

(No Model.)

2 Sheets—Sheet 1.

W. E. NICKERSON.

DOOR FOR AUTOMATIC WEIGHING MACHINES.

No. 555,179.

Patented Feb. 25, 1896.

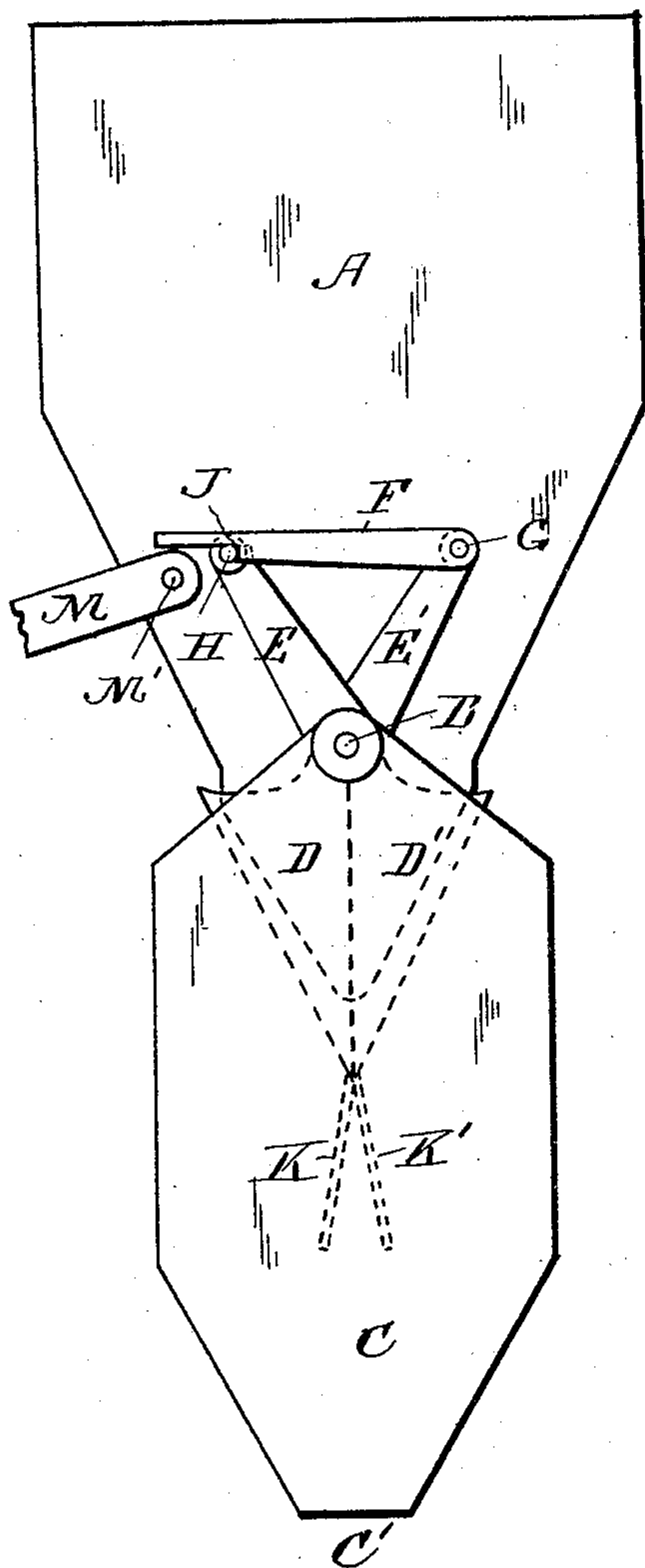


Fig. 1.

