

*R. H. Alexander,
Flour-Bolt.*

No. 67,830.

Patented Aug 20, 1867.

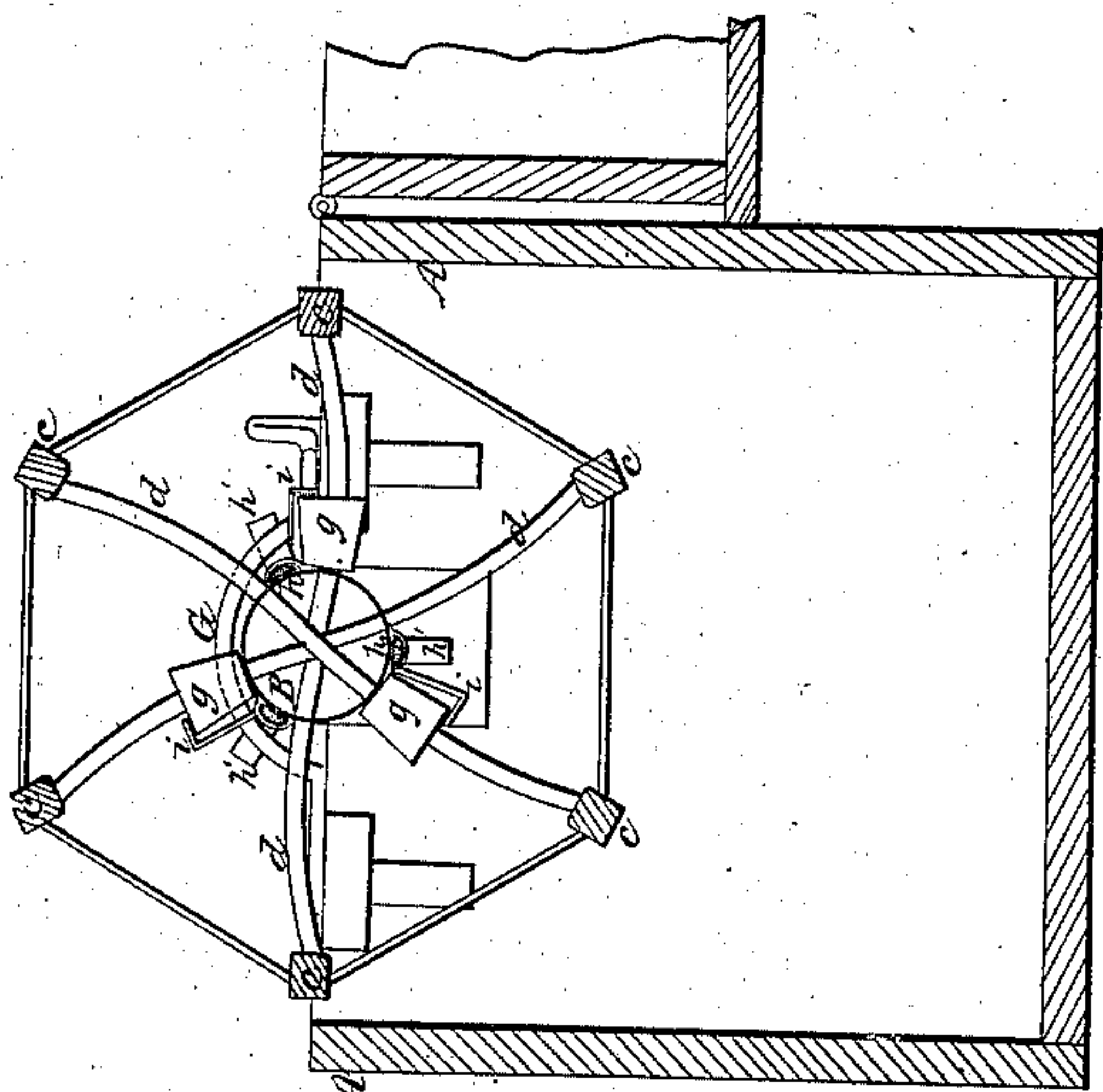


Fig. 3.

