

No. 688,780.

Patented Dec. 10, 1901.

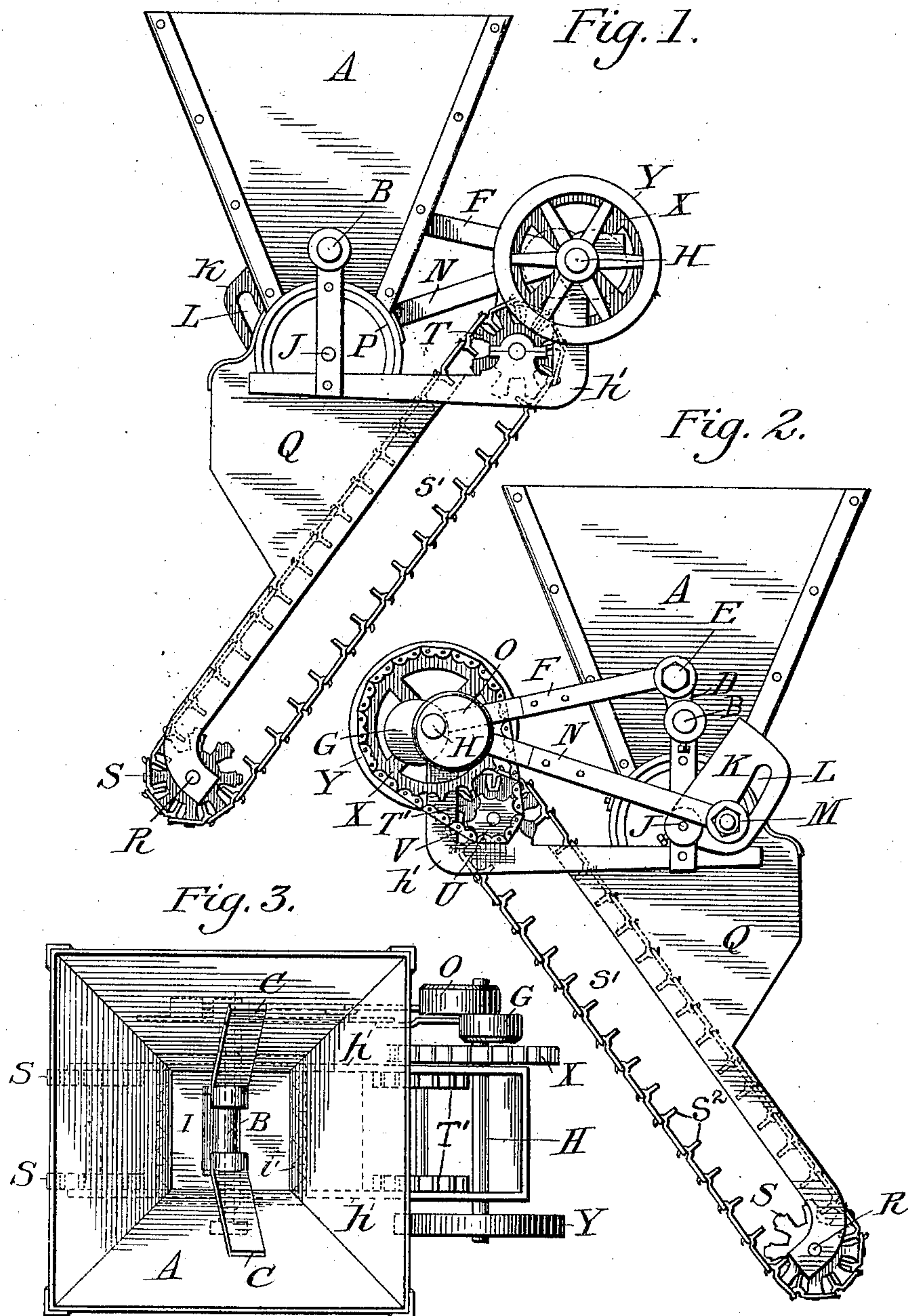
T. HASKARD.

FEEDING DEVICE FOR MECHANICAL STOKERS.

(Application filed Dec. 27, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.

Albert L. Williams  
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2 Sheets—Sheet 2.

Fig. 4.

