

(No Model.)

W. M. RAND.
FEED HOPPER.

No. 272,321.

Patented Feb. 13, 1883.

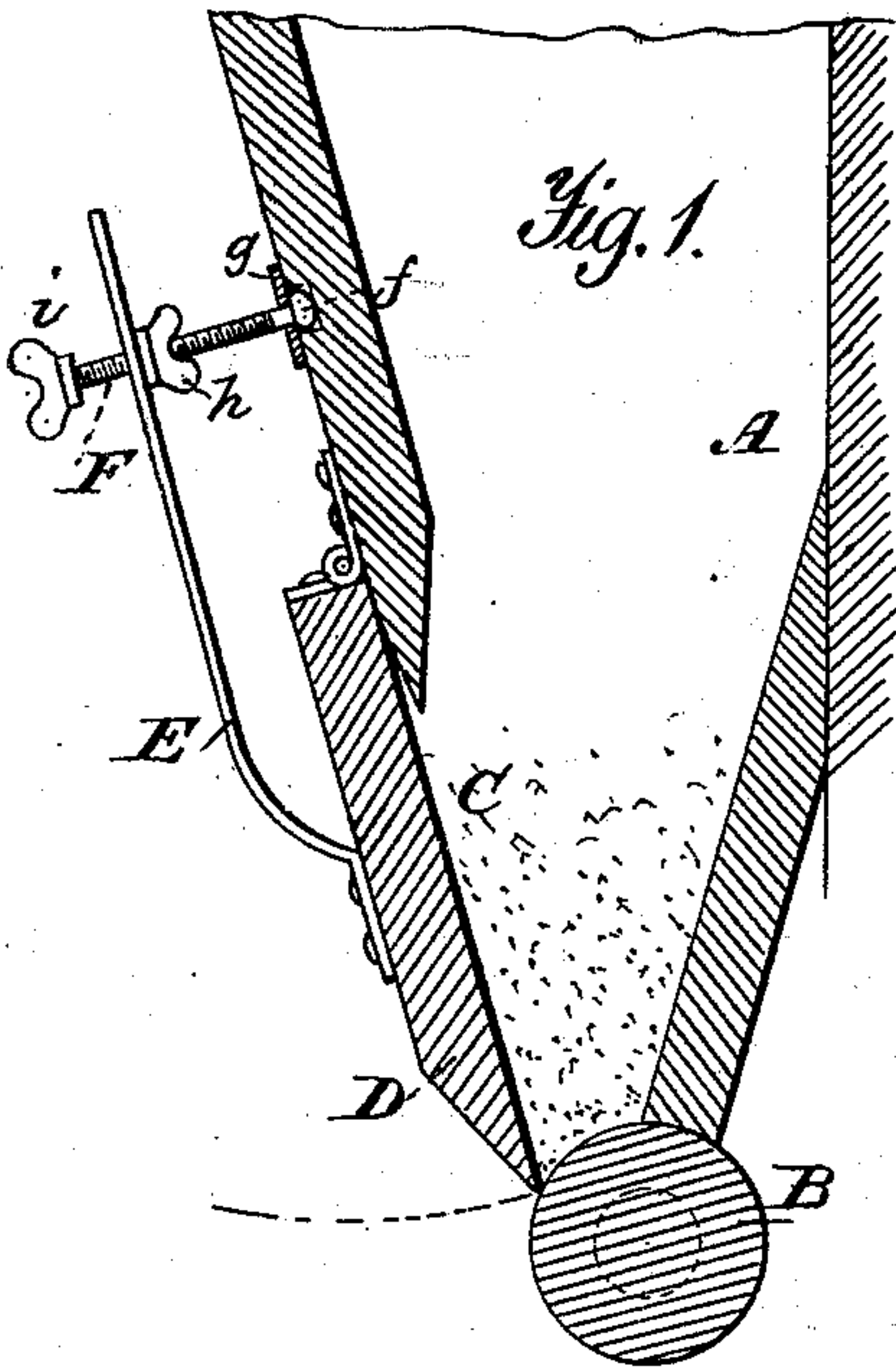


Fig. 1.

