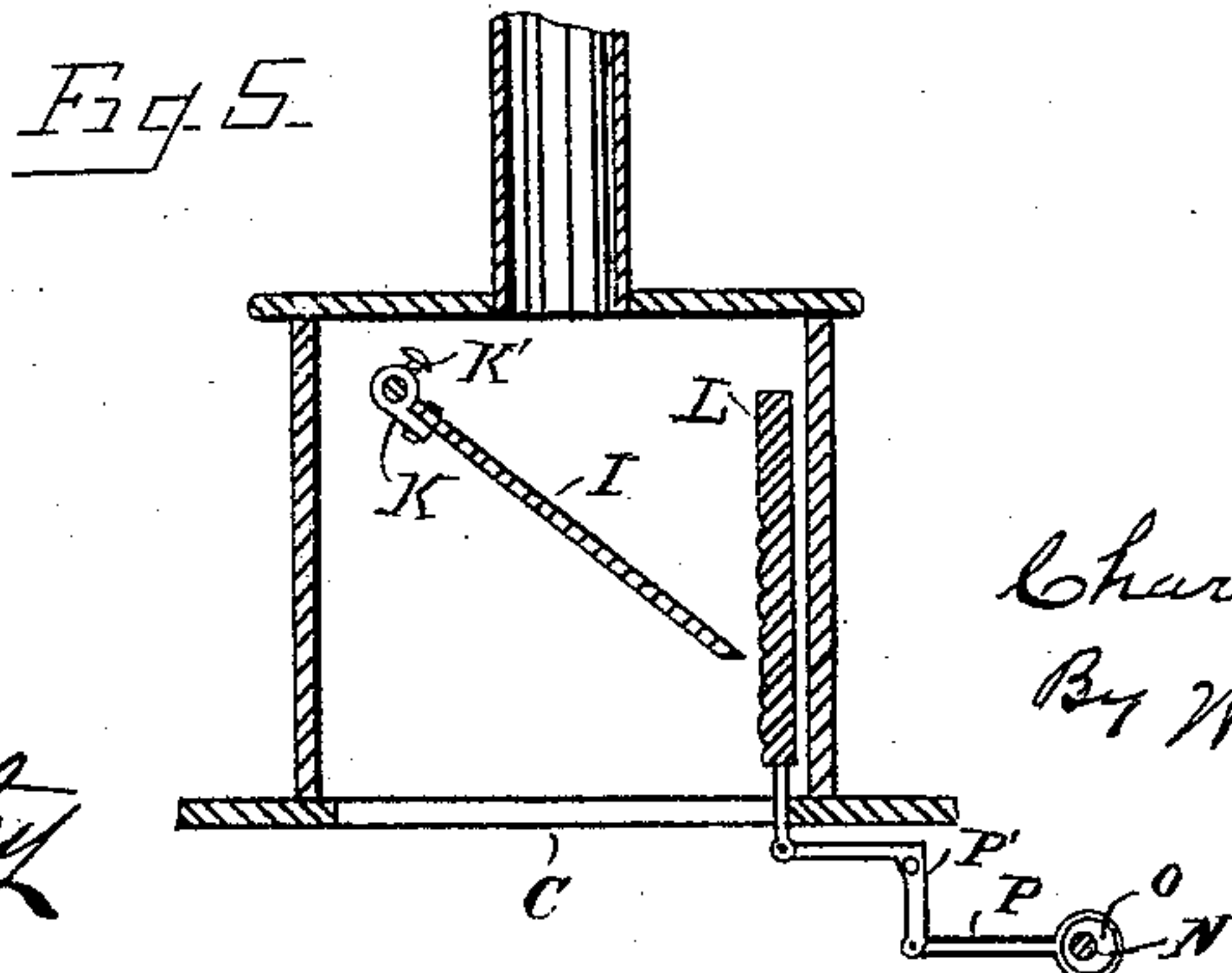
