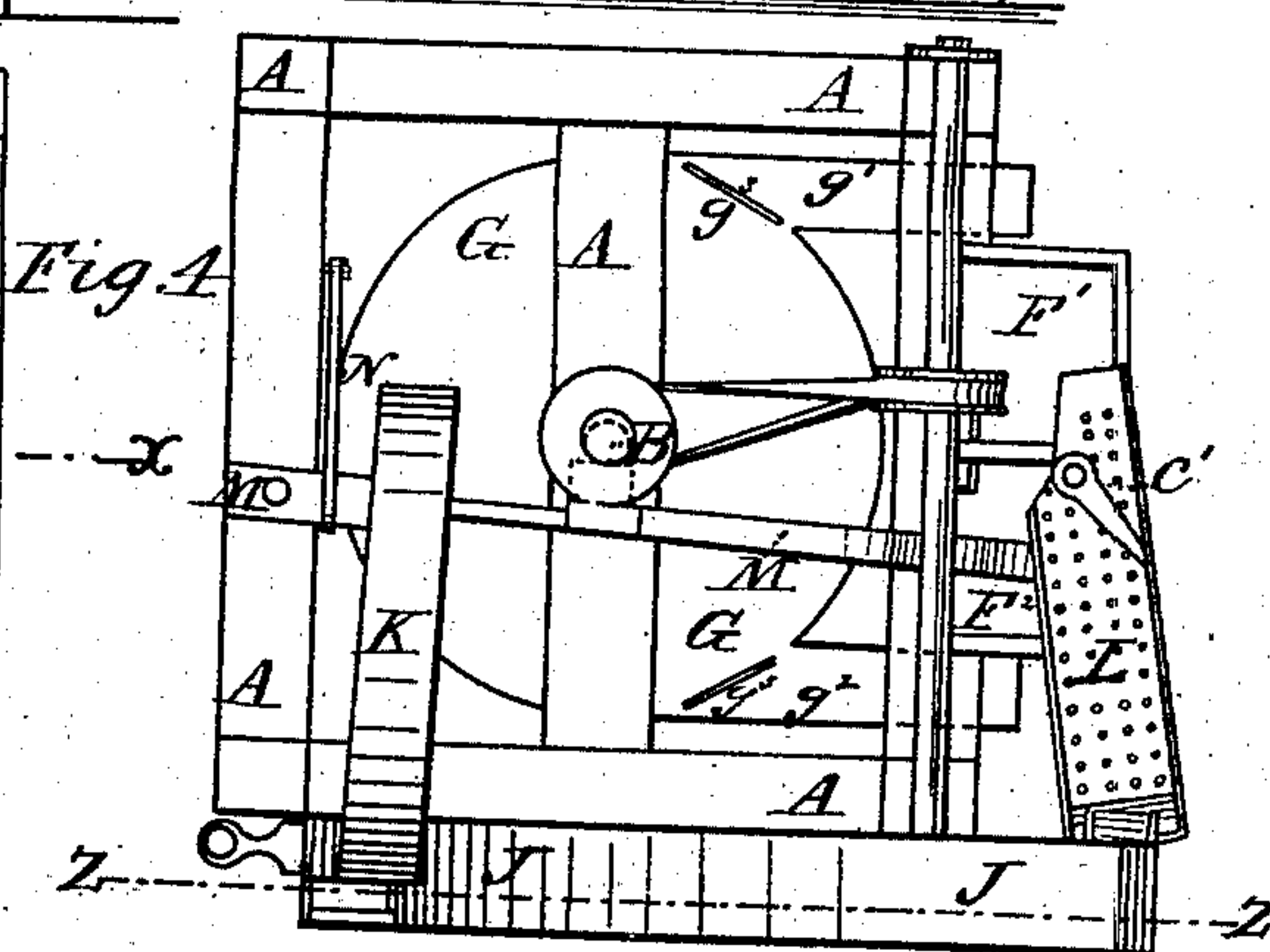
