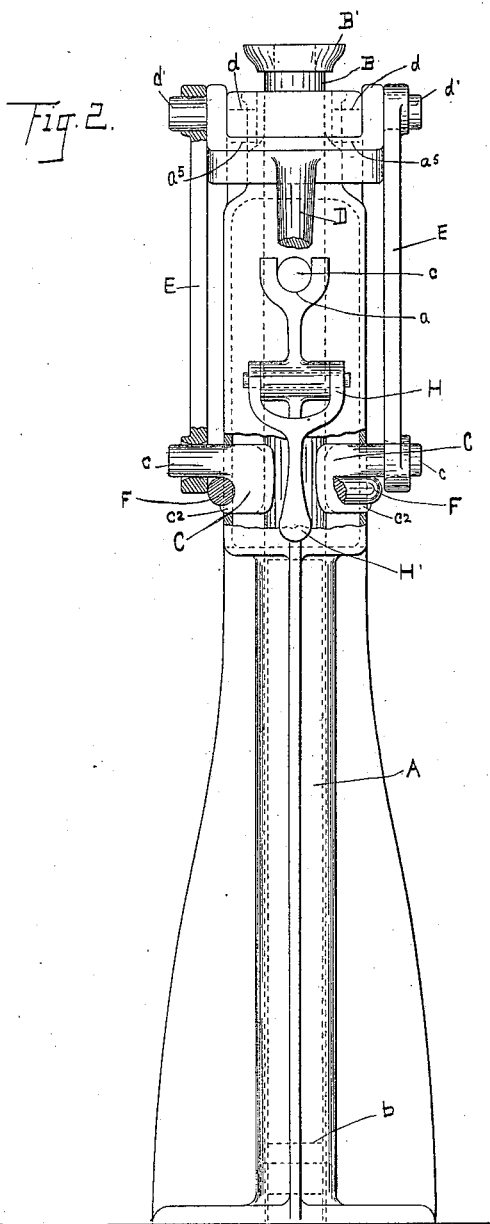
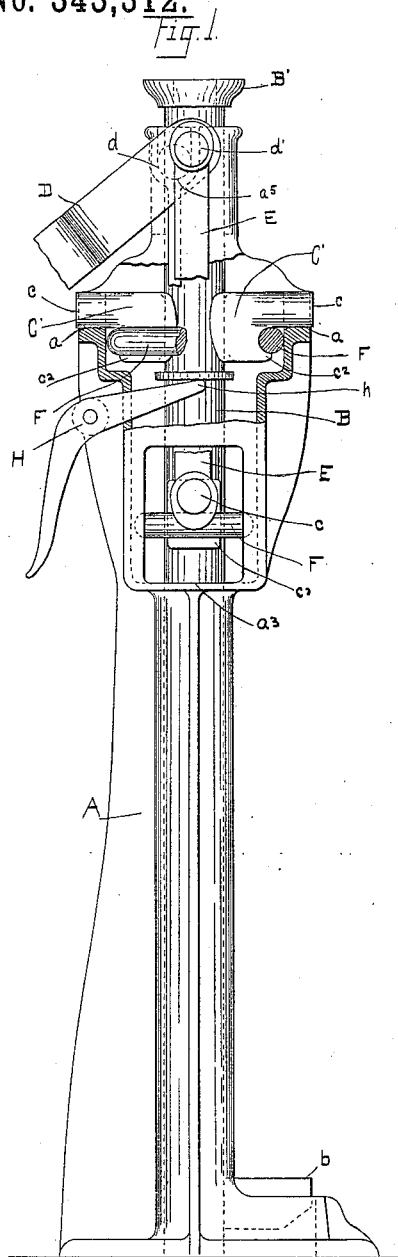


J. W. HAWKINS.

LIFTING JACK.

No. 343,312.

Patented June 8, 1886.



WITNESSES:

