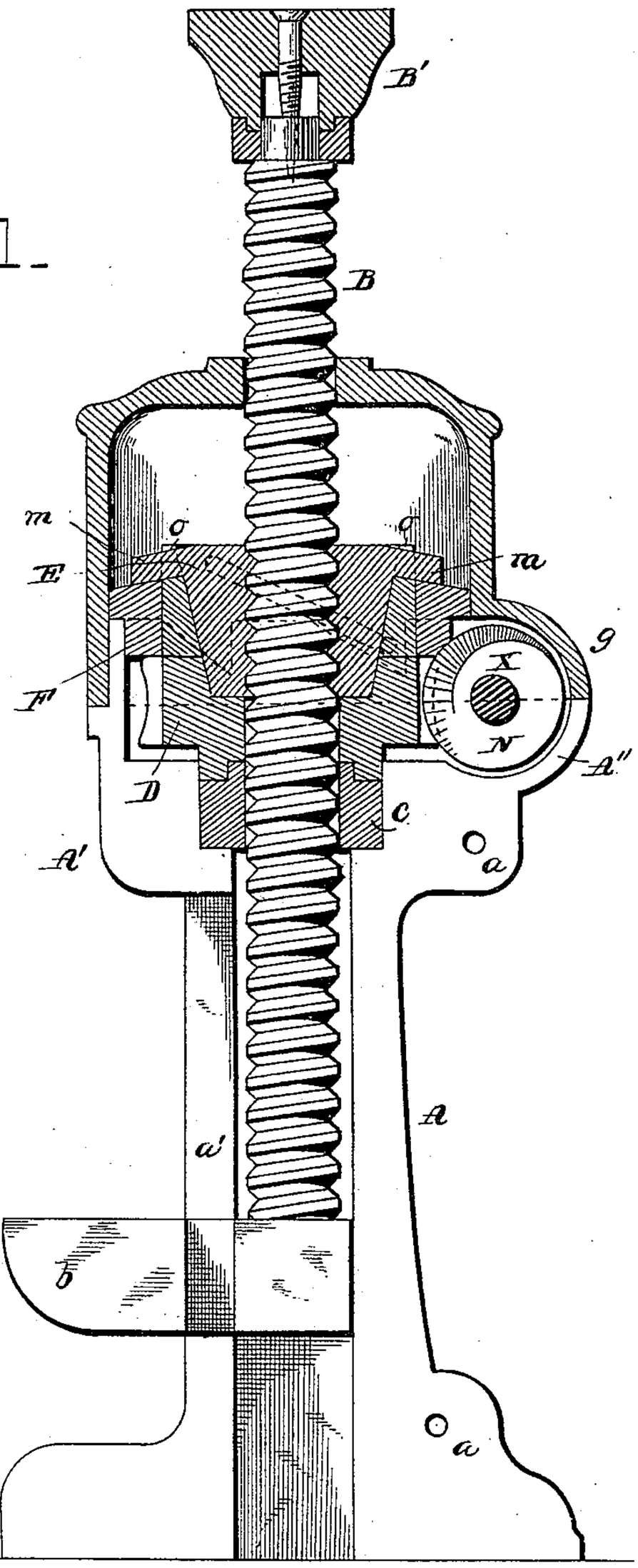
(No Model.) 2 Sheets—Sheet 1.

T. MAXON.

LIFTING JACK.

No. 298,306. Patented May 6, 1884.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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LIFTING JACK.

No. 298,306. Patented May 6, 1884.

Fig. 2.