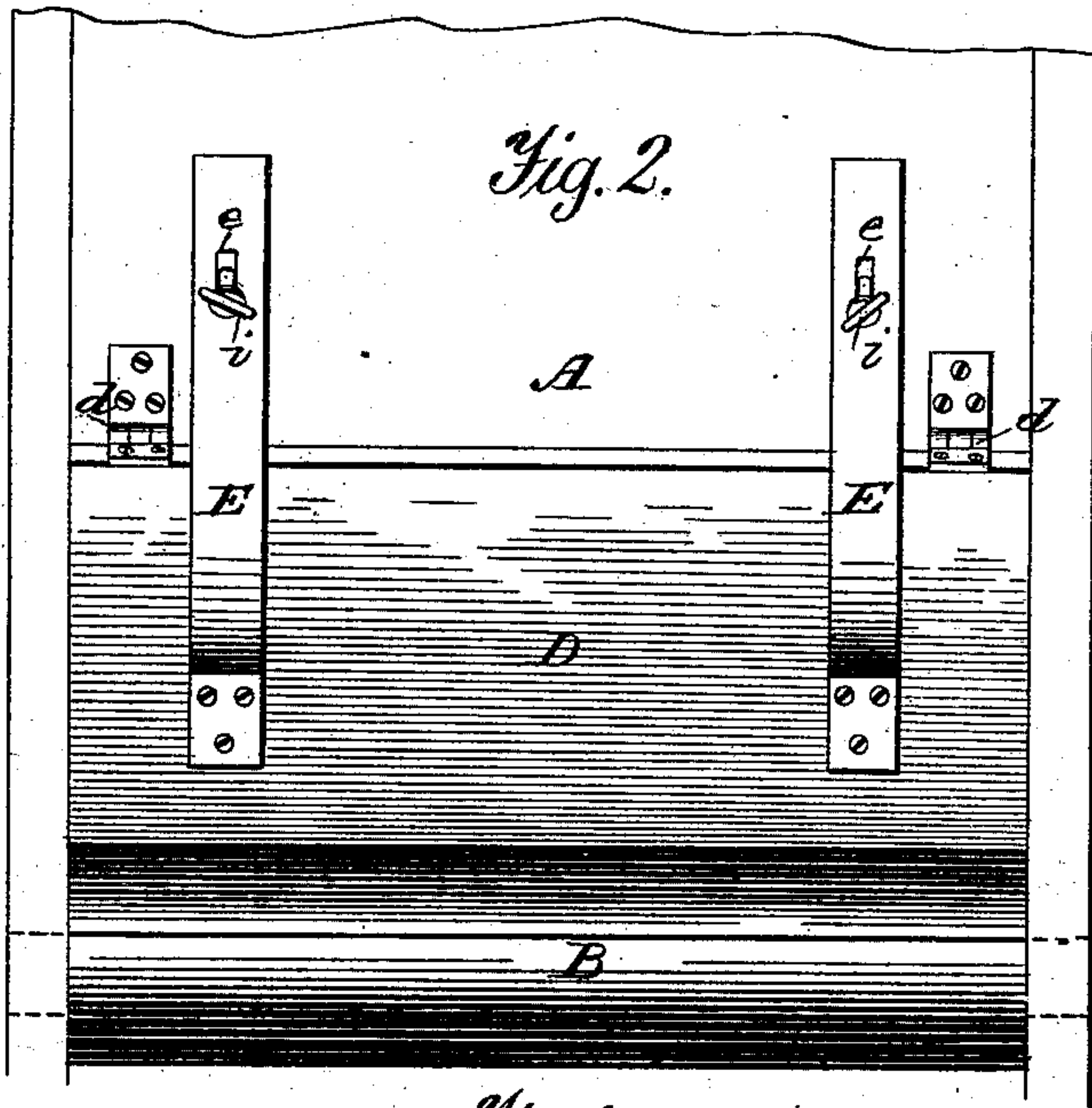


Fig. 2.