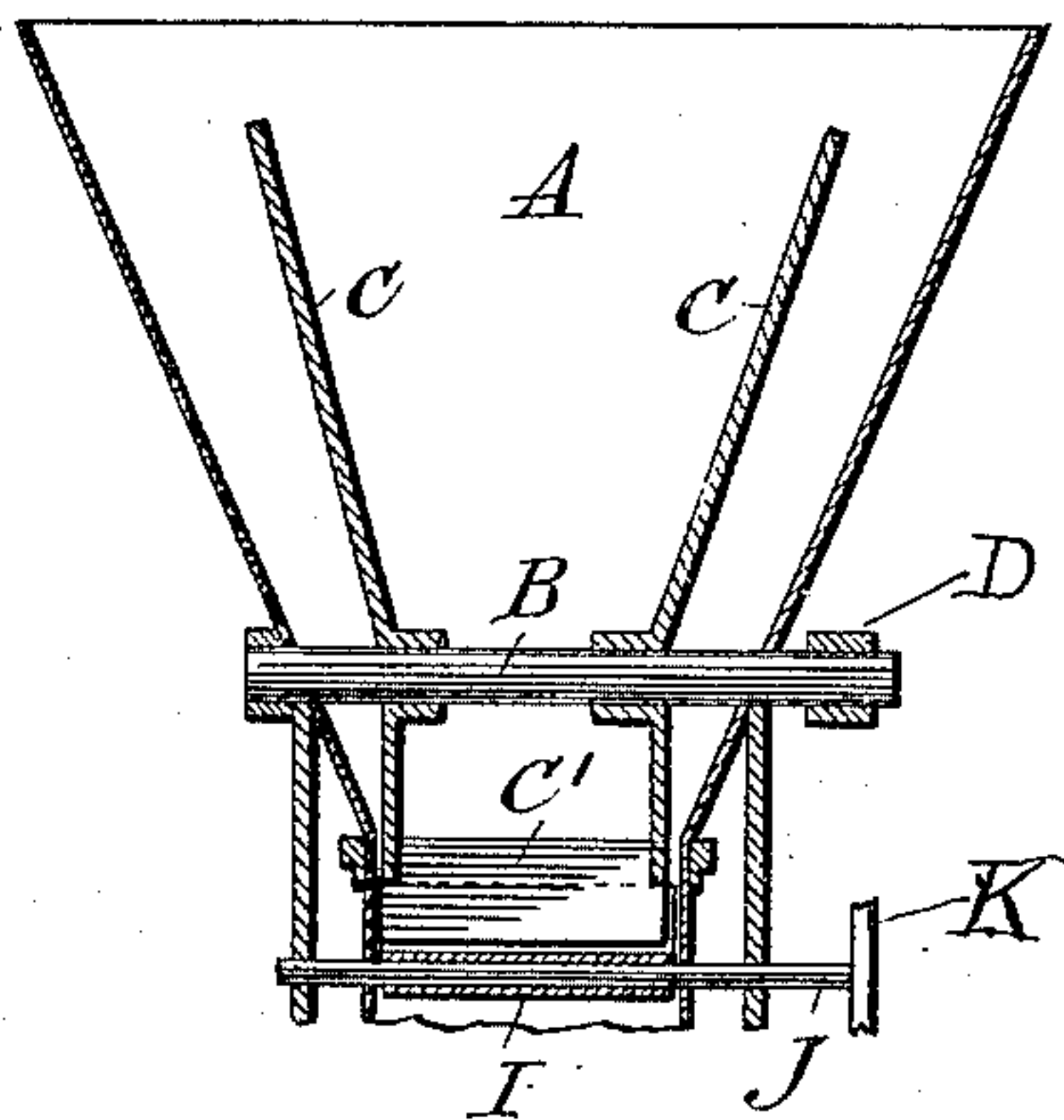


Fig. 5.