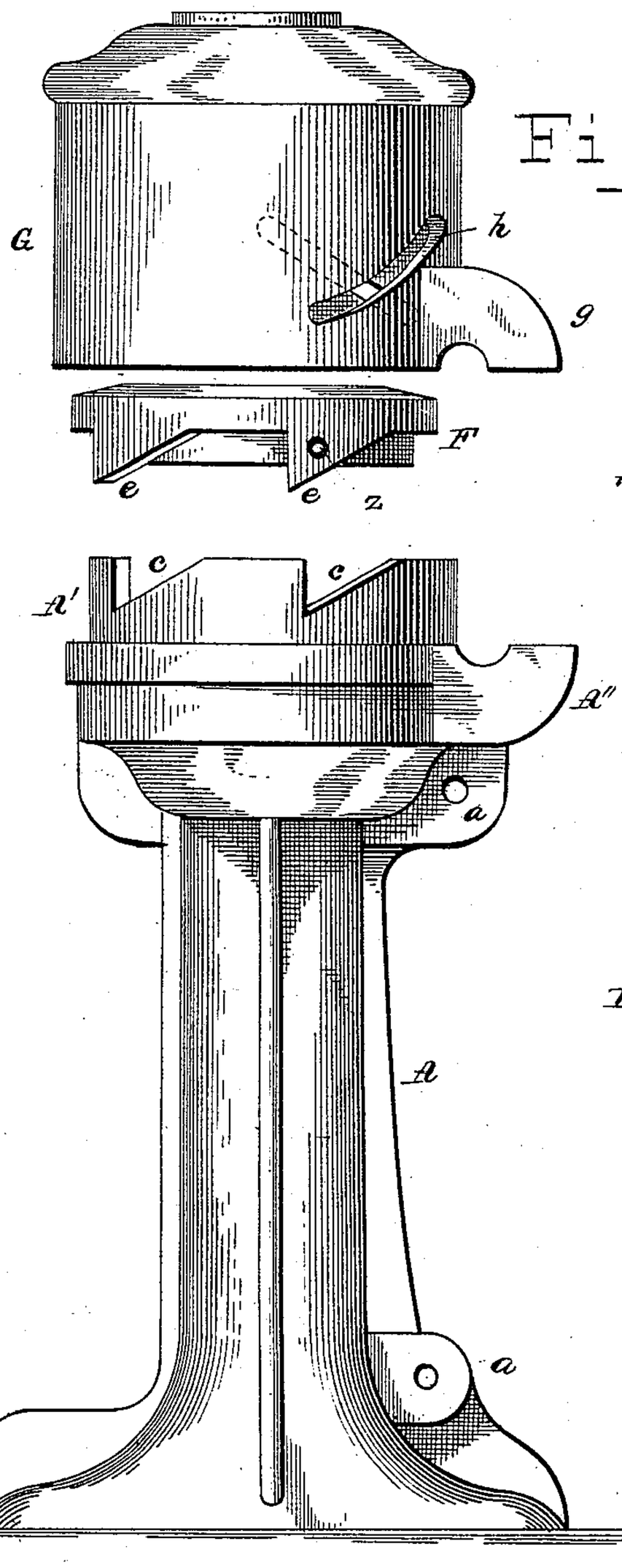


Fig. 3.

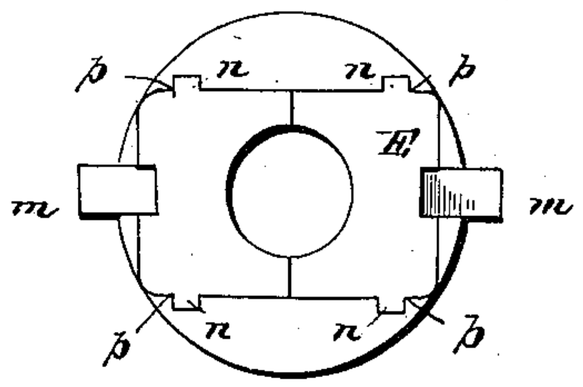
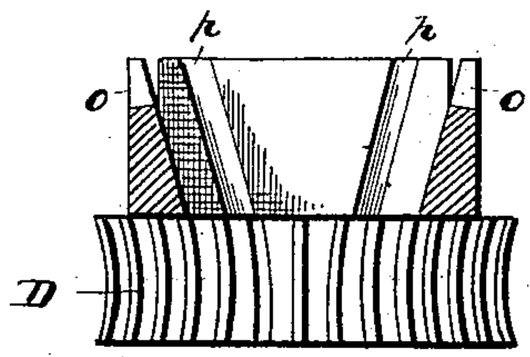


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS MAXON, OF DAYTON, OHIO, ASSIGNOR OF ONE-HALF TO JAMES W. CARPENTER, OF SAME PLACE.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 298,306, dated May 6, 1884.

Application filed February 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MAXON, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to lifting-jacks; and its object is to provide a jack adapted to lifting heavy weights, and which require to be lifted very slowly and with a steady movement, which I accomplish by means of a screw driven by worm-gearing. The connection of the two and the parts and the auxiliary parts will be hereinafter more fully described.

In the accompanying drawings, making part of this specification, Figure 1 represents a vertical section; Fig. 2, a side view of several parts detached in position to be closed together. Fig. 3 is a plan view of the divided nut-box, and Fig. 4 the gear-wheel and connection partly in section.

