(No Model.)

J. M. SMITH.

LIFTING JACK.

No. 393,930. Patented Dec. 4, 1888.

Fig. 5.

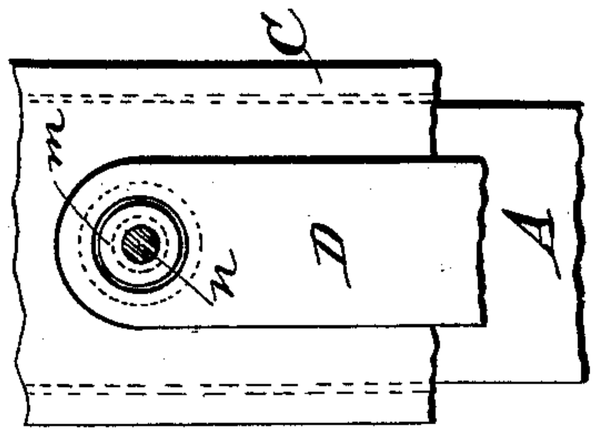


Fig. 2.

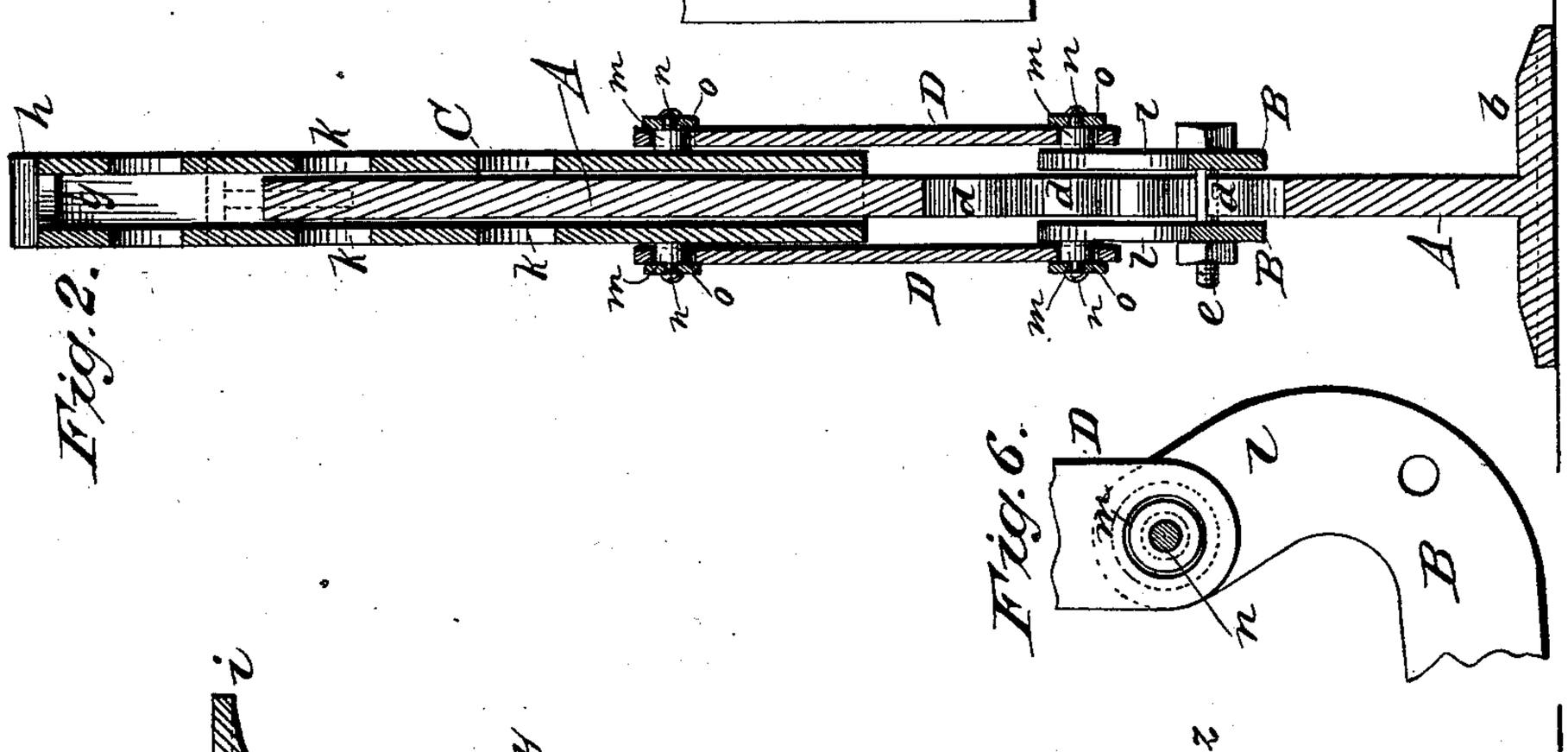


Fig. 6.

Fig. 1.

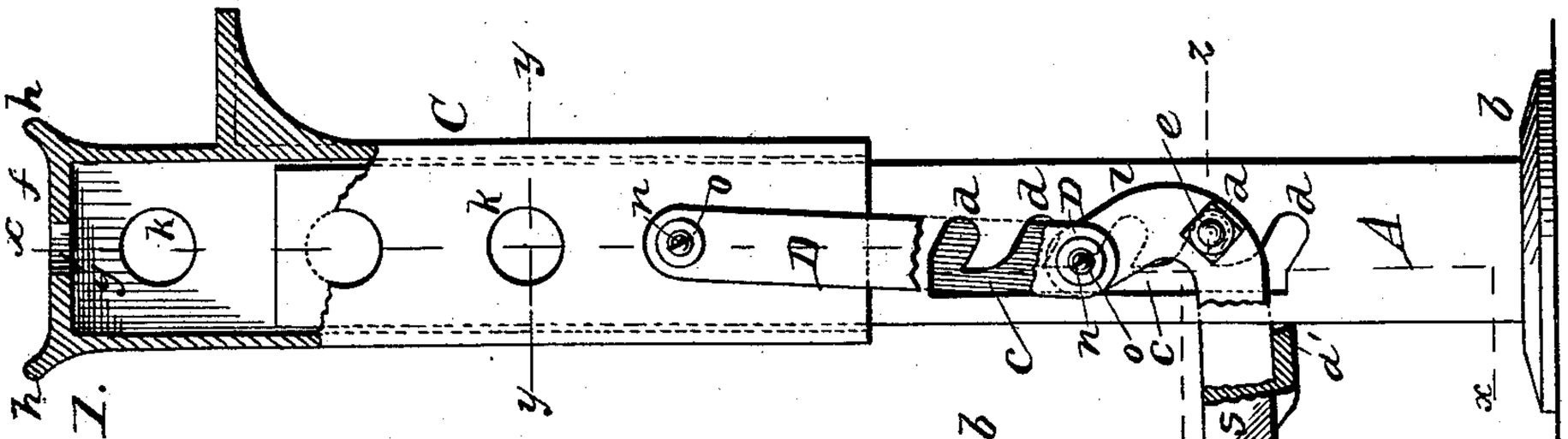


Fig. 3.