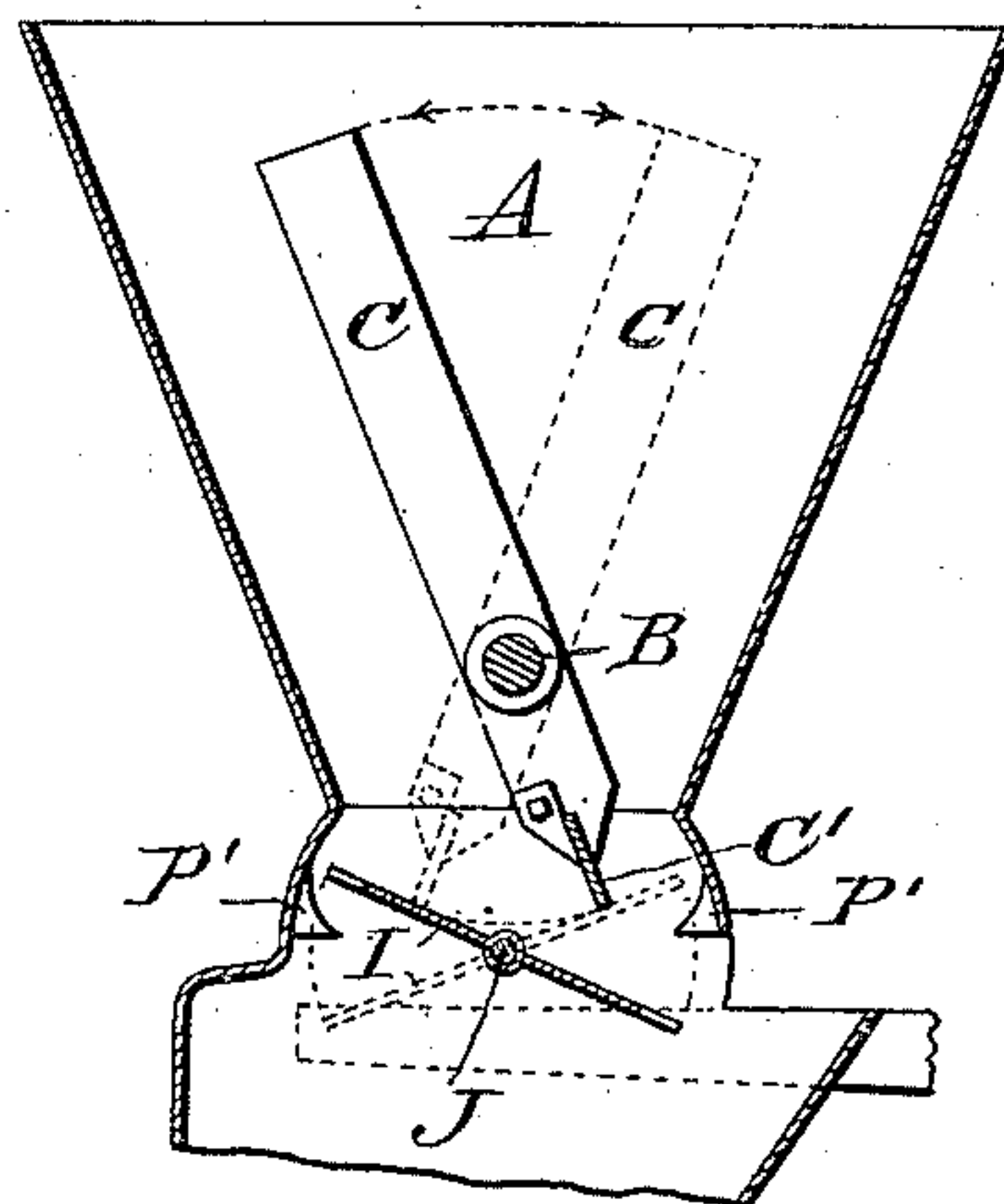


Fig. 6.

