

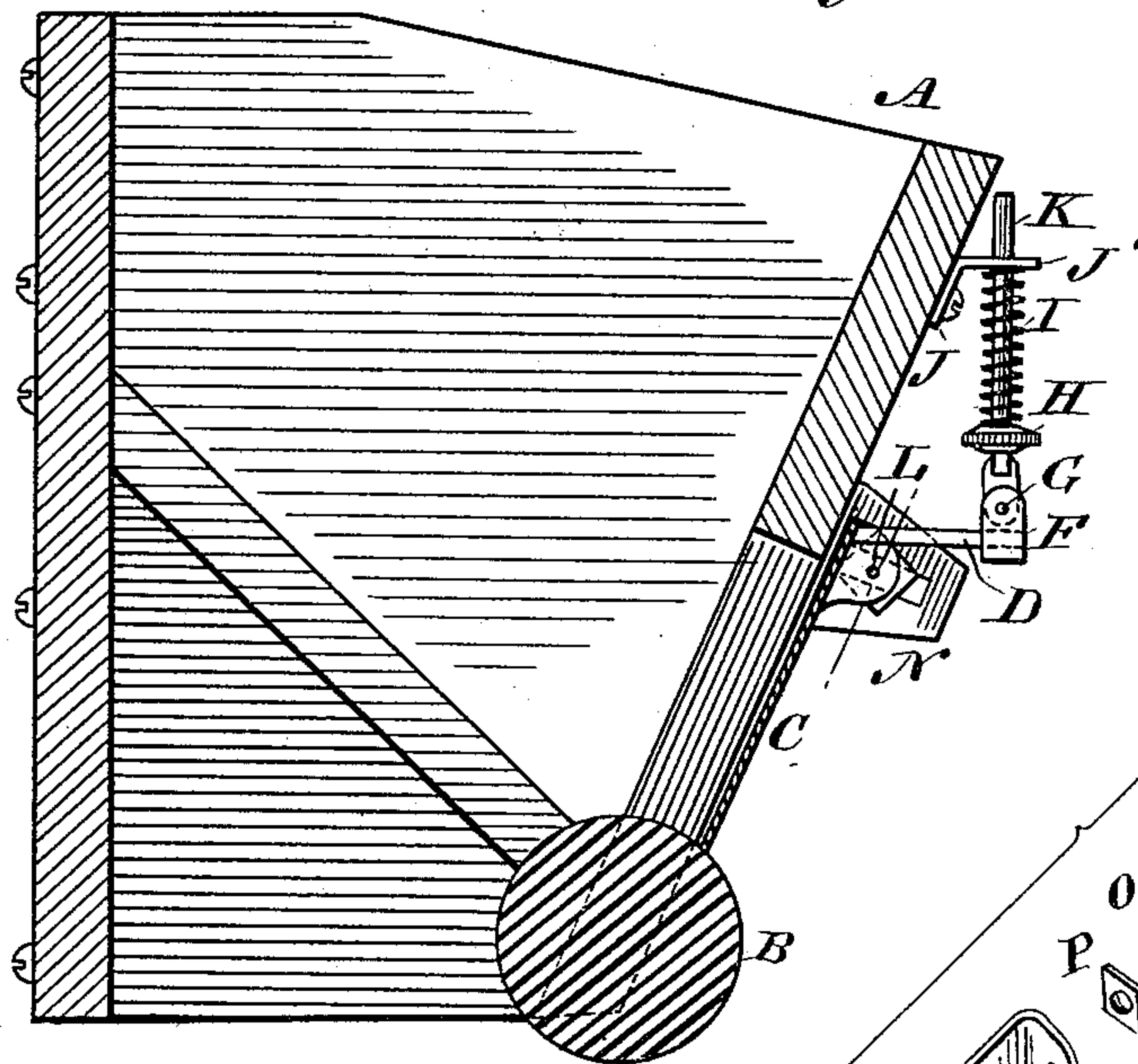
(No Model.)