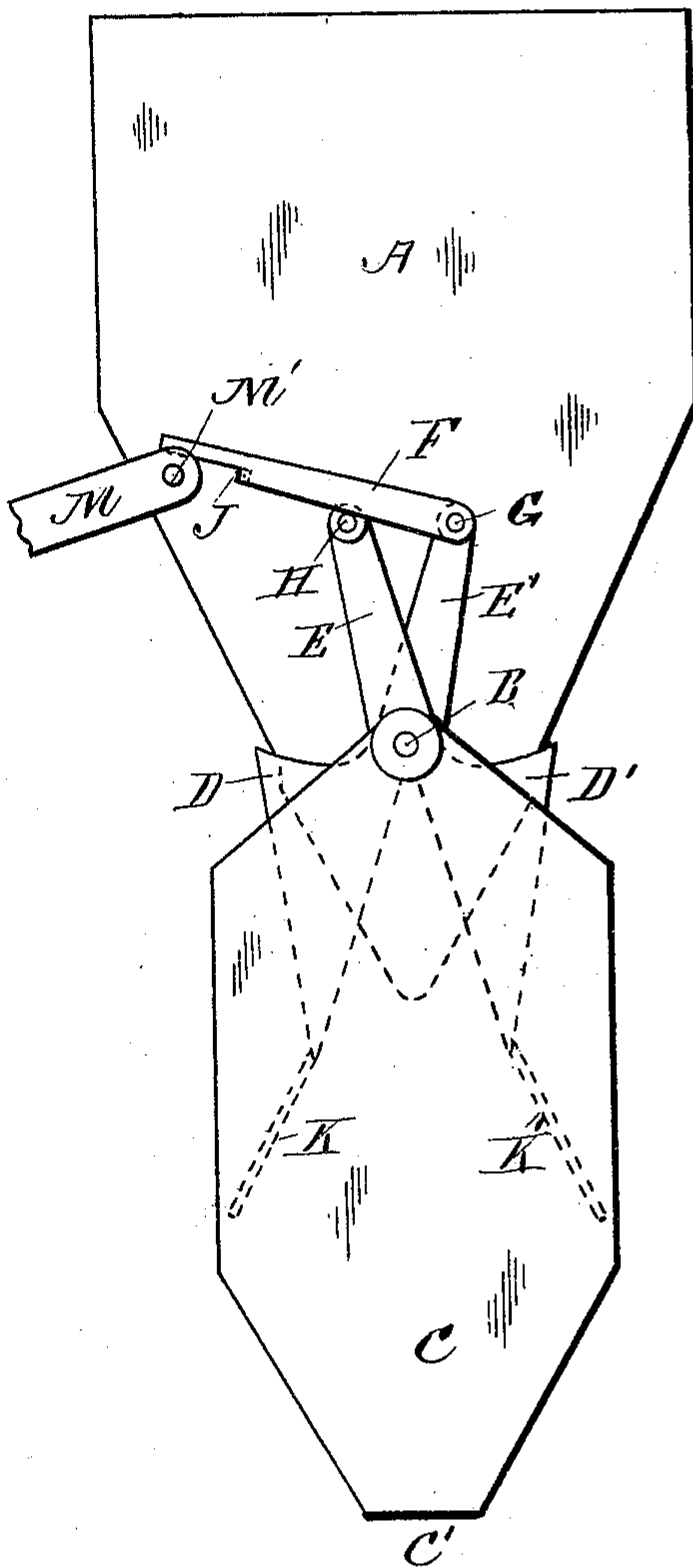


Fig. 2.

