W. B. TEMPLETON.

POLE JACK.

APPLICATION FILED MAR. 4, 1918.

1,325,963.

Patented Dec. 23, 1919.

2 SHEETS—SHEET 1.

Fig. 2.

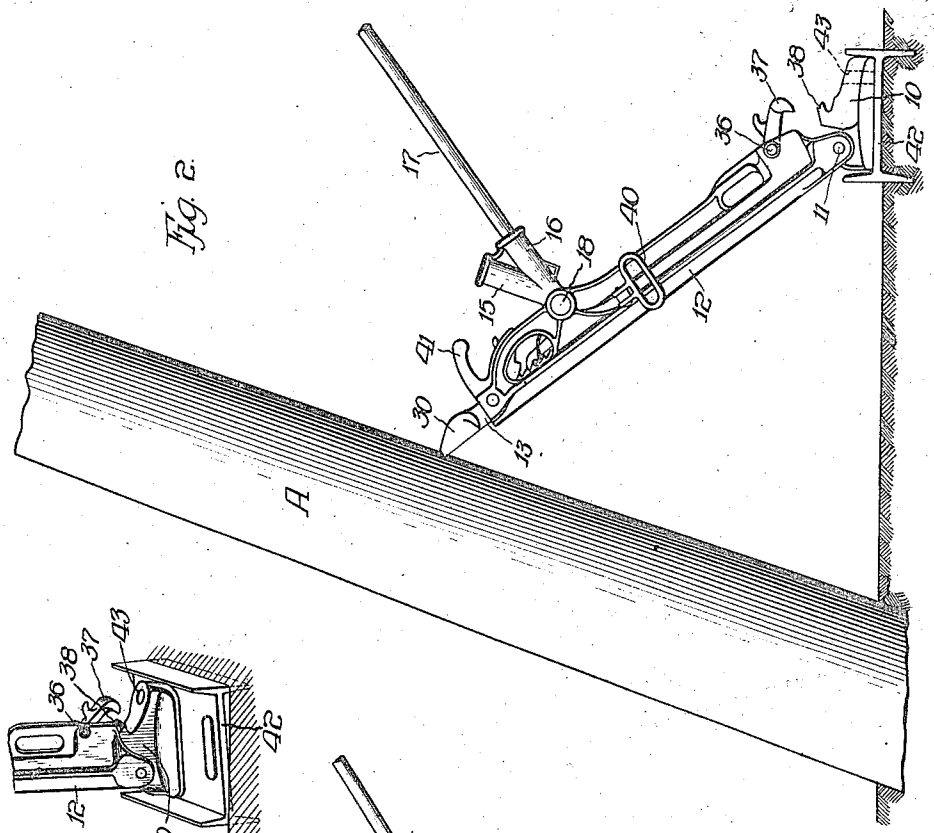
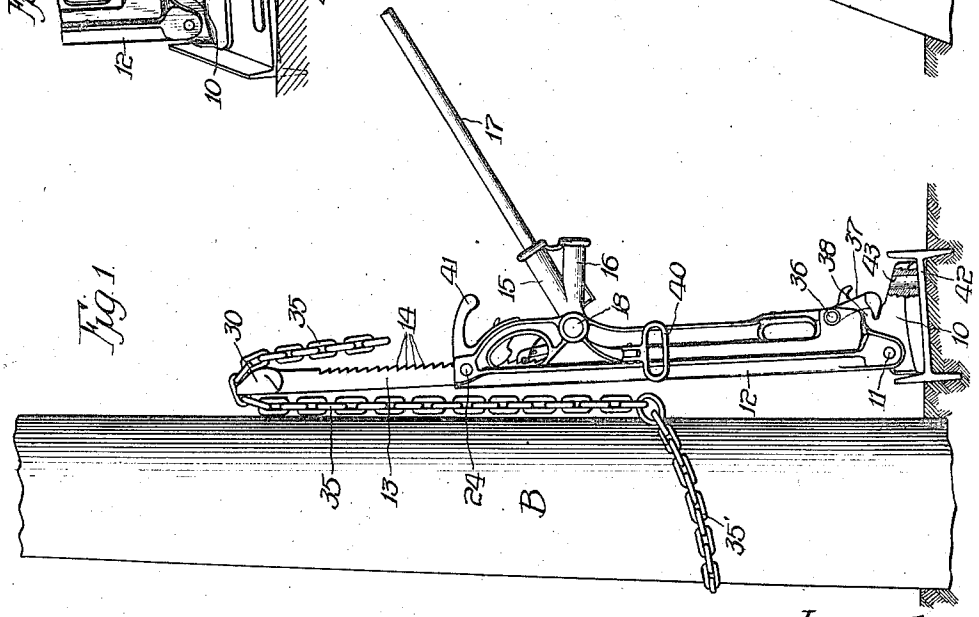


Fig 8

Fig 1.



