

(No Model.)

3 Sheets—Sheet 1.

C. K. ROGERS.  
ELEVATOR.

No. 349,177.

Patented Sept. 14, 1886.

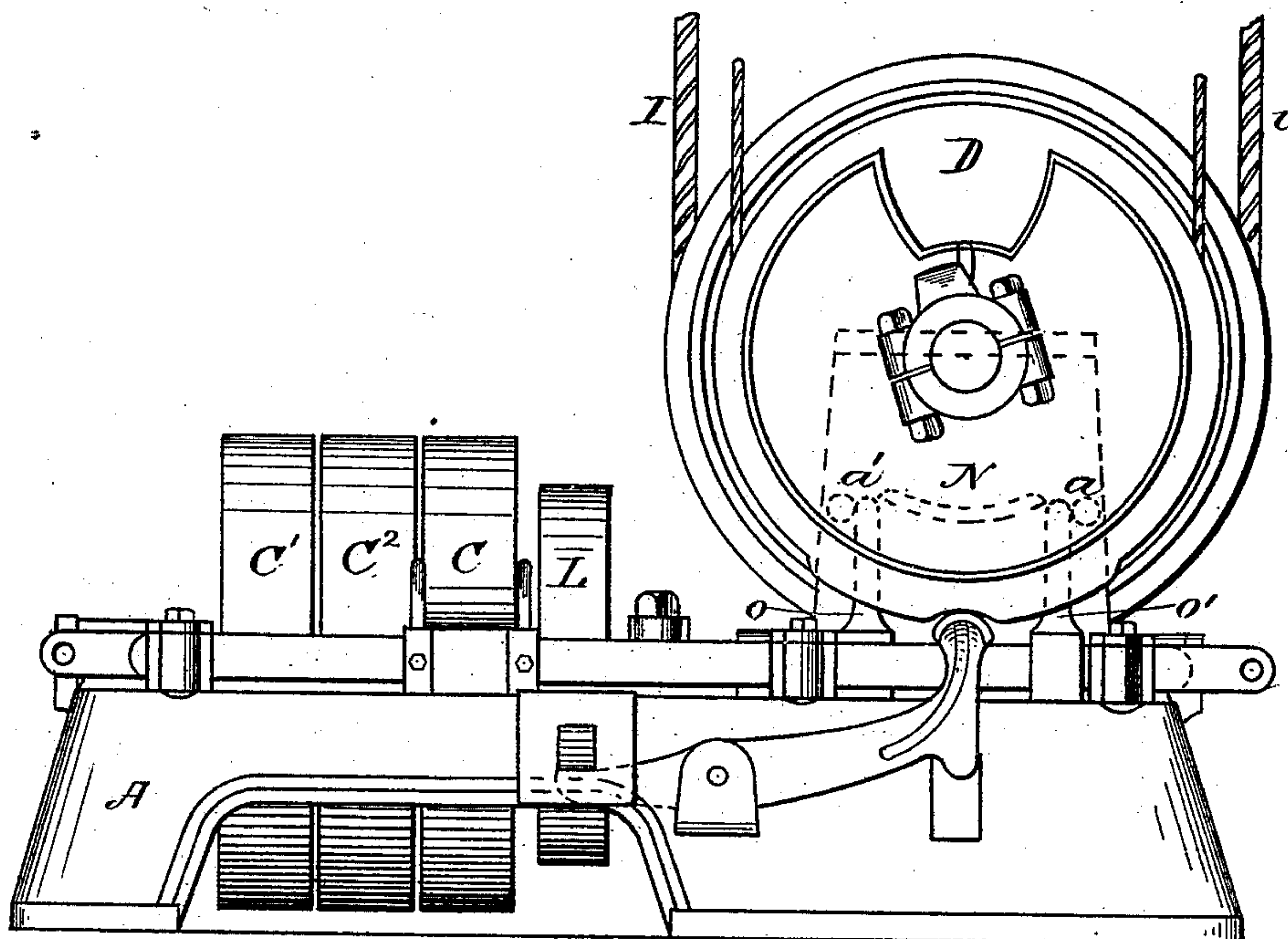


FIG. 1.

