

(No Model.)

2 Sheets—Sheet 1.

A. FITTS.
ELEVATOR.

No. 365,806.

Patented July 5, 1887.

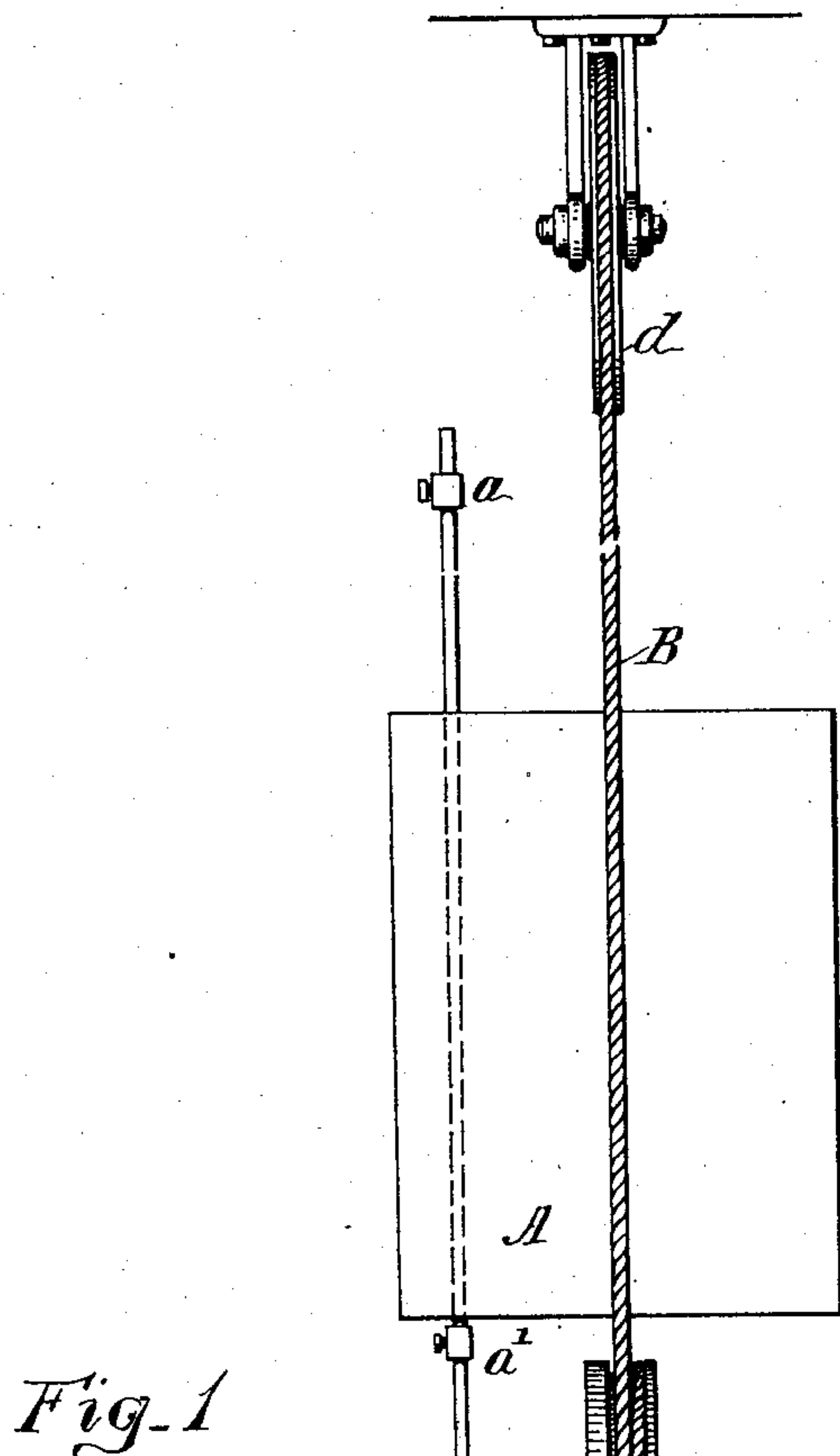


Fig-1