N. S. Amstutz
Geo. W. King

J. Wesley Hawkins, INVENTOR

BY

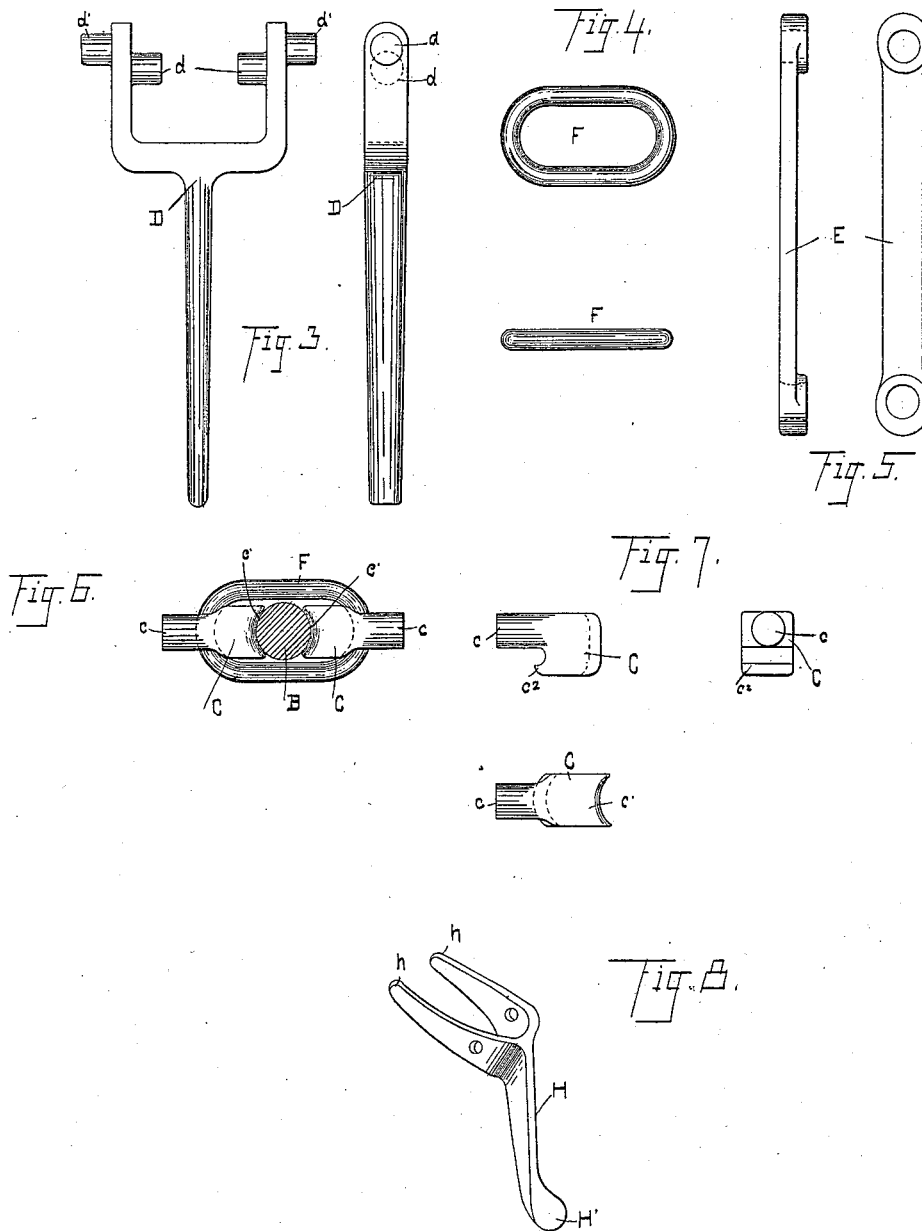
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UNITED STATES PATENT OFFICE.

J. WESLEY HAWKINS, OF KENT, OHIO, ASSIGNOR TO THE RAILWAY SPEED
RECORDER COMPANY, OF SAME PLACE.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 343,312, dated June 8, 1886.

Application filed March 6, 1886. Serial No. 194,236. (No model.)

To all whom it may concern:

Be it known that I, J. WESLEY HAWKINS, of Kent, in the county of Portage and State of Ohio, 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 pertains to make and use the same.

My invention relates to improvements in lifting-jacks in which are employed friction lifting and retaining pawls arranged in pairs, to embrace and operate the lifting-bar, with links arranged, respectively, to couple, fulcrum, and sustain the lateral strain of each pair of pawls, to the end that a simple, durable, and effective lifting-jack is had at a small initial cost.

With these objects in view my invention consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation, and Fig. 2 is a front elevation, of a lifting-jack embodying my invention, portions being in section and other parts broken away to show the construction. Fig. 3 shows a plan and edge view of the lever for operating the jack. Fig. 4 shows a plan and edge view of a link for coupling a set of pawls. Fig. 5 shows a front and side elevation of the lifting-links. Fig. 6 is a plan view of a pair of pawls and connected link. Fig. 8 is a view in perspective of lever E. Fig. 7 shows a side elevation and plan of a friction-pawl.

A represents a hollow standard that constitutes both the casing and supporting-frame of the jack, and inside of which operates the lifting-bar B. The bar, in the main, is preferably round in cross-section and of uniform size, but has a head or cap, B', and below a toe, b, that extends laterally through a vertical slot in the casing. The lifting-bar is embraced by lifting-pawls C, that are operated by the lever D, connected by links E with lifting-pawls C, and by retaining-pawls C', that are supported directly by the casing at a. The pawls are alike, and are made from the same pattern if of cast metal, or forged in the same dies if of forged metal. Each pawl has a laterally-pro-

jecting supporting-trunnion, c, a concaved face, c', adapted to engage the lifting-bar, and a hook, c'', for engaging a link, F, the said link being arranged astride the lifting-bar and so as to couple a pair of pawls, forming fulcrums for the same, and sustaining the lateral strain caused by the pawls gripping the lifting-bar.

