

(No Model.)

2 Sheets—Sheet 1.

J. R. PALMER.
FEED REGULATOR FOR ROLLER MILLS.

No. 334,891.

Patented Jan. 26, 1886.

Fig. 1.

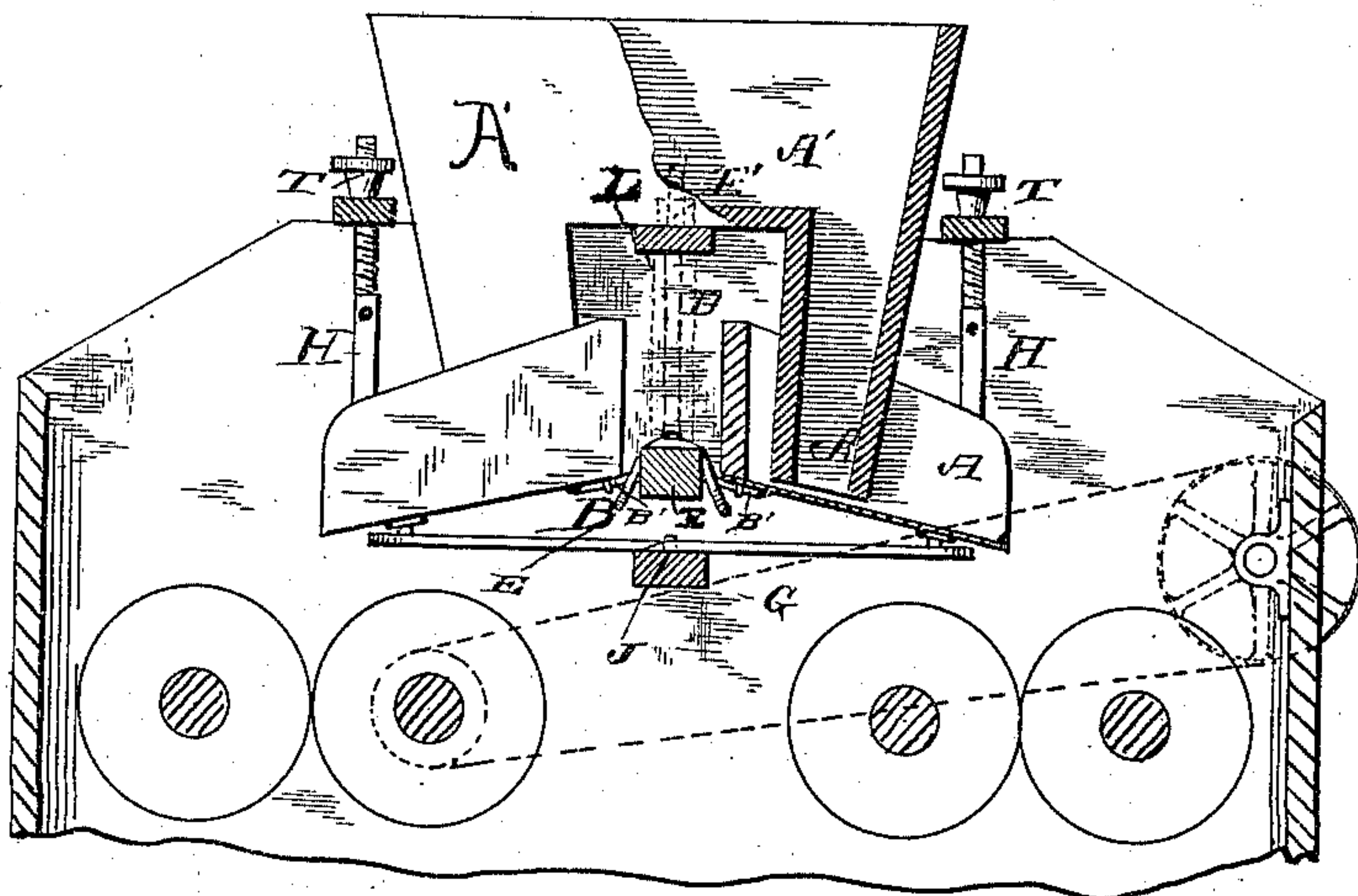


Fig. 2.