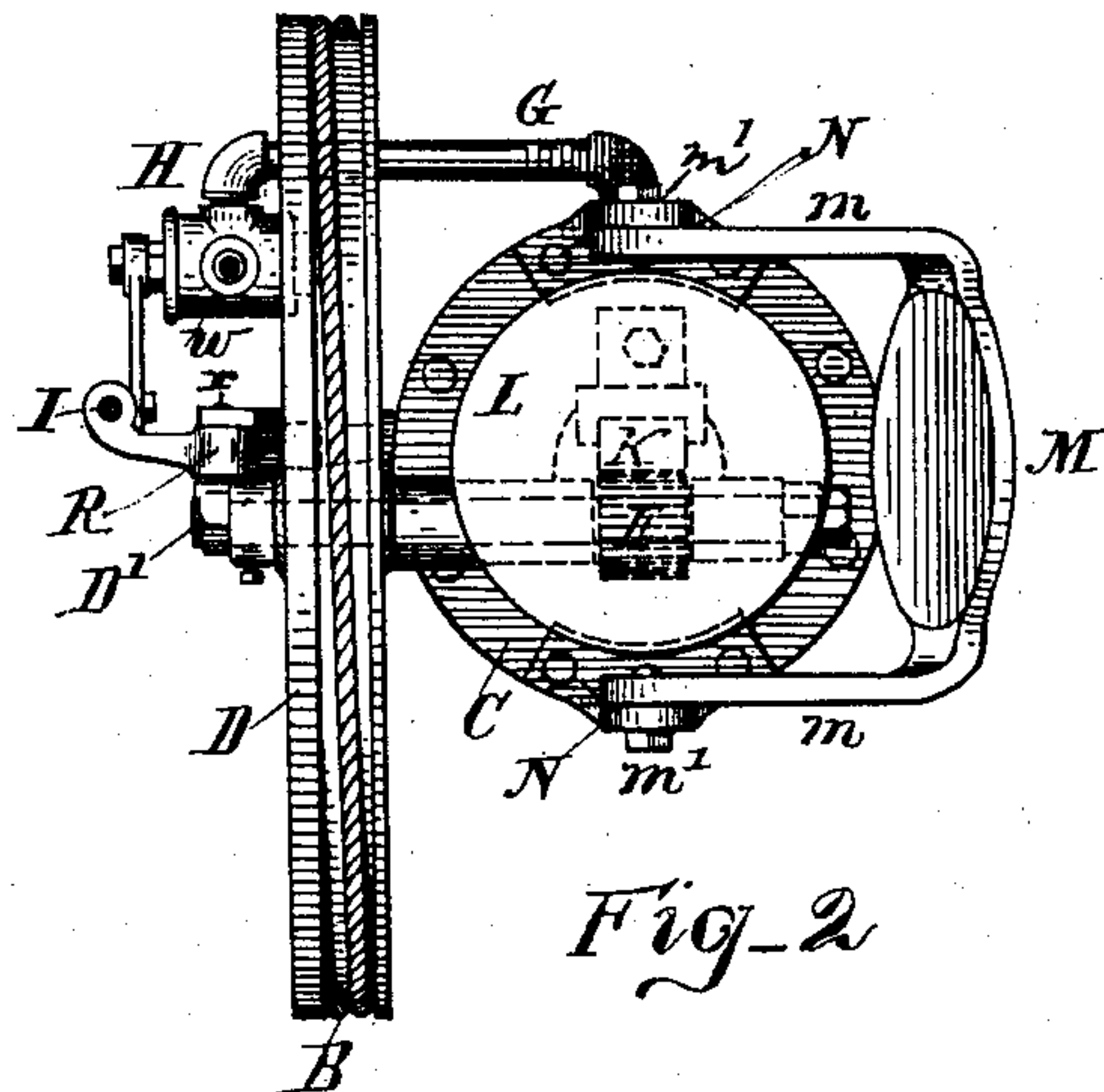


Fig-2

Witnesses:

Ella P. Blinn
Frank L. Wheeler.

Inventor:

Abraham Fitts.
By Chas. H. Burleigh,
Attorney.

(No Model.)

