

(No Model.)

J. FELSING.

GRAIN SEPARATOR OR SIZER.

No. 255,266.

Patented Mar. 21, 1882.

Fig. 1.

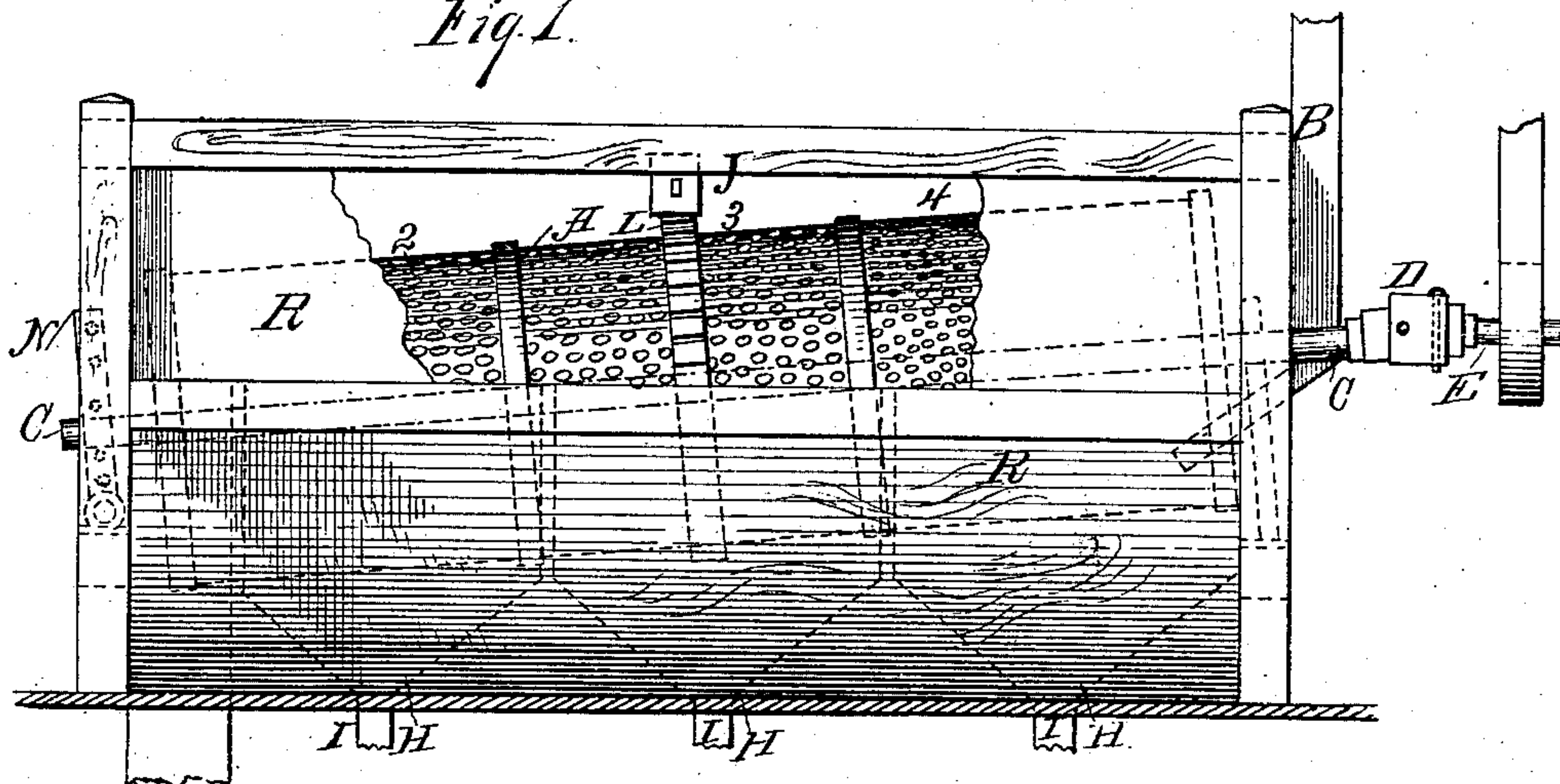


Fig. 2.