WITNESSES

Frank G. Parker.
Edward S. Day

INVENTOR

William Emory Nickerson

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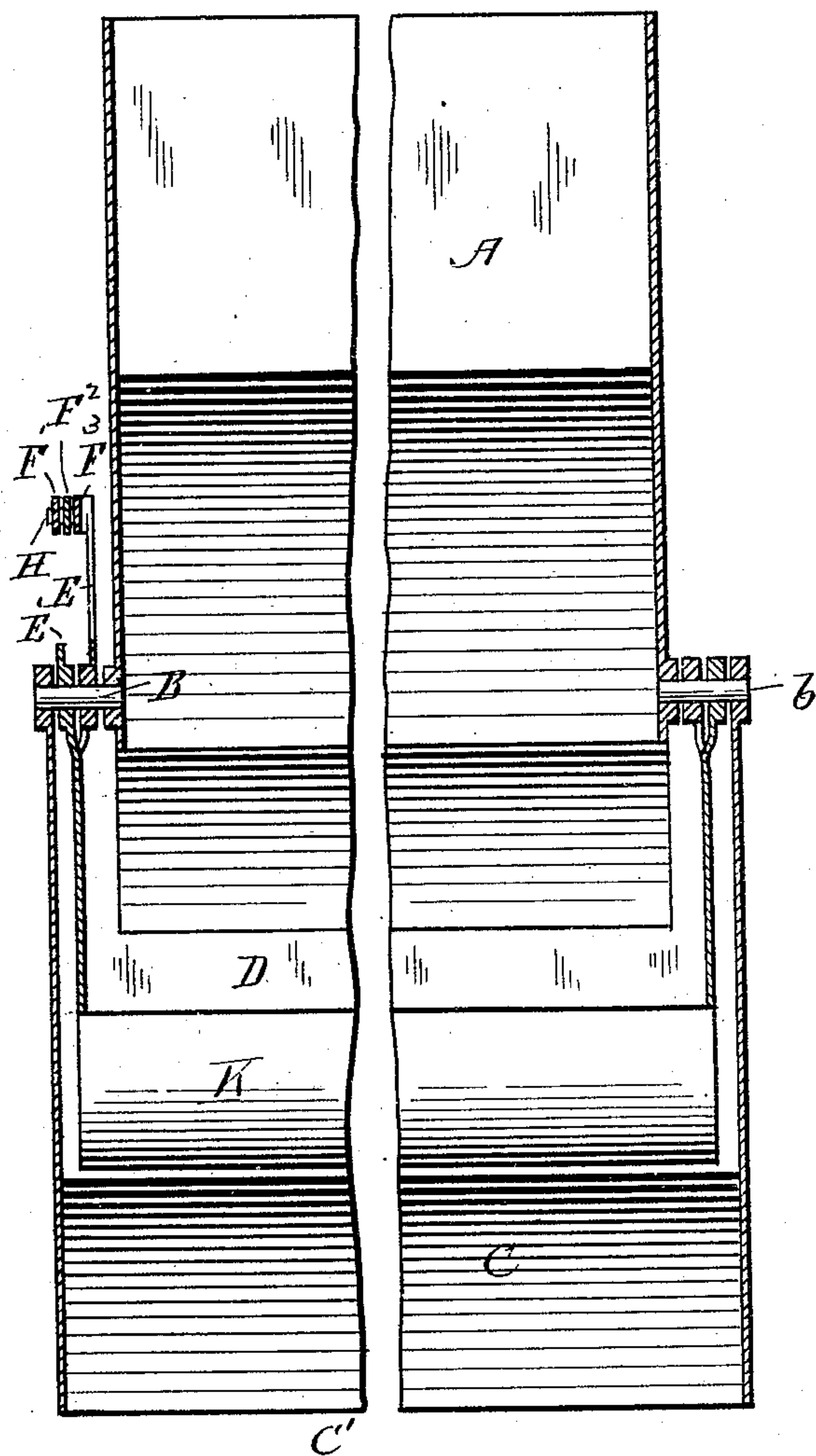


Fig. 3.