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2 SHEETS—SHEET 2.

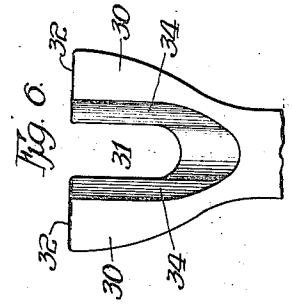


Fig. 6.

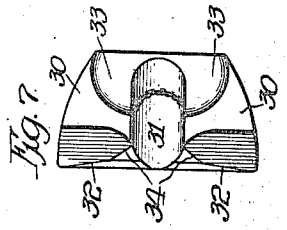


Fig. 7.

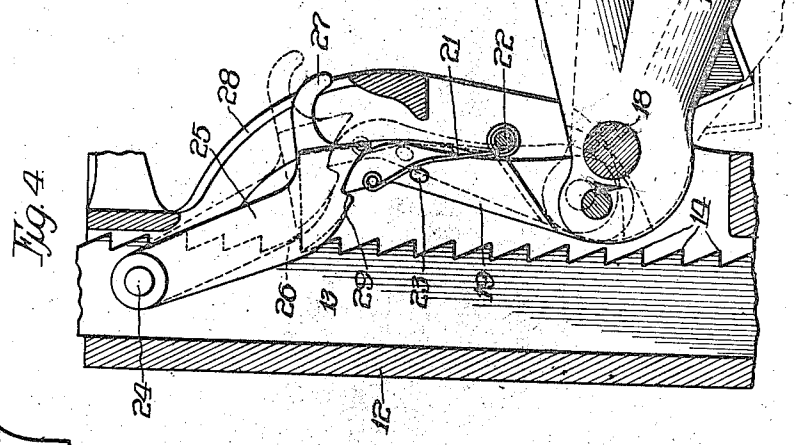


Fig. 4.

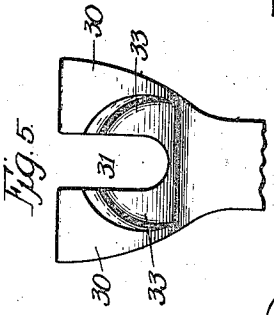


Fig. 5.

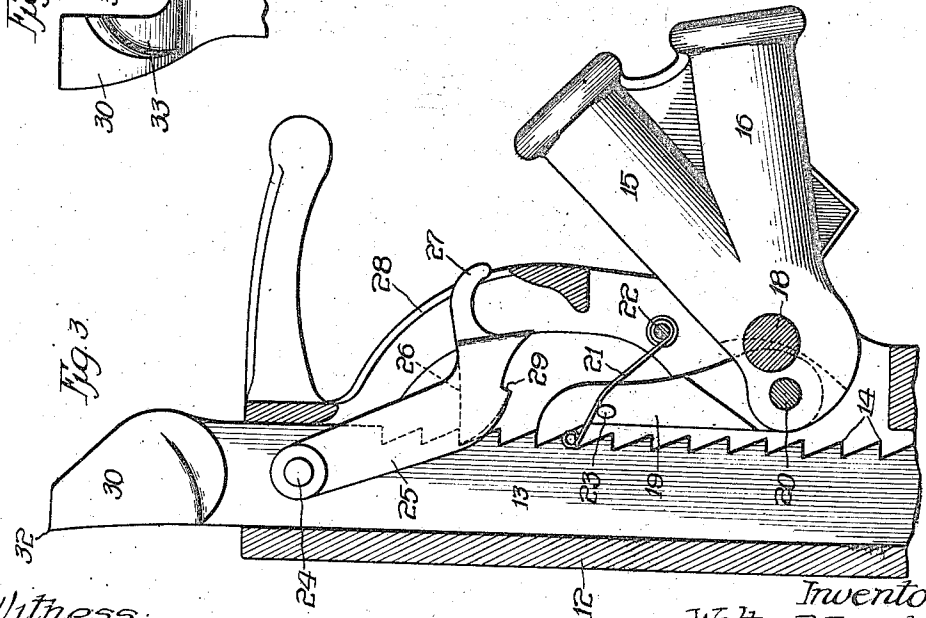


Fig. 3.

