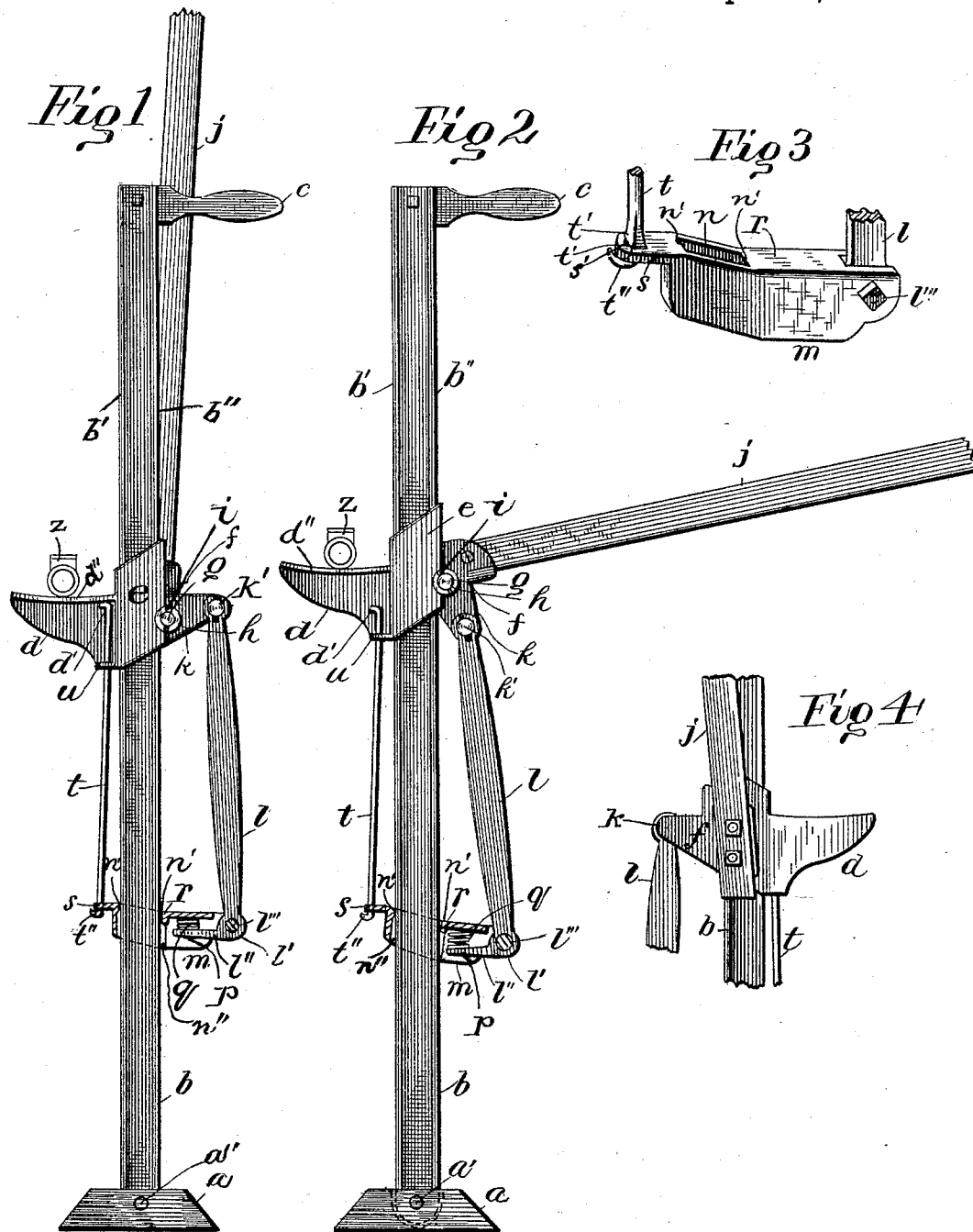


(No Model.)

W. H. COX.
LIFTING JACK.

No. 460,116.

Patented Sept. 29, 1891.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. COX, OF VIRDEN, ILLINOIS.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 460,116, dated September 29, 1891.

Application filed July 21, 1891. Serial No. 400,194. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. COX, a citizen of the United States, residing at Virden, in the county of Macoupin and State of Illinois, have invented certain new and useful Improvements in Lifting-Jacks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to those lifting-jacks in which a vertically-movable bracket slides upon an upright to allow it to be drawn up under the object to be lifted and then raised still higher by the downward movement of a lever movable with the bracket.

The object of my device is to provide a more easily-operated and a more desirable implement.