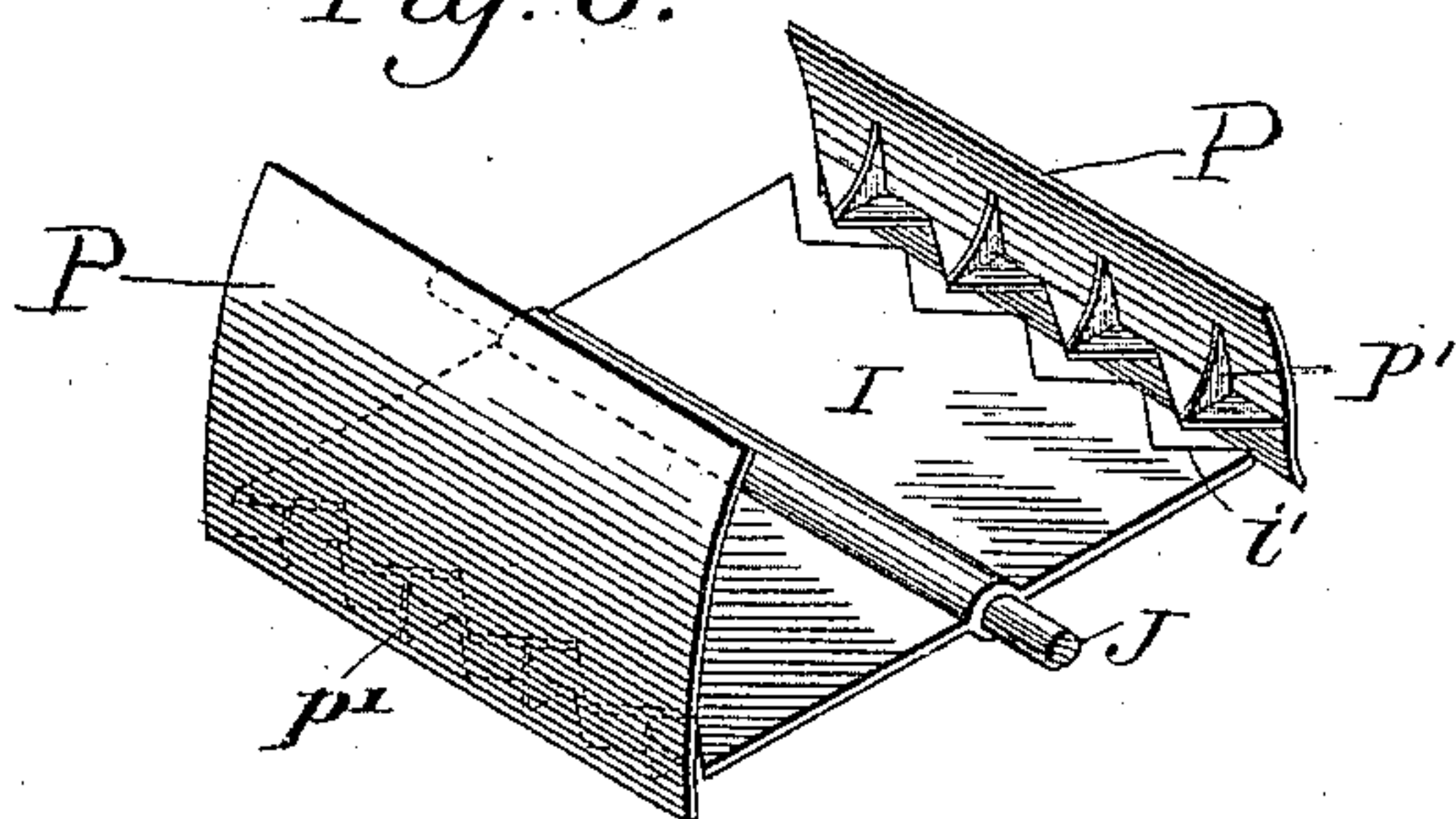


Fig. 6a.