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UNITED STATES PATENT OFFICE.

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POLE-JACK.

1,325,963. Specification of Letters Patent. Patented Dec. 23, 1919.

Application filed March 4, 1918. Serial No. 220,121.

To all whom it may concern:

Be it known that I, WALTER B. TEMPLETON, 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 Pole-Jacks, of which the following is a specification.

This invention relates to improvements in that class of lifting appliances commonly known as jacks, and has reference more particularly to a type and construction of jack especially designed and adapted for the pulling and straightening of telegraph and telephone poles, heavy posts, and generally similar articles.

The jack of my present invention is of the pivoted base variety whereby it is adapted to operate at a greater or less inclination from the vertical; and among the salient objects of the invention are, to provide a powerful and dependable implement by which poles can be quickly, cleanly and safely pulled from their settings without requiring any preliminary digging or loosening of the ground, to provide such an implement which can with equal effectiveness be used for straightening poles, posts, buildings and the like that, from wind storms or other causes, have become dangerously inclined or bent from their true position, to provide an implement of the character mentioned capable of being manipulated by a single operator, and to provide an implement which, while primarily designed for and adapted to the pole pulling and straightening functions above mentioned, shall also be capable of performing the direct raising functions of an ordinary lifting jack. Other and more specific objects are, to provide an improved head for the lifting-bar adapted both to receive and securely hold a chain hitch for pulling a pole and to effect a strong and secure bite in the surface of a pole when used to straighten the latter and to provide an improved portable non-slipping base or cribbing adapted to afford a secure anchorage or rest for the lower end of the tool.

Still other objects and advantages of the invention will be apparent to those skilled in the art as the invention becomes better understood from the following detailed description, taken in connection with the accompanying drawings wherein I have illustrated one practical and approved embodiment of the invention, and in which—

Figure 1 is a side elevation, showing the jack employed in raising a pole out of the ground.

Fig. 2 is a similar view, showing the jack employed in straightening an inclined or canted pole.

Fig. 3 is an enlarged fragmentary detail, in vertical section through the casing, showing the structure and relative arrangement of the lifting and dogging pawls at the beginning of a lifting stroke.

Fig. 4 is a view similar to Fig. 3, but showing in full lines the lifting pawl retracted into engagement with the lower end of the dogging pawl preliminary to disengaging the latter from the lifting-bar, and showing in dotted lines a further retracted position of both pawls in which the lifting-bar is free to descend, and both pawls are mutually locked out of engagement with the latter.

Figs. 5, 6 and 7 are rear, front and top plan views respectively of the head or cap of the lifting-bar; and

Fig. 8 is a perspective detail of the portable base or foundation member.

Referring to the drawings, 10 designates the permanent base or pedestal of the jack, to which is pivoted at 11 the frame or casing 12 formed with a slideway for the lifting-bar 13, the latter having the usual ratchet-tooth formation 14 on one edge thereof. The lever socket piece comprises two integral sockets 15 and 16 inclined to each other, the upper socket 15 being designed to receive the handle lever 17 when the tool is used in a vertical or approximately vertical position, as shown in Fig. 1, and the lower socket 16 receiving the handle lever when the tool is used in a considerably inclined position, as shown in Fig. 2. The socket piece is pivoted between the sides of the frame on trunnions 18 as usual, and carries at its forward end the lifting pawl 19 pivoted thereto at 20. A spring 21 secured to the frame at 22 presses against a laterally projecting pin 23 carried by the pawl 19 and urges the nose of the latter into engagement with the teeth of the lifting bar 13, as shown in Fig. 3.

Pivoted to the sides of the casing at 24

is a forked dogging pawl, the arms 25 of which straddle the lifting-bar, and the transverse member 26 of which normally engages the teeth of the lifting-bar under the gravity effect of the pawl. At the rear of the lower end of this pawl is an extension 27 that projects through a slot 28 in the rear wall of the casing and forms a finger-hold by which the dogging pawl can be manually retracted whenever it may be necessary or desirable to effect a gradual lowering of the load. Extending across the under side of the dogging pawl is a shoulder 29 that coöperates with the nose of the lifting pawl 19, as shown in Fig. 4, to force the dogging pawl out of engagement with the lifting-bar when the latter is under load and to lock both pawls disengaged from the lifting-bar to permit the full descent of the latter.

