

(No Model.)

4 Sheets—Sheet 1.

J. B. DUBLER, Sr.

LIFTING JACK.

No. 356,193.

Patented Jan. 18, 1887.

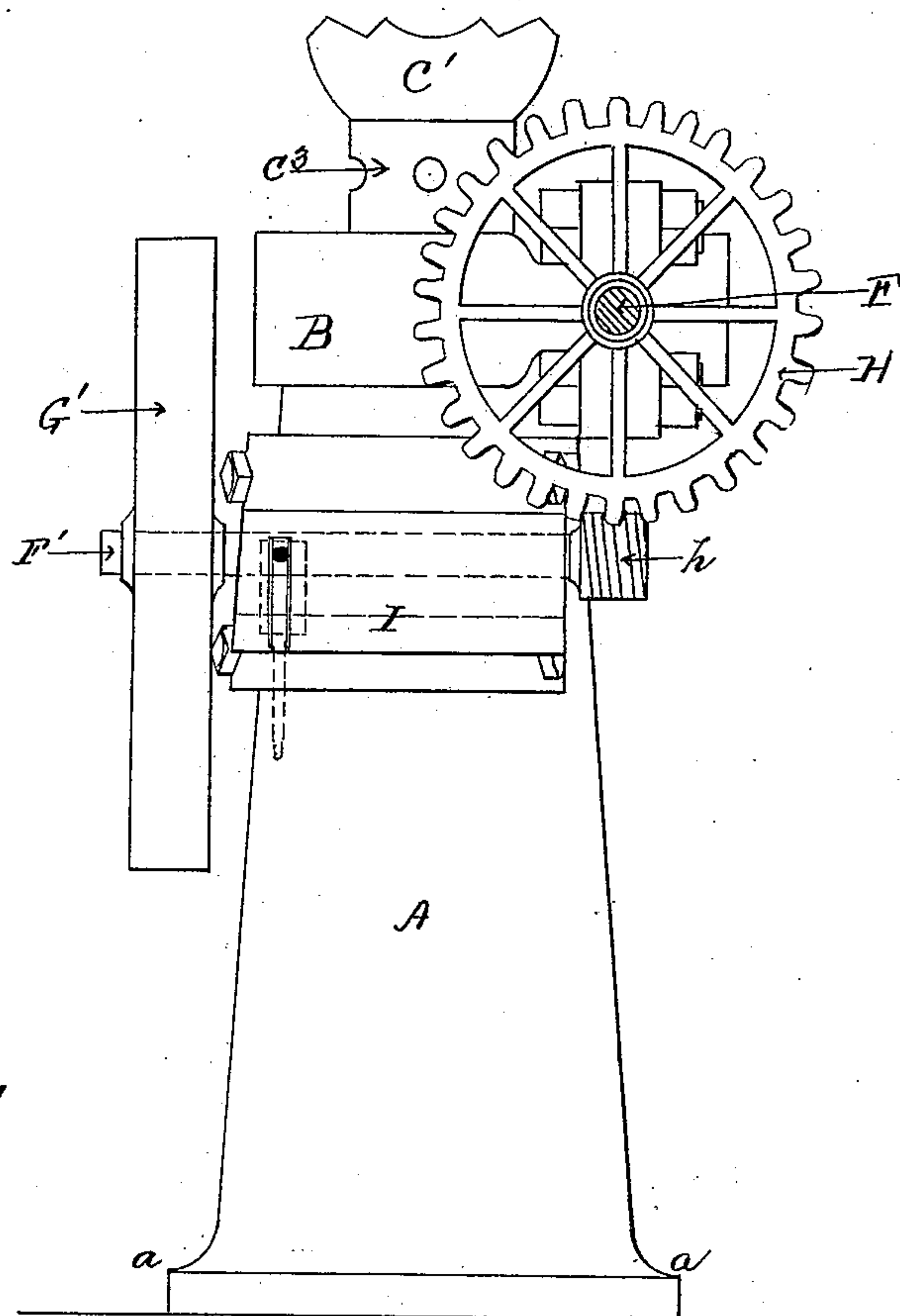


Fig. 1