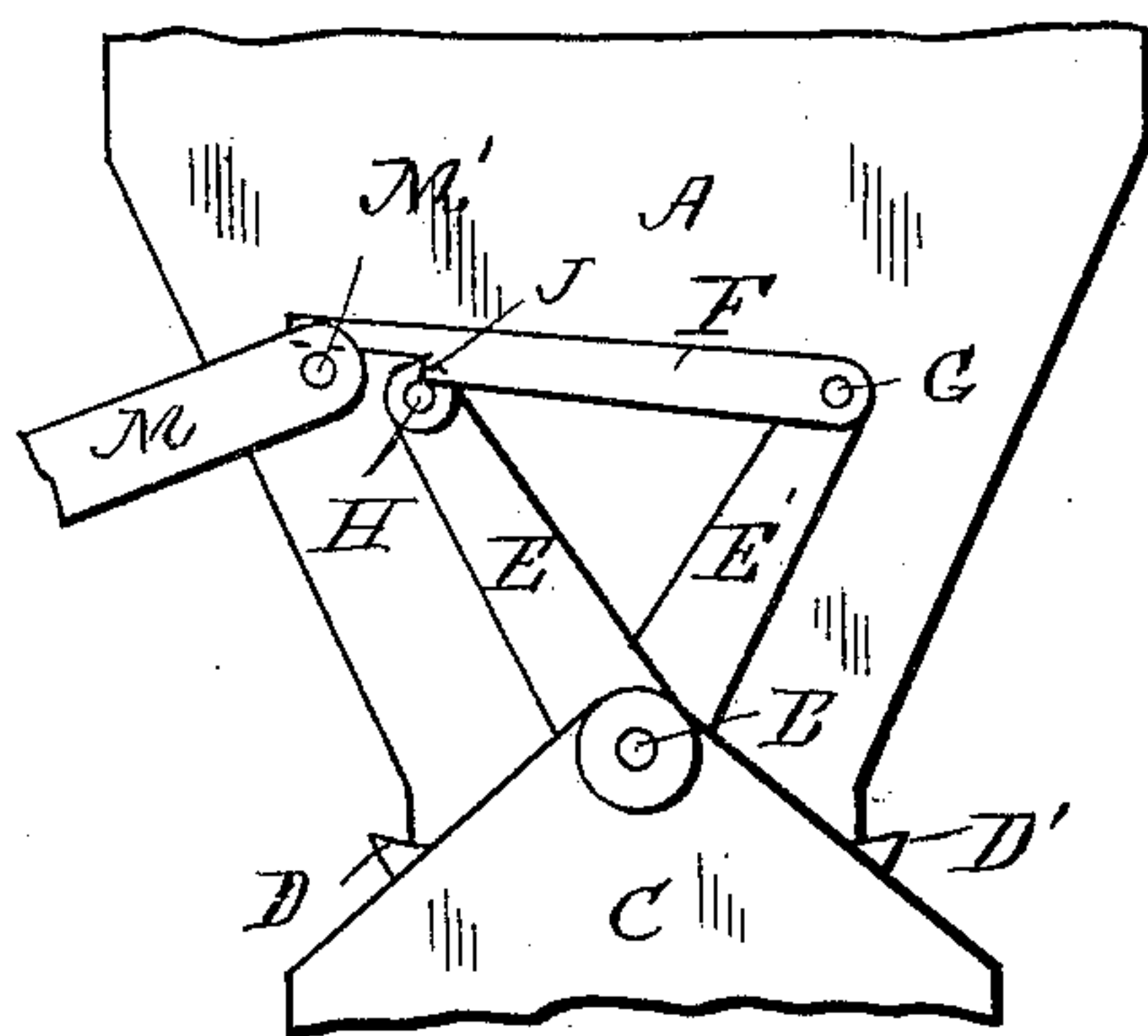


Fig. 4.

