 26 through the tubular standard 24 for connection with a fluid supply conduit (not
 40 shown) from the aforementioned source.

In use, the jack is positioned beneath the work and fluid under pressure is introduced through the nipple 36 into the stem 26 for
 45 raising the cylinder 30, the fluid entering the cylinder from the upper end of said stem 26. After the work has been raised, it may be shifted horizontally by discharging fluid under pressure into the casing 12 through
 50 either of the pipes 23, according to the direction in which it is desired to shift the work. The fluid enters the casing 12 from one of the pipes 23, actuates the rotor 21, and leaves the casing through the other pipe 23. The
 55 rotor 21, through the medium of the pulleys 19 and 14 and the endless belt 20, actuates the gears 15 which are engaged with the rack teeth 16, thus moving the base 9 on the track 1. The gate 7 permits the base 9 to be removed from the track 1 if desired.

60 It is believed that the many advantages of a jack constructed in accordance with this invention will be readily understood, and, although the preferred embodiment of the invention is as illustrated and described, it
 65 is to be understood that changes in the de-

tails of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. A jack comprising a track, a rack on the track, a base slidably mounted on the track, a vertically movable work-engaging member mounted on the base, gears rotatably mounted
 75 on the base and engaged with the rack, a fluid-actuated rotor mounted on the base, and means operatively connecting the gears to the rotor for actuation thereby for shifting the base on the track.

2. A jack comprising a track, a rack on the track, a base shiftably mounted on the track, a housing mounted on the base, a casing mounted on the housing, spaced shafts journaled in the base and extending into the housing, pulleys fixed on the shafts in the housing, a shaft extending rotatably through the housing and the casing, a fluid-actuated rotor fixed on the second-named shaft in the casing, a pulley fixed on the second-named shaft in the housing, an endless belt operatively connecting the first-named pulleys to the second-named pulley for actuation in the same direction thereby, and gears fixed on the first-named shafts and engaged with the rack for shifting the base on the track.

3. A jack comprising a track including raised, opposed flanges, a rack formed integrally with the track intermediate the flanges, a stationary stop on one end of the track, a gate mounted for swinging movement on the other end of the track, a base slidably mounted on the track, said base including a substantially U-shaped lower portion, the legs of the substantially U-shaped lower portion terminating, at their lower ends, in out-turned flanges engaged beneath the track flanges, a work-engaging member mounted for vertical reciprocation on the base, gears rotatably mounted on the base and engaged with the rack for shifting the base on the track, and means for actuating the gears.

4. A jack comprising a base, a substantially cylindrical cylinder rising from the base, a top on the cylinder having a central opening therein, a tubular stem fixed in the opening and rising from the cylinder, said stem having its lower end portion extending into the cylinder, a piston fixed on the upper end portion of the tubular stem, a cylinder mounted for vertical reciprocation on the piston and the tubular stem, a head rotatably mounted on the upper end of the cylinder, and means for discharging fluid under pressure into the cylinder for raising the same.

In testimony whereof I affix my signature.

ALVIN SAEDER.

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