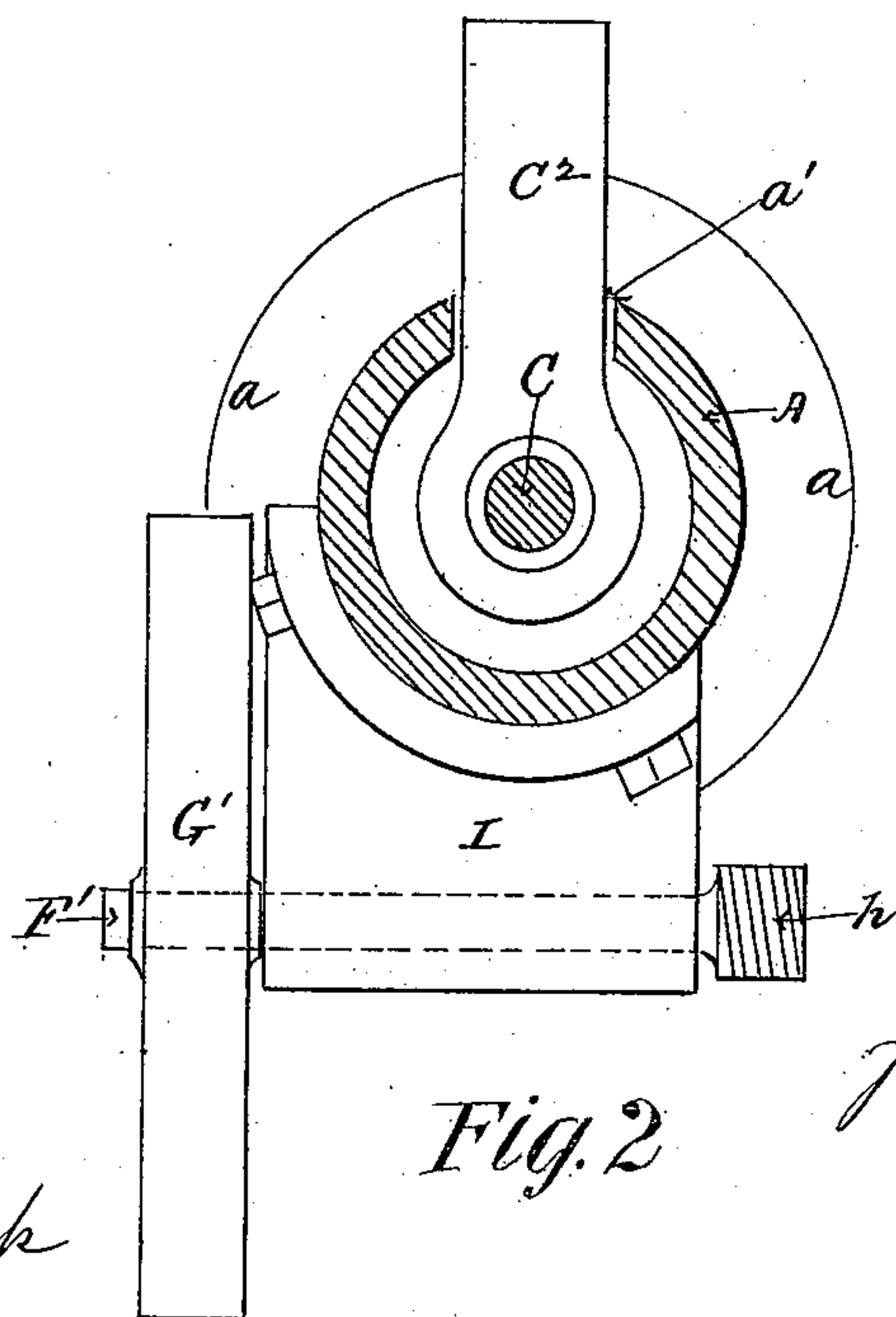


Fig. 2

WITNESSES:

W. F. Palmer
Florence E. Kopp

INVENTOR

John B. Dubler Sr.
by his attorney
Thos. D. Mowbray

(No Model.)