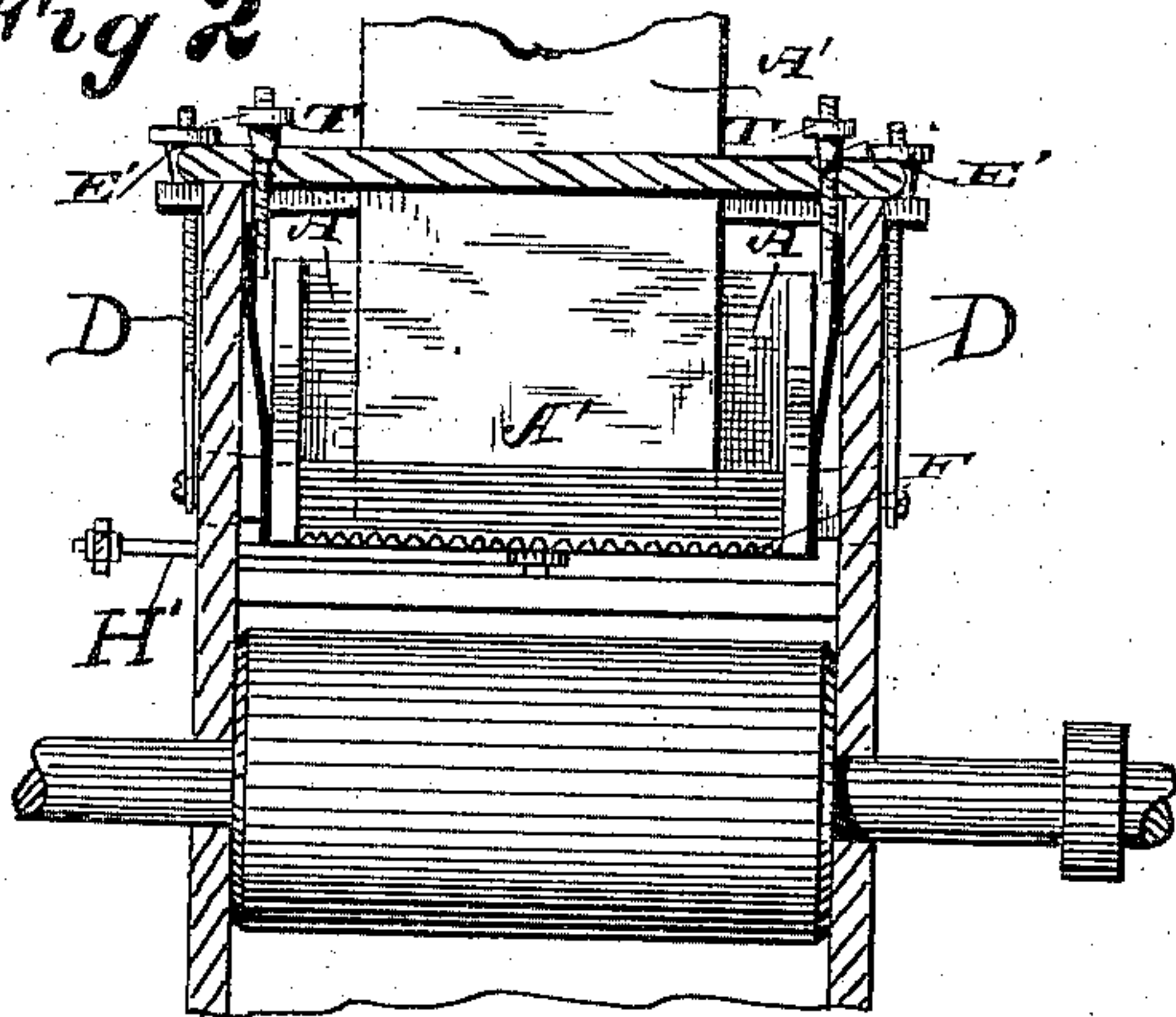


Fig. 3.

