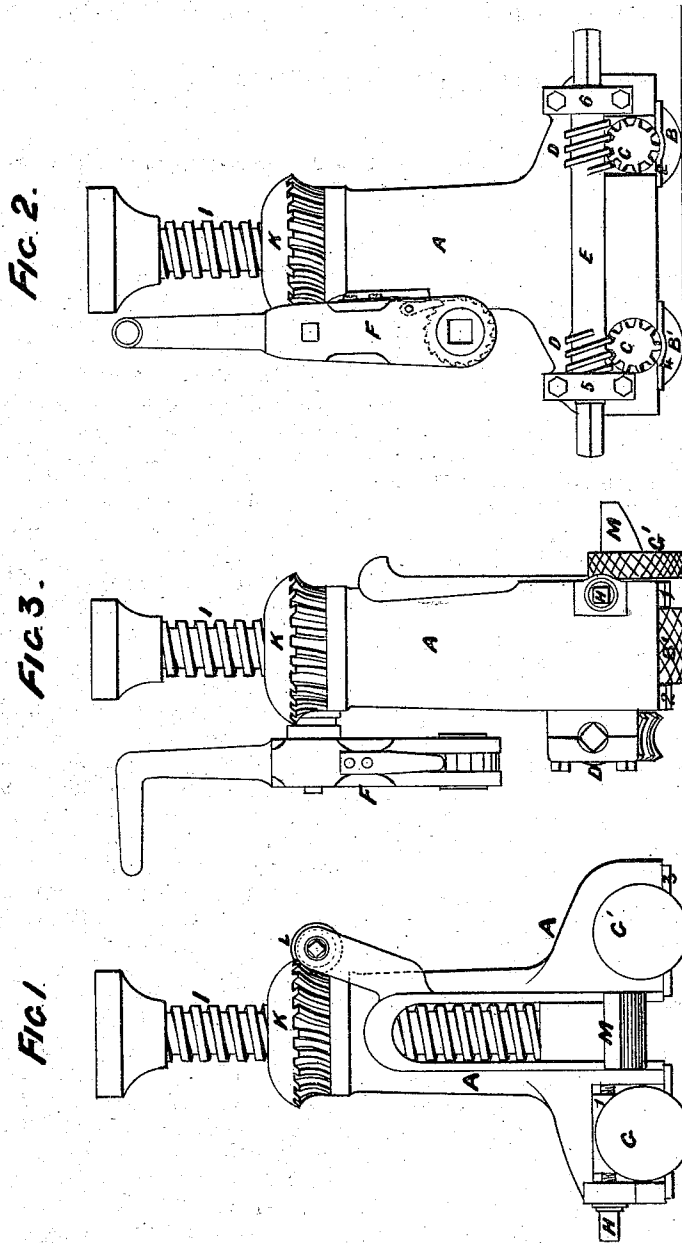


B. HARRISON.
Lifting-Jacks.

No. 154,246.

Patented Aug. 18, 1874.



*Witnesses, Harry Smith
Thomas M. Swain.*

*Benjamin Harrison
By his Atty.
Houston and Son.*

UNITED STATES PATENT OFFICE.

BENJAMIN HARRISON, OF KINGSLAND, ENGLAND.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. **154,246**, dated August 18, 1874; application filed July 6, 1874.

To all whom it may concern:

Be it known that I, BENJAMIN HARRISON, of Kingsland, in the county of Middlesex, England, engineer, have invented Improvements in Traversing Lifting-Jacks, of which the following is a specification:

The objects of my invention are to render the ordinary lifting-jacks readily adjustable, secure them after adjustment, and increase their stability, objects which I attain in the following manner: I mount the body of the jack upon strong wheels or rollers, the peripheries of which I serrate or cross-cut, to insure greater hold on the ground. These wheels or rollers are provided with axles which work in bearings in the lower part of the body of the jack, and on one of the axles of each of these rollers I fix a worm-wheel, into which gear worms carried on a horizontal shaft which may be actuated by means of a ratchet-lever or otherwise. By turning this shaft in one direction or the other the jack may be traversed to any desired distance, while at the same time it may be employed as a stationary lifting-jack, the rollers remaining fixed, unless actuated as above described. The elevating portion of the jack may be worked by any suitable or well-known arrangement of mechanism. A lip or platform is formed on the lower end of the lifting portion, for the purpose of enabling me to raise heavy weights from off the ground. For this purpose I make the elevating screw or rack sufficiently long to allow the lip before mentioned to descend below the ground, which would be cut away for that purpose. In order to prevent the jack from tilting when employing the lip for raising, I construct the rollers in such a manner as that a portion thereof shall project outside the body of the jack on that side from which the lip projects, so as to afford a more extended base. If desired, a steering apparatus may be combined with the above so as to enable the jack to be traversed in any direction other than a straight line; and