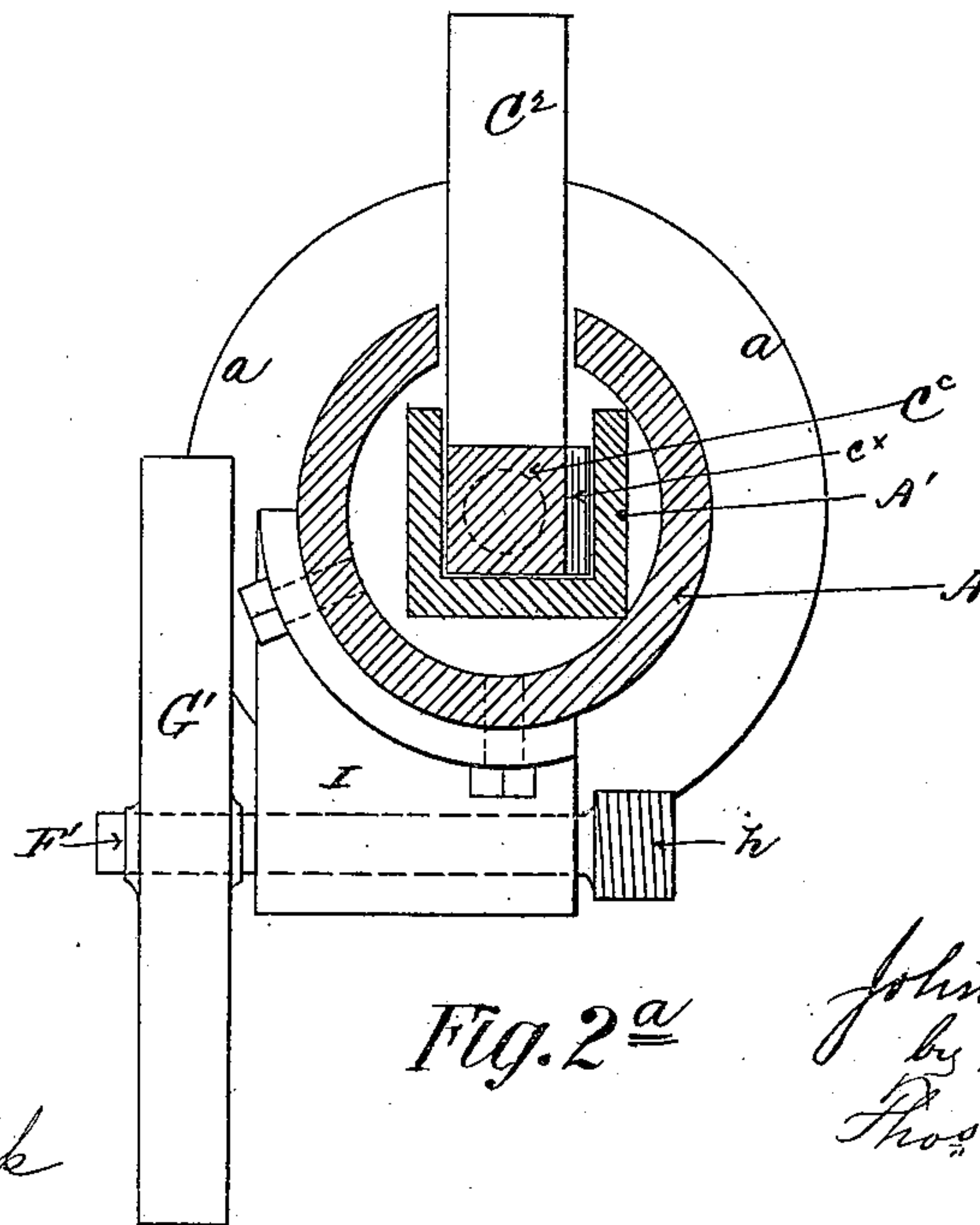
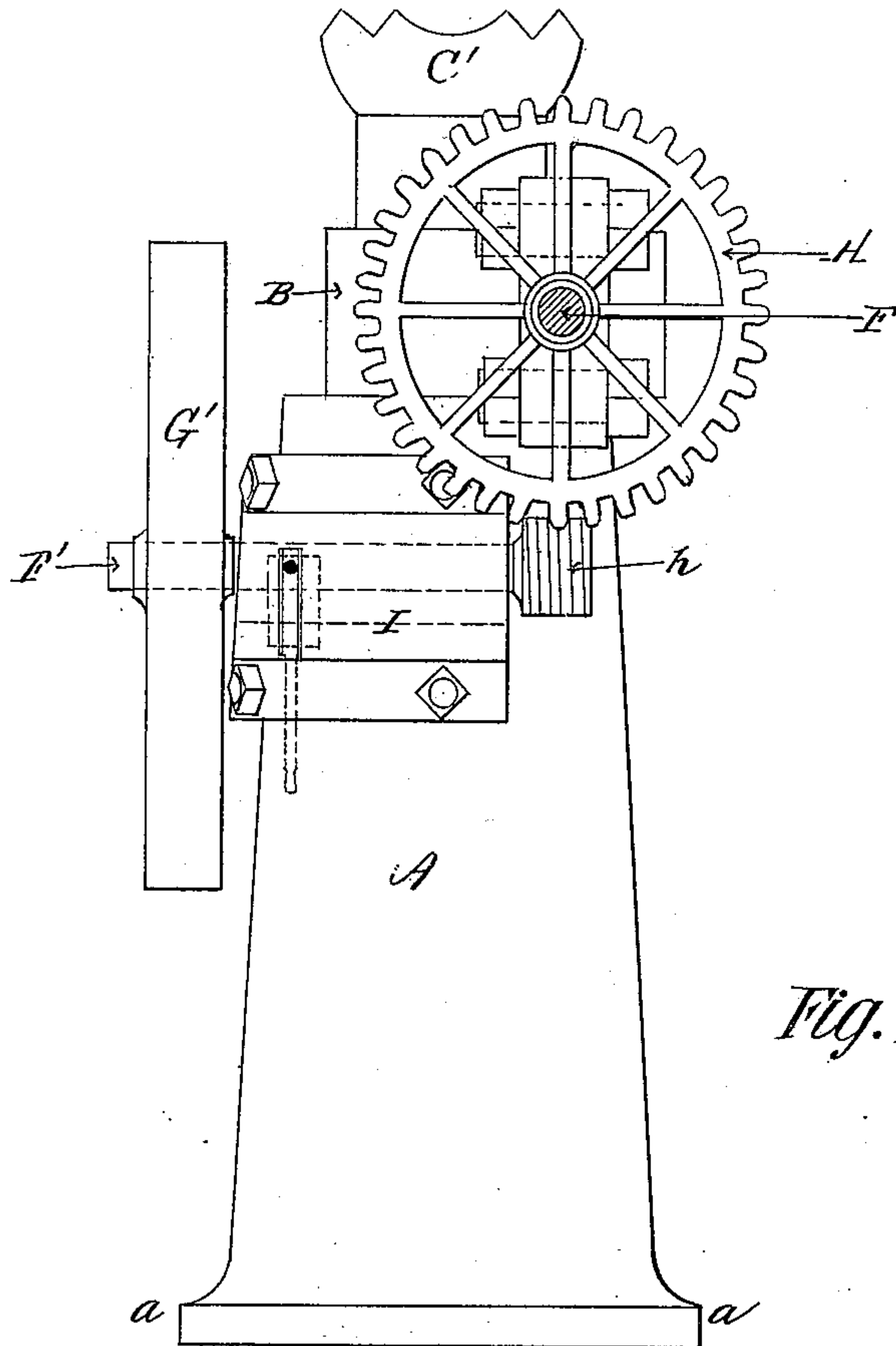
