

(No Model.)

G. R. DAVIDSON.

FEED REGULATOR.

No. 380,095.

Patented Mar. 27, 1888.

Fig. 1.

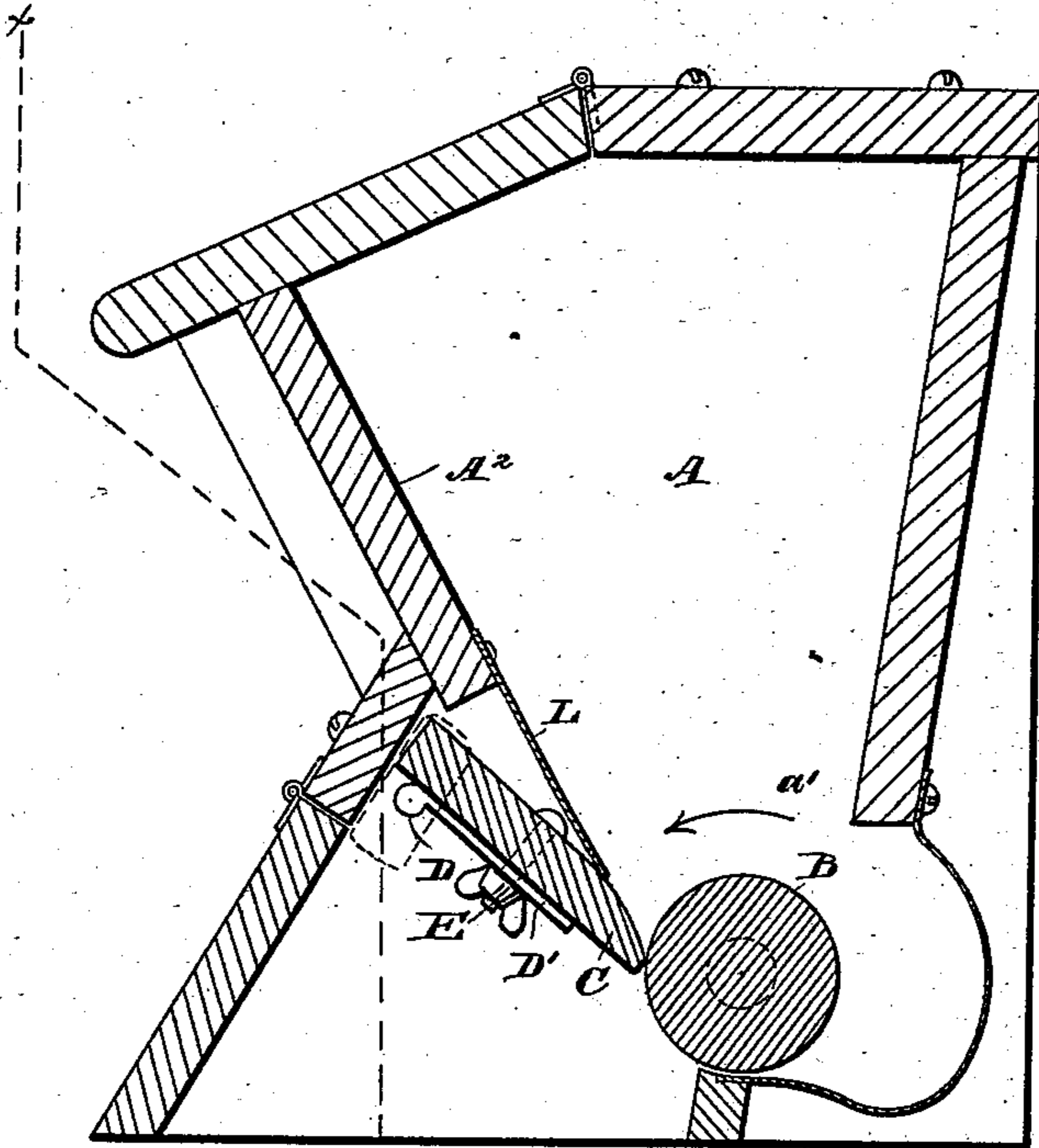


Fig. 2.