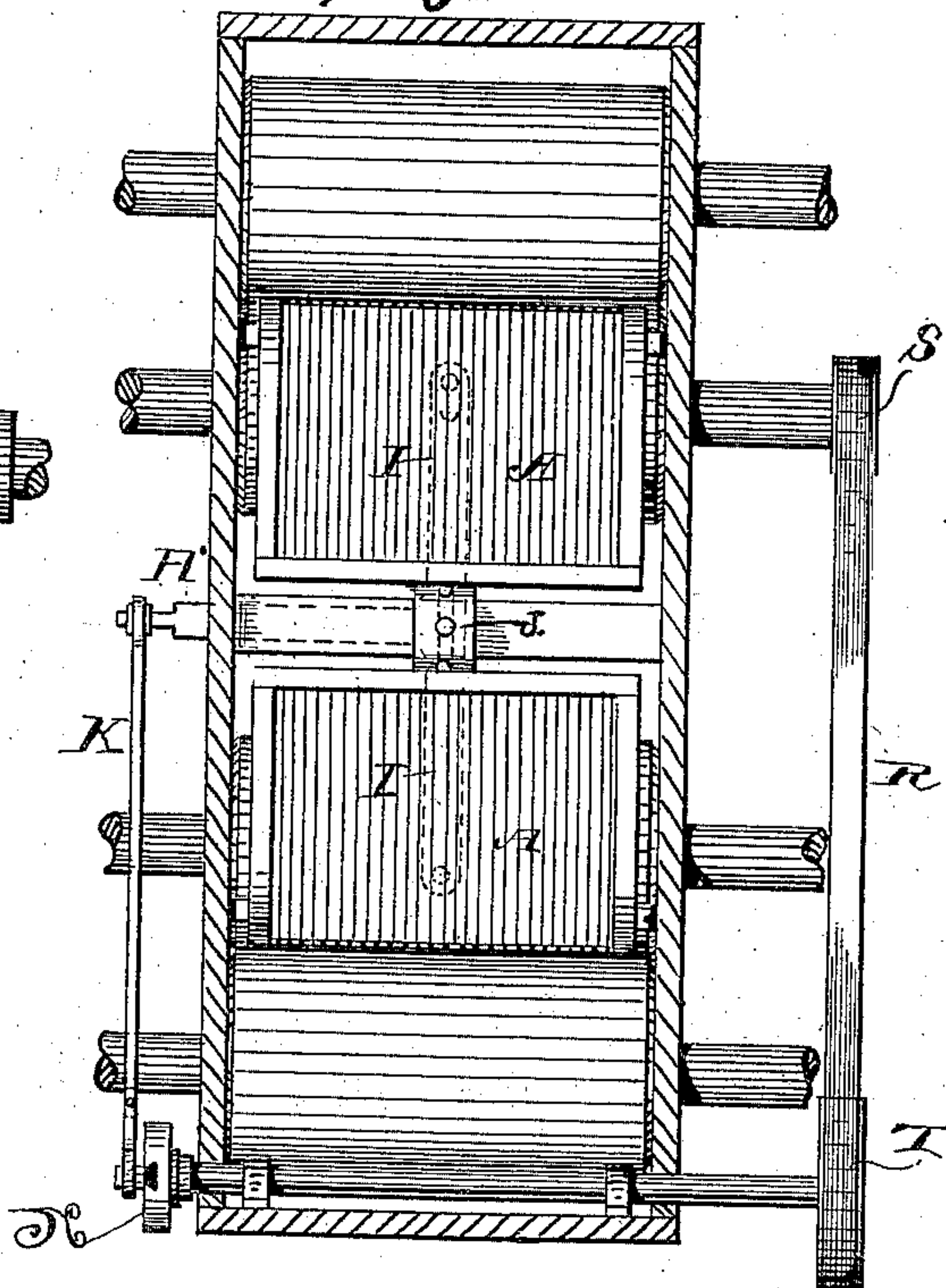
