No. 832,251. PATENTED OCT. 2, 1906.

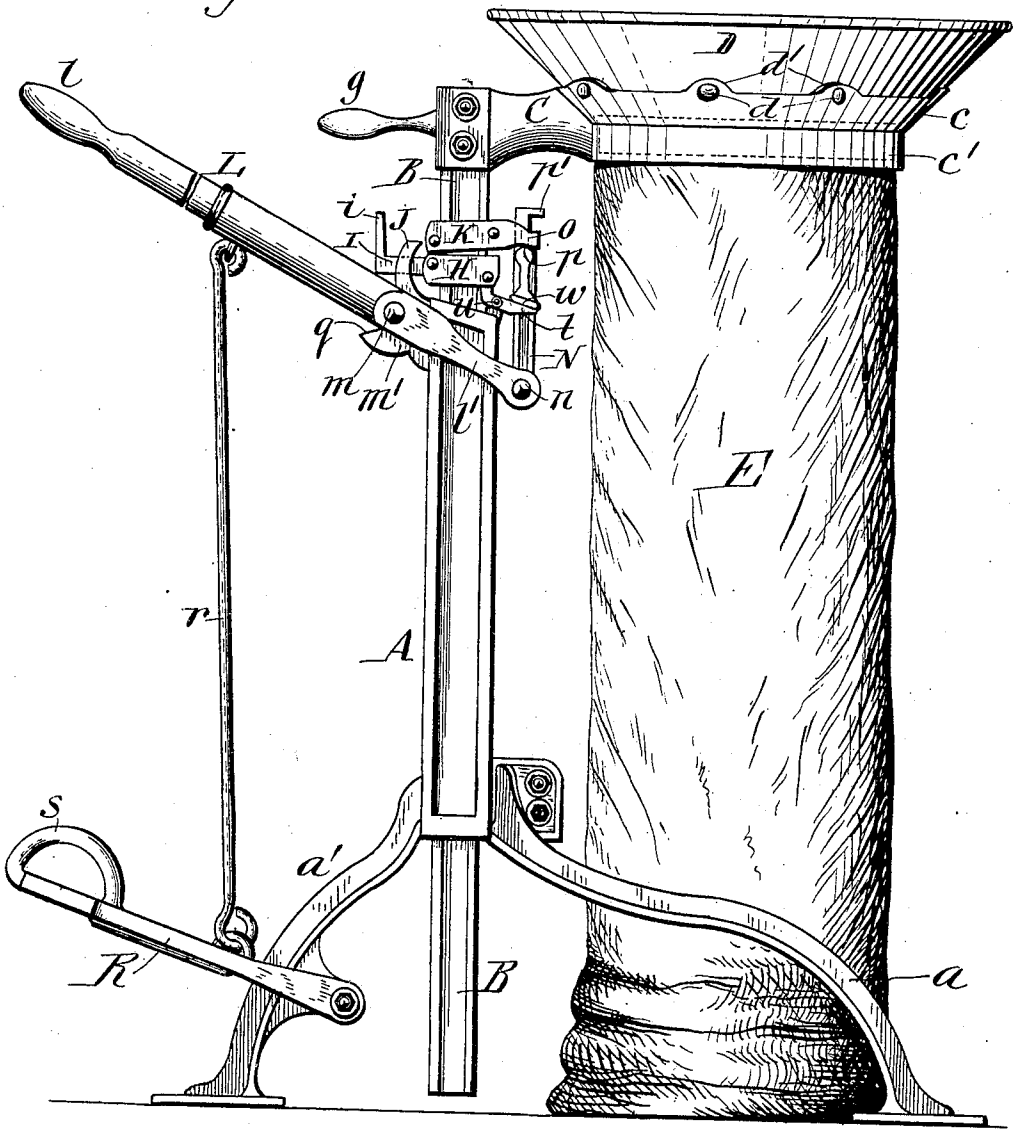
R. E. GIPPLE.