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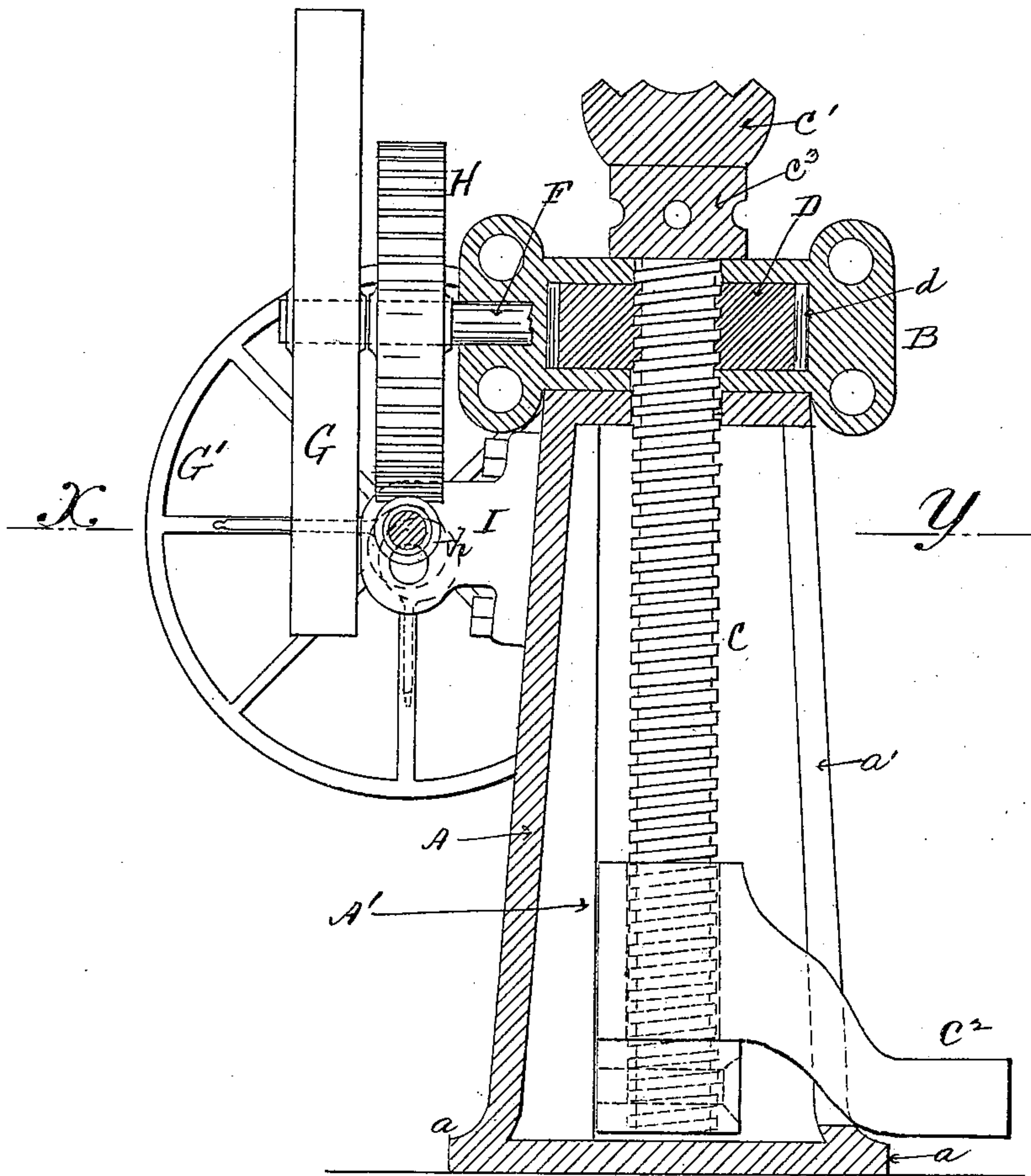