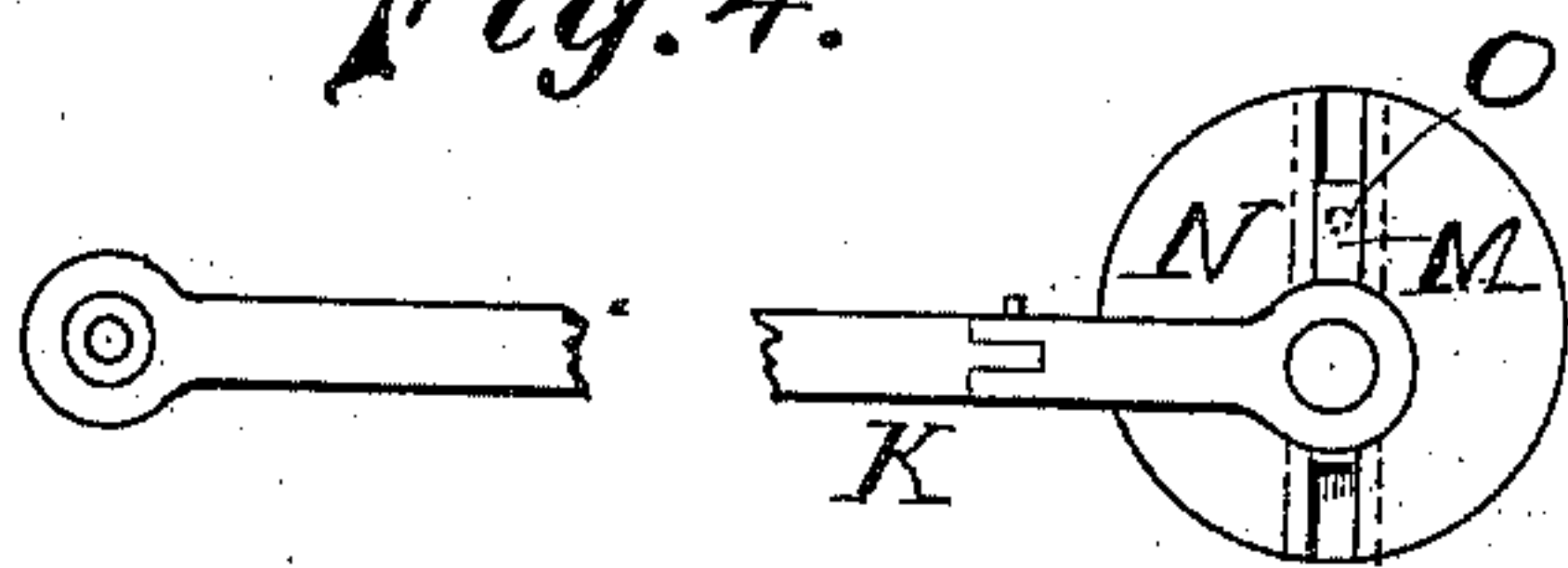