LIFTING DEVICE.

APPLICATION FILED MAY 21, 1906.

4 SHEETS—SHEET 1.

Fig. 1.



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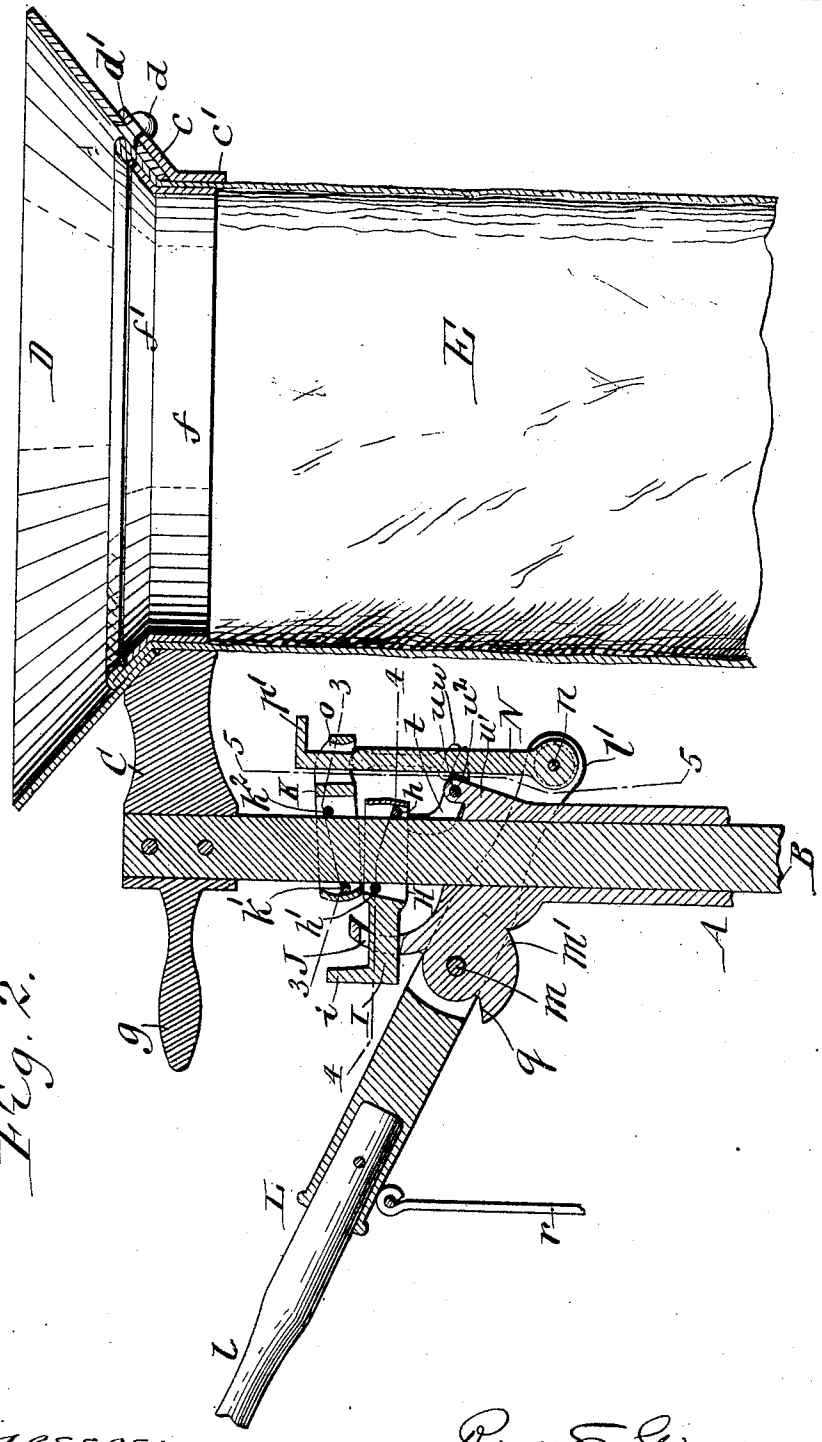


Fig. 2.

