June 26, 1934. J. F. QUINN 1,964,173

JACK

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Fig. 1.

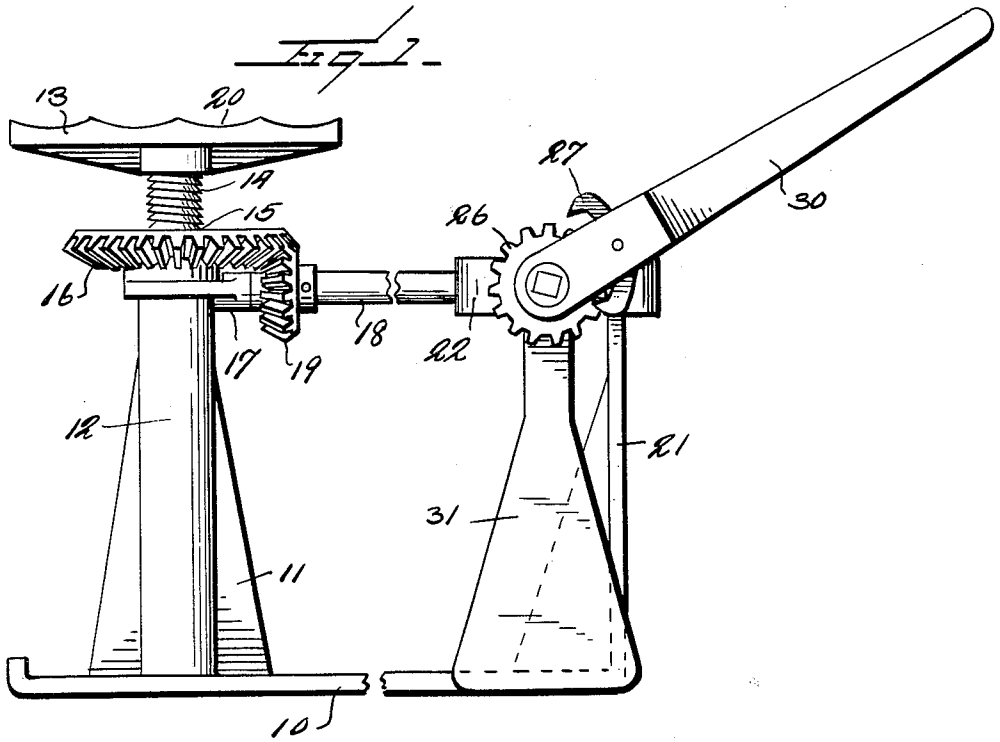


Fig. 4.

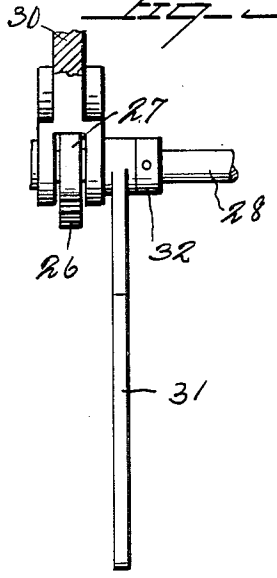
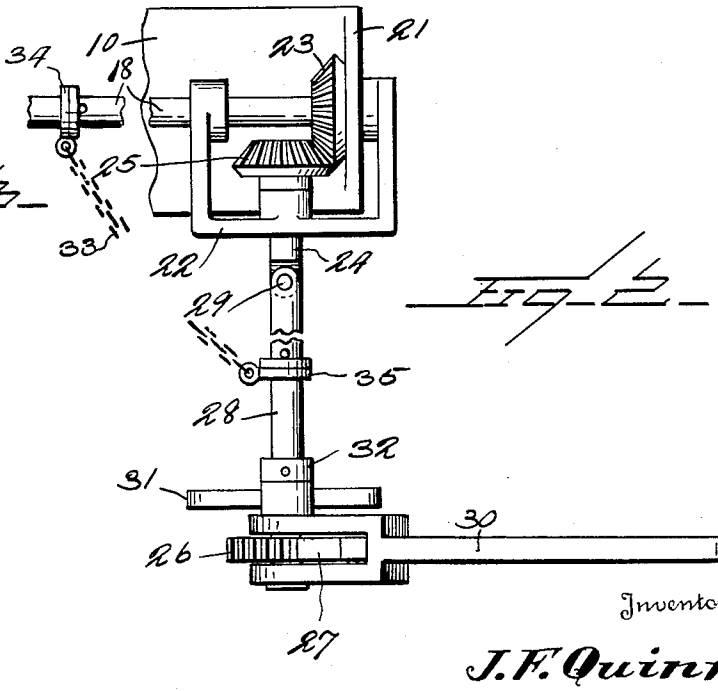