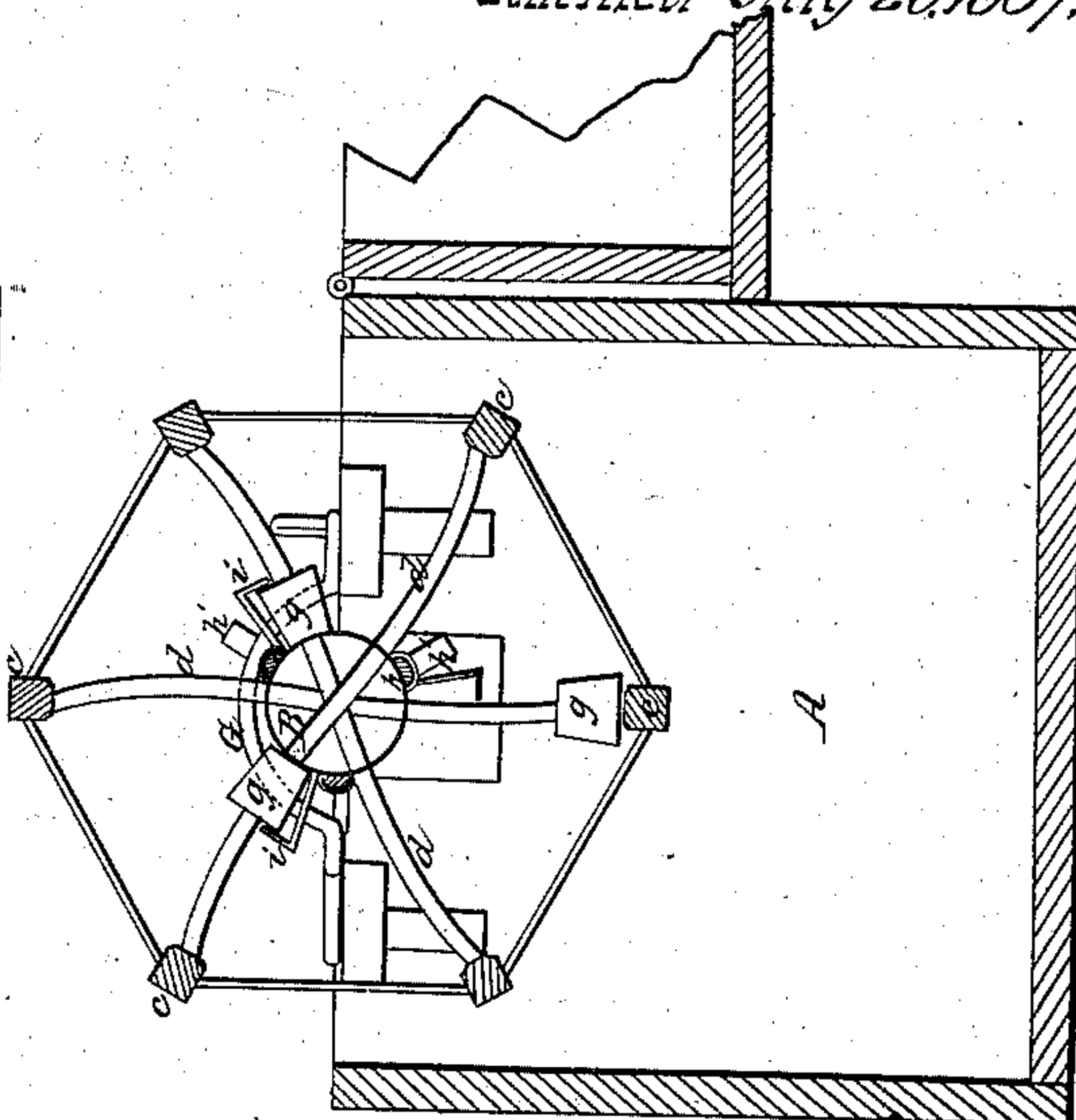


Fig. 4.

