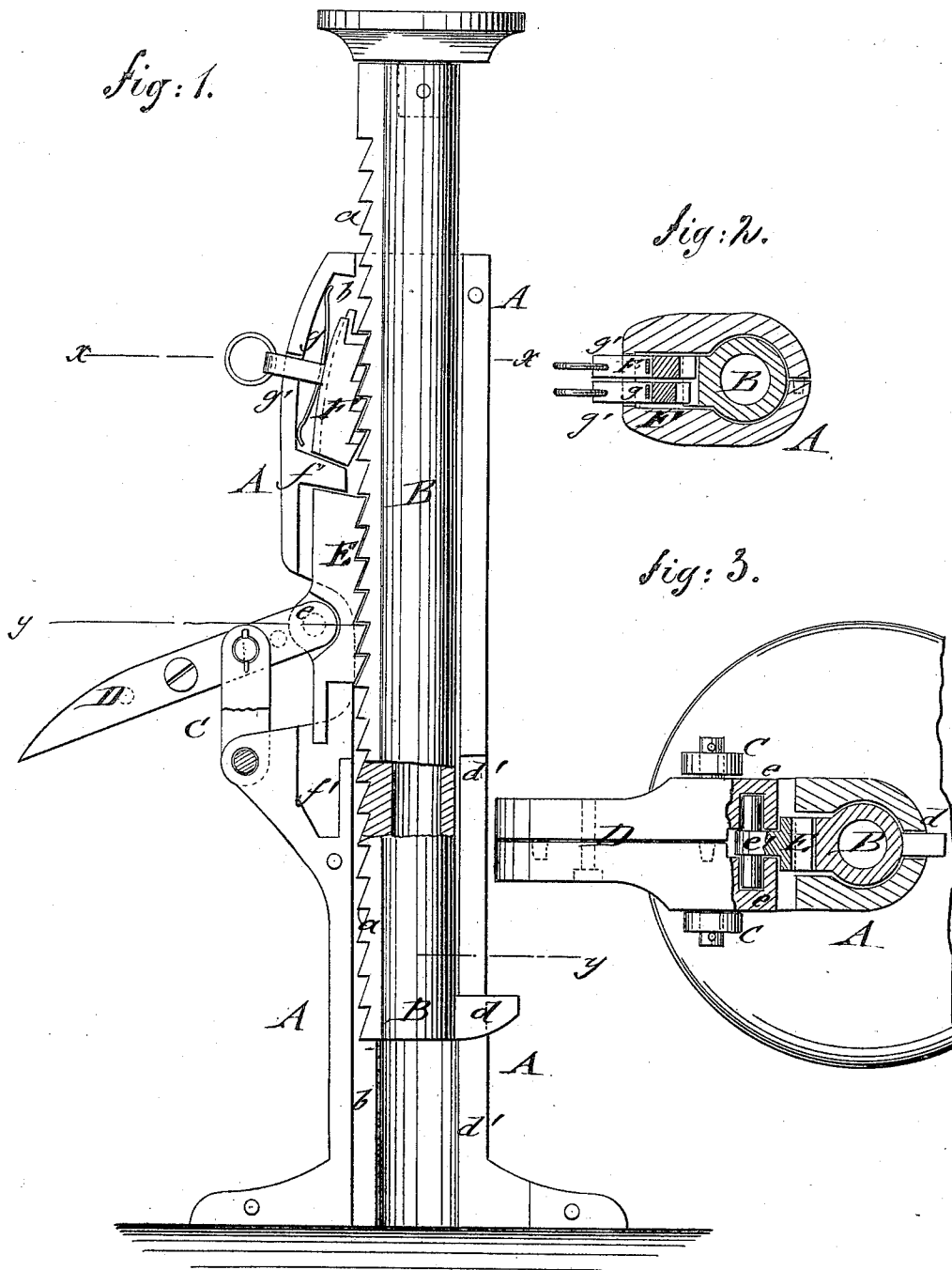


S. E. MOSHER.

LIFTING-JACK.

No. 172,471.