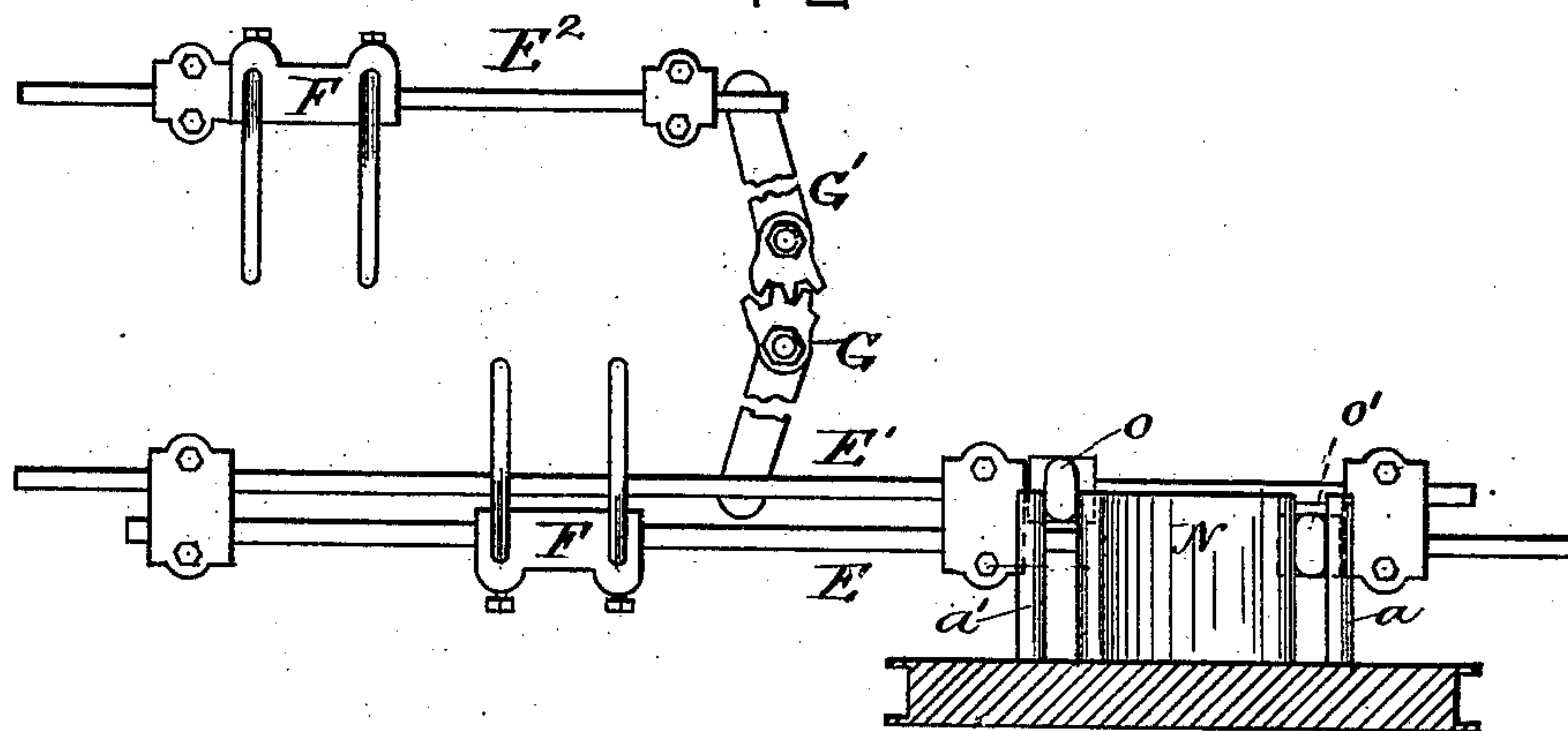


FIG. 3.