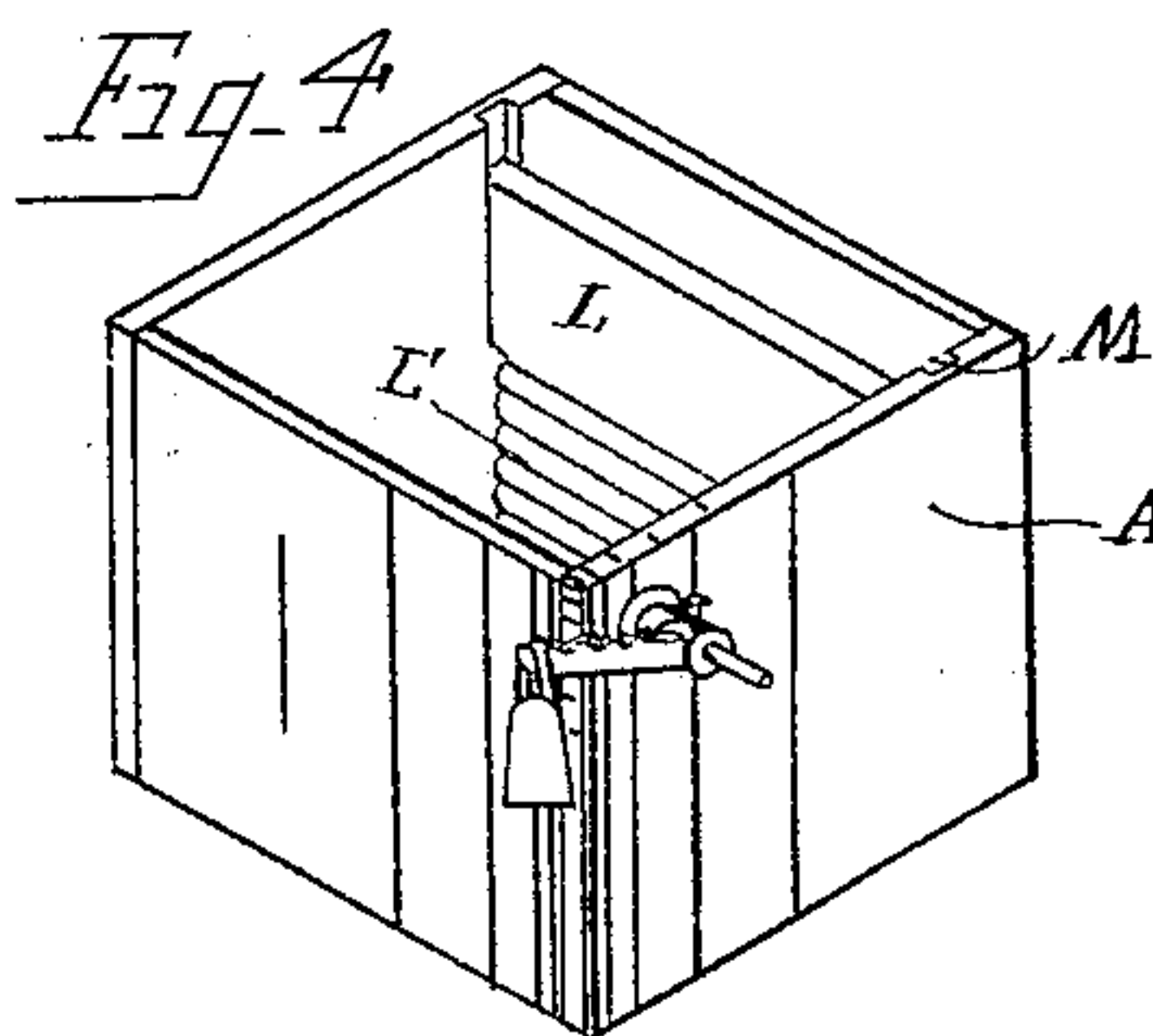
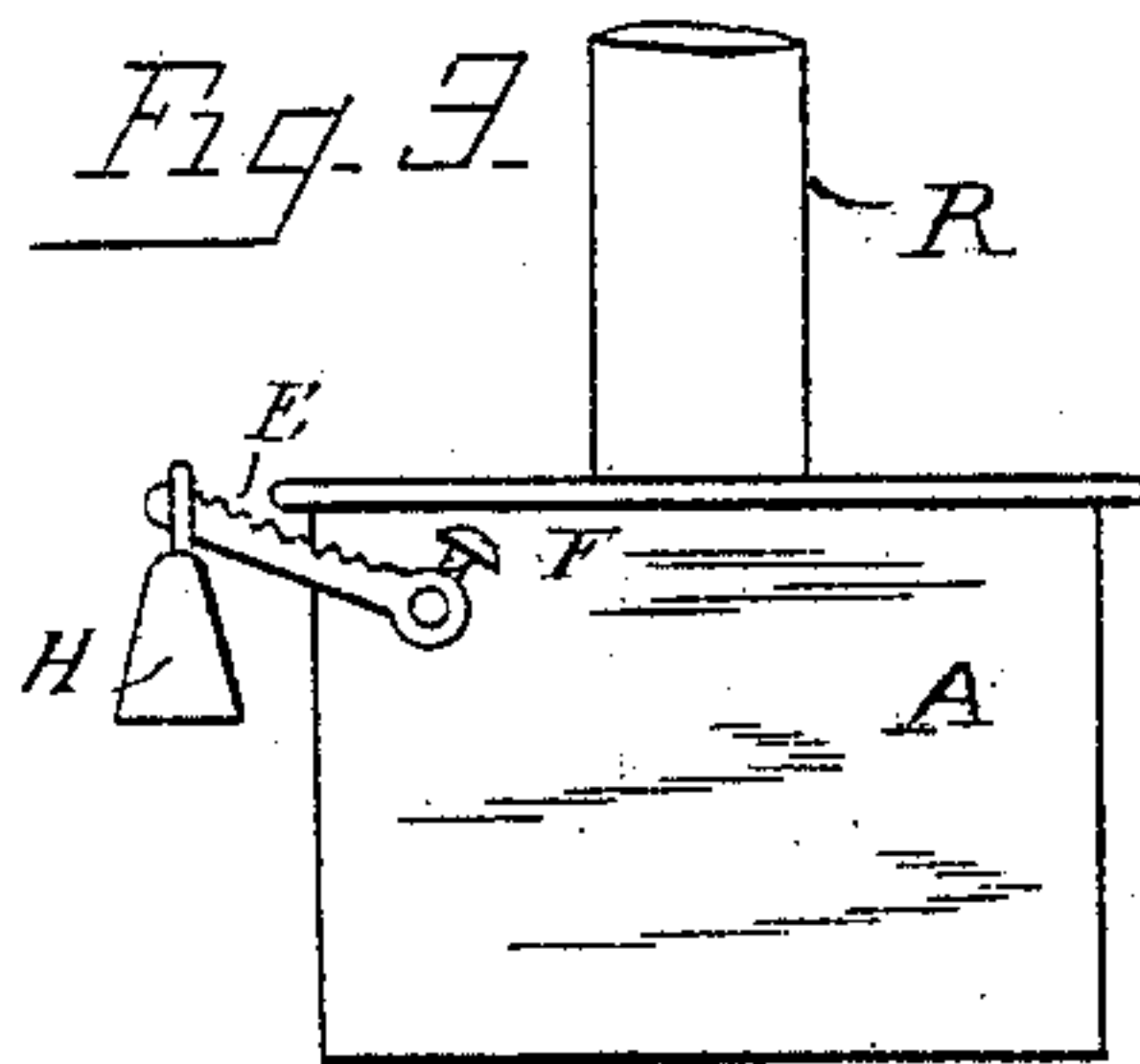