In order that my said invention may be fully understood, I shall now proceed more particularly to describe the same, and for that purpose shall refer to the several figures on the annexed sheet of drawings, the same letters of reference indicating corresponding parts in all the figures.

Figure 1 represents a front elevation of my

improved traveling jack; Fig. 2, a back elevation, and Fig. 3 an end elevation, of the same.

A represents the framing or body of the jack mounted upon rollers or wheels B B', the axles of which extend between and project at each of their ends beyond the front and rear sides, respectively, of the framing or body A, and are carried by bearings 1 2 3 4 formed on the under side of the said framing or body, as shown. At one end of each of these projecting axles is fixed a worm-wheel, C, into which gears a worm, D, the two worms being fixed to or forming part of a horizontal shaft, E, mounted in bearings 5 6 on the side of the framing or body A, and rotated in either direction and from either end by means of a ratchet-lever, F, or by any other suitable contrivance. At the other or opposite projecting ends of the said axles are supplementary or additional rollers or wheels G G', which form an extended base to the jack, for the purpose hereafter described. The peripheries of the rollers or wheels B B' and those of the rollers G G' are serrated or cross-cut to enable the said rollers to take a firmer bite or hold on the ground when revolving. The bearing 1 of the axle to the roller or wheel B is capable of a horizontal movement or adjustment in the framing or body A, the said movement being radial to the opposite bearing 2, and effected by means of a screw, H, working through the bearing 1 and actuated by a ratchet-lever or other contrivance, or the adjustment of the bearing 1 may be effected by any other convenient method. I represents the elevating portion of the jack, which in this instance is a screw raised or lowered by the worm wheel or nut K bearing or resting on the top of the framing or body A, and worked by a worm, L, as shown, but the said elevating portion of the jack may consist in and be worked by a rack-and-pinion gear or by hydraulic pressure, or by any other well-known arrangement of mechanism. The front side of the body or framing A is open or slotted to its bottom edge, as shown, so as to allow of the projecting foot M of the screw or elevating portion I of the jack to descend below the latter into the ground, and thereby enable a low purchase to be taken at weights to be raised.

On lifting any weight in the ordinary manner by the projecting foot M of the elevating

portion I the jack is prevented from tilting by the supplementary or additional rollers or wheels G G', which form an extended base to the jack, as before mentioned, and on which, as well as on the main rollers or wheels B B', the whole apparatus takes its bearing as on the base of any ordinary jack.

By turning the rollers or wheels B B', and with them the supplementary or additional rollers or wheels G G', in either direction, the jack can be moved or traveled endwise along the ground accordingly to any required distance and at the same operation, without the inconvenience or necessity of packing up the weight and taking a fresh purchase, as is the case with ordinary traveling jacks, which are restricted in the extent of travel at each purchase to the length of their traveling base or frame.

When desired, also, the jack, when traveling, may be guided or turned to the right or left by inclining the axle of the roller B to that of the roller B' in the manner previously mentioned, or the guiding arrangement may be dispensed with and the apparatus shifted in the usual manner.

For special purposes, the worms actuating

the rollers or wheels G G' may be made to be readily thrown in or out of gear with their wheels, so that the jack can be pushed along without their aid.

One special feature of my improvement consists in giving an increased form and disposition of material to the lower portion of the framing or body A, as shown, whereby a greater rigidity and strength in the jack is attained.

I claim—

1. The combination of a lifting-jack with the rollers B B', and worms and worm-wheels for operating and securing said rollers, as specified.

2. The combination of the jack with its rollers B B', and the adjustable roller-bearings 1 2, as and for the purpose set forth.

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

BENJ. HARRISON.

Witnesses:

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