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4 SHEETS—SHEET 3.

Fig. 3.

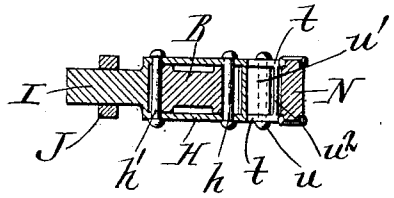


Fig. 4.

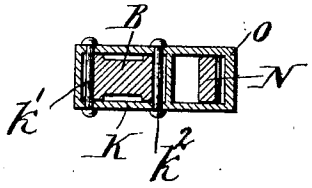


Fig. 5.

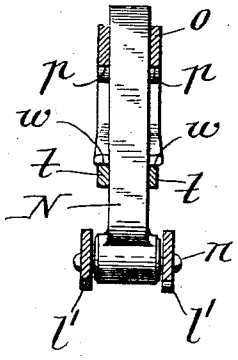
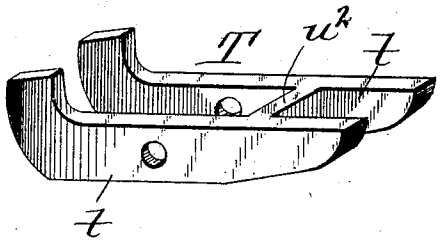


Fig. 6.



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4 SHEETS—SHEET 4.