Fig. 2.



Inventor

J. F. Quinn

By Watson E. Coleman

Attorney

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JACK

John F. Quinn, Bristol, S. Dak.

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5 Claims. (Cl. 254—103)

This invention relates to jacks and more particularly to an improved type of jack for use in lifting vehicles, trucks or the like.

An object of this invention is to provide a jack which is so constructed that it can be readily positioned beneath the desired part of a vehicle and which embodies features to prevent the ready tipping over of the jack.

Another object of this invention is to provide in a jack construction of this kind means whereby the jack may be operated at a point remote therefrom and in a position at one side of the vehicle.

A further object of the invention is to provide a jack having an enlarged or elongated base portion and a swingable operating means so that the jack can be readily folded up and carried within the tool box of the vehicle.

The above and various other objects and advantages of this invention will in part be described and in part be understood from the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing, wherein:—

Figure 1 is a detail side elevation partly broken away of a device constructed according to the preferred embodiment of this invention.

Figure 2 is a fragmentary top plan view of the device.

Figure 3 is a fragmentary detail front elevation of the operating end of the jack.

Referring to the drawing wherein like numerals of reference designate corresponding parts throughout the several views, the numeral 10 designates generally a base which has positioned at one end thereof a vertically extending upright or standard 11 provided with a tubular member 12. A threaded shaft 14 is mounted for movement vertically within this tubular member 12, and a rotatable nut member 15 is disposed on top of the standard including the uprights 11 and the hollow member 12. This nut member 15 is provided with gear teeth 16 of the beveled type and a shaft support 17 is disposed beneath the beveled gear 16. A shaft 18 is rotatably engaged with this hanger or support 17, and a pinion or beveled gear 19 is secured to this shaft 18 and engages the gear 16. A head 13 is swivelly mounted on top of the threaded shaft 14 and is provided with suitable recesses 20 so that this head 13 may engage round surfaces such as shafts, axle housings or the like, and will not slip from beneath these members.

A second upright or standard 21 is mounted on the base 10 in a position remote from the standard 11 and the opposite end of the shaft 18 is journaled in this upright 21. A U-shaped member 22 has each leg thereof engaged about the shaft 18 and is swingable on this shaft. A beveled gear 23 is secured to the shaft 18 at the end opposite from the gear 19, and is positioned between the parallel legs of the U-shaped member 22. A stub shaft 24 is journaled in the bight of the U-shaped member 22, and a gear 25 fastened to the stub shaft 24 meshes with the beveled gear 23.

A ratchet or toothed member 26 is secured to a shaft extension 28 which is pivotally secured, as at 29, to the stub shaft 24. A forked rock lever or jack operating member 30 is loosely mounted on the shaft 28 on opposite sides of the ratchet 26, and a pawl 27 is carried by this lever 30 and the pawl 27 is swingable to permit the rotation of the shaft 28 in either direction so that the jack may be either raised or lowered. A shaft support or standard 31 is carried by the shaft 28 so that this swingable shaft 28 can be supported in a stable manner relative to the base 10. A collar 32 engages the shaft 28 and holds the support 31 against longitudinal movement on the shaft 28. A member 33 in the form of a flexible member is connected at one end as by a collar 34 to the shaft 18 and by a collar 35 to the shaft 28 and acts to prevent undue strain on the U member 22. The threads on the threaded shaft 14 are preferably of the V-shaped type and in the present instance, these threads are constructed in double form so as to effect rapid vertical movement of the head 13 upon rotation of the toothed nut 16.