Patented Jan. 18, 1876.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL E. MOSHER, OF CHILLICOTHE, OHIO.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. 172,471, dated January 18, 1876; application filed December 18, 1875.

To all whom it may concern:

Be it known that I, SAMUEL EARL MOSHER, of Chillicothe, in the county of Ross and State of Ohio, have invented a new and Improved Lifting-Jack, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical central section of my improved lifting-jack, and Figs. 2 and 3 are horizontal sections of the same, respectively, on the line *x x* and *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved lifting-jack, which may be made entirely of cast-iron, and adjusted to any suitable height to support the weight to be lifted in perfectly safe and reliable manner.

The invention consists of a hollow standard that guides a tubular and toothed lifting-bar, into which the toothed and lever-acted block enters that raises the lifting-bar to support the same on differential toothed spring-pawls at any height. The actuating-lever is made of two sections, fulcrumed to oscillating pieces of the main standard and pivoted to the lifting-block.

In the drawing, A represents the hollow supporting standard or frame, which is preferably made in one casting or of two symmetrical sections of cast-iron that are suitably connected to guide the interior sliding lifting-bar B. The lifting-bar B is also made hollow, which admits of being made lighter and stronger than in any other way. The lifting-bar B is guided by a projecting toothed rib or flange in a longitudinal groove, *b*, of the standard, its extreme height being determined by a projection, *d*, at the bottom, running in a slot, *d'*, of the standard. The standard A is cast with projecting seats for the pivot-pin of the oscillating pieces C, to whose upper ends the actuating-lever D is fulcrumed. The lever D is made of two sections, which are connected by projecting pins and grooves and rigidly locked together by screw-bolts, rivets, or bands being applied at the inner end by socket *e* to pivot *e'*, cast to project at right angles from the sides of the toothed lifting-block E. The oscillating pieces admit the

ready entrance of the block E into the teeth of the lifting-bar B for raising the same or the withdrawal of the same when it is desired to lower the lifting-bar. The lifting-block E has just sufficient play in the surrounding casing of the standard that its teeth may clear the teeth of the hollow bar B. For this purpose the casing of the standard A is provided above the lifting-block E with an inclined plate, *f*, up to which the block E may be raised, while its downward motion is defined by a recess and shoulder in the lower part of standard A. The toothed pawls F are placed sidewise on the inclined plate *f*, in the upper part of the standard, and forced by separate springs *g* into the teeth of the lifting-bar A until released by being withdrawn on taking hold of a handle, *g'*, of the same, that projects through a slot of the standard. The teeth of the pawls F are arranged in such a manner to each other that those of one pawl are intermediately between the teeth of the other, and divide the distance from one tooth to the other, allowing thus the more exact adjustment of the jack to different heights. The intermediate teeth support the lifting-bar and prevent the going back or slipping of the same for the length of a full tooth, as the pawls work alternately in differential manner.

The pushing up of the bar by the lifting-block by means of the oscillating pieces, and the instant support of the bar by either one of the pawls, produces an effective and quickly operated jack, which may be manufactured in light and cheap manner, as all the parts may be cast, and the cutting of teeth, drilling, and other expensive work, be avoided.

In place of oscillating pieces the lever may also be placed by side pivots on inclined extension-bearings of the frame or standard, which prevent the lever from slipping out of the frame while giving, in connection with the toothed block hinged to the end, the same play as the oscillating pieces. The escape of the lever-pivots from the inclined bearings is prevented by the block that allows them only to pass up along the same to a certain distance. The bearing may be extended to the top of the standard, and serve then as strengthening-braces to the same.

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

1. In a lifting-jack, the toothed lifting-block pivoted to sockets of a double lever, swinging on an oscillating fulcrum to engage and clear readily the teeth of the lifting-bar as required, substantially for the purpose described.

2. In a lifting-jack, the combination of toothed and spring-acted differential pawls with the lifting-bar to retain the same at any point, substantially as specified.

3. The standard or casing A of the jack, being provided with an inclined plate, *f*, for the purpose of readily sliding the pawls toward the toothed lifting-bar, substantially as set forth.

SAMUEL EARL MOSHER.

Witnesses:

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F. M. DEWEESE.