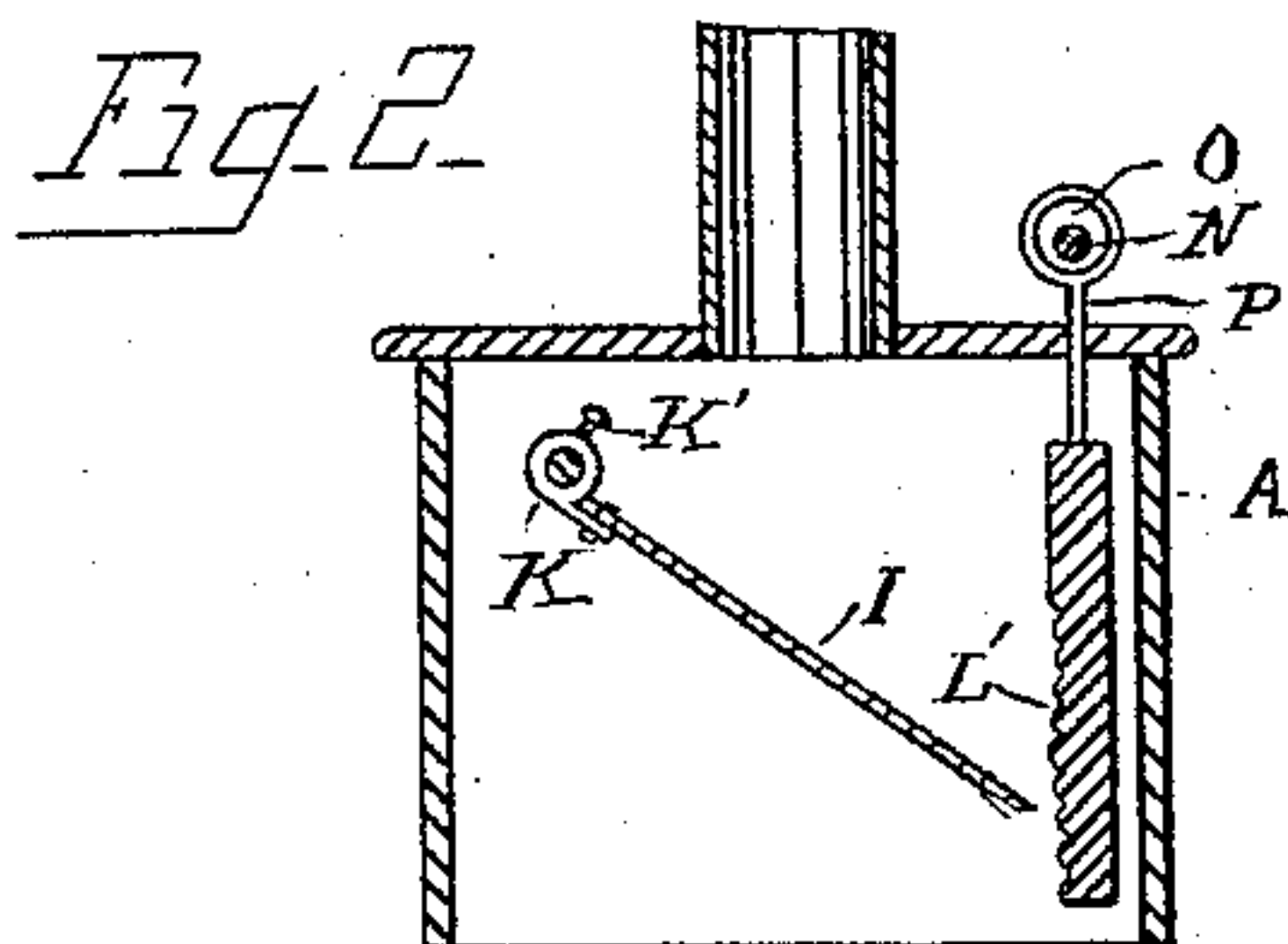