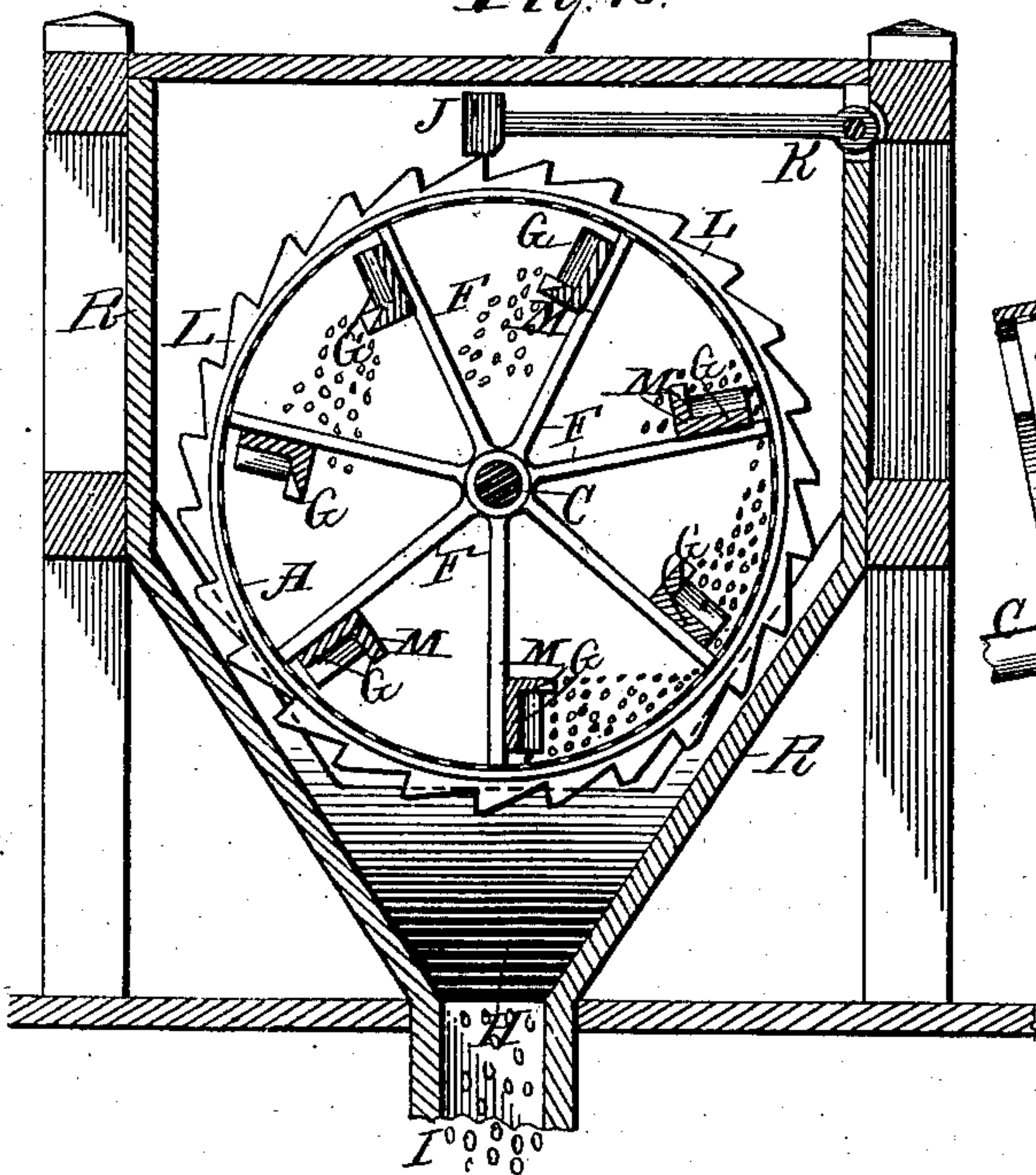


Fig. 3.