Fig. 4.



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C. F. DeWald.
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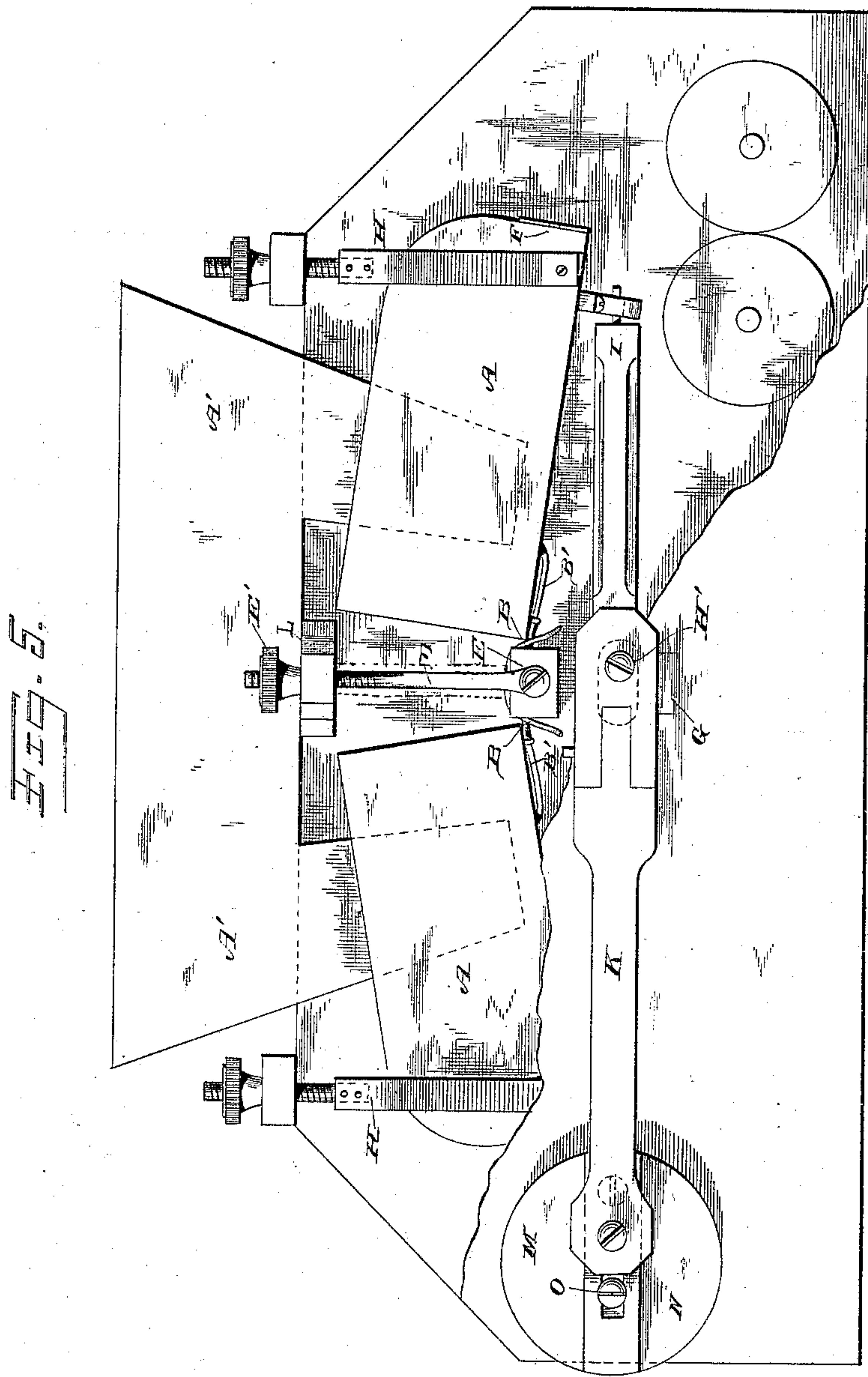
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2 Sheets—Sheet 2.

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Witnesses

Samuel J. Barber
Chas. E. Barber

By his Attorney

Inventor
John R. Palmer
J. S. Jones
2.

UNITED STATES PATENT OFFICE.

JOHN R. PALMER, OF DAYTON, OHIO.

FEED-REGULATOR FOR ROLLER-MILLS.

SPECIFICATION forming part of Letters Patent No. 334,891, dated January 26, 1886.

Application filed April 23, 1885. Serial No. 163,160. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. PALMER, of Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Improvement in Feed-Regulators for Roller-Mills, which is fully set forth in the following specification and accompanying drawings.

My invention relates to a feed-regulating attachment for roller-mills, purifiers, separators, and similar machines, for evenly distributing grain and other material to be ground or otherwise treated. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of my feed-regulator. Fig. 2 is an end view of the same in cross-section. Fig. 3 is a top view of the same in longitudinal section. Fig. 4 is a view of the jointed pitman-rod, pulley N, and the adjustable slide for regulating the length of its stroke. Fig. 5 is a side elevation of my feed-regulator with a part of the casing broken away.

My feed-regulator consists of a frame so constructed as to be readily attachable to any roller-mill, purifier, or separator, and this frame has centrally on the upper side a transverse strip, to which the spouts are attached, and from which the saddles are suspended by adjustable rods. Within the frame are suspended two oppositely-disposed distributing-boards, adapted to be operated by a double-bell-crank lever, so as to be vibrated, all of which will be hereinafter set forth and claimed.

The material to be fed or distributed between the rolls is supplied by the grain-spouts A' A' to the receivers or distributors A A, which are held in a slanting or inclined position by means of the straps H H, which hold their outer ends. These straps may be made of leather or thin bands of steel, and secured one at each of the lower corners of the outer ends of the distributors, as clearly shown in Fig. 2. At their inner ends the receivers A A are secured to the saddle B, which rests on the vertically-adjustable piece E, the height and level of which is regulated by the vertical rods D and the nuts E'. Thus the inner ends are adjusted to and from the lower ends of the supply-spouts, and regulate the flow of the grain from said spouts.