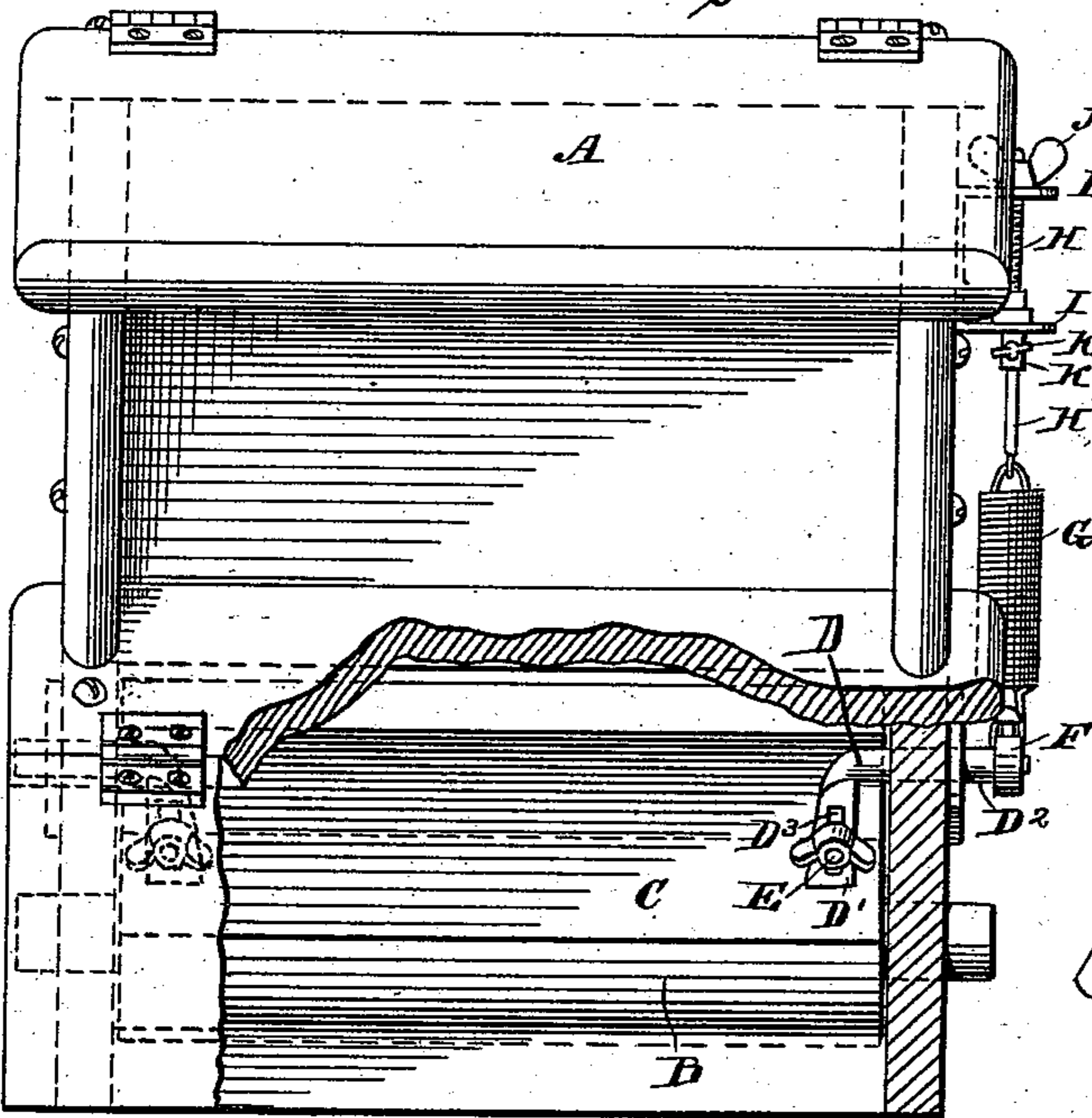