With this purpose in view my invention consists in the peculiar features and combinations of parts more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my device, in which the lever is shown raised to almost a vertical position, as in the adjusting operation. Fig. 2 is a similar view in which the lever is depressed, as in the lifting operation. Fig. 3 is a detail view in perspective of the runner and its connections. Fig. 4 is a detail view of the bracket portion of the jack.

The reference-letter *a* denotes a base to which is secured a rectangular standard *b*, having a handle *c*, by which the jack is moved about. A vertically-movable bracket *d* is secured upon the standard *b* by means of a sleeve *e*, which loosely embraces the standard. A bell-crank lever *f* is provided with a fulcrum *g*, which fulcrum is attached to and moves with the sleeve *e* by means of a circular bearing *h*, cast integral with the back of the sleeve, and the fulcrum is held in this bearing by a linchpin *i*. The upper arm *j* of the bell-crank lever *f* forms the handle by which the lever is operated. The short arm *k* is pin-joined to the long arm of another bell-crank lever *l*, having a fulcrum *l'* in the outer end of a runner *m*, provided with an orifice *n*, through which the standard passes. The upper interior walls of this orifice are provided with gripping-surfaces *n'*, adapted to

engage the front and rear edges *b' b''* of the standard, as shown more clearly in Fig. 2. The lower part *n''* of the orifice is made larger, in order to allow the runner *m* to tilt up and down in gripping the standard. The rear end of the runner *m* is bifurcated to receive the lever *l*. The lower short arm of this lever operates in a recess *p*. This recess also contains a coil-spring *q*, which is interposed between the short arm and the top wall *r* of the recess. The front of the runner is provided with a lip *s*, having a perforation *s'* to receive the lower end of a vertical rod *t*. This rod is provided with shoulders *t'*, which engage the upper surface of the lip and prevent it from downward movement, while its lower extremity is given a bend *t''* to secure it to the lip *s*. The upper end of the rod passes through a hole in a lip *u* on the bracket *d*, and a bend *d'* prevents it from slipping away from the lip. The rod is free to slide up and down through the lip, so that its upper end will come in contact with a flange *d''* on the bracket and assist in bringing the runner into horizontal adjustment, as in Fig. 1. The standard *b* is pivoted to the base by a bolt *a'* and allows the standard a limited amount of lateral play, so that the base will always have a firm seat on the ground.

In using my jack the operator first places it beneath an axle, such as *z*, then draws the lever up to an almost vertical position, thereby moving the arm *k* of the bell-crank lever *f* outward and upward, carrying with it the upper arm *l'* of the lower lever *l* and raising the lower arm *l''* of the lever. This action also raises the fulcrum *l'''* and rear end of runner *m*. The sleeve *e* and its bracket *d* descend until the latter is arrested by the top of rod *t*, and the downward pressure of the bracket thereby depresses the front end of the runner *m* and brings the runner into a horizontal or nearly horizontal position, releasing it from the standard *b* and allowing it to slide freely up and down. When the parts are in this position, it will be seen that the spring *q* is compressed. When the lever *j* is depressed, as in the lifting operation, the spring expands and permits the runner to assume an inclined position and lock itself tightly to the standard, for the weight of the brackets, the sleeve, and the levers *f* and *l*

is brought down upon the rear of the runner. Hence it will be seen that the runner automatically locks itself to the stand and when the bracket is raised to the required
 5 height and beneath the object to be lifted, so that when the long arm j of the lever is depressed the pin k' , which connects the upper end of lever-arm l' , serves as a fulcrum for the lever f in raising the bracket d and its weight,
 10 the axle z .

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

1. The combination, in a lifting-jack, of a
 15 vertical standard, a movable bracket provided with a sleeve adapted to slide up and down on the standard, a bell-crank lever hinged to the sleeve, a runner movable on the standard below the bracket, a rod connecting the runner
 20 with the bracket, a bell-crank lever fulcrumed to the rear end of said runner, and a

spring interposed between the short arm of the latter lever and the runner, all arranged and adapted to operate in the manner and for the purpose substantially as described. 25

2. In a lifting-jack, a vertical standard provided with a bracket, a runner vertically movable thereon, in combination with a bell-crank lever secured to move with the bracket, a bell-crank lever and spring located on the runner,
 30 one arm of the lower lever being connected with the upper lever, and a rod connecting the front end of the runner with the bracket, in the manner and for the purpose substantially as described. 35

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. COX.

Witnesses:

HERBERT H. COWEN,
 FRANK H. COGSWELL.