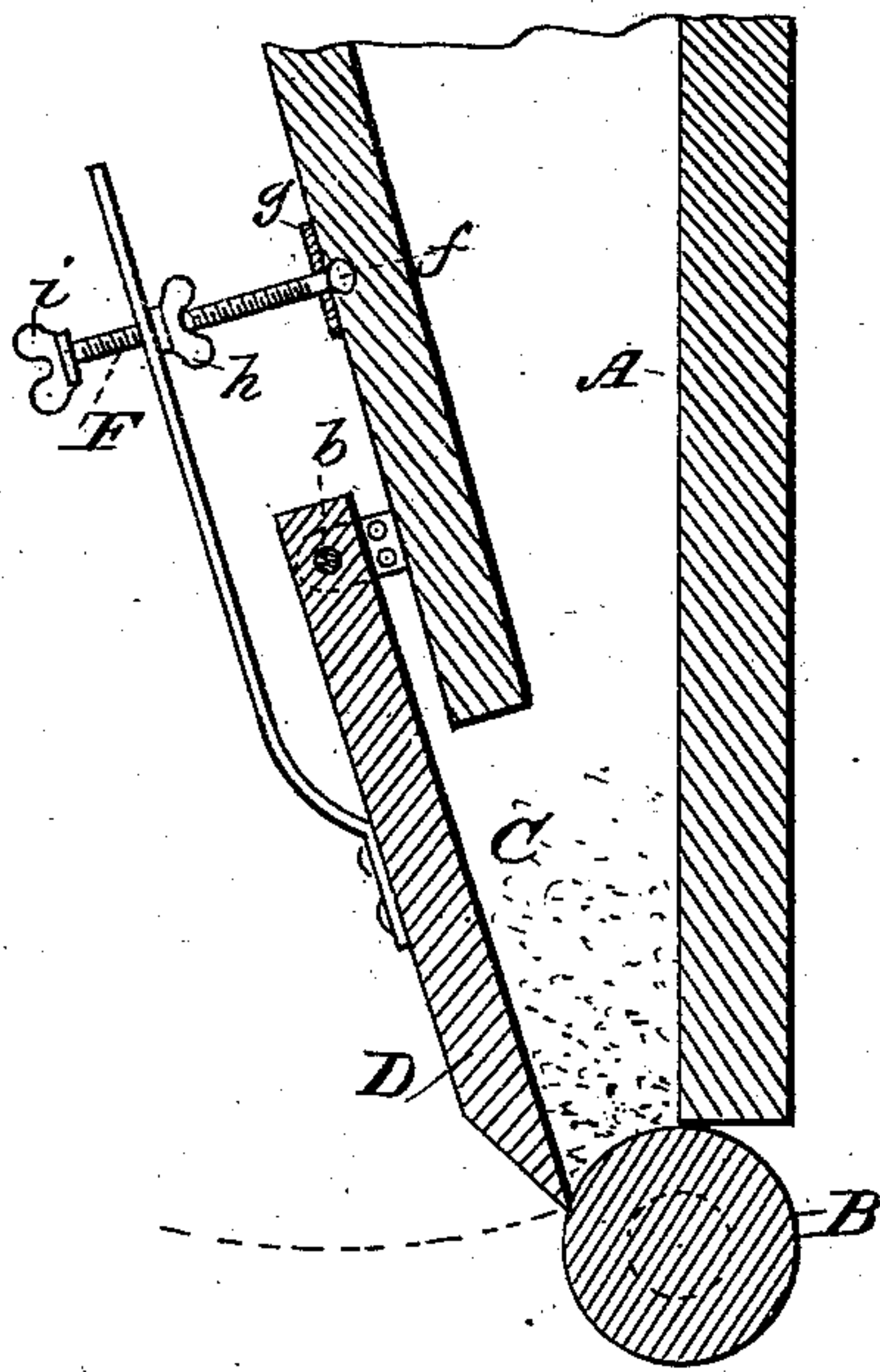


Fig. 3.