The lever D is forked, as shown in Fig. 3, and has inside the prongs the lugs d, that are arranged in line and rest in suitable bearings, a', at the upper end of the casing, and form a fulcrum for the lever. Outside the prongs are the lugs d', on which are respectively pivoted the links E. The lower end of these links receive the trunnions c of the lifting-pawls. Lines respectively through the axis of the lugs d d' and d' d' would be parallel, but separated a short distance, by reason of which and of the length of the lever great leverage or power is had in operating the lever D. The lifting-pawls extend out through opening a' of the standard, and by elevating the handle of the lever D the lifting-pawls may be so far depressed that they rest at a'' on the casing at the bottom of the opening a'.

H is a forked lever pivoted to the casing, as shown, the prongs h of the lever passing in through suitable openings in the casing and astride the lifting-bar, and support a ring, G, that embraces the bar B loosely, and is located just under the retaining-pawls. The lower and outer end of the lever at H' may curve outward, so that the foot of the operator may engage the same.

In operating the jack, when the handle of the lever D is depressed, the lifting-pawls, by means of the connecting-links E, are elevated; but as the upward draft is on the trunnions c and the lower side of the pawls are held from moving apart by the link F, the upper side of the pawls are pressed together and made to grip the lifting-bar, that is consequently raised. Meantime the bar slides up through the retaining-pawls. When the lever D is reversed, the retaining-pawls in like manner grasp the bar B and hold the load.

This lifting-jack is well adapted to railroad purposes—such, for instance, as track-work—and when the lifting-bar is depressed to the bottom of the jack the toe b will be near the

ground, and may be conveniently set—for instance, under a rail in leveling the track. After the lifting-jack has performed its labor at one point—the sooner the better—it is let
 5 down and got out of the way, or moved to another point where it is wanted. If the jack is supporting little or no load, by raising the handle of the lever D and depressing the lifting-pawls until they rest on the casing they
 10 will of course be separated so that they do not grasp the lifting-bar, after which, by a blow or quick pressure on the levers H at H', the ring G will be forced up, and will separate the retaining-pawls, so that the lever B will fall by
 15 gravity. If the load on the lifting-bar is so heavy that the retaining-pawls cannot be released in this manner, the lifting-pawls are elevated just enough to take the load, after which the lever H is depressed and held, by means of
 20 which the retaining-pawls are kept open, after which, by depressing the lifting-pawls until they rest on the casing, and then, if necessary, pressing them downward on the casing by still further elevating the handle of the lever D,
 25 the lifting-pawls will be forced open so that the bar B may fall. In either case an expert operator will drop the lifting-bar in a moment.

The jack is made light and strong, and the rapidity with which it can be shifted and operated renders it desirable for many purposes.
 30 What I claim is—

1. In a lifting-jack, the combination, with friction-pawls arranged in pairs to embrace the lifting-bar, each individual pawl having a
 35 laterally-projecting supporting-trunnion, and below the trunnion a seat for a link, of a link arranged astride the lifting-bar for connecting laterally a pair of pawls below the trunnions, said link forming a fulcrum for the engaging-
 40 pawls, substantially as set forth.

2. In a lifting-jack, the combination, with a lifting-bar, friction retaining-pawls having

supporting-trunnions engaging suitable seats on the casing, of friction lifting-pawls having trunnions engaging the links that are connected with the operating-lever, each pair of pawls having fulcrum-links engaging the respective
 50 pawls laterally to hold the pawls against the lifting-bar in operating the jack, substantially as set forth.

3. In a lifting-jack, the combination, with a friction retaining-pawl and friction lifting-pawls arranged, respectively, to embrace the lifting-bar, lateral fulcrum-links for connecting, respectively, each pair of pawls, arranged
 55 substantially as indicated, of a forked lever fulcrumed on the casing, links connecting the lever with the lifting-pawl, substantially as set forth.

4. In a lifting-jack, the combination, with a
 60 lifting-bar, friction lifting-pawls and friction retaining-pawls, arranged substantially as described, of a ring mounted loosely on the lifting-bar, a lever for moving said ring upward to engage and separate the retaining-pawls,
 65 the parts being arranged substantially as described.

5. In a lifting-jack, the combination, with friction-pawls, respectively lifting and retaining, arranged in pairs to embrace the lifting-
 70 bar, lateral links, and a lever for operating the retaining-pawl, arranged substantially as indicated, of shoulders of the casing arranged to engage and separate the lifting-pawls at the end of the downstroke of the latter, substan-
 75 tially as described.

In testimony whereof I sign this specification, in the presence of two witnesses, this 19th day of February, 1886.

J. WESLEY HAWKINS.

Witnesses:

J. B. MILLER,
 GEO. O. RICE.