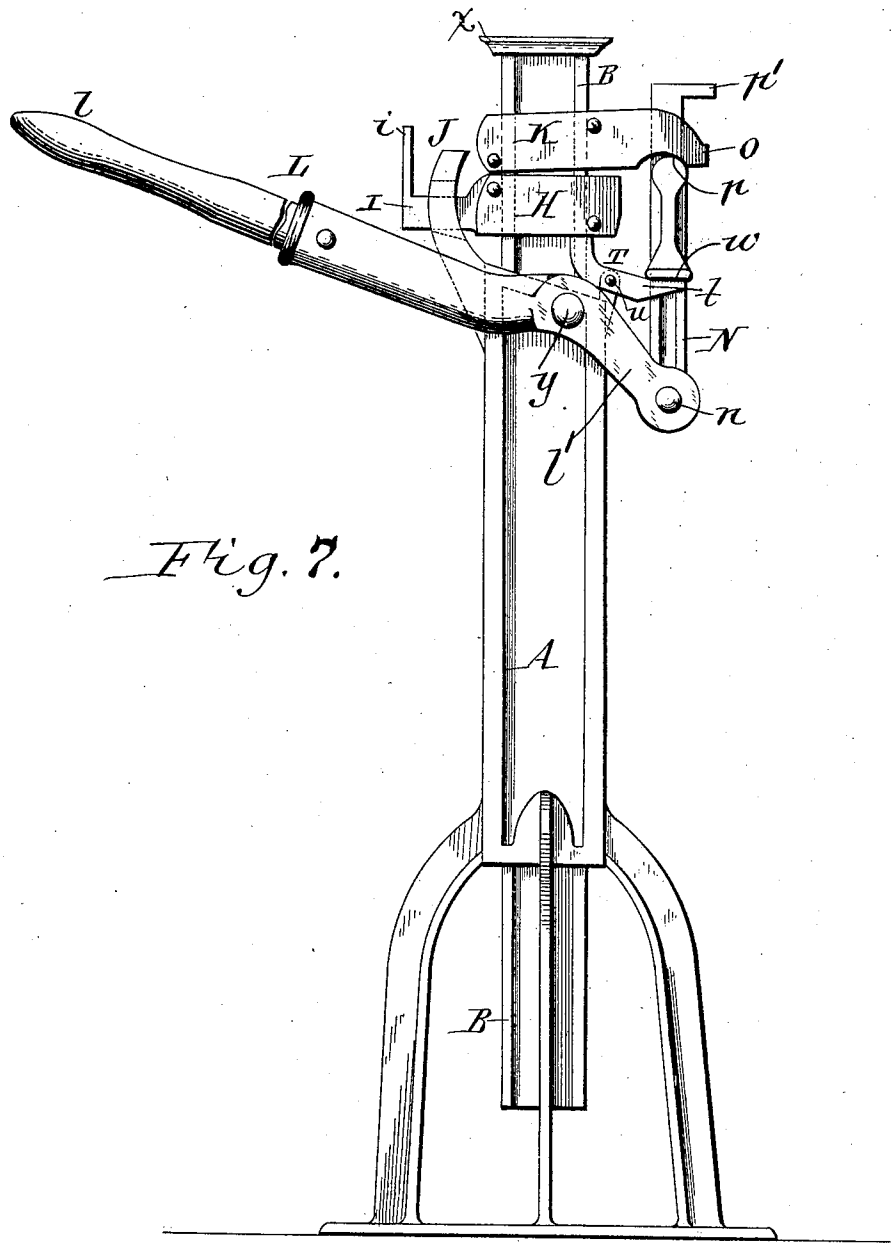


Fig. 7.

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UNITED STATES PATENT OFFICE.

ROY E. GIPPLE, OF BUFFALO, NEW YORK.

LIFTING DEVICE.

No. 832,251. Specification of Letters Patent. Patented Oct. 2, 1906.

Application filed May 21, 1906. Serial No. 317,890.

To all whom it may concern:

Be it known that I, ROY E. GIPPLE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Lifting Devices, of which the following is a specification.

This invention relates to a lifting device which is more particularly designed for use in connection with bag-holders and wagon-jacks, but which may also be used for other purposes.

The object of this invention is to produce a lifting device of this character which is simple in construction, reliable in operation, and capable of being easily manipulated.

In the accompanying drawings, consisting of four sheets, Figure 1 is a side elevation showing a bag holder or filler equipped with my improved lifting device. Fig. 2 is a fragmentary vertical section thereof on an enlarged scale. Figs. 3 and 4 are horizontal sections in lines 4 4 and 3 3, Fig. 2, respectively. Fig. 5 is a vertical cross-section in line 5 5, Fig. 2. Fig. 6 is a detached perspective view of the clutch-releasing lever. Fig. 7 is a side elevation of a wagon-jack embodying my invention.

Similar letters of reference indicate corresponding parts throughout the several views.

Referring to Figs. 1 to 6, A represents a hollow upright standard or column which is provided at its lower end with supporting-legs *a a'*. B represents an upright lifting-bar which is guided in the standard so as to be capable of moving vertically therein. At its upper end the lifting-bar is provided with a laterally-projected arm C, the outer or front end of which carries a supporting-ring composed of an upper conical portion or flange *c* and a lower cylindrical portion or flange *c'*. To the upper flange of the supporting-ring is secured a funnel D by means of rivets *d* passing through perforated ears *d'* at the upper edge of the conical flange. The upper end of the bag E is clamped within this funnel, so that it is held open in position for filling by means of a clamping-ring, fitting within the upper end of the bag and composed of a lower cylindrical flange or portion *f*, which presses the bag against the cylindrical flange of the supporting-ring and an upper conical flange *f'*, which presses the bag against the funnel. At its rear end the arm C is provided with a handle *g*, whereby the same may be raised or lowered directly by hand, if desired.

