J. C. BIRD.

Lifting-Jack.

No. 163,969. Patented June 1, 1875.

Fig. 1

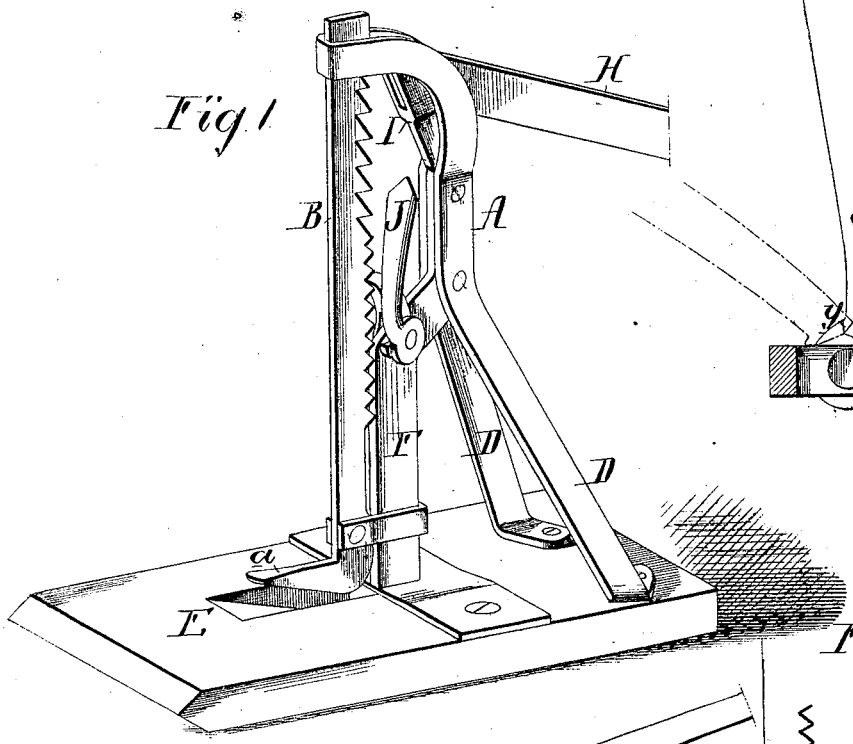


Fig. 4

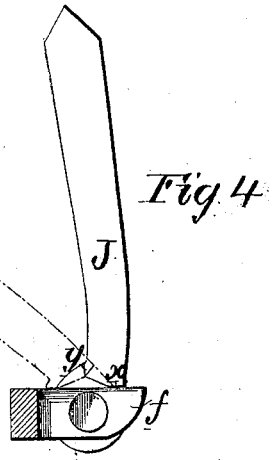


Fig. 5

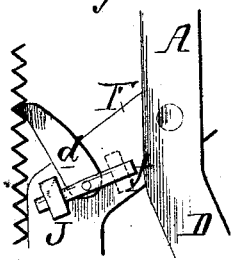


Fig. 3.

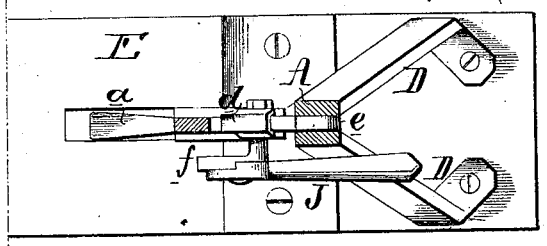
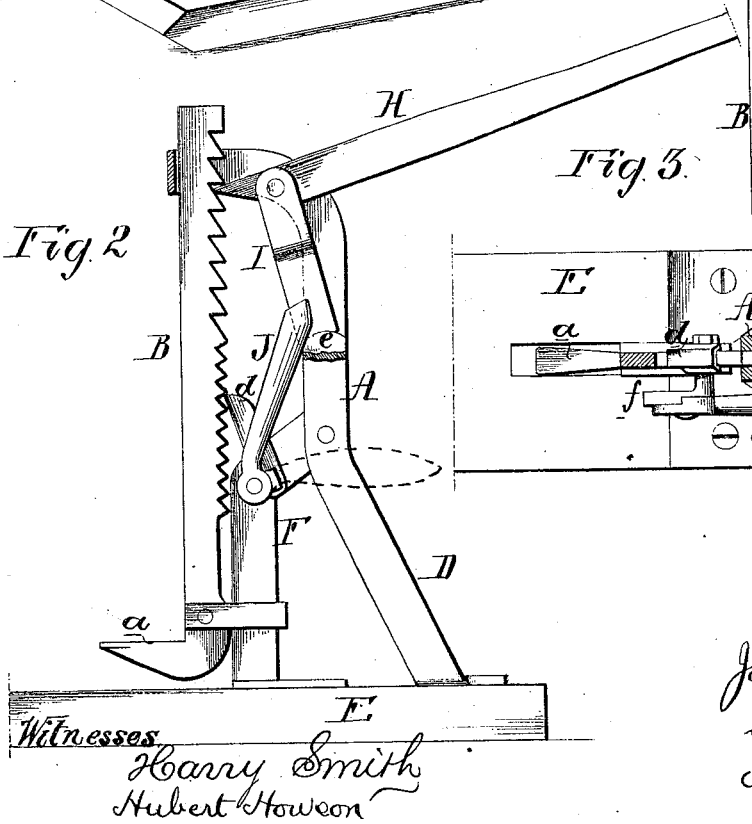