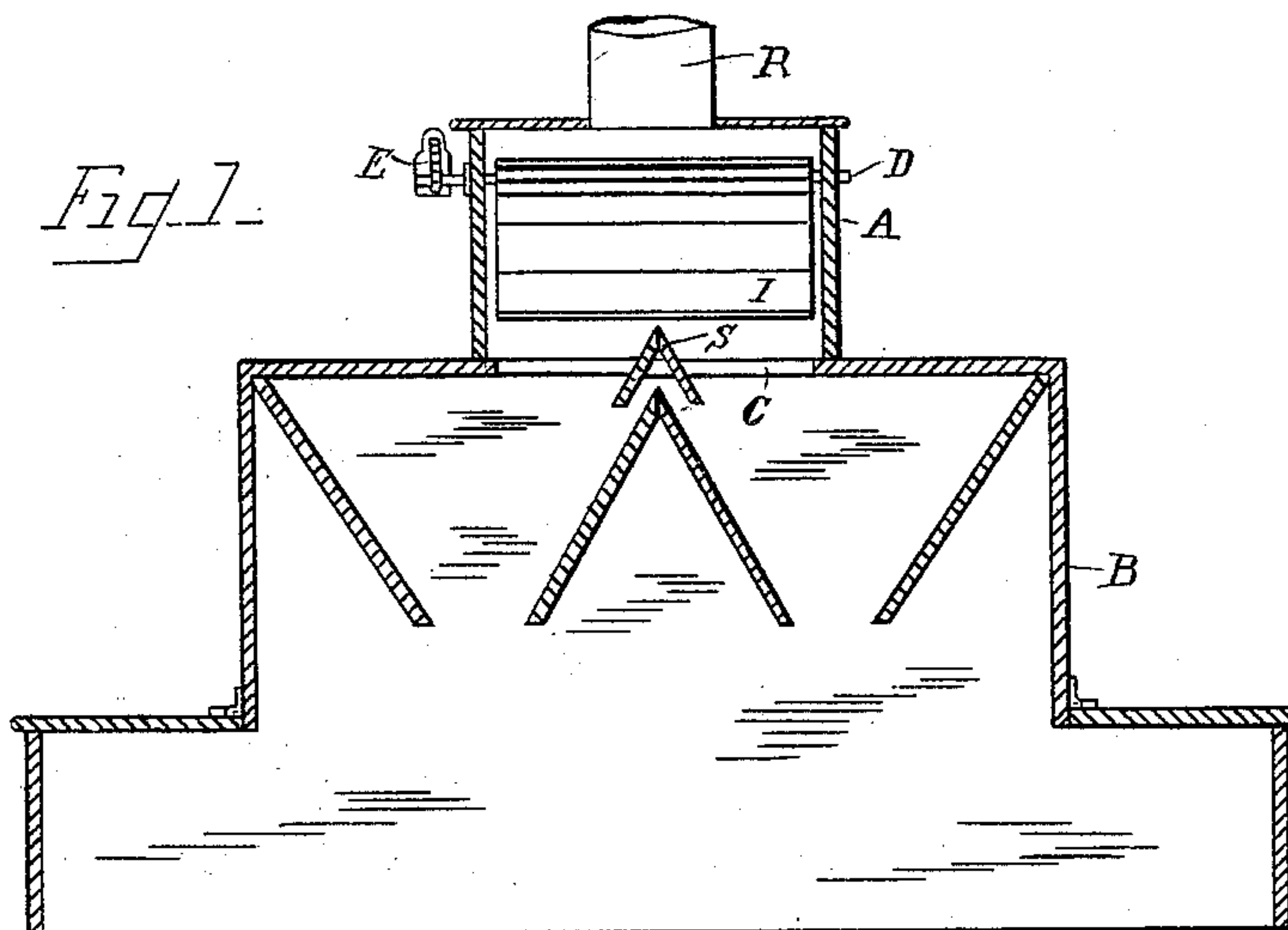