On the upper end of the lifting-bar is a head or cap shaped to provide a pair of upstanding prongs 30 of gradually increasing width toward their upper ends, forming between them a relatively deep slot 31 extending from front to rear of the head. The upper forward edges 32 of the prongs 30 are made comparatively sharp so as to readily indent or bite into the side of a pole, such as that shown at A in Fig. 2, or other object that is to be straightened up from an inclined or partially fallen position, and prevent slipping of the tool on the object when power is applied. To further adapt the head to receive and securely hold a lifting chain for a pole-pulling operation, such as is pictured in Fig. 1, the rear inclined faces of the prongs 30 are hollowed out or concaved as shown at 33 in Figs. 5 and 7 and their front faces are also beveled or chamfered, adjacent to the sides of the slot 31, as indicated at 34 in Figs. 6 and 7. An edgewise standing link of an ordinary oval link chain 35 lies within the slot 31, while the adjacent ends of the two links at either end thereof register with and abut against the concave and chamfered surfaces 33 and 34 respectively, so that the chain is neatly fitted and strongly secured to the head in such a manner as to resist tensional strain on the chain and prevent its slipping on the head. The lower end of the chain being looped around a pole B (Fig. 1) at 35′, an enormous lifting effect can be exerted and a heavy pole completely extracted from its setting in a few moments' time. To the lower end of the frame or casing is pivoted at 36 a depending locking pawl 37, the nose of which, when the frame is normal to its base or pedestal 10 engages beneath a catch 38 integral with the base and securely locks the frame rigid with and normal to the latter. On the back of the locking pawl 37 is a finger-hold 39 by which the pawl may readily be disengaged when the jack is to be used in tilted position, as shown in Fig. 2. Pivoted handles 40 on either side of the frame, and a rearwardly extending horn 41 at its upper end, facilitate the manual transportation of the tool and the positioning of the same for work.

In order to insure an adequate non-sinking and non-slipping rest or foundation for the lower end of the tool when used on comparatively soft ground, I provide an I-beam section 42 of a length considerably exceeding the width of the permanent base or pedestal 10, as shown in Fig. 8, and of a width between flanges equal to the length of the latter so as to easily accommodate the same between its flanges, as shown in Figs. 1 and 2. Under the downward stress exerted by the tool the lower flanges of this I-beam section sink into the ground and firmly anchor it against slipping, while its broad web resting on the surface of the ground prevents it from sinking therein. The upstanding flanges prevent fore and aft slipping of the permanent base 10 of the tool in an obvious manner. To prevent slipping of the permanent base 10 in situations where it may not be possible or practicable to employ the auxiliary base or foundation member 42, I preferably provide the base 10 with a hole 43 extending from top to bottom thereof through which a peg may be driven into the ground to pin it in place.

It is believed that the foregoing description, taken in connection with the drawings, and particularly Figs. 1 and 2 of the latter, will make clear to those familiar with tools of this general character the structural features, uses and advantages of the present invention. The two principal uses—pole-pulling and pole-straightening—are clearly illustrated in Figs. 1 and 2 respectively. By setting the jack vertically beneath an object to be raised with the head of the lifting-bar under such object and the pawl 37 in locking position the tool may obviously be used to accomplish the usual and ordinary functions of a plain lifting or raising jack. When used for pulling poles no preliminary excavating or loosening of the earth around the base of the pole is required. The I-beam base is set on the ground beside the pole, the jack set upon it, the chain slung around the pole, the upper end of the chain dropped in the forked and recessed head or cap of the lifting-bar, and the lever operated until the pole is out of the ground. When used for straightening a pole, the I-beam base is set on the ground a little distance from the pole on the side toward which the latter leans, the jack set upon it, the latch-hook at the heel released, the jack tilted forwardly and the prongs of the cap dented into the side of the pole, and the lever operated until the pole is forced to the exact position or rake required. The ground is then freshly tamped around

the base of the pole or the guy-wires tensioned, or both, and the jack is then released. These operations can readily be performed by a single operator.

The jack herein shown is single-acting, and to release the lifting-bar when under stress of the load and permit it to descend, with the dogging pawl holding the load the handle lever is raised slightly, the lifting pawl drawn backwardly by grasping the pin 23 until its nose engages behind shoulder 29, and then, by lowering the handle lever, the dogging pawl is forced out of engagement with the teeth of the lifting-bar, and both pawls assume the positions shown in dotted lines in Fig. 4 in which they mutually lock each other disengaged from the lifting-bar, leaving the latter free to drop, until the handle lever is again raised when they at once resume their normal functions. By manual manipulation of the dogging pawl, through finger-grip 27, the lifting-bar can be lowered under load under the control of the lifting pawl and handle lever.