The mechanism whereby the lifting-bar is raised in successive steps and whereby the same may be released to permit of lowering the same when required is constructed as follows: H represents a detent-clutch which normally permits the lifting-bar to be raised, but prevents downward movement thereof relatively to the standard. This clutch has a loop-shaped body which loosely surrounds the lifting-bar and is provided at the lower end of its inner front side with a front gripping-jaw *h* and at the upper end of its inner rear side with the rear gripping-jaw *h'*. At its rear end the body is provided with a rearwardly-projecting arm or horn I, which is arranged loosely within an eye J, arranged on the upper rear part of the standard. In rear of the eye the arm is provided with an upwardly-projecting lug, stop, or shoulder *i*, which prevents the detent-clutch from becoming easily detached from the standard when the lifting-bar is removed therefrom. In the operative position of the detent-clutch the same turns by gravity in a vertical plane with its arm I on the lower part of the supporting-eye J, causing its front and rear jaws to bear against diagonally opposite parts of the lifting-bar, and thereby grip this bar, so as to prevent downward movement thereof. This bar, however, is free to slide upwardly through the detent-clutch, inasmuch as during this movement of the bar the same lifts the detent-clutch sufficiently into a position in which its jaws are retracted from opposite sides of the lifting-bar. Upon forcibly lifting the detent-clutch at its front end, so as to retract its jaws out of their operative position, the lifting-bar is also free to move downwardly through the same. K represents a lifting-clutch forming part of the mechanism whereby the lifting-bar and the parts connected therewith are raised. This lifting-clutch has its body constructed in the form of a loop which surrounds the lifting-bar immediately above the detent-clutch and is provided at the lower end of its inner rear side with a rear jaw *k'* and at the upper end of its inner front side with a front jaw k^2. Upon raising the front end of this lifting-clutch the same is tilted so that its front and rear jaws bear against diagonally opposite parts on the front and rear sides of the lifting-bar, causing the latter to be gripped by and moved up-

wardly with the lifting-clutch. Upon lowering the front end of the lifting-clutch the same is turned in the direction which disengages its jaws from the lifting-bar and permits the lifting-clutch to slide idly downward on the lifting-bar. This downward movement of the lifting-clutch is limited by engagement of the same with the upper side of the detent-clutch.

Each of the jaws of the detent and lifting clutches preferably consists of a pin of steel or other hard metal, which is seated at opposite ends in openings in the side walls of the respective clutch-body and secured in place by riveting its ends against the outer side of said walls, as shown in Figs. 3 and 4. This construction permits of readily replacing these jaws when worn without going to the expense of replacing the entire clutches.

L represents the hand-lever of the lifting device, the same being pivoted, by means of a transverse pin m, to a bracket m' at the upper rear end of the standard and provided with a rearwardly-projecting single handle or arm l and a double or bifurcated front arm l', the members of which are arranged on opposite sides of the standard and terminate in front thereof.

N represents an upright shifting rod, which is arranged in front of the standard and pivoted at its lower end by a transverse pin n to the front ends of the front arms of the hand-lever. The upper end of this rod projects through an eye or opening o at the front end of the lifting-clutch and is provided on opposite sides with upwardly-facing shoulders p, which engage with the under side of said eye, and with a laterally-projecting lug or shoulder p', which is adapted to engage with the upper side of said eye and prevent said shifting rod and lifting-clutch from becoming detached when these parts are in their normal position.

Upon depressing the rear arm of the hand-lever its front arms are raised, together with the shifting bar connected therewith. This upward movement of the front arms is transmitted to the lifting-clutch by engagement of the upwardly-facing shoulders p on the shifting rod with the under side of the eye o of said lifting-clutch, thereby causing the latter to grip the lifting-bar and raise the same, together with the parts mounted thereon. During the return movement of the hand-lever the shifting rod is again lowered and the lifting-clutch slides idly down on the lifting-bar, the latter being at this time held against downward movement by the detent-clutch in the manner heretofore described.

The forward or downward stroke of the hand-lever is preferably limited by means of a shoulder or stop q, arranged on the bracket m' and adapted to engage with the hand-lever in rear of its pivot.