The inclination of the receivers or distributing-tables A and the length of their vibrations are readily adjustable according to the nature of the material to be operated upon, as will hereinafter be fully set forth.

The lower or outer ends of the vibrating receivers or distributing-tables A A are provided with end-gates F, as shown in Fig. 2, which are evenly perforated throughout, or serrated or otherwise provided with small openings, so that as the grain by the vibrating motion of the tables passes down it will be distributed along the end-gates and pass out through the openings so provided evenly and regularly, thereby preventing the grain from being fed to the rolls in uneven masses.

G is a cross-piece of wood, firmly secured to the frame within centrally, and having in the center thereof a pivot, J, secured in any suitable manner.

H' is a lever having two right-angled arms, I, through the center of which passes the pivot J. The arm H' is for the transmission of motion. The arms I are attached to the under surfaces of the receivers A A at their outer ends in such a manner as to allow of their free vibratory movement. The projecting outer end of the lever H' is attached to the connecting-rod K, through the medium of which and pulley N motion is transmitted to the receivers.

The ends of the horizontal vertically-adjustable cross-piece E pass through slots L, which are shown in dotted lines in Figs. 1 and 5. It is noted here that the cross-piece is provided with bolts at its ends, to which are secured the rods D at its ends; hence the slots are narrower than the width of the main portion of the cross-piece in the side of the machine, and are suitably attached to the regulating-rods D D, and have free action upon the feed-tables at the point where the pivot-support is formed by the hooks B' B', hooked into the saddle B. The saddle is of metal or other suitable material fastened, preferably, on the upper side of the movable cross-piece E, and having at each of its extremities suitable attachments whereby it may be fastened to the receivers. I have shown this saddle perforated at each end and extending across the adjustable cross-piece, and I have shown hooks B' B' on the distributors which are hooked into the perforations in the saddle; but I do not wish to

limit myself to this exact construction, as this is simply a preferred means of pivotally attaching the distributors to the cross-bar.

The sustaining-straps H may be made of any suitable material, and are regulated and held in their position by set-screws or other suitable devices.

Figs. 3 and 4 show a jointed pitman-rod having the one end attached to the slide M in the pulley N, and the other to the arm K of the vibrating lever H'. It is obvious that the throw of the vibration can be regulated by adjusting the slide M, so that the pivot will be near to or far from the center of the pulley.

The slide is retained in any required position by means of the screw O, passing through a slot in the said slide, and thus regulating the length of the stroke of the pitman-rod K, so as to vary the vibrations of the receivers A A.

The pitman-rod K may be jointed near one end for the purpose of affording free lateral motion to said pitman-rod, thus enabling it to adapt itself to the varying length of the stroke. Motion is imparted to pitman-rod K by means of the belt R, which receives motion from the pulley S on one of the crushing-roll shafts, and imparts the same to pulley T, which is on the same shaft with the pulley N, as is clearly shown in Fig. 3.

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

1. In a feed-regulating device, the combination of the independent feed-boards and hori-

zontal lever to which both the feed-boards are connected, with the pitman and devices for imparting motion to the same, substantially as set forth.

2. The inclined vibrating feed-board and a vertically-adjustable cross-piece and saddle, in combination with a discharge-spout which supplies meal or grain to said feed-board, substantially as herein set forth.

3. The adjustable inclined feed-tables, in combination with the double-bell-crank lever attached to their outer ends, the pitman-rod K, and the adjustable crank, substantially as herein set forth.

4. The combination of the adjustable inclined vibrating feed or distributing tables A, having the perforated end-gates F, the saddle B, the vertically-adjustable cross piece E, the suspending-straps H, and the supply-spouts A', substantially as herein set forth.

5. The combination of the adjustable inclined vibrating feed or distributing tables, the cross-piece E, the saddle B, and the suspending-straps H, with the bell-crank-operating levers H' I and the pitman-rod K, substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand, this 5th day of August, 1884, in the presence of witnesses.

JOHN R. PALMER.

Witnesses:

ED. H. WILLIAMS,

W. L. MAY.