(No Model.)

C. J. PILLIOD.  
FEED REGULATOR.

No. 422,623.

Patented Mar. 4, 1890.



Witnesses.  
Carroll J. Webster.  
Geo W Hartley

Inventor.  
Charles J Pilliod  
By William Webster  
Atty

# UNITED STATES PATENT OFFICE.

CHARLES J. PILLIOD, OF SWANTON, OHIO, ASSIGNOR TO LEWIS N. PILLIOD  
AND HOLLY S. BASSETT, OF SAME PLACE.

## FEED-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 422,623, dated March 4, 1890.

Application filed April 9, 1888. Serial No. 270,016. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES J. PILLIOD, a citizen of the United States, and residing at Swanton, in the county of Fulton and State of Ohio, have invented certain new and useful Improvements in Feed-Regulators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to an automatic feed mechanism for roller-mills, and is designed for use in mills where the same stock is being fed to two sets of rolls.

Heretofore it has been usual to feed the stock to each set of rollers by means of a spout delivering the stock to a division-board placed centrally of the two hoppers.

It has been found that the uneven delivery of stock to the spout causes an impulse to be given to the body of stock in the spout, whereby there is frequently a greater amount fed to one hopper than to the other, causing one set of rolls to be choked while the other set is running clear of stock.

My invention consists in a receptacle for stock, supplemental to the usual hopper and placed upon the same, and provided with an automatically-adjustable feed-gate pivoted within the receptacle, and adapted to receive the stock from the common source and deliver the same in even quantities to each set of rolls when coacting with a vertically-reciprocating feed-board moving within the receptacle.

In the drawings, Figure 1 represents a vertical section of the hopper of a mill with my regulator attached thereto, the divider being shown in vertical section. Fig. 2 is a vertical section of the regulator, showing the interior in side view. Fig. 3 is a side elevation of the supplemental hopper, showing the arm and counter-weight. Fig. 4 is a perspective view of the supplemental hopper with its top removed to expose the interior feed mechanism. Fig. 5 is a vertical section of the di-

vider, showing a modified form of reciprocating mechanism.

A designates the supplemental receptacle for stock, placed upon hopper B of the mill, and having communication therewith through an opening C, formed in the top of the hopper directly beneath receptacle A.

D is a horizontal rod journaled in the sides of receptacle A, and having a right-angled arm E adjustably secured thereon by means of a set-screw F. Arm E is notched along its upper side, and a weight H is suspended therefrom by means of a bail secured to the weight, whereby the weight may be suspended at any desired distance from rod D, and held in place by reason of the bail engaging with the notches upon the arm whenever adjusted.

I designates a feed-gate connected to rod D by being secured to hangers K, adjustably connected to the rod by set-screws K'.

L is a vertically-reciprocating feed-board moving in guides or ways M formed in the sides of receptacle A.