WITNESSES

J. W. Dolan.  
Fred. B. Dolan.

INVENTOR

Columbus K. Rogers  
by his attys  
Clarke & Raymond

(No Model.)

3 Sheets—Sheet 2.

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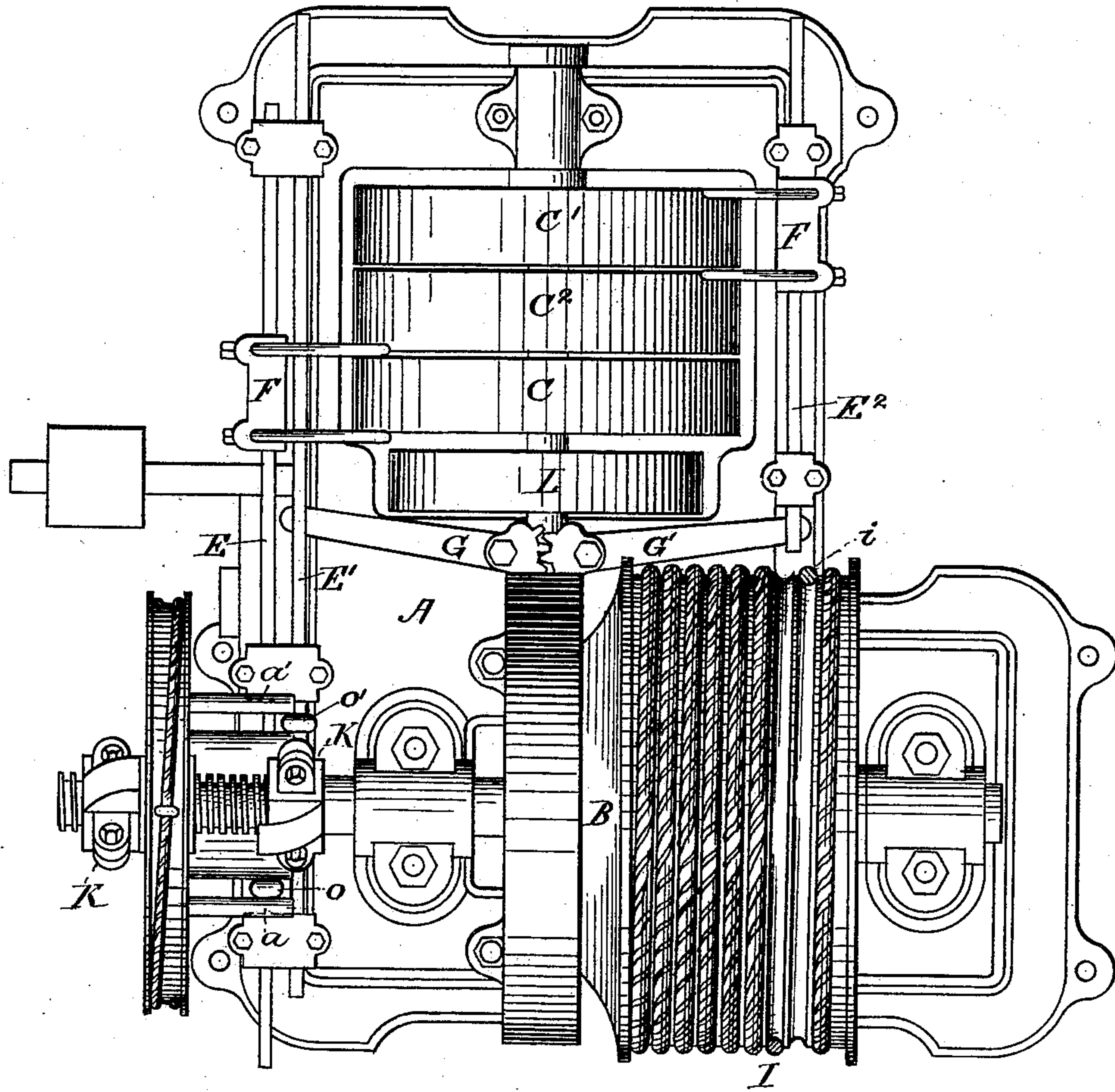


FIG-2.