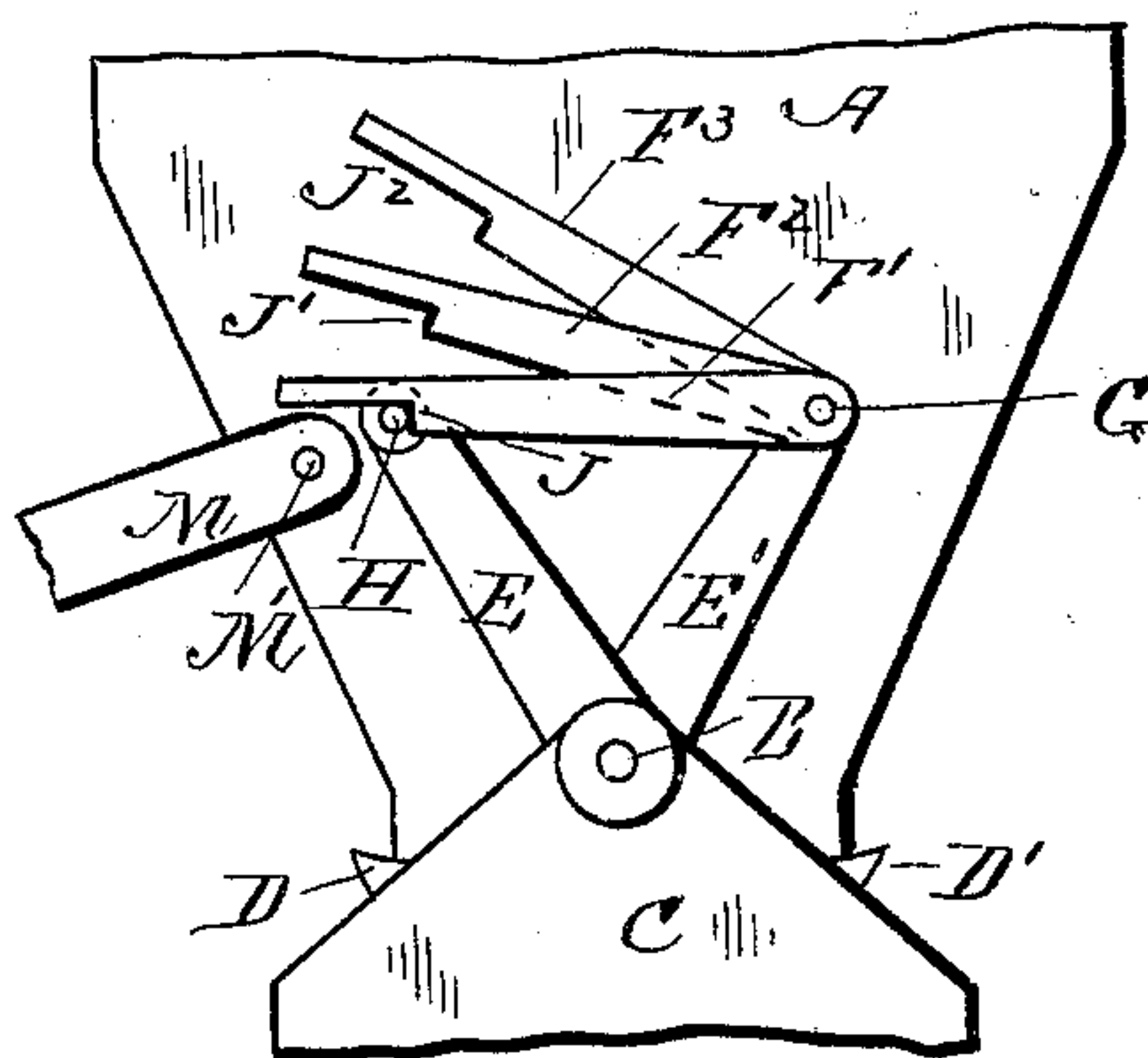


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM EMERY NICKERSON, OF CAMBRIDGE, MASSACHUSETTS.

DOOR FOR AUTOMATIC WEIGHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 555,179, dated February 25, 1896.

Application filed May 24, 1895. Serial No. 550,554. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EMERY NICKERSON, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Doors for Automatic Weighing-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to discharge-doors especially adapted to be used in connection with automatic weighing-machines.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my device, the doors (shown mostly by dotted lines) being closed. Fig. 2 is a front elevation, the doors (shown mostly by dotted lines) being open. Fig. 3 is a central vertical section in a plane at right angles to that shown in Figs. 1 and 2. Figs. 4 and 5 are explanatory of details.