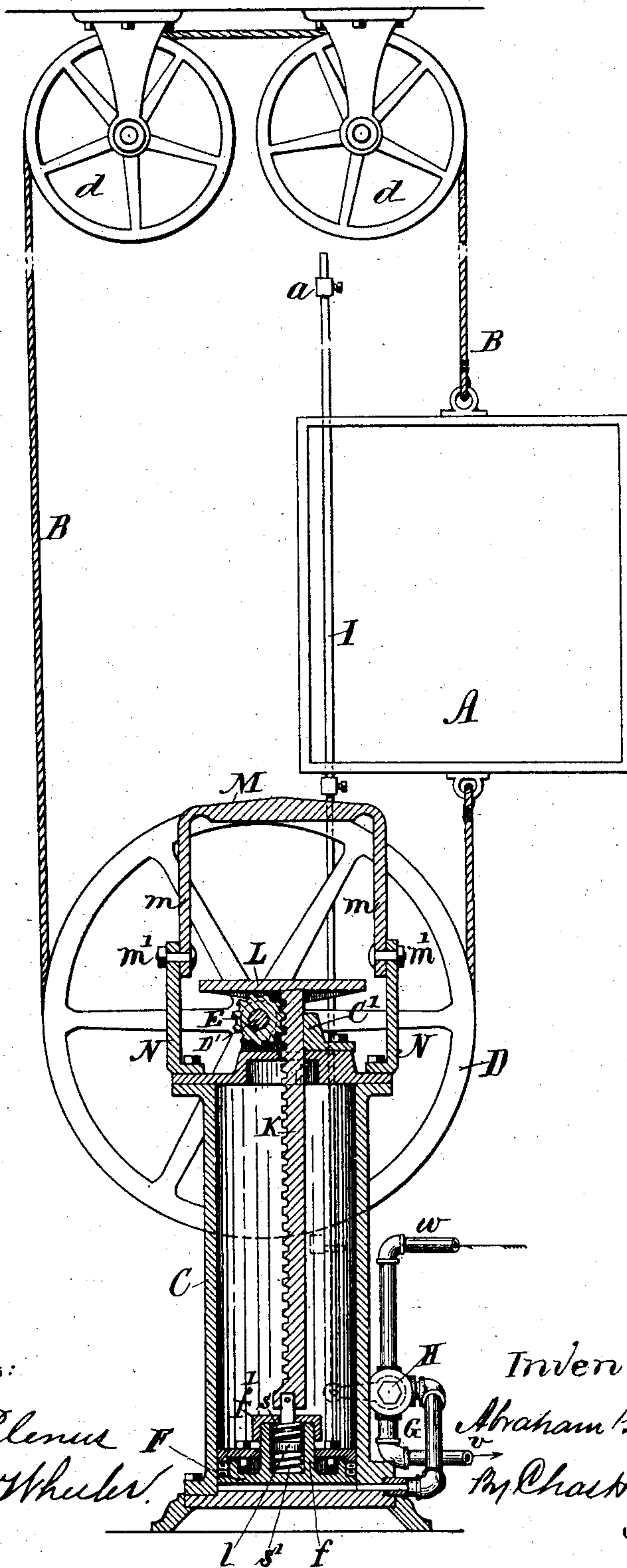
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Fig. 3



Witnesses:

Ulla P. Blenue
Frank L. Wheeler

Inventor:

Abraham Fitts
By Charles G. Gough
Attorney

UNITED STATES PATENT OFFICE.

ABRAHAM FITTS, OF WORCESTER, MASSACHUSETTS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 365,806, dated July 5, 1887.

Application filed October 13, 1886. Serial No. 216,124. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM FITTS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Elevators, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my present invention is to provide a simple and effective hydraulic elevator mechanism, more especially adapted for household purposes as a dumb-waiter, for transferring food, dishes, or other articles of comparatively light weight from one floor to another, and which mechanism can be handled or operated with ease, facility, and dispatch.

Another object of my invention is to provide a combined elevator and kitchen-press, or means, in connection with hydraulic elevating apparatus, whereby the power mechanism can with facility be utilized for pressing purposes when not employed in running the elevating-car.

Another object of my invention is to provide a yielding connection between the piston and the rack-bar in a rack-and-gear elevator, to avoid shocks on the gear-teeth; also, to provide an automatic brake device for stopping the motion of the winding-wheel as the car reaches its limit of movement.

These objects I attain by mechanism such as shown and described, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a side view of my improved elevator mechanism. Fig. 2 is a plan view of the same; and Fig. 3 is a vertical section through the cylinder-operating gear and piston.

In referring to parts, A denotes the cage or elevating-car; B, the hoisting-rope, which is attached to said car, and is operated by the winding drum or wheel D and carried by guide-sheaves *d* at the top of the run.