It is evident that the implement herein shown and described is capable of being modified in details without altering its essential structural or functional characteristics or capabilities or sacrificing the advantages inherent therein. Hence, I do not limit the invention to the precise embodiment of the invention here presented for purposes of illustration and disclosure but reserve all such variations, modifications and mechanical equivalents as fall within the scope and purview of the appended claims.

I claim—

1. In a pole pulling and straightening jack, the combination of a base, a frame pivoted on said base to tilt forwardly, and a lifting-bar slidably mounted in said frame and formed with a head having a slot extending from front to rear thereof, said slot opening through the upper end of said head and its bottom wall forming a seat to supportingly engage with a link of a chain set edgewise in said slot.

2. In a pole pulling and straightening jack, the combination of a base, a frame pivoted on said base to tilt forwardly, and a lifting-bar slidably mounted in said frame and formed with a head having a slot extending from front to rear thereof, said slot opening through the upper end of said head and formed with a forwardly and downwardly inclined bottom wall constituting a seat to supportingly engage with a link of a chain set edgewise in said slot.

3. In a pole pulling and straightening jack, the combination of a base, a frame pivoted on said base to tilt forwardly, and a lifting-bar slidably mounted in said frame and formed with a head having a slot extending from front to rear thereof, said slot opening through the upper end of said head and formed with a forwardly and downwardly inclined bottom wall constituting a seat to supportingly engage with a link of a chain set edgewise in said slot, and said head being concaved on its rear side on both sides of said slot to form an abutment for the adjacent end of an adjacent link of said chain.

4. In a pole pulling and straightening jack, the combination of a base, a frame pivoted on said base to tilt forwardly, and a lifting-bar slidably mounted in said frame and formed with a head having a slot extending from front to rear thereof, said slot opening through the upper end of said head and formed with a forwardly and downwardly inclined bottom wall constituting a seat to supportingly engage with a link of a chain set edgewise in said slot, and said head being concaved on both its front and rear sides on both sides of said slot to form abutments for the adjacent ends of adjacent links of said chain.

5. In a pole pulling and straightening appliance, the combination of a base, a frame articulated to said base, a lifting-bar slidably mounted in said frame and formed with a head having a vertical slot opening through the upper end of said head and formed with a forwardly and downwardly inclined bottom wall, and a chain having a link thereof seated edgewise in said slot and supported on said inclined wall and a depending portion lying in front of said lifting-bar and frame and formed with a loop at its lower end adapted to embrace the pole to be pulled.

6. In a pole pulling and straightening jack, the combination of a base, a frame pivoted on said base, and a lifting-bar slidably mounted in said frame and provided with a head having a pair of upstanding prongs with sharp upper edges and a chain-seating slot between said prongs.

7. In a pole pulling and straightening jack, the combination of a base, a frame pivoted on said base, and a lifting-bar slidably mounted in said frame and formed with an integral head having a pair of upstanding prongs of gradually increasing width toward their upper ends, said prongs having sharp upper edges, and said head having a narrow slot between said prongs adapted to seat a link of a chain set edgewise therein.

8. In a pole pulling and straightening appliance, the combination with a jack having a base and a frame pivoted on said base to tilt forwardly, of an I-beam section forming a non-slipping rest or foundation for the base of said jack.

9. In a pole pulling and straightening appliance, the combination with a jack hav-

ing a base and a frame pivoted on said base to tilt forwardly, of an I-beam section forming a non-slipping rest or foundation for the base of said jack, said I-beam section having a length exceeding the width of said jack base, and a width between its flanges substantially equal to the length of said jack base.

10. In a jack, the combination of a base, a frame pivotally mounted on said base, and a socket-piece fulcrumed in said frame, said socket-piece being formed with a plurality of handle-engaging sockets.

11. In a jack, the combination of a base, a frame pivotally mounted on said base so as to tilt forwardly, and a socket-piece fulcrumed in said frame, said socket-piece being formed with a pair of rearwardly divergent handle engaging sockets.

12. In a jack, the combination of a base, a frame pivotally mounted on said base so as to tilt forwardly, releasable means for locking said frame rigid with said base, and a socket-piece pivoted in said frame and formed with a pair of rearwardly divergent upper and lower handle engaging sockets, the upper of said sockets adapted for use when said locking means is operating and the lower when it is idle.

WALTER B. TEMPLETON.