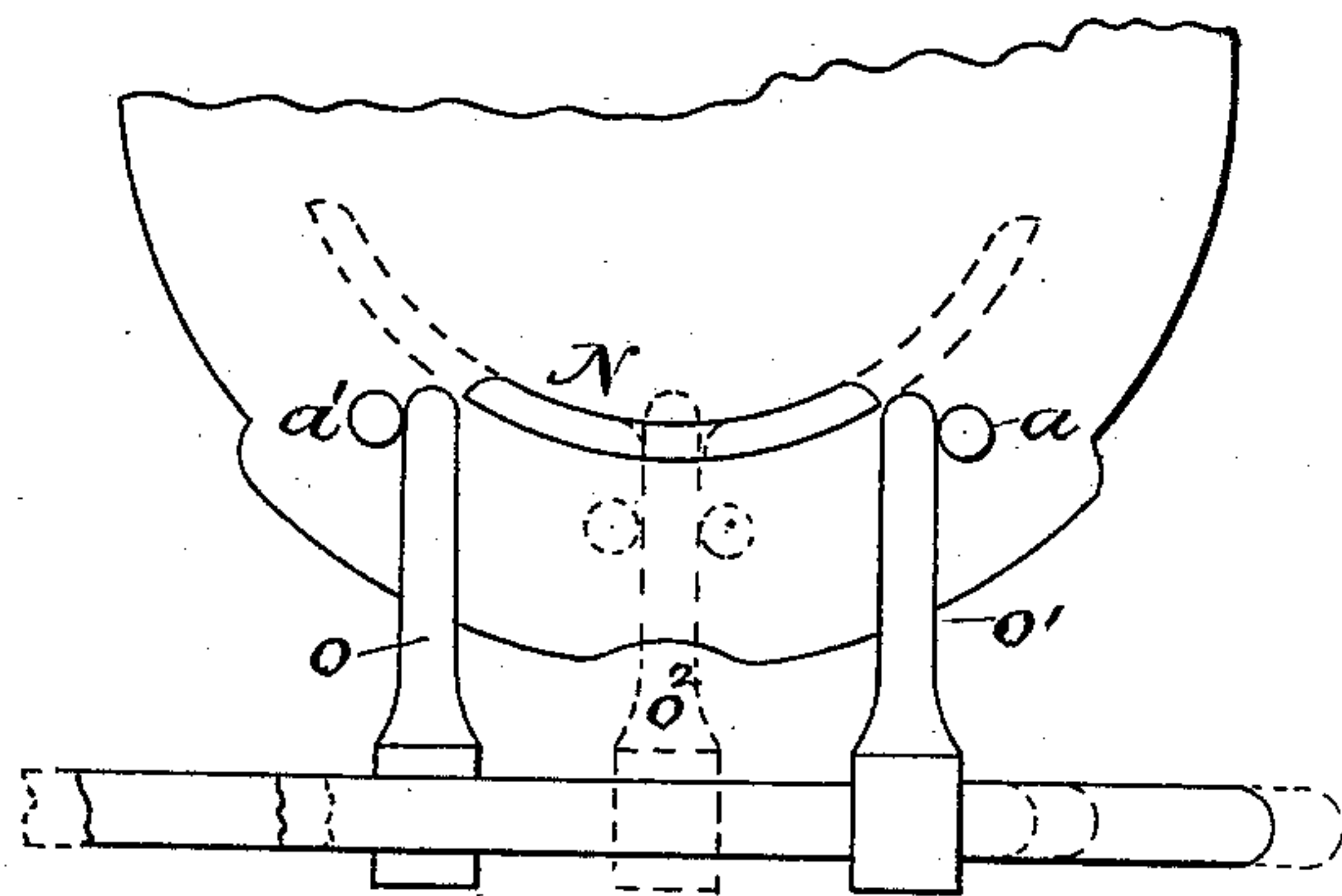


FIG-4.