Fig. 3

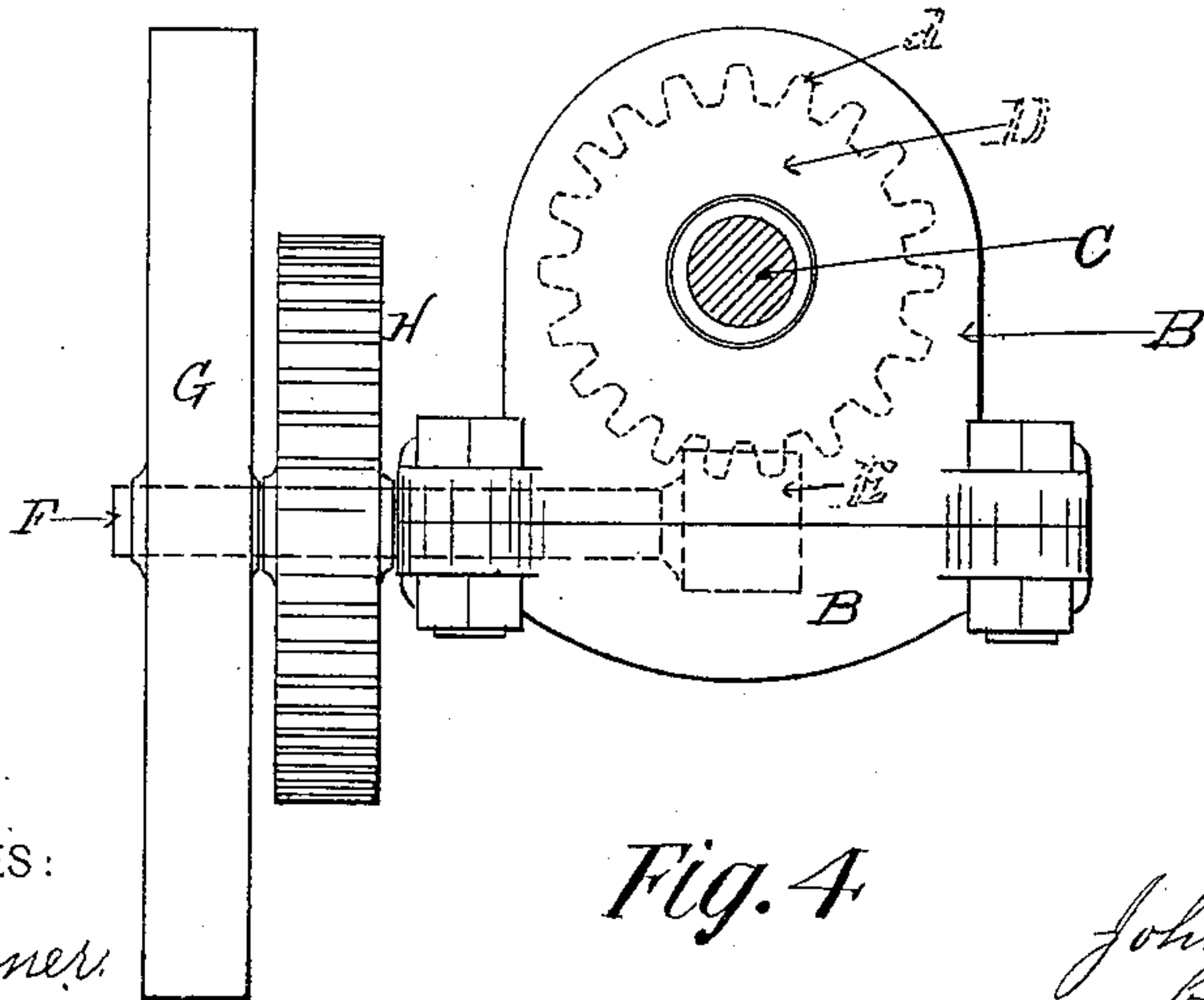


Fig. 4

WITNESSES:

W. F. Palmer.

Florence E. Kopp

INVENTOR

John B. Dubler, Sr.
by his attorney
Thos. D. Mowldy

(No Model.)