In order to assist the hands in lifting the load on the lifting-bar if the same is unusually heavy, a foot-lever or treadle R is provided, which is pivoted at its front end on the rear leg a' of the standard and connected by a rod or link r with the rear arm of the hand-lever, as shown in Fig. 1. This foot-lever is preferably provided at its free end with a stirrup or keeper s for confining the foot on said lever.

T represents a releasing-lever which operates to release the detent-clutch from the lifting-bar upon shifting the hand-lever into its extreme backward or upward position when it is desired to lower the lifting-bar and the parts supported by it. This releasing-lever preferably consists of two like sections t t, which are pivoted by a horizontal transverse pin u to a lug u', arranged at the upper end of the standard in rear of the shifting rod. The sections of this releasing-lever are preferably connected in front of the pivot by a cross-bar u^2 and are arranged on opposite sides of the lifting-bar and shifting rod. Each section of the releasing-lever has its rear arm turned upwardly into engagement with the lower edge of the adjacent side wall of the detent-clutch body, while its front arm engages with a downwardly-facing shoulder w on the adjacent side of the shifting-rod.

During the ordinary oscillating movement of the hand-lever, whereby the lifting-bar is raised step by step, the same is not moved backwardly or upwardly into its extreme position, so that the lower shoulders w of the shifting rod stop short of operatively engaging the front arms of the releasing-lever sections, thereby causing the detent-clutch to remain in its operative position and hold whatever has been gained in the upward movement of the lifting-bar through the medium of the lifting-clutch. When, however, it is desired to release the detent-clutch from the lifting-bar to permit the latter to drop freely, the hand-lever is turned backwardly to the limit of its movement in this direction, whereby the lower shoulders w of the shifting rod are caused to engage the front arms of the releasing-lever sections and depress the same, while their rear arms are elevated, so as to lift the detent-clutch into an inoperative position, thereby freeing the lifting-bar and permitting the same to move downwardly through the standard. By this means a bag after being filled can be alternately raised and then allowed to drop on the ground or floor for shaking or settling the material compactly in the bag

When my improved lifting device is organized as a wagon-jack, the upper end of the lifting-rod is provided with a bearing head or plate x, as shown in Fig. 7, and the pivot y, connecting the hand-lever with the standard, is arranged near the front side of the same for the purpose of obtaining greater leverage, which is necessary on account of a greater load which is usually lifted by a wagon-jack.

My improved lifting device is exceedingly simple and inexpensive in construction and contains no delicate parts which are liable to get out of order by ordinary usage, rendering the same particularly desirable for the uses which have been mentioned.

I claim as my invention—

1. A lifting device comprising a standard, a lifting-bar guided on the standard, a detent-clutch mounted loosely on the standard and engaging with the lifting-bar, a lifting-clutch engaging with the lifting-bar, a hand-lever pivoted on the standard, a shifting rod connecting the hand-lever and lifting-clutch, and a releasing-lever pivoted on the standard and having two sections arranged on opposite sides of the standard and shifting rod and each bearing at its rear end against the under side of said detent-clutch and at its front end against a shoulder on the shifting rod, substantially as set forth.

2. A lifting device comprising a standard, a lifting-bar guided on the standard, a detent-clutch mounted loosely on the standard and engaging with the lifting-bar, a lifting-clutch engaging with the lifting-bar, a hand-lever pivoted on the standard, a shifting rod connecting the hand-lever and lifting-clutch, and a releasing-lever pivoted by a transverse pin to a lug on the standard and comprising two sections arranged on opposite sides of the standard and shifting rod, said sections being connected in front of said pivot-pin by a cross-bar and each section having an up turned rear arm which bears against the under side of the lifting-clutch while its front arm engages with a downwardly-facing shoulder on the adjacent side of the shifting rod, substantially as set forth.

Witness my hand this 12th day of May, 1906.

ROY E. GIPPLE.

Witnesses:
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R. S. GIPPLE.