WITNESSES

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Clark & Raymond

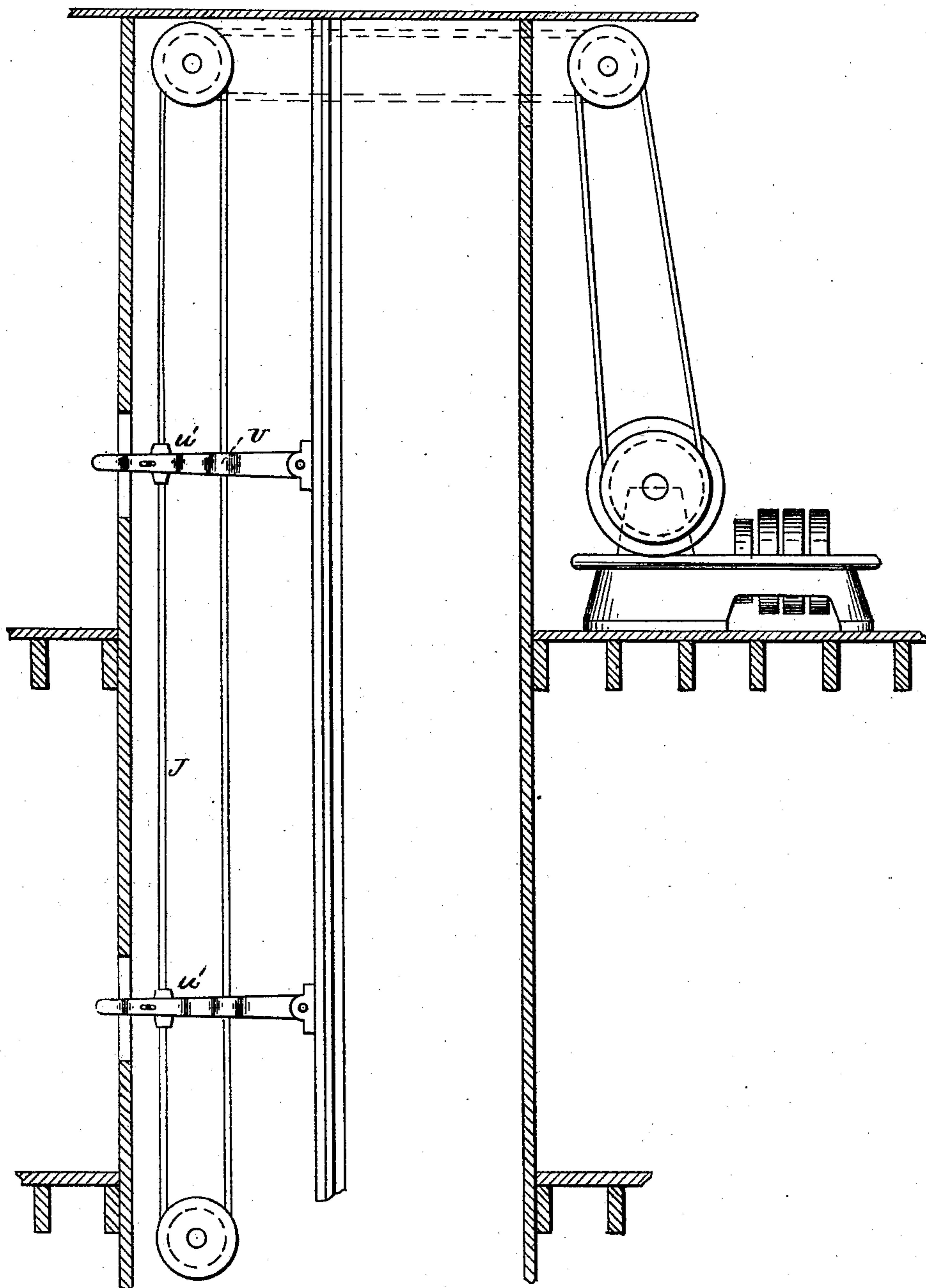
(No Model.)