C indicates the cylinder, upon the head of which, mounted to turn in suitable bearings, is the axle or shaft D' of the winding-drum D, which axle is provided with a pinion, E, fixed thereon at a central position above the cylin-

der C. The piston F is worked up and down within the cylinder by hydraulic pressure, as water is let into or out of the cylinder C by way of the pipe G, under control of the valve H, which valve is worked by a pull-rod, I. The piston-rod K is made as a rack with gear-teeth that mesh with and operate the pinion E, and thereby rotates the shaft and winding-drum D. Said piston-rod or rack-bar K is attached to the piston-head F by a yielding connection, which is, in the present instance, composed of a flanged head or small piston, *l*, fixed to the end of the rod K and confined within a recess or small cylinder, *f*, on the piston-head F by a cap-plate, *f'*, and springs S S' are arranged above and beneath the head or small piston *l* in a manner to give cushioning action in either direction. The strength of the springs S S' should be made sufficient to support the normal strain for moving the mechanism under the usual conditions of work, but so as to yield slightly when any shock occurs, such as the sudden closing off of the water or quick stopping of the car, thus avoiding the liability of breaking out one or more of the gear-teeth from the rack K or pinion E. The rack-bar K is guided and held up to working position with the pinion by a block, C', or bearing on the cylinder-head, as indicated.

w indicates the water-supply pipe, and *v* the vent or discharge pipe, which are to be respectively connected with the street-main service and with the waste-drains, as convenient in any case.

Upon the top end of the rod K, I arrange a plate, L, which may be permanently fixed thereon or detachably connected thereto, as preferred, and in combination therewith I also provide a swinging head piece or plate, M, having side bars, *m*, that are pivoted at *m'* to ear-pieces N, fixed to the end of the cylinder, as indicated, which head-piece can be turned up, as shown in Fig. 3, or swung down to one side, as in Figs. 1 and 2. When turned up, it forms the support or head-platen for a temporary press, while the plate L serves as the lower platen or pressing-follower, thereby forming and providing a hydraulic press that can be used for such purposes as compressing corned beef, baling small articles, extracting juices of fruits, and for many other similar household uses, thus practically affording efficient facilities.

ties for occasional pressing work without materially increasing the cost of the elevator apparatus and without interfering with the use of the apparatus for the purposes of a dumb-waiter or elevator.

R indicates a brake arranged to act against the periphery of the winding-wheel D. Said brake is actuated by the collars *i i'* on the rod I, for applying the brake to the wheel D when the car A moves into contact with the stop-collars *a* or *a'*. At the same time the valve is shifted. Then when the rod is moved for opening the valve the brake is relieved from its pressure on the wheel. The brake-lever R is pivoted at *r* in a slot on the bracket R'. When the collar *i* depresses the end of the lever R, the pivot-pin acts as the fulcrum, and the brake is raised against the wheel. When the end of the lever R is raised by the collar *i'*, the pivot-stud *r* is raised in the slot, the end of the lever at *r''* acts as the fulcrum, and the brake is raised against the wheel.

In the present instance the rope B is shown continuous, or extending from both sides of the wheel D to the ear; but, if desired, the rope could be used single, or attached so as to lift the car by winding onto the drum, and the weight of the car depended upon for drawing it down.

What I claim as of my invention, and desire to secure by Letters Patent, is--

1. The combination of the cylinder C, the winding wheel or drum D, having its axle mounted in bearings on the cylinder-head and provided with a toothed pinion, E, the piston

F, and the toothed rod or bar K, meshing with said pinion and attached to said pinion by a yielding or elastic connection, substantially as and for the purpose set forth.

2. The combination, with a kitchen elevator apparatus having a hydraulic cylinder and piston geared for operating the rope-winding wheel, of an adjustable platen adapted to be moved into position and used in connection with a follower-plate on the piston-rod for pressing purposes, substantially as hereinbefore set forth.

3. The combination of the cylinder C, having ear-pieces N attached thereto, the piston F, the piston-bar K, carrying the plate L, and the swinging head-plate having side pieces, *m m'*, pivoted to said ears, substantially as shown and described.

4. The combination of the car A, the rope B, the winding-wheel D, the rod I, provided with the stop-collars *a a'* and *i i'*, and the brake R, substantially as and for the purpose set forth.

5. In combination with the hoist-rope winding-wheel, the toothed pinion on the winding-wheel axle, and the toothed bar K, the piston F, provided with the chamber *f*, the connecting-piston I, springs S S', and cap *f'*, substantially as and for the purpose set forth.

Witness my hand this 8th day of October, A. D. 1886.

ABRAHAM FITTS.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.