N is a rotating shaft journaled in bearings upon the receptacle, and having eccentrics O, to which are connected pitmen P, which are attached either directly to the feed-board, as shown in Fig. 1, or indirectly by means of a bell-crank lever P', as shown in Fig. 5. Feed-board L is formed with its inner side fluted or corrugated, as shown at L', for a purpose hereinafter stated.

R represents the feed-spout inserted within the top of receptacle A and adapted to convey the stock to the feed-gate to be divided and fed to the rolls.

S is a dividing-board placed within the hopper in parallel relation with the rolls and at right angles to the feed-gate, and is designed to separate the stock delivered to the hopper and by its inclination to direct the stock to the feeder within the mill.

In operation stock is fed through spout R and falls upon feed-gate L, which is adjusted to receive and sustain enough stock to insure its filling the throat between the gate and board and thereby spread the entire length of the gate and to lie against the feed-board along its entire length. The board when re-



ciproated agitates the stock and causes it to  
 feed evenly along the entire length of the  
 board, thereby insuring an even feed to the  
 divider S. When, however, an unusual  
 5 amount is received, the feed-gate is depressed,  
 raising weight H and opening the throat be-  
 tween the gate and feed-board and allowing  
 the surplus stock to pass without clogging.  
 The gate will be returned to its normal posi-  
 10 tion as soon as the surplus stock is disposed  
 of by the action of weight H. Feed-board L  
 is reciprocated by the revolution of shaft N,  
 which may receive motion from any preferred  
 source through the medium of the eccentrics  
 15 and a pitman-connection, either direct, as  
 shown in Fig. 1, or by bell-crank lever, as  
 shown in Fig. 5, or in any suitable manner.  
 The reciprocation of the fluted feed-board  
 agitates the stock which is collected in a suf-  
 20 ficient quantity upon the feed-gate to lie in  
 contact with the feed-board along its entire  
 width, thereby feeding evenly to the hoppers  
 communicating with the divider S and insur-  
 ing an equal amount to each, the quantity  
 25 fed being determined by the opening between  
 the feed-gate and feed-board, which may be  
 regulated by the weight upon arm E.

It will be understood that I may substitute  
 a spring for the arm and weight to control  
 30 the operation of the feed-gate, and that the  
 feed-board may be reciprocated through the  
 medium of cranks upon shaft N in place of  
 eccentrics.

The machine is inexpensive in construc-  
 35 tion, readily adjusted, and adaptable to all  
 forms of roller-mills.

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

40 1. In a feed-regulator for roller-mills, the  
 combination, with a hopper, of a supplemental  
 hopper arranged above and communicating  
 with the same and a divider arranged between  
 the two, an automatic vertically-adjustable

feed-gate journaled within the supplemental 45  
 hopper and at an angle to the divider, an arm  
 attached to the feed-gate, and an adjustable  
 weight sliding upon the arm to vary the po-  
 sition of the feed-gate, and a vertically-recip-  
 50 rocating feed-board, located also within the  
 hopper adjacent to and parallel with the free  
 end of the feed-gate and moving past the  
 same to feed the stock into the machine, sub-  
 stantially as shown and described.

2. In a feed-regulator for roller-mills, the 55  
 combination, with the frame of a roller-mill, of  
 a hopper, a shaft journaled within the hopper,  
 and a feed-gate secured to said shaft, the  
 feed-gate being vertically adjustable to vary  
 the internal area of the hopper, an arm at- 60  
 tached to the shaft without the hopper, and  
 an adjustable weight sliding upon the same  
 to vary the position of the feed-gate, and a  
 vertically-reciprocating feed-board located  
 within the hopper adjacent to and parallel 65  
 with the free end of the feed-gate and recip-  
 rocating past the same, substantially as  
 shown and described.

3. In a feed-regulator for roller-mills, the  
 combination, with a hopper A, of a shaft D, 70  
 journaled within the same, a feed-gate I, at-  
 tached to the shaft, said shaft having an arm  
 E, carrying an adjustable weight H, by means  
 of which the vertical position of the free end  
 of the feed-gate is varied, and a vertically- 75  
 reciprocating feed-board L, corrugated as de-  
 scribed, located within the hopper and work-  
 ing past the free end of the feed-gate to feed  
 the stock to the rolls, all arranged and adapt-  
 ed to operate substantially as shown and de- 80  
 scribed.

In testimony that I claim the foregoing as  
 my own I hereby affix my signature in pres-  
 ence of two witnesses.

CHARLES J. PILLIOD.

Witnesses:

WILLIAM WEBSTER,  
CARROLL J. WEBSTER.