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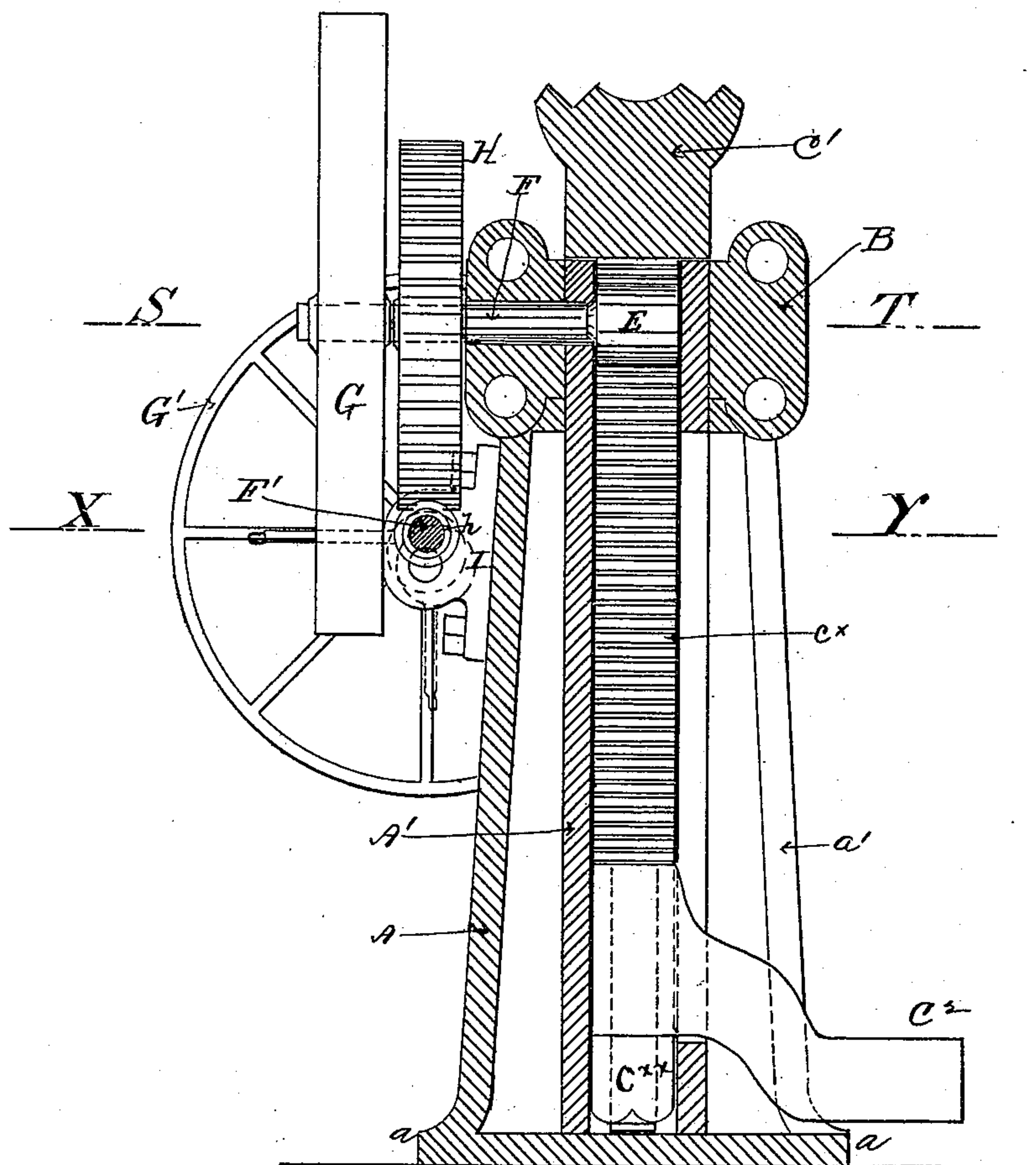