3 Sheets—Sheet 3.

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WITNESSES

FIG. 5.

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# UNITED STATES PATENT OFFICE.

COLUMBUS K. ROGERS, OF SALEM, MASSACHUSETTS, ASSIGNOR TO ZINA  
GOODELL AND ABNER C. GOODELL, JR., BOTH OF SAME PLACE.

## ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 349,177, dated September 14, 1886.

Application filed November 9, 1885. Serial No. 182,224. (No model.)

*To all whom it may concern:*

Be it known that I, COLUMBUS K. ROGERS, of Salem, in the county of Essex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Elevators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

This invention has for its object an improvement in the shipping device of elevators and in the arrangement of the winding-drum with relation to the elevator-rope and the counterpoise, and also an improvement in the frame supporting the driving-wheels, whereby the belts thereto may be led horizontally as well as vertically, which is the usual way of leading belts at present.

In the drawings, Figure 1 is a side elevation, and Fig. 2 a plan view, of an elevator hoisting-gear. Fig. 3 is a plan detail of the shipping device, and Fig. 4 an elevation detail of the shifting-wheel and its engagements with the shipping device. Fig. 5 is a vertical central section of the elevator-well and an elevation of the shipping device.

Like letters indicate like parts in all the figures.

A is the base or frame of the machine, which rests, as shown in Fig. 1, upon posts and webs, and has the web removed near the bottom, adjacent to the driving-pulleys C C'. This is done in order that the belts which engage with these pulleys C C' may be led horizontally to the pulleys of the prime mover.

The rope-drum B is very much of the usual form, and is mounted on a shaft which is transverse to the shaft on which the pulleys C C' C<sup>2</sup> are mounted. The drum-shaft is driven from the pulley-shaft by gearing in any usual way.

The counterpoise is attached to a rope which is led around the winding-drum in an opposite direction from the elevator-rope, which counterpoise-rope is marked *i*, while the elevator-rope is marked *I*. It will be observed that by this construction the counterpoise-rope has a tendency always to rotate the winding-drum in such a direction as to lift the elevator, and that the unwinding of the elevator-rope

from the drum winds up the counterpoise-rope. By this method of winding the counterpoise with the car a heavier counterpoise may be used than the weight of the car, while when the counterpoise-rope simply is led from the car over a pulley to the counterpoise, the weight of the counterpoise must be always less than the weight of the car. Consequently by this method of combining the elevator with the counterpoise through the winding-drum I am enabled to carry up weights more advantageously than in the other method ordinarily in use.

On the end of the drum-shaft is mounted the shipping-wheel D, around which the usual shipping-rope, J, is wrapped for the purpose of revolving it. This wheel is mounted by a screw on the drum-shaft, as shown in Fig. 2, and runs in or out, toward or from the winding-drum, as the drum is revolved upward or downward. Dogs K, fixed upon the winding-shaft, serve to come in contact with projections on the face of the wheel when it is run a sufficient distance in either direction for the car of the elevator to reach the extremities of the shaft. These dogs serve to move the shipping-wheel, and thus shift the driving-belt on the loose pulley C<sup>2</sup>. This arrangement of mounting the shipping-wheel on a screw-thread of the drum-shaft is not novel. From the inner face of the shipping-wheel D there projects toward the winding-drum a lug, N. (Shown in elevation in Fig. 4 and in plan in Fig. 2.) This lug is formed on the arc of a circle concentric with the center of the shipping-pulley D, and on either side of it, projecting from the same face of the pulley, are the pins *a*. Upon the frame of the machine are arranged in guides two shipping-slides, E E', the slide E carrying the shipper F, which shifts the driving-belt for one direction between the driving-pulley C and the loose pulley C<sup>2</sup>. The shipping-slide E' acts with levers G G', which reach from side to side of the machine, and are geared together with segment-gears at the center over the shaft of pulleys C C' C<sup>2</sup>. On the frame of the machine, opposite to the frame where the shipping-slides E E' are found, is another shipping-slide, E<sup>2</sup>, carrying the belt-fork F, which serves to transfer the opposite