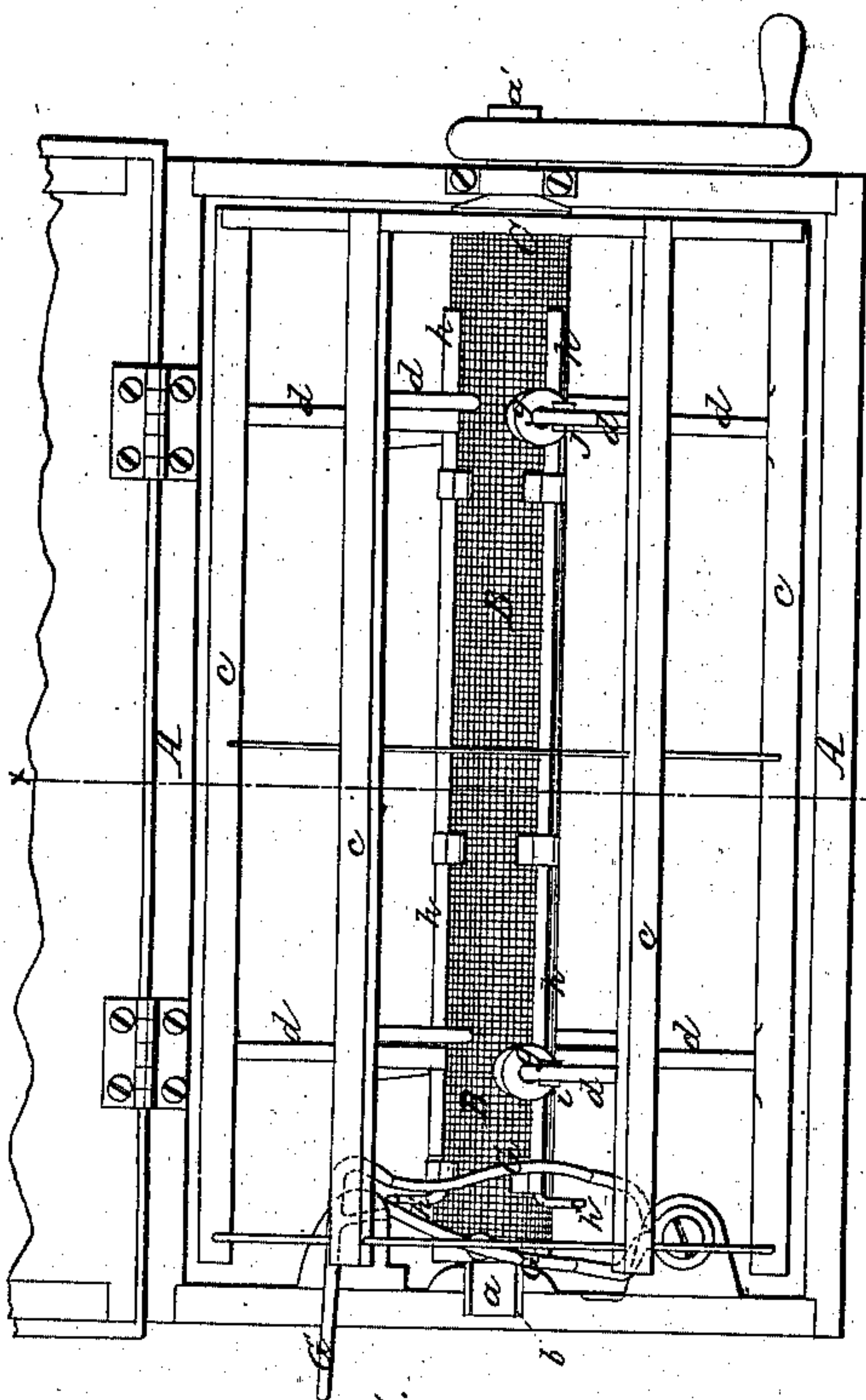


Fig. 1.

