E. H. KOHORST.

LIFTING JACK.

APPLICATION FILED JUNE 2, 1917.

1,364,117. Patented Jan. 4, 1921.

Fig. 1.

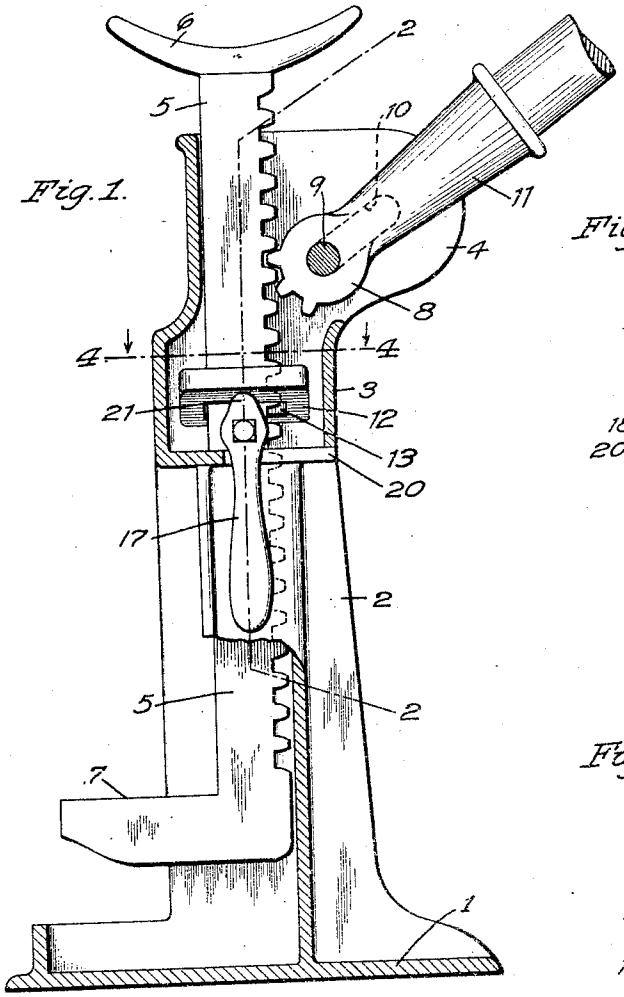


Fig. 2.

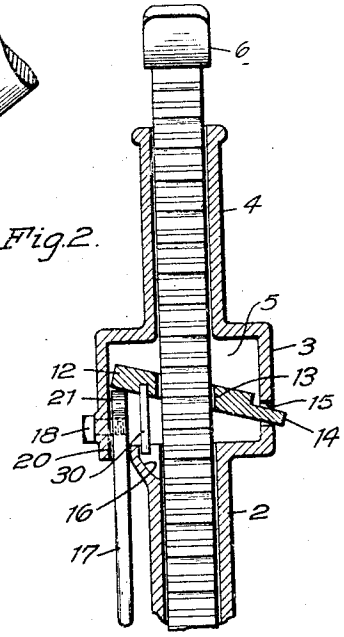


Fig. 3.

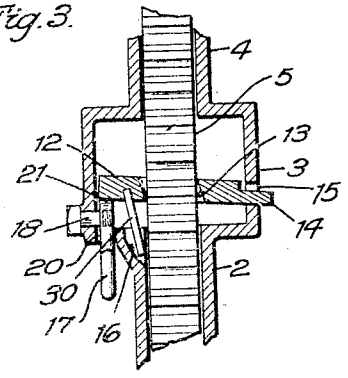
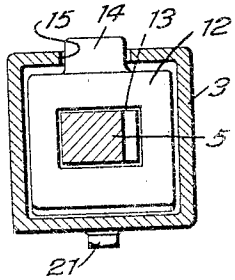


Fig. 4.



Inventor

Edward H. Kohorst

By Allen Allen

Attorneys

UNITED STATES PATENT OFFICE.

EDWARD HENRY KOHORST, OF DAYTON, OHIO, ASSIGNOR TO THE JOYCE CRIDLAND COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO.

LIFTING-JACK.

1,364,117. Specification of Letters Patent. Patented Jan. 4, 1921.

Application filed June 2, 1917. Serial No. 172,539.

To all whom it may concern:

Be it known that I, EDWARD H. KOHORST, a citizen of the United States, and a resident of the city of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to provide a lifting jack of the ordinary lever type, and which may be made with very few parts and easily and quickly put together, to efficiently serve the purpose of the ordinary lifting jack and especially for automobile work, where cheapness must be combined with strength and durability, and for truck work where adjustments may be made to the small fractions of an inch.