H. M. WHITNEY.  
AUTOMATIC FEED GATE.

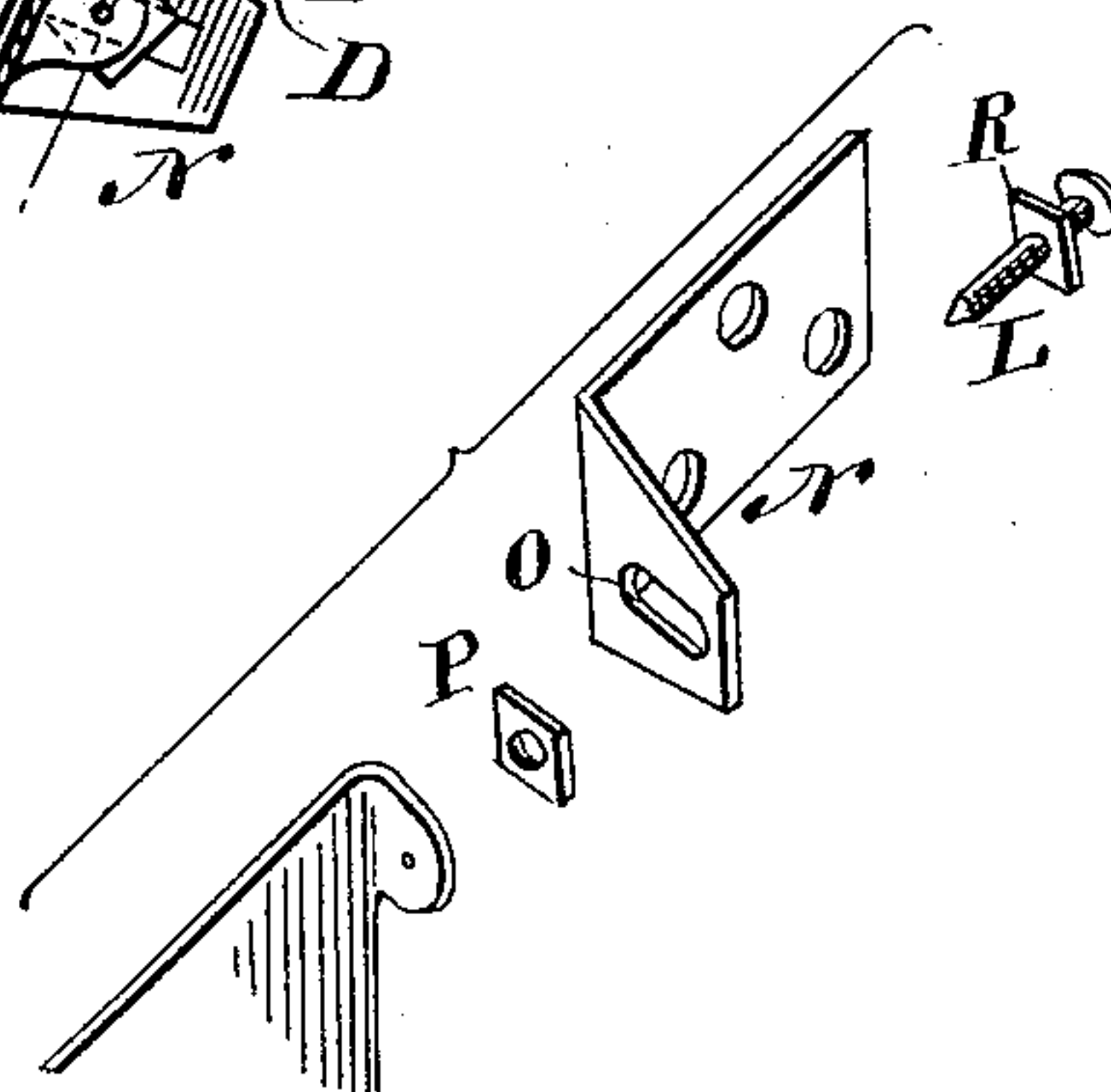
No. 388,164.

Patented Aug. 21, 1888.