In the figures, A represents the frame of the jack. This frame is constructed in two parts and bolted together, as seen at *a a*. An opening is left between the two parts, and in this opening the screw B is allowed to play freely. The lower portion of the frame is formed into a suitable base, and the upper into a cylindrical case, A′, which is intended to contain a portion of the working mechanism of the jack. In the edge of this case are cut openings *c c*, one side of which inclines at an angle of about forty degrees, the other side being vertical. On one side of the case is formed a projection, A″, in which is formed one half of a journal-box, the purpose of which will be hereinafter described. In one side of the frame A is a slot or opening, *a′*, which extends from the bottom of case A′ to the bottom of the base.

B represents the lifting-screw. This screw is provided with a suitable crown-piece, B′, which has on its under side an opening surrounded by a tongue. This tongue fits in an annular groove in a circular piece rigidly secured to the head of the screw. This arrangement is for the purpose of receiving lubricating material, and, with a foot-piece, *b*, when the screw is raised or lowered, the foot-piece *b* plays in the slot *a′* in the side of the frame.

C represents a collar which surrounds the screw B, and which rests upon an annular seat in the case A′. This collar has an annular groove on its upper surface.

D represents a gear-wheel, through which the screw passes, and which is provided on its under side with a tongue, which rests in the groove upon the collar C. Upon the upper side of this wheel is either formed or secured a cylindrical box the cavity of which has two parallel sides and two beveled or converging sides. In the top of the two converging sides are formed recesses or openings *o o*. (Seen in Fig. 4.) In the two parallel sides are four grooves, *p*, which converge at the same angle with that of the converging sides.

E represents a divided block, which is provided with threads to correspond with those upon the screw B. This block enters the cavity of the box D, and its sides are made to correspond with the sides of the interior or cavity of said box. The block is provided with lugs or projections *m m*, which fit in the recesses *o o* of the box, and also with ribs *n n*, which fit in grooves *p p*, as shown in Fig. 4. The two parts of the block may rise and fall in the cavity and clamp or release the screw, as the nature of the case may require.

F represents a collar which surrounds the box D above the gear-wheel. The lugs *n n* project sufficiently far to rest upon the upper side of this collar. Upon the under side of the collar F are formed inclined downwardly-projecting teeth *e e*, in shape to correspond with the openings *c c* in the case A′. When the collar F is partially rotated, one incline riding upon the other lifts the collar from its seat, and it consequently lifts the block E, so that the threads within it will be disengaged from those of the screw B. A dome, G, covers the working parts above described, its bottom resting upon a flange on the case.

g represents a projection on one side of it with half a journal-box in it to correspond with that in the projection A″ on the case. A shaft, *x*, works in the journal-box thus formed, and this shaft carries a worm the threads of which engage the teeth of the gear-wheel D, and when the shaft is revolved impart motion to it.

h represents an inclined slot in the dome G. A pin passes through this slot and enters an opening, *z*, in the collar F.

When the jack is working, the pin rests in the bottom of the slot. When it is desired to raise the block E, so as to free it from connection with the screw B, the pin is moved so that it slides up the incline slot. This causes the collar to rise on the inclines of openings *c c* and lift the block from its connection with the screw. The screw, being thus freed, may be raised at once, so that its top or foot may be adjusted under the object to be raised. By moving the pin to the bottom of the slot again the collar is lowered, and so are the parts of the block to again embrace the screw. Now, by turning the shaft *x* the worm causes the wheel D to revolve, and of course the block E within it. This causes the screw to rise or fall with an easy movement, and very slowly to adapt it to the lifting of heavy objects. Low weights may be caught upon the foot-piece *b*, while higher ones are taken upon the crown-piece B′.

Having thus fully described my invention, what I claim is—

1. The frame A, divided as specified, and provided at its upper end with the case A′, having inclined openings *c c* in its edge, and adapted to contain the working mechanism of the jack, substantially as herein specified.

2. The box D, formed internally with two parallel sides and two beveled sides, and having sloping grooves on the parallel sides, and the bottom having a circular opening for the jack-screw, and provided externally with a gear-wheel, in combination with the case A and worm-wheel N, substantially as and for the purpose set forth.

3. The block E in two threaded parts, in combination with the screw B, the box D, and the collar F, constructed substantially as set forth.

4. The dome G, with its inclined slots, in combination with the collar F, and the divided screw-block E, and a pin for operating the collar, substantially as and for the purpose set forth.

5. The combination of the case A′, box D, as constructed, the divided block E, the screw B, and the worm-wheel N, the several parts being constructed substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS MAXON.

Witnesses:
WEBSTER W. SHUEY,
GEORGE P. HUFFMAN.