Fig. 2



Witnesses,
Harry Smith
Hubert Howson

Joseph C. Bird
by his Attorneys,
Howson & Howson

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

JOSEPH C. BIRD, OF RISING SUN, MARYLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO EDWIN MARTIN, OF SAME PLACE.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. **163,969**, dated June 1, 1875; application filed May 5, 1875.

To all whom it may concern:

Be it known that I, JOSEPH C. BIRD, of Rising Sun, Cecil county, Maryland, have invented an Improved Lifting-Jack, of which the following is a specification:

The object of my invention is to so construct a lifting-jack that the operating-lever can be readily removed and replaced, and the retaining-pawl thrown in and out of gear, without danger either to the attendant or to the apparatus; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of my improved lifting-jack; Fig. 2, a side view; Fig. 3, a sectional plan on the line 1 2, Fig. 2; Fig. 4, a detached view; and Fig. 5, a view of a modification of my invention.

The frame A of the jack embraces and forms a guide for the upper ends of the toothed lifting-bar B, the frame terminating below in two legs, D D, which are secured to the base E, a central standard, F, also secured to the base E, and connected at its upper end to the frame A, forming, with the legs D D, a tripod, which insures a steady and substantial structure. The bar B has at its lower end a projection or foot, *a*, on which the article to be lifted rests, and the bar is elevated by means of a lever, H, which acts upon the teeth, and is hung to the upper forked end of an arm, I, contained between the opposite sides of the frame, and resting loosely at its lower end on a bearing, *e*, so that both it and the operating-lever can be readily removed. A pawl, *d*, adapted to the teeth of the bar B, is hung to the standard F, and the spindle of this pawl has at one end an arm, *f*, to which is pivoted a lever, J, having two faces, *x* and *y*, for bearing on the arm *f*, as best observed in Fig. 4. The center of gravity of the pawl *d* depends upon the position of the lever J. Thus, when the face *x* of the lever is in contact with the arm *f*, as shown in full lines in Fig. 4, the tendency of the lever is to hold the pawl against the teeth of the lifting-bar; but when moved to the position shown in dotted lines, the tendency of the lever is to draw the pawl away from the teeth.

During the operation of lifting, the lever J is in the position shown in Fig. 2, and the pawl engages with the teeth of the lifting-bar; but when it is desired to lower the bar, the center of gravity of the pawl is changed by moving the lever to the position shown in dotted lines. The pressure upon the pawl, however, prevents the removal of the same until the bar B has first been slightly lifted by the operating-lever, when the pawl will be withdrawn, and the bar B may be gradually lowered under control of the operating-lever.

By thus arranging the pawl in respect to the lifting-bar, so that it cannot be withdrawn from the teeth of the bar until the latter is under the control of the operating-lever, the sudden descent of the bar and its load, and the consequent danger to the operator and to the machine, are obviated.

Another feature of my invention is the facility with which the operating-lever H and its arm I can be lifted clear of the frame when it is desired to use the lever independently of the machine.

Fig. 5 illustrates a modification of my invention, in which a movable weight, X, is used in place of the lever J, the arm *f*, in this case, extending on each side of the spindle of the pawl.

I claim as my invention—

1. The combination, in a lifting-jack, of the toothed lifting-bar B with the operating-lever H, hung to the upper forked end of an arm, I, which is contained in the space between the opposite sides of the frame, and rests loosely at its lower end upon a bearing, *e*, on the frame, all substantially as set forth.

2. The combination of the arm *f* on the spindle of the pawl *d* with a movable weight or lever, by adjusting which the center of gravity of the said pawl can be changed, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH C. BIRD.

Witnesses:

E. HAINES, Jr.,

H. F. BIDDLE.