In the drawings, A represents the bucket of a weighing-machine, adapted to descend a limited distance when loaded and to return to its original position when its load has been discharged. The bucket A is provided at the front and back with the pins B and b, which serve to support the supplementary bucket C and also as pivots for the doors D and D'. The pivotal pins B and b are located centrally vertical over the discharge-orifice of the bucket, whereby the doors tend to close against each other naturally without weighting them with counterbalances. The doors D and D' are provided with the arms E and E', respectively. Upon the upper end of the arm E' is pivoted the latch F, said latch being composed of two or more separate parts or leaves F', F², and F³, these being shown moved apart in Fig. 5. The latch turns upon the pin G fixed in the arm E'. The arm E carries at its upper end the pin H, which serves to engage with the latch F by means of the shoulders J J' J² in the leaves F', F², and F³. The shoulders in the different leaves of the latch are so arranged that the shoulder in each leaf progressively in the set is located a little nearer to the pivotal pin G than its predecessor—that is, the shoulder J² is nearer than J', and J' is nearer than J. The object of this arrangement is to cause the doors to be as tightly latched as possible and at the

same time to avoid the possibility of failure to latch if for any reason the doors fail to come completely together, as might result from small particles remaining between their edges—that is to say, if the doors do not close tight enough to allow the leaf with the most distant shoulder to engage with the latch-pin one of the other leaves having a shoulder nearer the pivotal pin will engage, and so hold the doors.

The doors D and D' are provided with the wing-pieces K and K', which serve the purpose of preventing the doors from closing prematurely—that is, before all the load has fallen below them. These wing-pieces operate by resting against the mass of material which is temporarily retained in the supplementary bucket C, whose discharge-aperture C' is somewhat less in capacity than the door-opening of the bucket A.

Instead of the supplementary bucket C being hung to the bucket A, it might be supported independently of it, with practically the same effect as far as the operation of the wing-pieces is concerned.

Attached to some fixed part of the machine is the rigid arm M, in front of the bucket A, but in no way connected with it. This arm is provided with the pin M', which engages upon a descent of the bucket with the end of the latch F and causes its disengagement with the pin H, allowing the doors to be opened by the pressure of the load within.

The operation of my device is as follows: Upon a descent of the bucket A with its load the latch F engages with the pin M' upon the fixed arm M, (see Fig. 4,) and the shoulders of the latch are forced out of engagement with the pin H in the arm E. This allows the pressure of the load to open the doors, and the parts take the positions shown in Fig. 2. The load now falls into the supplementary bucket C, which temporarily retains a mass of the material and prevents the doors from closing, by the action of the wing-pieces K and K', until all of the load has cleared the doors D and D'. When the load has fallen below the wing-pieces, the doors close and the bucket rises to its first position, allowing the latch to again engage with the pin H, and is then ready to receive another load. It is obvious that either of the doors D or D' would

be operative if the other were a fixed part of the bucket A. It is also obvious that the latch F and engaging-pin H, instead of being mounted upon the arms E and E', might
5 be placed upon the doors themselves below the fulcrum-pin B by using suitable modifications.

I claim—

1. In a weighing-machine, the weighing-
10 bucket A and the doors D and D' adapted when shut to close the discharge-orifice of said bucket; in combination with the wing-pieces K and K' attached to said doors and adapted to prevent their premature closing by
15 resting on material retarded by the supplementary bucket C, and the supplementary bucket C adapted to temporarily retain a portion of the load and thereby co-operate with said wing-pieces as described, substantially
20 as and for the purpose set forth.

2. In a weighing-machine, in combination, the weighing-bucket A, the doors D and D' adapted when shut to close the discharge-

opening of said bucket, the pivotal pins B and b attached to the sides of the said bucket 25 and adapted to support the said doors, the latch F adapted to hold said doors closed by engaging with the latch-pin H, the latch-pin H and fixed disengaging-pin M', the wing-pieces K and K' attached to the doors D and 30 D' and adapted in connection with the supplementary bucket C to prevent the premature closing of said doors as described, and the supplementary bucket C adapted by temporarily retaining a portion of the load, to 35 co-operate with the said wing-pieces, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 21st day of 40 May, A. D. 1895.

WILLIAM EMERY NICKERSON.

Witnesses:

FRANK G. PARKER,
EDWARD S. DAY.