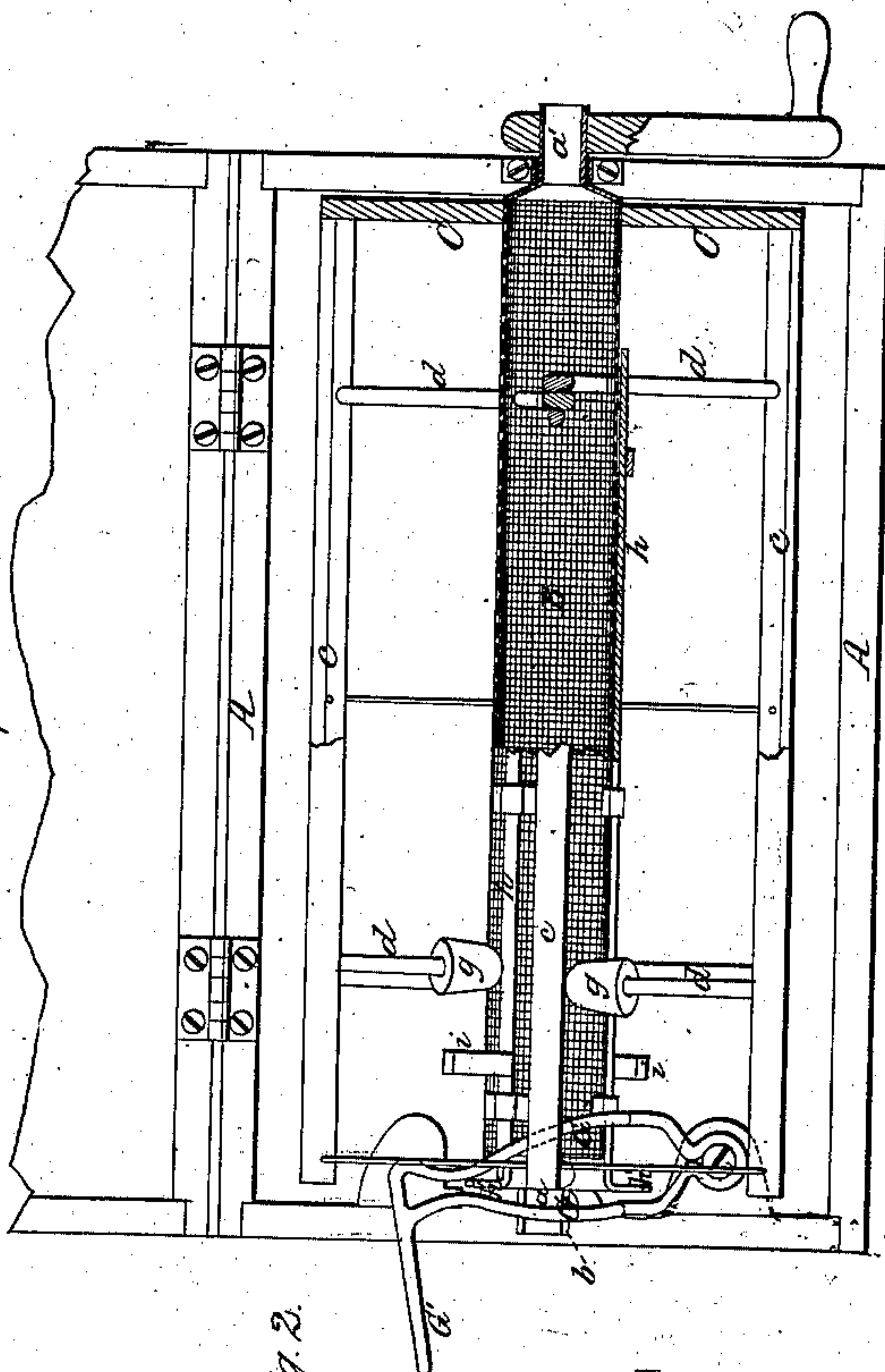


Fig. 2.

*Witnesses.
Edw. Schaefer
Henry Chyler*

*Inventor.
R. H. Alexander
Mason Penick & Co. Attorneys*

United States Patent Office.

R. H. ALEXANDER, OF PLATO, OHIO

Letters Patent No. 67,836, dated August 20, 1867.

IMPROVEMENT IN FLOUR-BOLTS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, R. H. ALEXANDER, of Plato, in the county of Lorain, and State of Ohio, have invented certain new and useful Improvements in Flour-Bolts; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of the bolt mounted in its chest, showing the knockers held fast.

Figure 2 is a similar view of the same parts, showing the knockers released.

Figure 3 is a vertical transverse section of fig. 1.

Figure 4 is a vertical transverse section of fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

The main object of this invention is to shake or jar a flour-bolt during the operation of bolting flour, by means of a number of sliding-weights or knockers which are applied to radial arms within the bolt, and provided with means which will enable a person to stop or release them at pleasure without stopping the motion of the bolt, as will be hereinafter described.