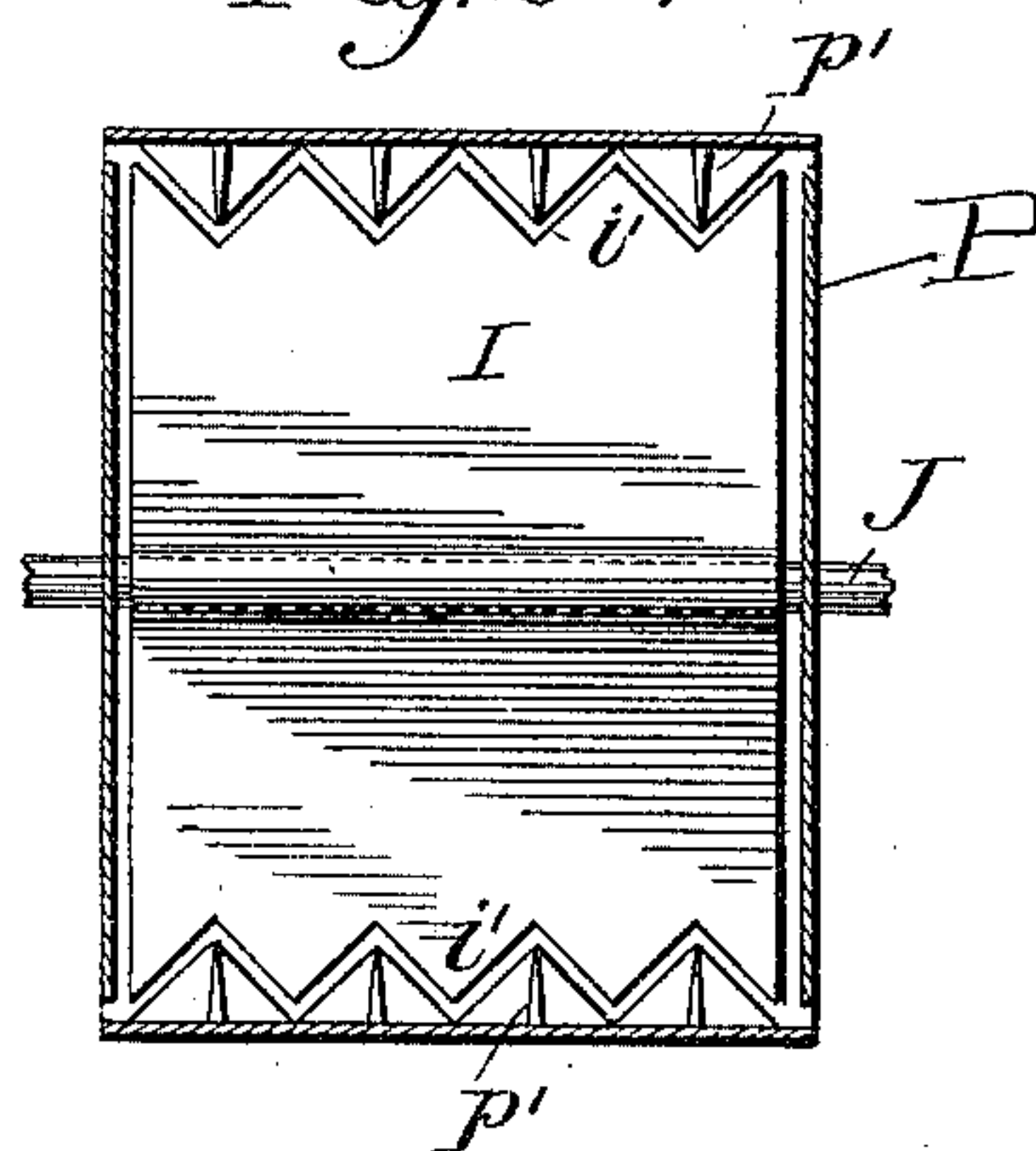
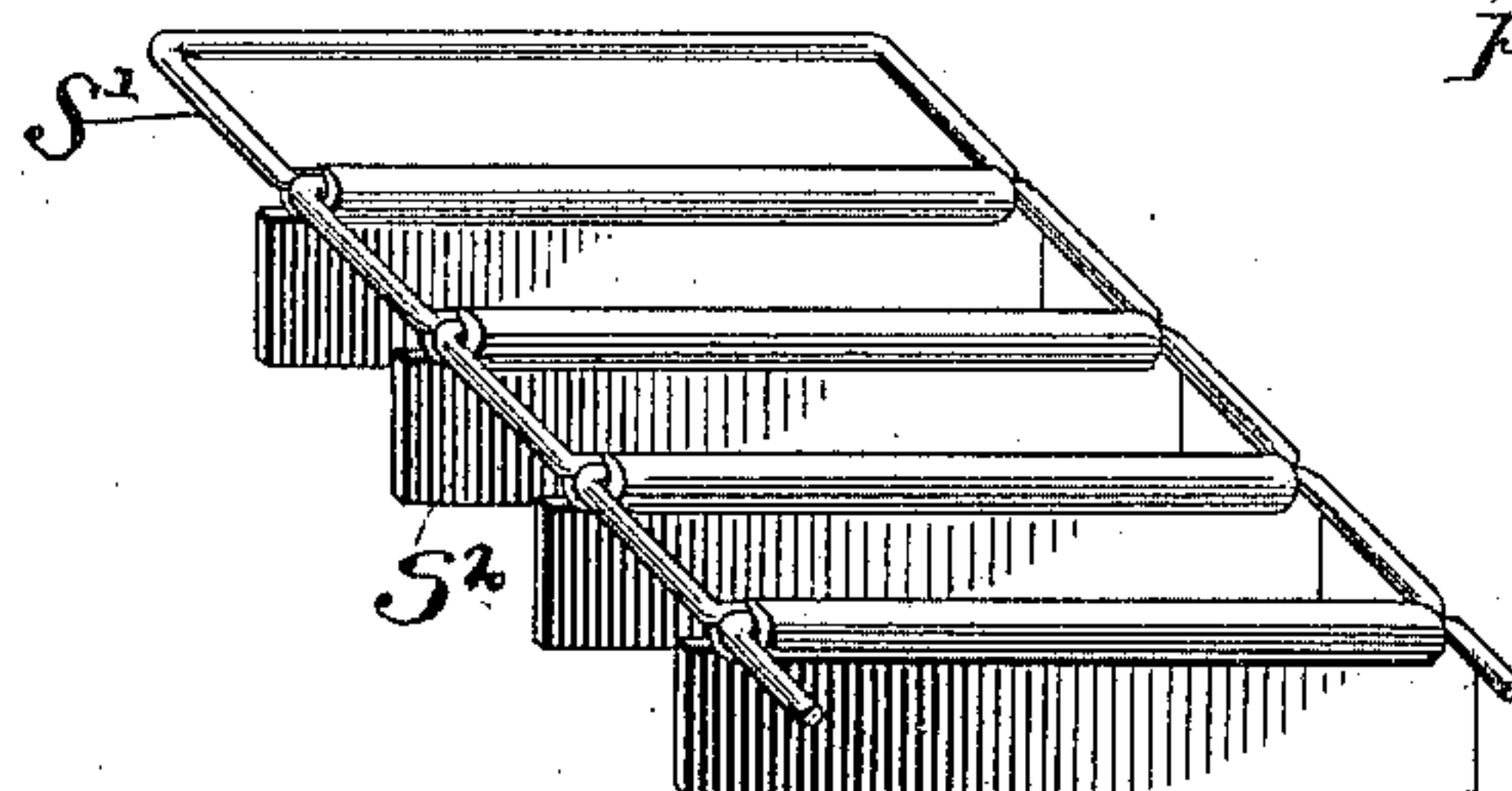