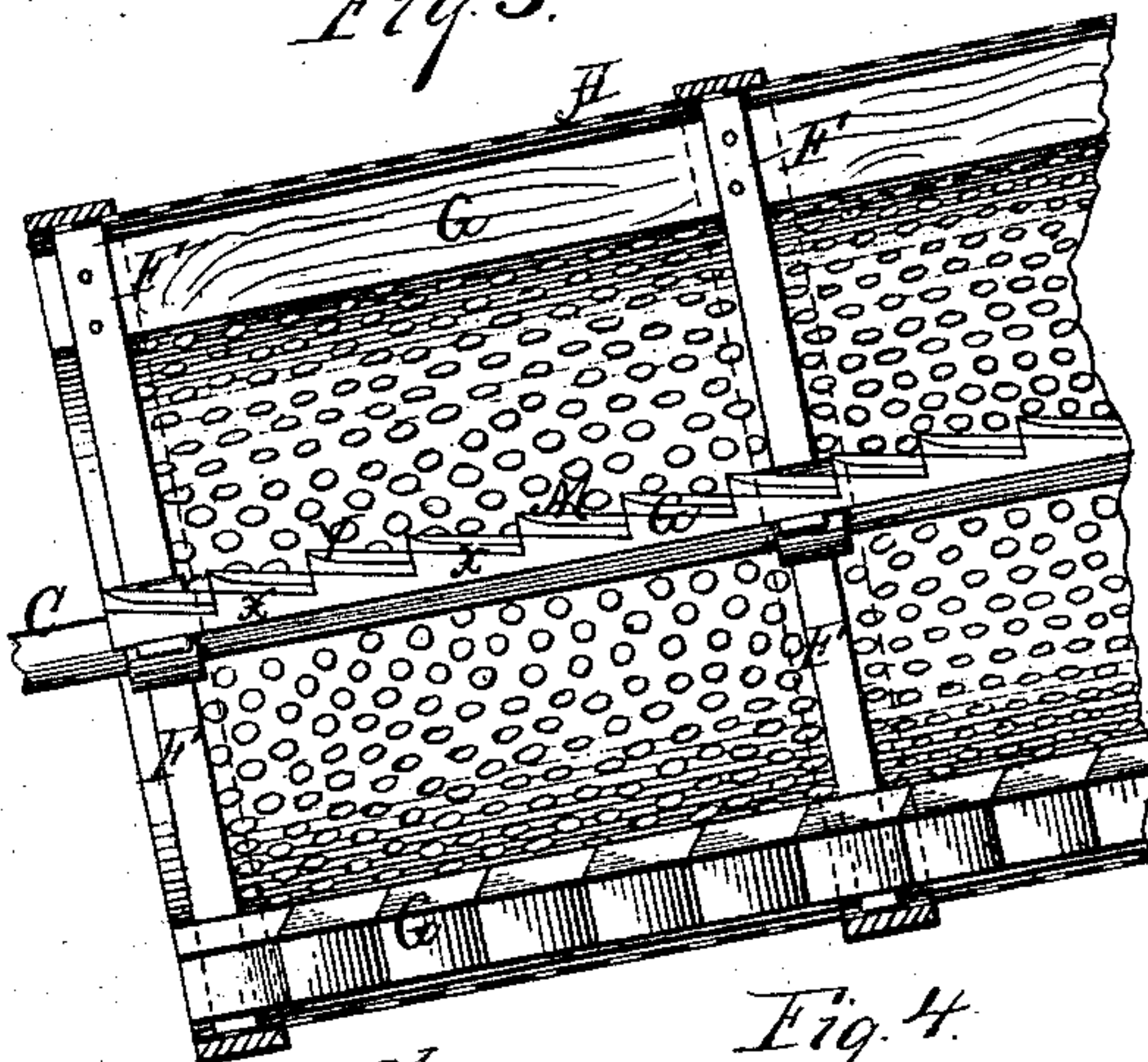
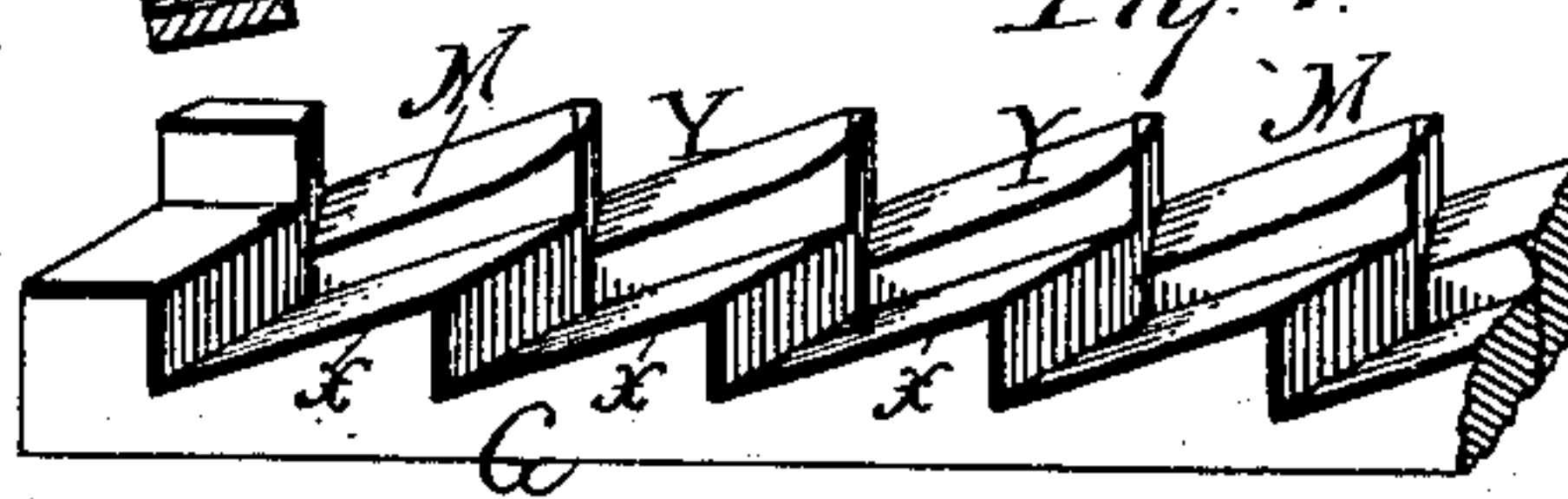