Fig. 3^a

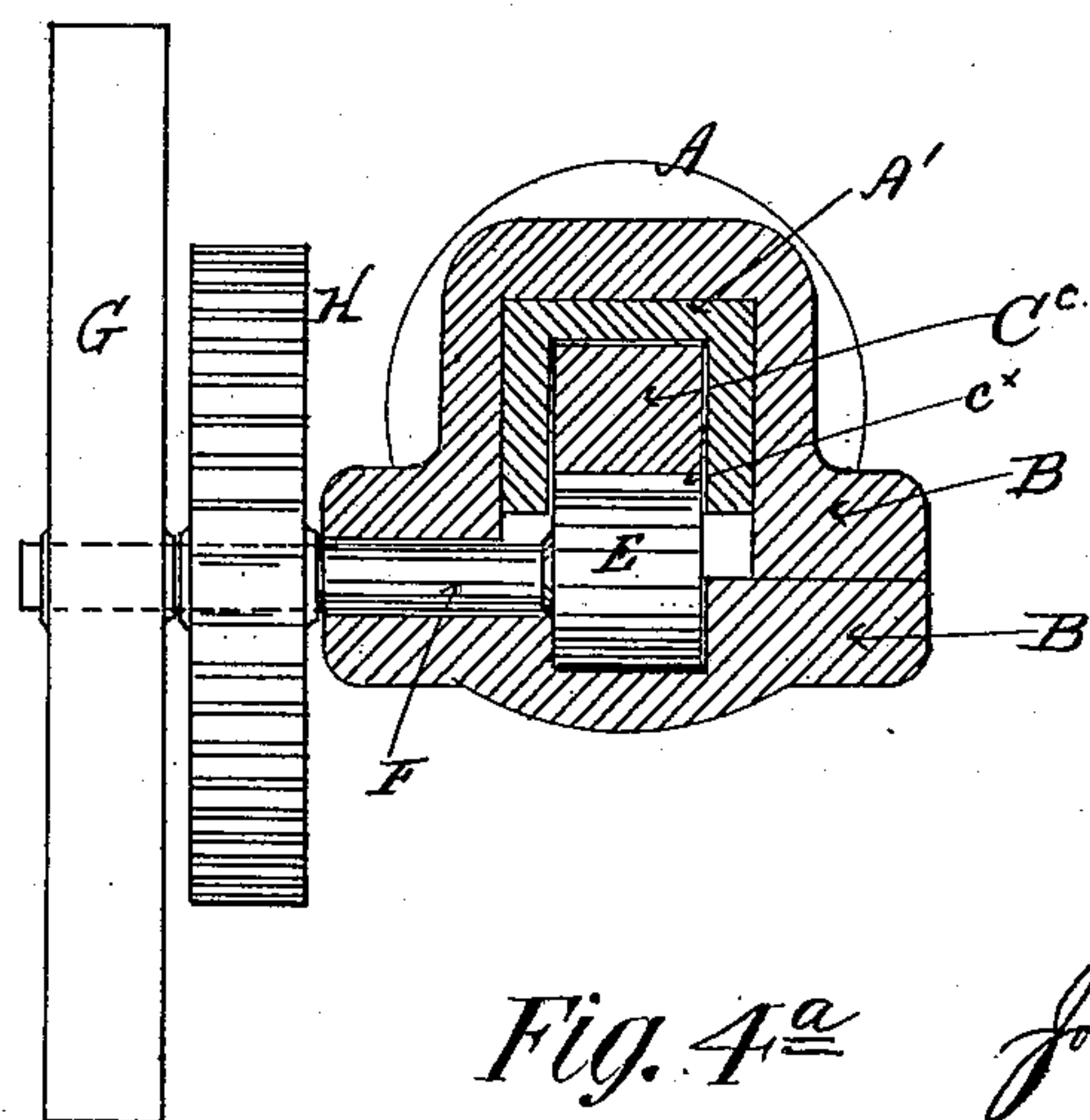


Fig. 4^a

WITNESSES:

W. F. Palmer

Florence E. Kopp

INVENTOR

John B. Dubler Sr.
by his attorney
Thos. A. Moulds

UNITED STATES PATENT OFFICE.

JOHN B. DUBLER, SR., OF PHILADELPHIA, PENNSYLVANIA.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 356,193, dated January 18, 1887.

Application filed July 23, 1886. Serial No. 208,847. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. DUBLER, Sr., a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, 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 appertains to make and use the same.

My invention relates to lifting-jacks for raising heavy weights, and has for its object the provision of a device of this character which shall possess great strength and power combined with the utmost simplicity of construction.

I provide a movable standard working in a suitable box or housing, and bearing at the top a head or rest for the reception of the weight to be raised, and also equipped at or near its lower end with a foot, which projects through a vertical slot in the housing, for receiving upon it and elevating a weight or body which may lie low down.

The standard may be either in the form of a screw with a worm to operate it, or in the form of a bar with a rack on one side and a pinion to operate it. In the screw form provision is made for the attachment of the foot by simply providing a screw-threaded opening in the portion of the foot which surrounds the screw, while in the rack-and-pinion form the foot is secured upon the standard by a nut. The worm or pinion by which the standard is elevated is operated by a transverse shaft extending outside of the housing and provided with a fly-wheel, and preferably with a gear, into which works a worm-wheel on a shaft set at right angles to the first-named shaft, and also bearing a fly-wheel, by means of which the power is increased. This secondary shaft with its worm and fly wheel is supported in movable bearings, and may be thrown out of gear when desired. In the screw and worm form a horizontally-turning nut threaded upon the screw and provided with cogs or teeth on its periphery is set in a box at the top of the housing, and the worm works in the teeth on the nut. In both forms of standard the standard is held circularly immovable, and is movable only in a vertical direction. I may, however, pro-

vide means for setting the head in any desired position without affecting the standard.

The accompanying drawings illustrate what I consider the best means for carrying my invention into practice.

Figure 1 is an elevation showing the principal fly-wheel removed. Fig. 2 is a horizontal section on line *xy*, Fig. 3. Fig. 3 is a vertical section taken at right angles to Fig. 1. Fig. 4 is a plan view with the head removed. Fig. 1^a is an elevation of the jack with the principal fly-wheel removed, in which the rack-and-pinion form are employed. Fig. 2^a is a horizontal section on line *xy*, Fig. 3^a. Fig. 3^a is a vertical section taken at right angles to Fig. 1^a. Fig. 4^a is a horizontal section on line S T, Fig. 3^a.