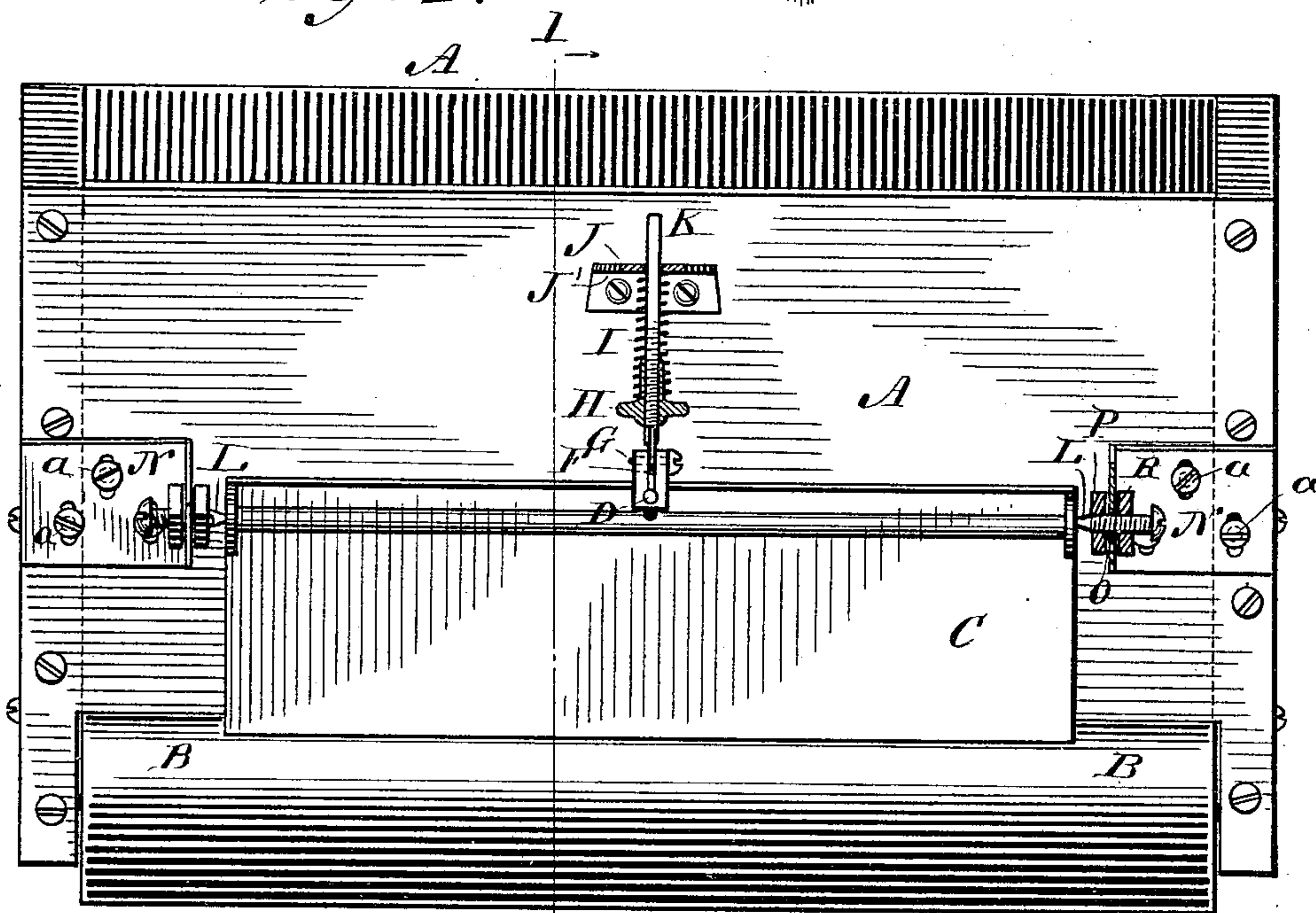
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



WITNESSES,

INVENTOR.

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*By his Attorney*  
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# UNITED STATES PATENT OFFICE.

HUGH M. WHITNEY, OF AVENUE CITY, MISSOURI, ASSIGNOR OF ONE-FOURTH TO LAWRENCE WILSON, OF SAME PLACE.

## AUTOMATIC FEED-GATE.

SPECIFICATION forming part of Letters Patent No. 388,164, dated August 21, 1888.

Application filed June 30, 1887. Serial No. 243,052. (No model.)