Fig. 4.



Witnesses:

E. G. Ames
Henry Poth.

Inventor:
Jacob Felsing
By Jas. P. Brown

Attorney.

UNITED STATES PATENT OFFICE.

JACOB FELSING, OF WEST GRANVILLE, ASSIGNOR OF ONE-HALF TO
JODECUS EHNERT, OF GRANVILLE, WISCONSIN.

GRAIN SEPARATOR OR SIZER.

SPECIFICATION forming part of Letters Patent No. 255,266, dated March 21, 1882.

Application filed August 29, 1881. (No model.)

To all whom it may concern:

Be it known that I, JACOB FELSING, a citizen of the United States, residing at West Granville, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Grain Separators or Sizers; and I do hereby 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 letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 represents a side view with side broken out to show cylinder. Fig. 2 is a cross-section; Fig. 3, a detailed view of cylinder. Fig. 4 is a perspective view of bar.

Like parts are represented by the same reference-letters throughout the several views.

The object of my invention is to provide a machine with which the large, small, and various intermediate sizes of kernels may be separated from each other and all the kernels of the same size deposited together by themselves, apart from those of different sizes. I accomplish this end by passing the grain through a long cylindrical screen, A, which is supported in an inclined position, as shown. The grain is introduced into the upper end by spout B, and is caused by the inclination of the cylinder to move gradually toward the lower end as the cylinder is revolved. The cylinder is supported upon and rigidly secured to the central shaft, C. The shaft C may be provided with a crank and the cylinder revolved by hand-power, if desired, or connected by band or gear with other motive power, as occasion requires.

D represents a universal coupling-joint, by which the central shaft, C, may be connected with a horizontal shaft, E, as shown.