Similar letters of reference indicate corresponding parts in all the figures where they occur.

A is the housing, preferably constructed of metal and tapering in form, having a broad end or base with extensions (shown at *a*) for resting upon the ground or other supporting-surface. Guides or ways A' are placed centrally in the housings, in which the standards C and C^c are moved up and down.

At the top of the housing in both forms of standard are provided boxes B, in which the standard-operating devices are held.

The standard may be made in the form of a screw, C', or in the form of a bar, C^c, with a rack upon one side, the former construction being illustrated in Figs. 1 to 4, inclusive, and the latter in Figs. 1^a to 4^a, inclusive. Both forms work upon the same general principle and perform the same functions.

The standard is provided with a head, C', which may be rigidly fixed thereto or swiveled, so that it can be turned in any horizontal position, so as to accommodate the weight to be raised by it. A foot, C², is provided upon the lower end of the standard and projects out through a vertical slot, *a'*, in the housing, upon which such weights as lie close to the ground or other supporting-surface may be raised. The foot C² is simply screwed upon the screw-form standard, and is held by a nut, c^{xx}, let over the screw-threaded base of the rack-form standard.

The screw-form standard is provided with a nut, D, resting in the box B, with cogs or

teeth on its periphery, as shown at *d*. The nut is fitted to turn smoothly in the box B, and as it is revolved the standard, which is held circularly stationary, is elevated, thereby elevating the head and any weight or body which may be upon it. The nut D is operated by a worm, E, on the end of a shaft, F, which will be more fully explained presently.

In the rack form of standard, the rack side, designated by the letter *c*^x, is equipped with a pinion, in lieu of the worm E, which pinion operates directly upon the rack. In both forms the box B is made in two parts, as shown, bolted or otherwise secured together. The box B is divided vertically, so that the removable portion can be taken off without disturbing the head or other portion of the jack. In both forms the shaft F is supported in bearings in box B, and is provided with a fly-wheel, G, on its outer end. A gear, H, is preferably provided on shaft F between the fly-wheel and the box. Into this gear-wheel works a worm, *h*, secured upon an auxiliary shaft, F', set at right angles to shaft F, and provided on the end opposite to the worm with a secondary fly-wheel, G'. This auxiliary shaft, worm, and fly-wheel serve to increase the power of the jack in the well-known manner.

The shaft F' is held in a bracket, I, secured upon the housing, and its bearings in said bracket are movable, so that it can be thrown in or out of gear, as may be desired.

A cam or any other suitable means may be employed to accomplish the shipping of this shaft. It will be readily understood, however, that this shaft and the parts mounted upon it may be dispensed with without impairing the utility of my jack. In case the auxiliary shaft is not used the gear-wheel G may also be omitted.

As shown in Figs. 1 and 3, the head C' is mounted over a neck or collar, C³, which is rigidly attached to the standard, and is provided with holes, as shown, into which a lever or pin may be inserted, for turning the standard without the aid of the gearing, if desired.

Power is applied to the main shaft F in any suitable manner by hand or otherwise.

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

1. The herein-described lifting-jack, consisting of the housing A, a vertically-separa-

ble box, B, mounted on top thereof and fitting closely upon the operating means, guides or ways A', a standard working in said guides or ways, and a shaft for operating the standard, extending out between the parts of the separable box.

2. In a lifting-jack, the combination, with the standard, and means, substantially as described, for engaging said standard to raise and lower it, of a principal shaft for operating said engaging means, and an auxiliary shaft provided with a worm-gear for engaging a gear-wheel on the principal shaft, and having means, substantially as described, for throwing it in and out of gear with said main shaft.

3. In a lifting-jack, the combination, with the standard and engaging means, substantially as described, for raising and lowering it, of a shaft on which said engaging means is mounted, a fly-wheel and a gear mounted on said shaft, and an auxiliary shaft set at right angles thereto and provided with a worm for engaging the gear, and a fly-wheel, all substantially as and for the purpose set forth.

4. In a lifting-jack, the combination, with the standard and means, substantially as described, for engaging it to produce vertical movement, of a shaft on which said engaging means is mounted, said shaft being provided with a gear and a fly wheel, and an auxiliary shaft having a worm and a fly wheel mounted on it, said shaft being provided with movable bearings, by means of which the worm can be caused to engage or disengage the gear on the main shaft, as set forth.

5. In a lifting-jack, the combination, with the housing A, having the bracket I and box B, of a standard, engaging means, substantially as described, for raising and lowering said standard, a shaft on which said engaging means is mounted, said shaft having a gear-wheel and a fly-wheel upon it, and a supplemental shaft mounted in bracket I at right angles to the first-named shaft, and provided with a worm, *h*, for engaging the gear-wheel, as set forth.

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

JOHN B. DUBLER, SR.

Witnesses:

THOMAS D. MOWLDS,
CHAS. H. WHITE.