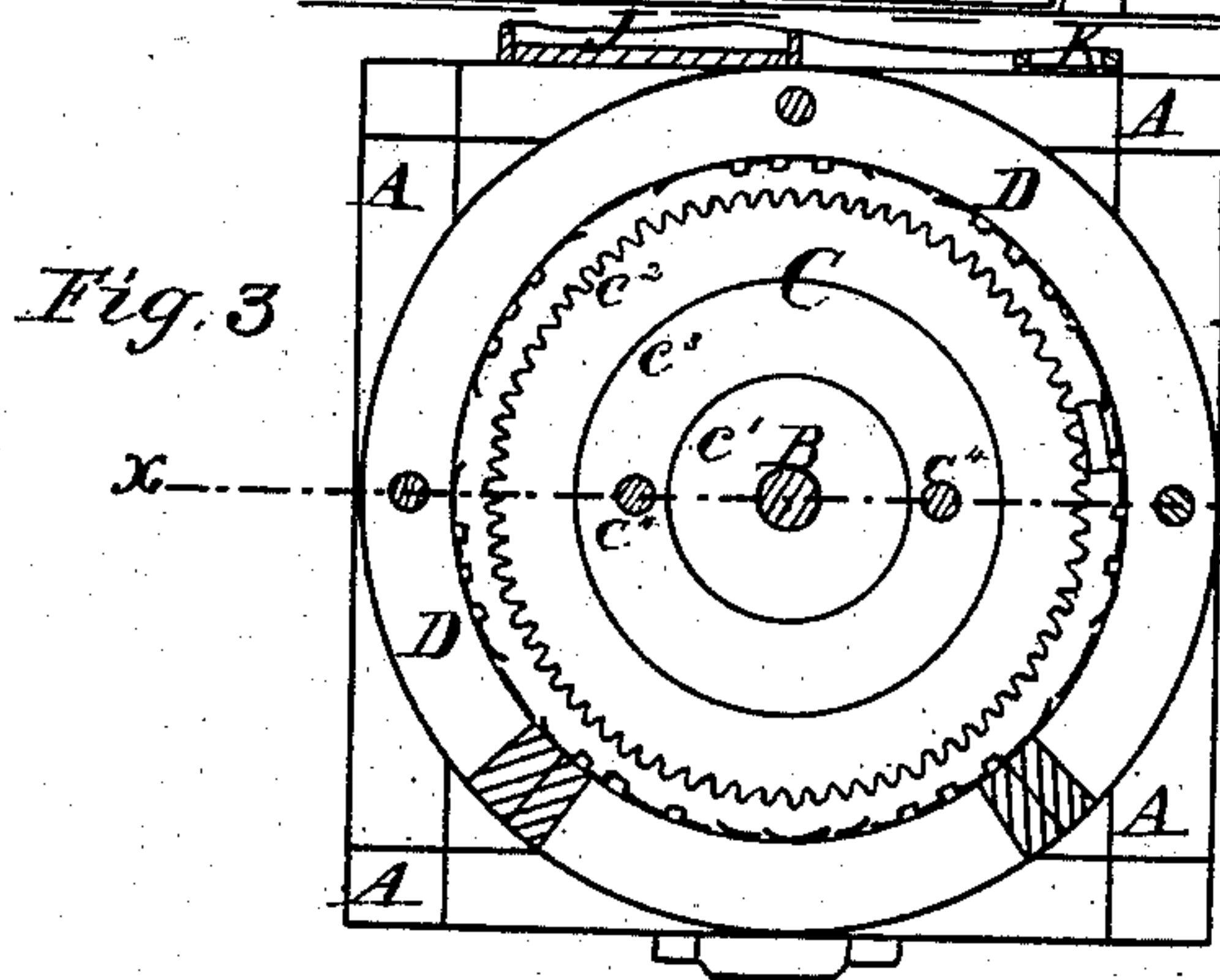