*To all whom it may concern:*

Be it known that I, HUGH M. WHITNEY, a citizen of the United States, residing in Avenue city, Andrew county, Missouri, have invented a new and useful Automatic Feed-Gate for Roller-Mills, &c., of which the following is a specification.

My invention relates to an improvement in automatic feed-gates in roller-mills, whereby all kinds of grain from the hopper are fed evenly into the rollers.

The chief advantage of my invention is its simplicity and its certainty in feeding evenly either large or small grain, as well as the compensating adjustments by which the wear on the gate can be taken up.

Another advantage will be shown to be that the shell of the hopper is not pierced at any point, but that the whole is made air-tight and prevents the escape of dust. There are no pieces of mechanism within the hopper to obstruct the fall of the grain, nor to become impeded in their own action by the accumulation of dust or other substance.

My invention consists in improvements which I will describe with reference to the drawings, and which I will fully and clearly set forth in my claim.

Figure 1 is a vertical section of a mill-hopper on the lines 1 1 in Fig. 2. Fig. 2 is a front view of the hopper, showing the gate and appliances for operating it. Fig. 3 is a view in detail of the devices for adjustment of the gate.

A is an ordinary hopper for receiving grain. B is a roller in its bottom.

C is a metal gate hung from any supports secured adjustably upon the front of the hopper.

D is a rod securely fixed upon the gate and projecting outwardly from it.

F is a yoke upon the bar D and at right angles to it, having an opening parallel to the bar D, made to receive and pivot the lower end of the upright bar K, which is a cylindrical metal bar having threads at the extremity nearer the pivot G, upon which the thumb-screw H turns.

The bar K is held in position by a bracket or an angular piece of metal, J, having one side fixed upon the face of the hopper. The other projects horizontally outward, receives the bar K through a perforation and holds it

in an upright position, allowing a motion in a perpendicular direction.

I is a spiral spring surrounding the bar K, having its base upon the under flat surface, J', of J, and exerting a force in a direction toward the pivot G.

H is a thumb-screw turning upon the bar K and receiving upon its top surface the impulse of the spring I.

In Fig. 2 a front view of the above is shown, indicating the action of the spring I along the bar K and its pressure transferred to the gate C by the bar D. The gate is represented as suspended by a bar at the upper line of the gate upon adjusting-screws L L, fixed firmly to the sides of the hopper, and provided with points made to fit into the bar along the upper line of the gate. The adjustment afforded by the pivotal screws L L is so nice that the gate is exceedingly sensitive and responds to the smallest degree of force tending to swing it on the points of the screws L L.

The supporters N N of the pivotal screws are pierced by vertical oblong perforations, through which, by screws a, they are secured to the sides of the hopper, and by means of which a vertical adjustment of the gate can be effected. The horizontal oblong slot O in the supporter N (see Fig. 3) is for the admission of the pivotal screws L and permits an inward and outward adjustment of the axes of the gate, the position of the screws being fixed by the clamping-nuts P R, turning upon the screw L, on opposite sides of the supporter N. When the nuts P R are screwed down upon either side of the supporter, they secure the screw L firmly to the supporter. The gate, by the action of gravity, tends to fall clear of the roll B perpendicularly from the points of suspension; but the spring I, having its seat upon the projecting angle J' and a resistance at H, exerts a force along the upright bar K, which is transferred along the bar D to gate C and operates to overcome the force of gravity and to impress the lower edge of the gate more or less firmly upon the roll B, the degree of tension being controlled by the thumb-screw H, operating upon the spring I.

I am aware that there are devices to operate a feed-gate by means of elastically holding the edge of the feed-gate against the roll B; but

what I claim as my invention is a combination by which this is accomplished with the greatest simplicity and perfection.

What I claim as my invention, and desire to  
5 secure, by Letters Patent of the United States,  
is—

As an improvement in automatic feed-gates for mills, the combination, with the yielding feed-gate, of the horizontally-adjustable pivot-

screws L L, slotted supporters N N for said rolls, the nuts P R on said screws and clamping the same to the supporters, and the screws a a for vertical adjustment of the supporters N N and gate, substantially as set forth.

HUGH M. WHITNEY.

Witnesses:

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