driving-belt between the tight pulley C' and the loose pulley C". Two standards, *o o'*, are arranged one upon the slide E' and the other upon the slide E, and engage with the pins *a a'* and lug N.

By reference to Fig. 4 it will be seen that when the lug N is arranged so that a tangent along its center will be nearly horizontal each of the shipping-levers will be in such a position that if the wheel D be rotated so that its top moves to the right the lug N will move along over the top of the standard *o*, and the slide E, attached to said standard, will not be affected by the movement of the shipping-wheel D, while the pin *a* will at the same time move the standard *o'* and the slide E', attached to it, and throw the levers G G', the slide E", and shaft-belt from the loose pulley C' to the driving-pulley C, and the length of the movement of the standard *o'*, and slide to which it is attached, being indicated by the dotted standard shown in Fig. 4 at *o"*, and the movement of the lug N being shown in dotted lines to the right of the lug N, marked in full lines in the same figure. If it now be desired to reverse the movement of the elevator, the lug N will be engaged with the standard *o'* until it has been moved back into its first position, when it will begin to travel over the top of the standard *o*, and the pin *a* will come in contact with the standard *o*, moving the shipping-slide E and fork F, attached to it, and so shipping its belt from the loose pulley C' to the driving-pulley C.

I have arranged for use in connection with the rope J the levers U, which are pivoted to the elevator-uptake, and are arranged at the side of the well so that the car may pass them, and so as to project through holes in the well of the elevator to a position immediately above the various floors, and they carry the blocks *u*, fastened to the rope J, and which are secured to the levers to permit the swinging movement thereof. Upon the movement of either of the levers up or down the rope J is moved either up or down. The object of this part of the invention is to provide means for

operating the car from any floor of the building without reaching into the elevator-well, so that a person standing on any floor can by the movement of the lever operate the elevator and cause it to be moved to the floor that he is on, or to any other floor that he may wish.

For the purposes intended to be served by this invention sundry devices have been already described in Letters Patent, among others, to C. E. Moore, No. 146,699, of January 20, 1874, to G. C. Tewksbury, Reissue No. 10,192, of August 29, 1882, to Morse and Tyson, No. 291,217, of January 1, 1884, and James C. Fernald, No. 283,586, of August 21, 1883, and I do not claim any of the devices shown and described in these patents, but desire to patent only the devices and combinations which differ from them and are novel with me.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the reciprocating shipping-slides E' E" with each other by the pair of geared levers G G', substantially as described.

2. The combination of the shipping-slides E E' with the shipping-wheel D by means of the plain standards *o o'*, erected on and fixed to the slides E E, and the plain lug N and pins *a a'*, projecting from the face of the shipping-wheel, substantially as described.

3. In combination with the shipping-rope of an elevator, arranged within the elevator-shaft, but outside of the elevator-car, a single lever pivoted to the wall of said elevator-shaft, fastened to said elevator-rope and having its power end projecting through the wall of the elevator-shaft to serve as the handle of a shipper-arm, whereby the driving-belt may be shifted and the motion of the elevator controlled at the landings by a single lever-handle, substantially as described.

COLUMBUS K. ROGERS.

Witnesses:

SARAH E. HUNT,  
GEORGE H. GOODELL.