Fig. 7.



Witnesses.

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# UNITED STATES PATENT OFFICE.

THOMAS HASKARD, OF VINELAND, NEW JERSEY.

## FEEDING DEVICE FOR MECHANICAL STOKERS.

SPECIFICATION forming part of Letters Patent No. 688,780, dated December 10, 1901.

Application filed December 27, 1899. Serial No. 741,774. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS HASKARD, a subject of the Queen of Great Britain, residing at Vineland, in the county of Cumberland and State of New Jersey, have invented a new and useful Improvement in Feeding Devices for Mechanical Stokers, of which the following is a specification.

My invention relates to an improvement, in a feeding device for a mechanical stoker, of an automatic feeder and crusher, and has for its object to crush the coal before entering the stoker and to feed it in uniform quantities and at a regular speed to said stoker.

With these and other objects in view my invention further consists in the novel details of construction and combination of parts to be fully described in the following specification and clearly set forth in the claims.

Referring to the accompanying drawings, forming a part of this application, in which like characters of reference indicate similar parts throughout the several views, Figure 1 is a front elevation of my improved feeding device. Fig. 2 is a rear elevation thereof. Fig. 3 is a top view. Fig. 4 is a central vertical sectional view of the hopper. Fig. 5 is a similar view taken at right angles to the plane of Fig. 4. Fig. 6 is a perspective view of the crusher. Fig. 6<sup>a</sup> is a plan view thereof, and Fig. 7 is a perspective view of a portion of the conveyer-chain.

In the drawings, A represents a hopper, in the lower part of which is journaled a shaft B, carrying a pair of upwardly-extending diverging paddles C, adapted when reciprocated to agitate the contents of the hopper A. The lower ends of the paddles C, which extend beyond shaft B, are connected by a transverse blade C', and a crank D is fastened to the shaft B on the outside of hopper A and is connected by a link F to an eccentric G of a shaft H, suitably journaled in the bracket h', mounted on the hopper.