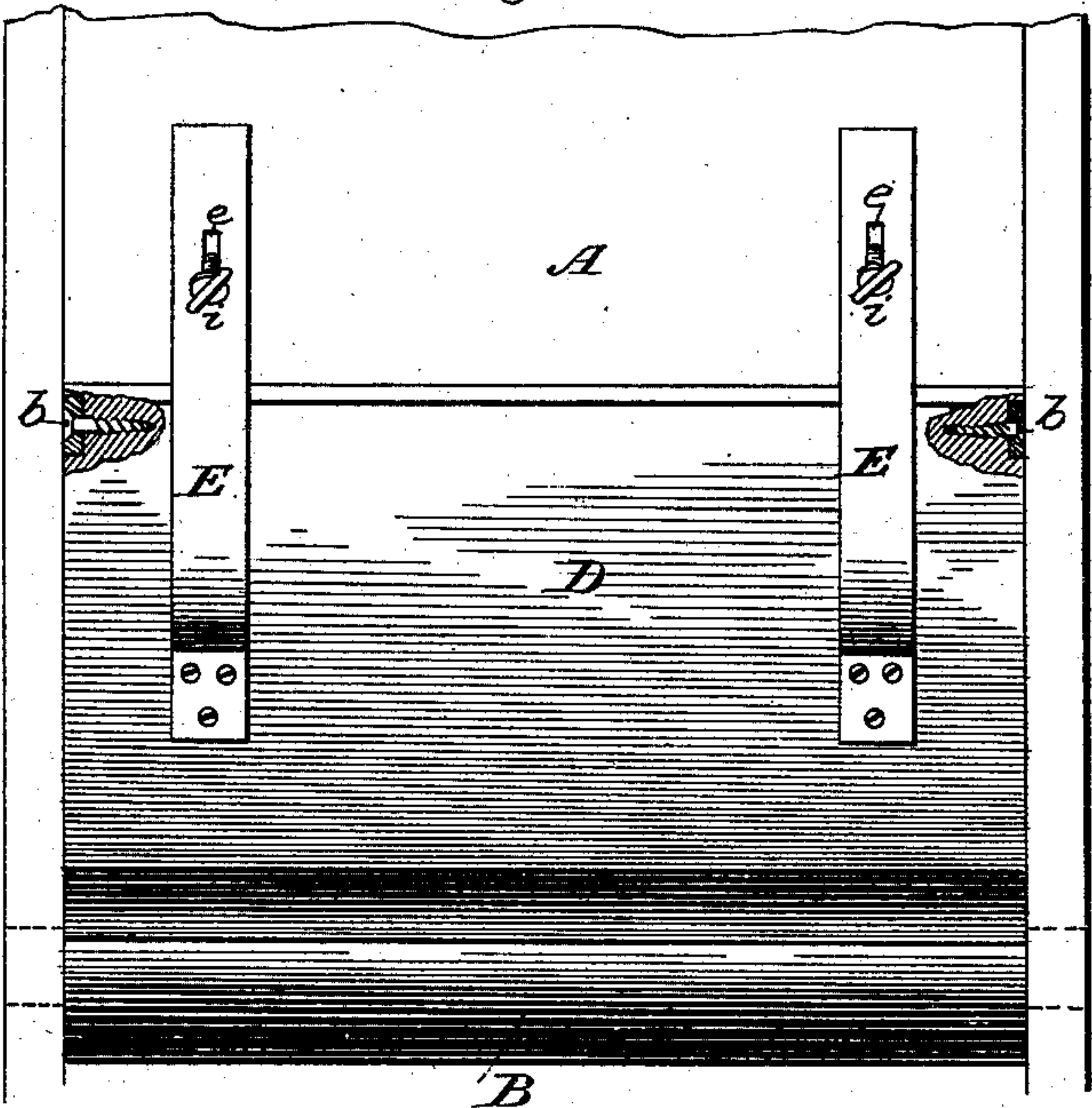


Fig. 4.