The cylinder is formed in three sections, 2, 3, and 4, having different-sized meshes. The lowest section has the largest meshes, which are adapted to allow the large kernels to pass through. The next section is a little finer. 4 is the finest, through which none but the very finest kernels can pass. Thus it is obvious that while the smallest kernels are

screened out by compartment 4, all the remaining grain is carried onto screen 3, when the next largest grade of kernels are screened out, and so on from one screen or section to another, until the grain reaches the lower end of the cylinder, where the largest kernels, which cannot pass through the meshes of the screen, pass out through the end of the cylinder. Thus the largest kernels, or No. 1 wheat, pass out through the lower end of the cylinder, while No. 2 wheat passes through screens 2, No. 3 wheat passes out through screen 3, and No. 4 wheat passes out through screen 4. The cylinder A is connected to shaft C by arms F. As the wheat is thus passing through the cylinder it is agitated and continually carried upward against the sides of the cylinder and thrown from one side of the cylinder to the other by a series of longitudinally-arranged buckets or troughs, which are formed by the union of bars M and G, said bars being secured together at right angles to each other upon the spokes or arms F. A narrow space intervenes between said buckets and the cylinder, through which a portion of the grain is permitted to escape as the buckets move upward, whereby the grain is distributed uniformly over the ascending side of the screen, leaving a portion of the grain in the buckets, which is elevated above the center of the cylinder and discharged upon the descending side of the screen, whereby the separation of the grain is accelerated.

The grain should traverse the entire length of the cylinder from the upper to the lower end upon the screen, as it is obvious that were it permitted to flow downward toward the discharge end when in said troughs or elevator-buckets the small kernels would pass, with the lower ones, over the dividing line between the sections, from the finer to the coarser screens, without being screened out. To prevent the grain from thus descending when on the troughs the surface upon which the grain rests is formed in or provided with the series of short inclined planes X and Y, the angles of which are reversely arranged to that of the cylinder. Thus the inclination of said short planes counteracts the effect upon the grain of the inclination of the cylinder, and causes the grain, when elevated

thereon, to remain in the same relative position thereto, and when being emptied therefrom to be discharged toward the upper end of the cylinder.

5 The angular surface Y may be formed by notching and beveling the edges of bar M, and the angular surfaces X may be formed either by cutting angular grooves in the bar or by securing a series of short angular blocks thereto.

10 The machine is regulated for fast or slow work by means of the adjustable standard N, upon which one end of the central shaft of said cylinder rests, and by which it is raised and lowered and the cylinder adjusted at a greater or
15 less angle, according to the speed at which it is desired to run through the grain. For rapid work the discharge end of the cylinder is lowered, so that the grain by its gravity is caused to flow more rapidly through it. By raising the
20 discharge end the opposite result is attained.

Separate receptacles H H H, for each of the several sized screens or apartments, are provided beneath said screens, to catch the several grades of grain as they are thus screened out.

25 The several receptacles H are respectively provided with spouts I, to which conductors may be attached for carrying the several sizes of grain to separate receptacles therefor.

30 The cylinder A is provided with a case or inclosure, R, which receives all the grain which may escape through the sides of the cylinder or screens above the receptacles H, and conveys such grain back to the proper receptacles below. To facilitate in passing the grain
35 through the meshes of the screen and prevent

the same from being obstructed, a device is provided for jarring the cylinder, consisting in the hammer J and ratchet L, which hammer is suspended above the cylinder by a pivot, K, which permits the hammer to rise and fall as
40 the respective teeth of the ratchet pass beneath, the hammer being raised, as the cylinder revolves to the apex of one tooth, when it drops of its own gravity upon the cylinder or the
45 next succeeding tooth, whereby the cylinder is continuously jarred and the grain and refuse substances are, as stated, prevented from being retained in the meshes of the screen. When
50 the machine is permanently located in a mill or grain-room the driving-pulley, shaft, and spout may be supported by the floor, walls, or ceiling, as indicated. For portable machines a strong frame may be provided for supporting
55 the several parts in their proper relative position to each other.

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

The combination of screen A, shaft C, arms F, and the longitudinally-arranged troughs
60 consisting of bars G and M, provided with angular surfaces X and Y, substantially as set forth.

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

JACOB FELSING.

Witnesses:

JAS. B. ERWIN,
EDITH ERWIN.