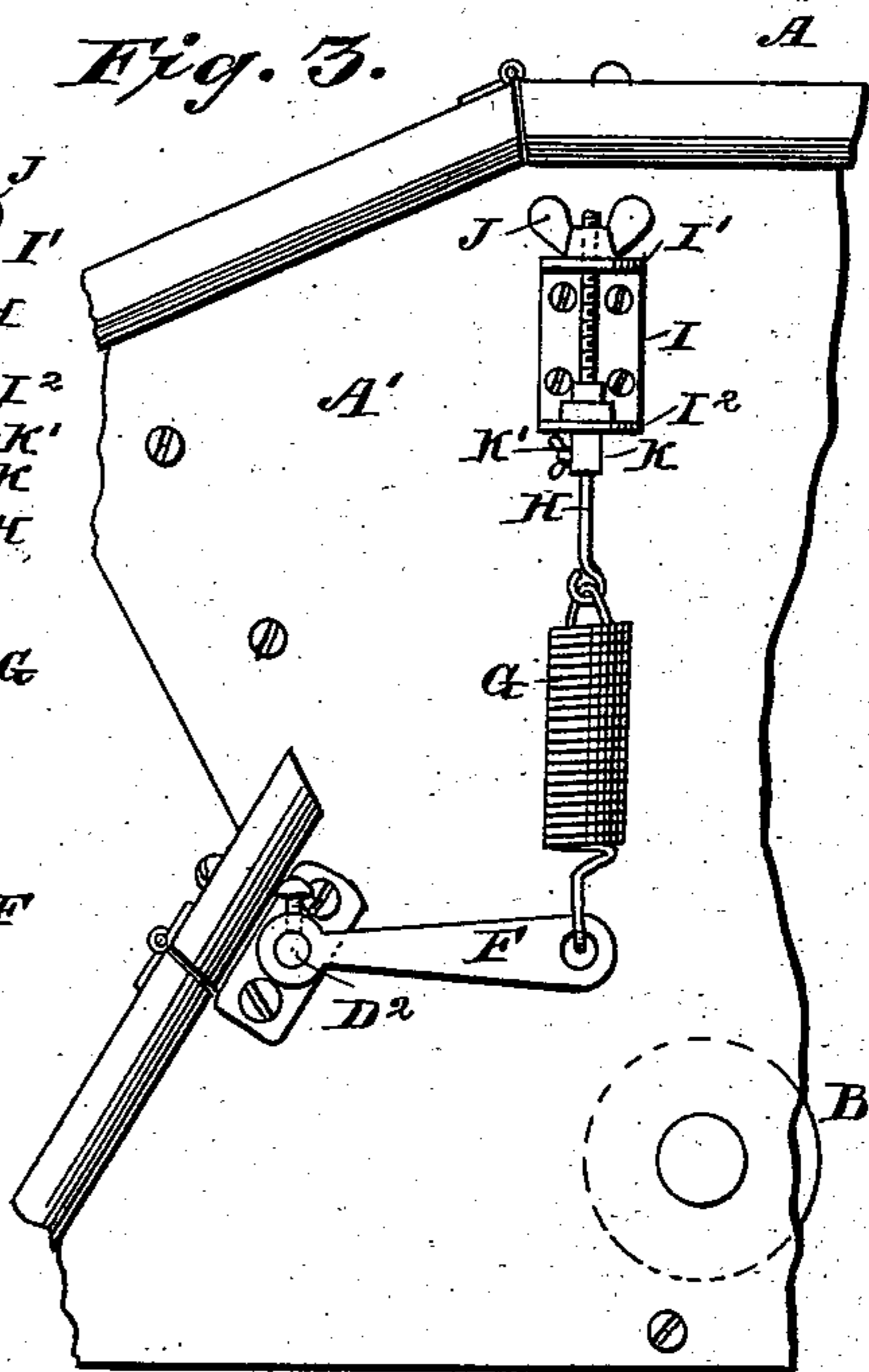