Another object of my invention is to construct the frame of a flour-bolt upon a central perforated cylinder, which forms the shaft of the bolt and also a means for conducting the flour into the bolt and separating the coarser particles from the fine flour, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A represents the chest within which the bolt is arranged to vibrate. B is a hollow shaft, which is made of thin metal finely perforated, and which is provided on its ends with journals *a a'*. The journal *a* is solid, and is supported upon an elastic bearing, *b*, but the journal *a'* is hollow, for the purpose of allowing flour to be introduced into the shaft B through it. The hollow and perforated shaft B may be made cylindrical, as shown in the drawings; and near that end which is furthest from the hollow journal *a'* holes of considerable size are made through the shaft, for the discharge of the coarse substances which have been separated from the flour before it is subjected to the fine cloth which surrounds the bolt-frame. The bolt-frame consists of a number of ribs *c c* secured to the ends of radial rods or arms *d d*, at equal distances from the axis of the shaft B, and parallel thereto. At the receiving end of the reel-frame a head, C, is secured to the shaft B, to which head the ends of the ribs *c* are secured. This head C not only strengthens the reel-frame, but it also prevents the escape of anything at this end, particularly "specks" or impurities. The arms *d* to which the parallel ribs *c* are secured are suitably secured to the hollow sieve-shaft B, and they are all curved, as shown in figs. 3 and 4, for a purpose which will be hereinafter described. Upon these arms *d* are placed loosely the sliding-weights or knockers *g g*, so that they will alternately strike the ribs *c c* and the sieve-shaft B when the bolt is rotated. These weights fall by their own gravity, and, in consequence of the arms *d* being curved as shown in the drawings, they strike the arms at an angle approaching a tangent to the circumference of the bolt. As these weights are raised above the horizontal plane of the shaft B they fall toward this shaft, and as they descend below this plane they fall toward the ribs; thus the bolt-cloth and sieve-shaft are both shaken by the blows of the knockers. There are three longitudinally-adjustable rods, *h h h*, applied to the circumference of the shaft B in a direction with its length, the ends of which rods are turned up, as shown at *h'*, so as to be acted upon by the vibrating-lever G, between the converging arms of which said ends pass as the bolt is turned. This lever G is pivoted to the bolt-chest A, so as to extend over that end of shaft B which is furthest from the hollow journal, and its free end is secured to a rod, *G'*, which projects through the bolt-chest, as shown in figs. 1 and 2. The open lever G is used for enabling a person to adjust the rods *h*, and to cause the hooks *i j* on these rods to catch over and hold the weights *g* in contact with the shaft B when it is desired to have them cease their action upon the bolt; also to move the hooks and release the weights when it is desired to have them operate. The converging arms of lever G operate upon the upturned ends of rods *h* upon the principle of cams, and move these rods either toward the head C or from it, as may be required, without stopping the rotation of the bolt. It is by the rotation of the bolt, bringing the ends of rods *h h* in contact with the oblique arms of lever G, that these rods *h*, with their hooks, are moved. When the rod *G'* is drawn

outward as far as possible, as shown in fig. 2, the lever G will move the hooks *i j* from their respective sets of knockers *g*, and thus allow both sets to slide outward and inward freely; but when arm G' is pushed inward, as shown in fig. 1, the hooks *i* and *j* will catch and hold their knockers. The hooks *i* and *j* are arranged in such relation to their respective knockers *g* that by partially withdrawing the rod G' the knockers which were held fast by the hooks *i i* will be released, while those which are near the opposite end of the bolt will still be held by their hooks *j*. This arrangement admits of only one set of knockers being used when desired. The lower edge of the rod G' should be notched to receive a projection on the chest A, and thus be held in the position desired. The elastic bearing for one end of the bolt-shaft B, above referred to, assists materially in shaking or jarring the bolt by allowing this end of the shaft to vibrate.

I am aware that McKain's patent of December 24, 1861, shows a bolting-reel with a central perforated tube applied to it, but this tube does not constitute both a shaft and separator, as in my construction. I am also aware that a central tube formed with journals is common in connection with coffee-roasters and grain-dryers, but the function of such central tube in such relation is different from that in my construction of bolting-reel.

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

1. Constructing a bolting-reel with a hollow perforated shaft, such shaft being furnished with a hollow, open-end journal, all substantially in the manner and for the purpose described.
2. The construction of the lever G G G' so that it will operate upon the sliding-hook rods *h h h' h'* and cause the hooks *i i* to either stop or free all the knockers *g g*, or a portion of them, as may be desired, substantially as and for the purpose set forth.

R. H. ALEXANDER.

Witnesses:

A. T. JOHNSON,
W. C. CRANE.