With the ordinary lifting jack of pivoted lifting and retaining pawls, especially where springs are employed to hold the pawl in operation, the springs are apt to get broken and the pivot pawls are apt to stick and not operate properly. When the jack has been raised it is difficult to provide simple mechanism to allow the jack to drop instantly without catching or the parts getting out of order, and it is often difficult to get at the shifting or tripping levers. Not only this, but the user of the ordinary lifting jack is bothered with having to arrange the jack for lifting and to shift the pawls for letting it down. The provision of pawls is expensive also, since they must be pivoted in the casing of the jack and must have a shift or trip.

Thus the object of my invention is to provide a simple jack for general use which can be constructed cheaply and which will not get out of order, and wherein more especially I provide a simple friction clutch for the bar in combination with a plain lever jack in other particulars.

The above objects and features are provided for and accomplished by that certain construction and arrangement of parts to be hereinafter more specifically pointed out and claimed.

In the drawing,

Figure 1 is a side elevation of the jack, partly broken away.

Fig. 2 is a detail longitudinal section, taken through the friction plate, on the line 2, 2, of Fig. 1.

Fig 3 is a like view showing the friction plate in operative position, whereas Fig. 2 shows it in normal position.

Fig. 4 is a cross sectional view taken on the line 4, 4, of Fig. 1.

The jack has a base 1, a lower frame portion 2, a central expanded frame portion 3, and a forwardly extended frame portion 4 at the upper end. In this frame is slidably supported the lifting bar 5 of the jack, which same has a head 6, and a foot 7. The foot slides in the lower frame portion through a suitable slot and serves as the ground lift, as customary.

The lower frame portion snugly fits the bar preferably so as to serve as a guide, and the bar is cut with rack teeth the same as used in the usual lever jack. As explained, the bar is lifted as in the usual pinion lift for jacks. There is the pinion 8 which is mounted on a pin 9 that is in turn supported in the slanting slots 10 in the upper frame portion. On this pinion is the lever handle 11 and the pinion operates by being pushed down in the slots to mesh with the rack on the bar, and the handle pushed down, as is customary.

As so far described, it will be noted that the jack is simply a plain lever type jack, with the fewest possible number of parts and nothing to get out of order. For the retaining member of the jack, instead of the usual retaining pawl I substitute a friction plate 12 which is slotted transversely at 13 and set over the bar, within the central expanded chamber of the casing. The slot is of a width to permit the jack bar to slide therein, but it will frictionally engage over the bar when the plate is not considerable of a slant, becoming tighter as the plate nears a horizontal position. The plate engages on the untoothed sides of the bar and does not interfere with the teeth at all.

To retain the plate in position, it is provided with a tongue 14 which loosely engages in a slot 15 in the expanded casing portion so as to permit of the plate pivoting at this point. At the other end of the plate is located a pin 30, which is preferably set in at a slant, and finds a pocket 16 beneath the plate in which the pin can slide but will not come out in any position of the plate, there-

by serving to retain it in place. The plate is thus merely floatingly held in the casing, over the bar.

For tripping the plate and allowing the bar to fall I provide the trip lever 17 which is supported pivotally by any device such as a pin 18. In the embodiment of the invention shown in the drawing, the casing is cut away at 20 to permit the lever to enter the expanded chamber in the casing, and bring its nose 21 against the free edge of the friction disk or plate. This nose is cam-shaped and when the lever is horizontal, the plate will be free to follow the jack, and when pushed down to the vertical it will trip the plate by moving it to position with the slot alined with the lifting bar. As will be understood, this direction of movement is not essential, the device shown being merely exemplary of my invention in this regard.

It can be seen that in the above described combination of elements, there is a most excellent jack provided for ordinary work. The parts are simple and for the most part drop into place. There is no delicacy of adjustment, and the clutch or friction plate is merely floating and goes into locking position by gravity and the down pressure of the load. The trip can be kicked over with the foot, and the plate does not interfere with the teeth on the bar. The casing may be of the simplest and most elementary type, without a single machined hole or bearing in it, and generally a workable, inexpensive device is provided for all ordinary jack purposes.

It is not intended by the omission of mention of equivalent structures in the foregoing matter to exclude from the claim the full application of the doctrine of equivalents in their construction.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

In a lifting jack, the combination with the casing, and a lifting bar to slide in said casing, with means for raising the lifting bar, of a retaining device for the bar comprising a floating friction plate having a transverse slot through which the lifting bar passes, with a tongue on the friction plate loosely engaging a slot in the casing, to support in the casing one side of the friction plate, said plate having a depending pin thereon, the casing having a pocket for said pin to hold and guide the plate, substantially as described.

EDWARD HENRY KOHORST.