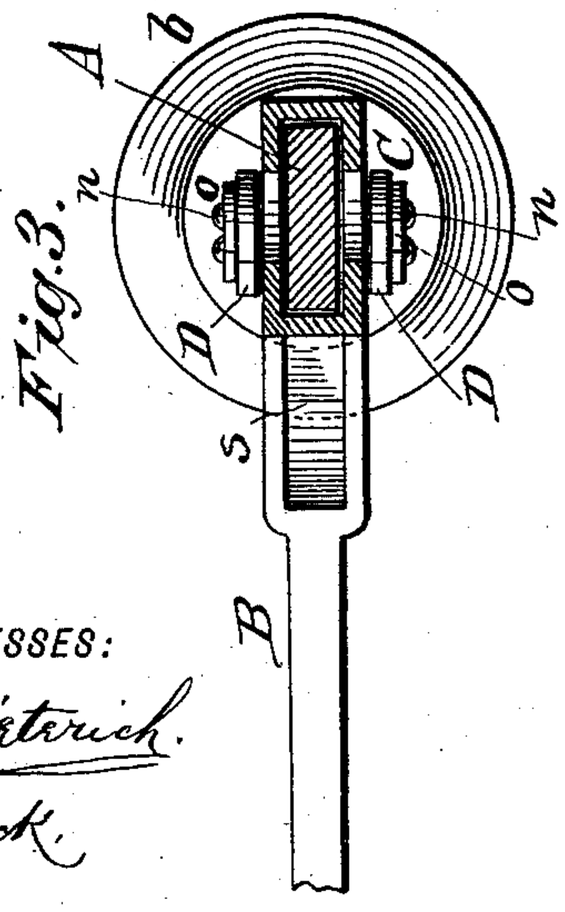
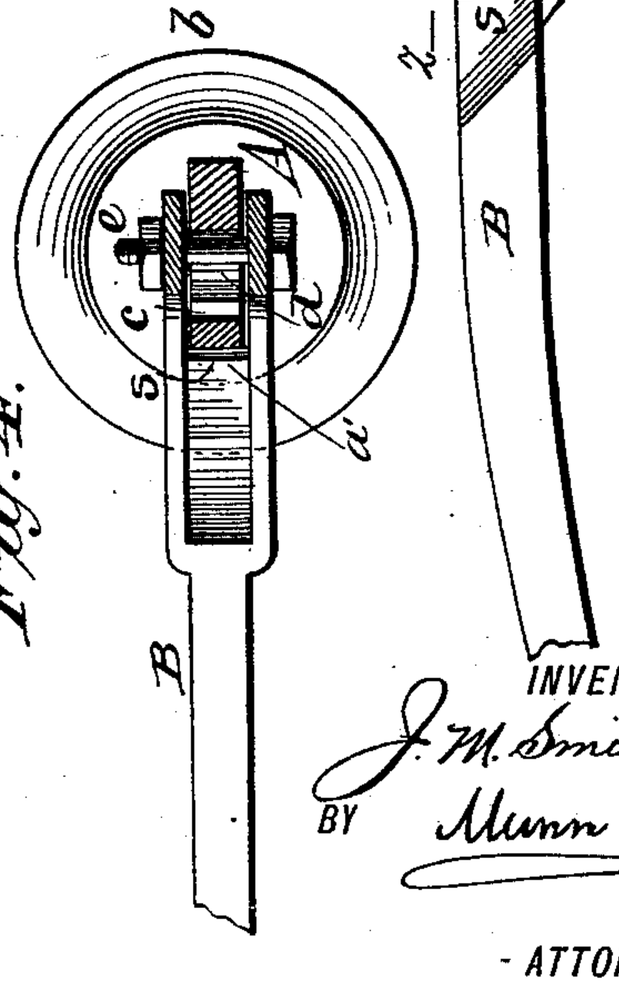


Fig. 4.



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J. MERRITT SMITH, OF GREENWICH, CONNECTICUT.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 393,930, dated December 4, 1888.

Application filed May 15, 1888. Serial No. 273,962. (No model.)

To all whom it may concern:

Be it known that I, J. MERRITT SMITH, of Greenwich, in the county of Fairfield and State of Connecticut, have invented a new and Improved Lifting-Jack, of which the following is a full, clear, and exact description.

This invention relates more particularly to lifting-jacks for carriages; but the purpose for which the jack is to be used is immaterial so far as the invention is concerned.

The object of the invention is to produce a lifting-jack which shall be cheap, efficient, and durable: and the invention consists in certain novel constructions and combinations of parts, substantially as hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a partly-sectional and broken side elevation of a lifting-jack embodying my invention; Fig. 2, a vertical section of the same upon the line *x x* in Fig. 1. Fig. 3 is a transverse section upon the line *y y* in Fig. 1, and Fig. 4 a like section upon the line *z z* in Fig. 1. Figs. 5 and 6 are detail views of certain parts hereinafter referred to.

A is a vertical stationary post or standard having a base or foot piece, *b*. This standard, which is in the form of a solid flat bar, has a lateral vertical slot, *c*, through it, having at its one edge a series of downwardly-inclining branch slots or pockets, *d*, the lower walls of which form rests or fulcrum-supports for the fulcrum pin or bolt *e* of the operating-lever B.