Witnesses.
A. Ruppert.
Wm H Bates

W. M. Rand
Inventor.
Holloway & Blanchard
Attys

UNITED STATES PATENT OFFICE.

WALTER M. RAND, OF OLNEY, ILLINOIS.

FEED-HOPPER.

SPECIFICATION forming part of Letters Patent No. 272,321, dated February 13, 1883.

Application filed October 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, WALTER M. RAND, a citizen of the United States, residing at Olney, in the county of Richland and State of Illinois, have invented certain new and useful Improvements in Feed-Hoppers; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in feed-hoppers for roller-mills, middlings-purifiers, grain-separators, and other purposes; and the object is to construct a feed-hopper by which the material, whatever it may be, is automatically fed to the rollers, sieves, &c., and by which the quantity or amount of material is automatically regulated and fed as required.

The invention consists in the formation and arrangement of the details of the device, which will be more fully pointed out and described in the specification and claim.

Similar letters refer to similar parts of the drawings, in which—

Figure 1 represents a vertical cross-section of the feed-hopper with the valve. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical cross-section of a modification of the same, and Fig. 4 is a side elevation of the same.

In the drawings, A represents a hopper, into which the material is conveyed in the ordinary manner by spouts or their equivalents.

The hopper can be varied in size and shape to suit the requirements of the case. At the bottom or mouth of the hopper is arranged a feed-roller, B, journaled in suitable bearings in the ends of the hopper. Upon this roller the material is supported at the bottom. In the front of the hopper is arranged an opening, C, extending the entire width of the hopper. Over this opening is placed a valve, D, hinged to the hopper, as shown at *d*. The lower end of said valve is beveled to form a sharp edge, and to the back of the valve are secured the springs E, extending upward and provided with slots *e*. Through these slots

the screws F pass, and have preferably ball or spherical heads *f*, held in suitable cavities in the hopper by plates *g*, so that they can move freely. A thumb-nut, *h*, regulates the tension of the springs, while another thumb-nut, *i*, prevents said springs from passing off the ends of the screws F.

As a modification of the hinges *d*, the valve may be pivoted to the hopper, as shown at *b*, while the other parts are similar to those shown in Figs. 1 and 2. A small space is then left between the valve and the side of the hopper.

The operation is as follows: The material, whatever it may be, is conveyed into the hopper in the ordinary manner by a spout or its equivalent, the springs being previously adjusted so as to exert the pressure required. When the proper amount of material has been fed into the hopper the weight of said material will force the valve back, and the material will fall between the rollers, or onto sieves or separators, and as soon as enough has passed out through the opening and the weight has been reduced the valve will again close the opening automatically, and, another charge of the material being let into the hopper, the operation will be repeated. If the feed is found to be too much or too little, the thumb-nuts are adjusted on the screws to regulate the tension of the springs, which can be increased or decreased, as desired, by the said thumb-nuts.

I am aware of the patents to H. O. Stahley, No. 266,218, October 17, 1882; J. T. Cook, No. 231,010, August 10, 1880; C. E. Sage, No. 247,215, September 20, 1881, and J. K. Walsh, No. 252,633, January 24, 1882—"feed-regulators"—and I make no claim, broadly, to the constructions therein shown.

I claim—

The combination of the feed-roller B, the feed-hopper A, the automatically-operating valve D, springs E, spherical-headed screws F, nuts *h i*, and plates *g*, substantially as shown and specified.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER M. RAND.

Witnesses:

ADEN KNOPT,
H. G. FAHS.