A feeding-plate I, provided with serrated or toothed outer edges i', is journaled beneath the hopper to the brackets h' by a shaft J, which has also rigidly attached thereto a crank-plate K. Adjustably secured in a curved slot L of this crank K is a wrist-pin M, connected by a link N to a second eccentric O,

also carried by the shaft H. The hopper A is made cylindrical at its lower end about the shaft J, as indicated at P, and is provided on its interior with opposite sets or rows of teeth P', which intermesh with the teeth of the feed-plate I.

A chute Q, in the formation of an inclined trough with a hopper at its upper end and its lower end terminating in bent legs R, is adapted to receive the crushed coal from the cylinder P and deliver it to any suitable stoker. (Not shown.) Sprocket-wheels S are journaled between legs R, and a sprocket-chain S' connects them with similar sprocket-wheels T', journaled in the bracket h'. A pinion U is carried by the shaft on which the sprocket-wheels P are mounted and is connected by a chain V to a sprocket-wheel X, carried by a shaft H, on which shaft is also mounted a drive-wheel Y.

The operation of my device is as follows: The drive-wheel Y is connected with any suitable source of power, and coal is fed into the hopper A, where it is kept in agitation and so prevented from clogging in said hopper by the reciprocating motion of the paddles C, caused by the eccentric and link connection between shafts B and H. The feed-plate I is likewise given a reciprocating or oscillating motion from the eccentric O, and the degree of this motion may be regulated by adjusting the position of the wrist-pin M in slot L of the crank-plate K, as the greater the distance between said crank M and the shaft J so the swing of the plate I is increased, and consequently a greater passage is provided between either end of plate I in its lowermost position and the set of teeth p' thereabove, and so the grade of coal permitted to pass is under regulation. Should a lump of coal which is larger than the grade for which the machine is set endeavor to pass feed-plate I, it would become engaged between the teeth p' and the blade C', so that the backward movement of that end of the plate I would grind the lump of coal between its teeth and the teeth p' and crumble it to a size small enough to pass. As the crushed coal accumulates in the bottom of the hopper part of chute Q it is taken up by the inwardly-projecting blades S<sup>2</sup> of chain S' and



carried down the inclined trough of said chute in uniform quantities and at a regular speed and discharged into the stoker.

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

1. In a feeding device, the combination of a hopper provided at its lower end with a feeding-plate, of a shaft passing horizontally through the hopper near its lower end, agitating-paddles secured to said shaft and adapted to be reciprocated thereby, a blade secured to the lower ends of the paddles, a crank connected to said shaft, a power-shaft provided with an eccentric, and a link connecting the crank-arm with the eccentric, substantially as described.

2. In a feeding device, the combination with a hopper provided at its lower end with a feeding-plate, of a shaft passing through the hopper near its lower end, an agitating-paddle carried by said shaft and adapted to be reciprocated thereby, a blade secured to the lower end of the paddle and means for rocking the shaft, substantially as described.

3. In a feeding device, the combination of a hopper with a toothed feeding-plate mounted in the lower part thereof, and a series of teeth on the hopper meshing with the teeth of the feeding-plate, of a shaft passing through the hopper above the feeding-plate, an agitating-paddle secured to said shaft and adapted to be reciprocated thereby, a blade on the lower

end of the paddle and means for rocking the shaft, substantially as described.

4. In a device of the character described, a hopper, a shaft mounted therein, an agitator-paddle carried by the shaft, a blade on the lower end thereof, a feed-plate journaled in the hopper beneath the said shaft, a series of teeth on each end of the feed-plate, a series of teeth on each side of the passage-way in which the feed-plate is located, a suitably-journaled drive-shaft, and means connected therewith for rocking the paddle-shaft and the feed-plate, substantially as described.

5. In a device of the character described, a hopper, a shaft mounted therein, an agitating-paddle carried by the shaft, a blade on the lower end of the paddle, a feed-plate pivoted in the hopper beneath said shaft, a series of teeth on each end of the feed-plate, a series of teeth on each side of the passage-way of the hopper in which said feed-plate is located, a suitably-driven shaft, a pair of eccentrics carried thereby, means for connecting the paddle-shaft with one eccentric, adjustable means for connecting the feed-plate with the other eccentric, a chute, and an endless conveyor operating therewith and receiving its motion from the drive-shaft, substantially as described.

THOMAS HASKARD.

In presence of—

HERBERT C. BARTLETT,  
FELIX S. S. JOHNSON.