C is a hollow bar or case constituting the lifting-upright of the jack, and which is constructed to inclose and slide up and down the post A, that operates as a guide and lateral support to said lifting-case C. The top of this sliding case C is provided with a platen-head, *f*, which may, if desired, be provided with a central aperture, *g*, end lips or horns, *h h*, and an extension or additional horn, *i*, below the head *f*, to adapt the jack to carriage use. To lighten the construction of the case C it may have its sides perforated, as at *k*.

The curved operating-lever arm B, which may be adjusted by means of the vertical slot *c* to place its fulcrum-pin *e* in any one of the notches or branch slots *d*, according to the height the lifting-case C is required to start from, is connected at its curved inner upper end, *l*, with the sliding lifting-case C by means of opposite side links, D D, which are fitted at their upper and lower ends over bosses *m m* on the sides of the case C and operating-lever B, respectively, and are secured by screws *n* and washers *o*, or otherwise. The pivoted connection of these links D D with the curved inner upper end, *l*, of the operating-lever B is above or so situated in relation with the fulcrum-pin *e* when in any one of the fulcrum-supports *d* that on working the lever B down it raises the hollow case C to give the necessary lift.

By the fulcrum supports or rests *d* being in the single stationary post or standard A a firm central support is obtained for the fulcrum-pin *e*, not subject to twist of said pin out of line or requiring that nicety of adjustment to keep it in line as when the fulcrum-supports for the pin are divided and on opposite sides or outside of the lifting-bar, as is the case when the lifting-bar is within the stationary post or standard. The lifting bar or case C, too, is centrally guided in its up-and-down movement.

The operating-lever B is slotted on its inner end, as at *s*, to receive within or through it the post A, and so that the side links, D D, will be free to work on opposite sides of the post A, and said lever is provided at the lower back end of said slot *s* with a stop, *a'*, arranged so that when the lever is fully down or its main portion is in an approximately-horizontal position, as shown in Fig. 1, the links D D will be in an approximately-vertical position, or, in other words, a straight line drawn through the upper and lower bosses or pivots of the links will, if extended, also pass through the axial line of the fulcrum-pin *e*, or nearly so, and the stop *a'* then resting against the edge of the post A will secure such relative positions of the link-pivots and fulcrum-pins in approximate alignment with each other when the lever B is fully down. This causes the line of resistance, when the lifting bar or case C is fully raised, to be directly over, or it may be a trifle on the inside to prevent shifting of the fulcrum-pin

e, which makes the jack automatically lock itself when raised, and prevents the load from deflecting the links D D outward and lowering the lifting-case C and raising the lever B. This forms a very simple and efficient means of automatically securing the jack in its raised position.

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

1. In a lifting-jack, the combination of the post or standard A, having a longitudinal slot, *c*, and branch slots *d* in communication with the longitudinal slot at its one edge and forming a series of fulcrum rests or supports one above the other, the hollow outer lifting bar or case, C, inclosing said standard, a lever provided with a fulcrum pin or attachment adapted to fit and rest within either of the branch slots *d* and in approximate central relation beneath the lifting-case, and the side links, D, connecting said lever with the case C, substantially as specified.

2. The combination, with the hollow lifting-case C and the central post or standard, A, provided with one or more fulcrum rests or supports, of the lever B, provided with a stop arranged when said lever completes its downward stroke to bear against the post or standard, and the side links, D, connecting the lifting-case with said lever above the fulcrum of the latter and in alignment or thereabout with the axial center of the fulcrum when the lever is fully depressed, essentially as and for the purpose herein set forth.

3. The combination of the central post or standard, A, having a longitudinal slot, *c*, and branch slots or pockets *d*, forming variable fulcrum rests or supports, the hollow lifting-bar or outer case, C, the slotted lever B, provided with a stop, *a'*, fulcrum-pin *e*, and upper arm or portion, *l*, and the side links, D, in pivoted connection with the lifting-case and with the arm or portion *l* of the operating-lever, and with their pivots in approximate alignment with the fulcrum of the lever when the latter completes its downstroke and is arrested by its stop, substantially as shown and described.

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