In the use and operation of this device, the head 13 may be disposed beneath the axle or other desired portion of the vehicle which it is desired to raise, and the head 13 initially lowered so as to permit the easy mounting of the jack beneath the axle or other portion of the vehicle. Due to the enlarged construction of the base 10, the jack structure is more stable than where a base of relatively small dimension is used. The jack structure may be positioned beneath the vehicle so that the operating lever 30 will extend either forwardly of the wheel or rearwardly of the wheel and to one side thereof. Through the use of the U-shaped member 22, the lever 30 can be swung to either side of the base 10 so that the jack can be used on either the right or the left hand side of the vehicle.

The pawl 27 can be moved into desired position relative to the ratchet 26 and the lever 30 then rocked or oscillated, which movement will turn the shaft extension 28 and rotate the gears 25 and

23, respectively. Rotation of the gear 23 will rotate the shaft 18 and the screw 14 will then be either raised or lowered through the train of gears 19 and 16, respectively. Through the provision of the threads, as hereinbefore described, the lifting power of the jack is increased, and through the provision of the hinged shaft construction, as at 29, the entire jack structure can be folded up and carried within the tool box of the vehicle.

It is, of course, understood that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. In a jack including a base, a vertically movable member and means rotatable about a horizontal axis operatively connected to the member for operation thereof; a remotely disposed operating means for said member comprising a substantially horizontally disposed elongated shaft connected to said operating means, a second shaft disposed at an angle to said first shaft, gear means for rotation of said first shaft by said second shaft, means engaging each of said shafts for holding said shafts in operative relation in selected positions of said second shaft, and means loosely carried by said second shaft for supporting said second shaft in selected position.

2. In a jack structure including a vertically movable member, and operating means therefor; a horizontally disposed shaft connected to said operating means, a second shaft disposed at an angle to the first shaft, gear means for operatively connecting said shafts together, means swingably carried by one of said shafts and engaging the other shaft to mount the second shaft for rotation in a selected position relative to the member, a lever carried by said second shaft, and dog and ratchet means carried by said lever and said second shaft.

3. In a jack structure including a vertically movable member, and operating means therefor; a horizontally disposed shaft connected to said operating means, a second shaft disposed at an angle to the first shaft, gear means for operatively connecting said shafts together, a U-shaped member swingably carried by said first shaft and engaging said second shaft to mount said second shaft for rotation for swinging movement, operating means for said second shaft, and supporting means carried by said second shaft to support said second shaft in a selected position relative to said vertical member.

4. In a jack structure including a vertically movable member and operating means therefor; a horizontally disposed shaft connected to said operating means, a second shaft disposed at an angle to the first shaft, means loosely carried by said first shaft and engaging the second shaft to support said second shaft in operative position on either side of the first shaft, gear means for operatively connecting said shafts together, means engaging the second shaft for rotation thereof, and means connecting the two shafts together at a point intermediate the ends thereof to prevent undue strain on said means loosely carried by said first shaft.

5. In a jack structure including a vertically movable member and operating means therefor; a horizontally disposed shaft connected to said operating means, a second shaft disposed at an angle to the first shaft, gear means for operatively connecting said shafts together, means loosely carried by said first shaft and engaging said second shaft to support one end of said second shaft in operative position relative to said first shaft, said supporting means permitting positioning of said second shaft in a substantially horizontal plane on either side of said first shaft, a shaft extension, means for pivotally securing said shaft extension to said second shaft, a supporting leg loosely carried by said shaft extension, and operating means secured to said extension.

JOHN F. QUINN.