Fig. 3.



WITNESSES:

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GEORGE R. DAVIDSON, OF BROCKWAY, MICHIGAN.

FEED-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 380,095, dated March 27, 1888.

Application filed April 13, 1887. Serial No. 234,593. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. DAVIDSON, of Brockway, in the county of St. Clair and State of Michigan, have invented a new and Improved Automatic Feed-Regulator for Roller-Mills and Purifiers, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved feed-regulator for roller-mills and purifiers, which regulator is simple in construction and very effective and automatic in operation.

The invention consists in the construction and arrangement of various parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a transverse sectional elevation of a feed-hopper provided with my improvement. Fig. 2 is a front elevation of the same, parts being in section, on the line *xx* of Fig. 1; and Fig. 3 is a side elevation of the same.

In the feed-hopper A, of any approved construction, revolves the feed-roller B, against the rim of which is held one end of the feed-gate C, secured adjustably to the L-shaped rods D by means of screws E passing through slots D³ in the arms D' of said L-shaped rods D. The other arm, D², of each rod D passes through a suitable bearing formed on the side of the hopper A, thus making a fulcrum for the feed-gate C, which can swing with its lower edge or bottom to or from the feed-roller B.

On the outer end of the arm D² of one of the L-shaped rods D is secured the lever-arm F, connected at its outer end with one end of the coiled spring G, secured by one end to a rod, H, held adjustably in a bracket, I, secured to the side of the hopper A. The bracket I is provided with two apertured flanges, I' and I², through which passes the said rod H, which is screw-threaded on its upper end, on which screws a winged nut, J, resting on top of the upper flange, I', of the bracket I. The lower part of the rod H is square in cross-section and passes through a similarly-shaped aperture in the flange I², thus preventing the rod

H from turning when screwing on the winged nut J. The upper part of the flange I² is provided with a boss surrounding the aperture to give an elongated bearing to the rod H.

A collar, K, slides on the square part of the rod H, and can be secured to the same by the set-screw K', and rests with its upper end against the under side of the flange I², thus acting as a jam-nut for the winged nut J, and at the same time holding the rod H firmly in place on the bracket I.

On the inside of the inclined side A² of the hopper A is secured one end of a canvas strip, L, extending with its free end downward upon the feed-gate C, thus preventing the material in the hopper A from passing up to the top edge of the feed-gate C. A tension-spring, G, and its connections, above described, may be placed on each arm D² of each rod D. The upper edge of the bottom of the feed-gate C next to the roller B is slightly curved, as shown in Fig. 1.

The operation is as follows: The material to be fed is held in the hopper A, and when the feed-roller B rotates in the direction of the arrow *a'* it forces the material to the feed-gate C, which opens sufficiently, according to the tension with which it is pressed against the roller B, so as to permit part of the material to pass out between the lower end of the gate C and the feed-roller B. The pressure with which the feed-gate C is held with its lower edge or bottom on the feed-roller B is regulated by adjusting the tension of the spring G by moving the rod H up or down by screwing the winged nut J and adjusting the collar K. The feed-gate C can be adjusted at each end by loosening the screws E, so as to permit of setting the lower edge or bottom of the gate C in line with the rim of the roller B, so as to produce equal feed throughout the length of the roller B. The feed-gate C may also be set high or low in relation to the feed-roller B on account of being adjustable on the slotted arms D' of the L-shaped rods D, which also form the fulcrum of the gate. Thus it will be seen that when the feed-gate C is moved inward on the slotted arms D' then the lower edge or bottom of the feed-gate C will be near to or below the horizontal plane that passes centrally through the cylinder of the roller B, and if said feed-gate

is moved outward on the slotted arms it will rest higher on the rim of the roller B.

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

1. In a feed-regulator, the combination, with the feed-roller and feed-hopper, of a feed-gate held in said hopper and resting with its bottom against the said roller, slotted arms on
10 which said feed-gate is held adjustably, and pivoted arms extending from said slotted arms to form a fulcrum, the said slotted arms having their bearings in the sides of said hopper, substantially as shown and described.

2. In a feed-regulator, the combination, with 15 a feed-gate, of slotted arms on which said gate is held adjustably, pivot-arms extending from the said slotted arms and forming the fulcrum for said feed-gate, a lever-arm secured to one of the pivot-arms, a spring connected with said 20 lever-arms, and means, substantially as described, for adjusting the tension of said spring, as set forth.

GEORGE R. DAVIDSON.

Witnesses:

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WALLACE B. BALLENTINE.