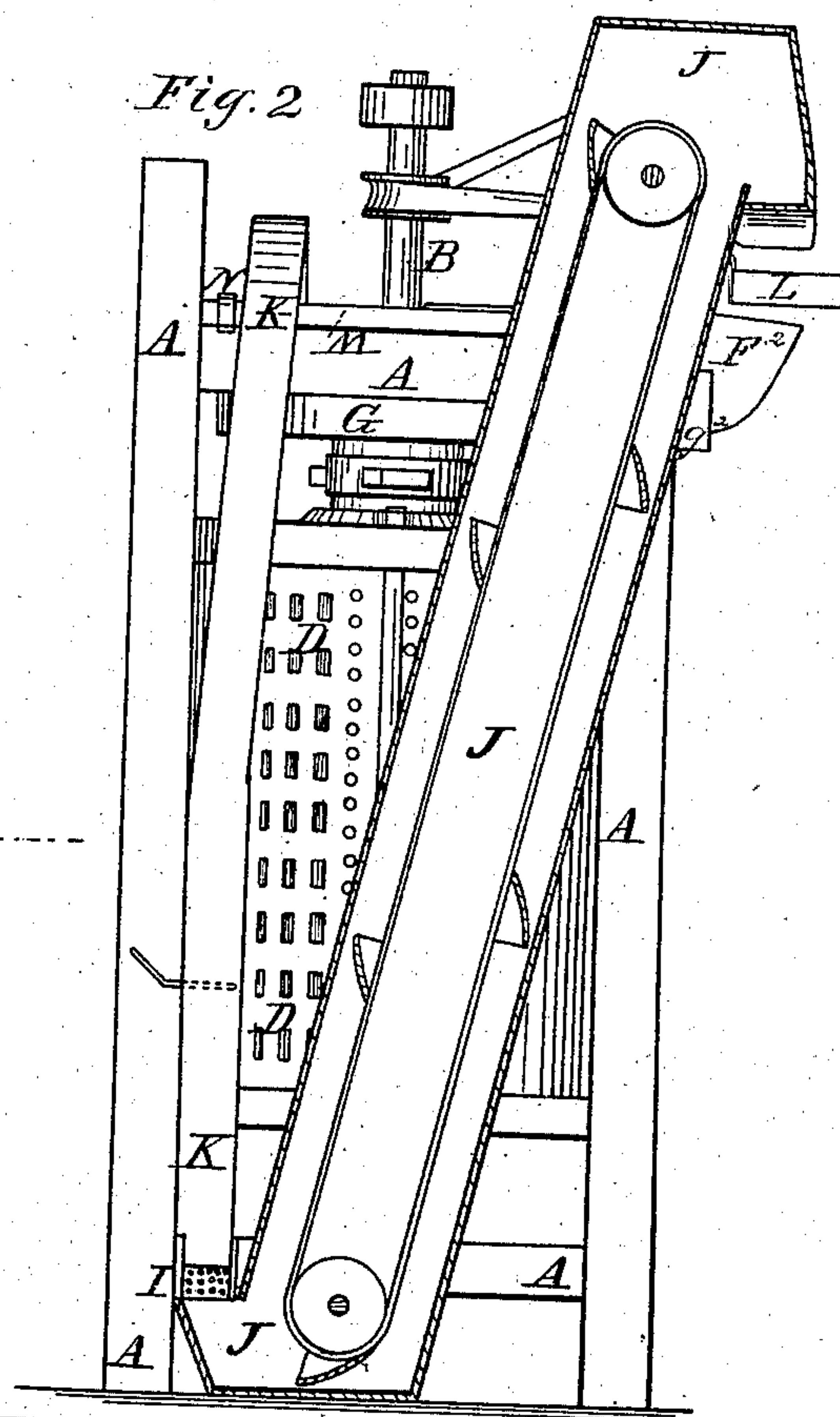
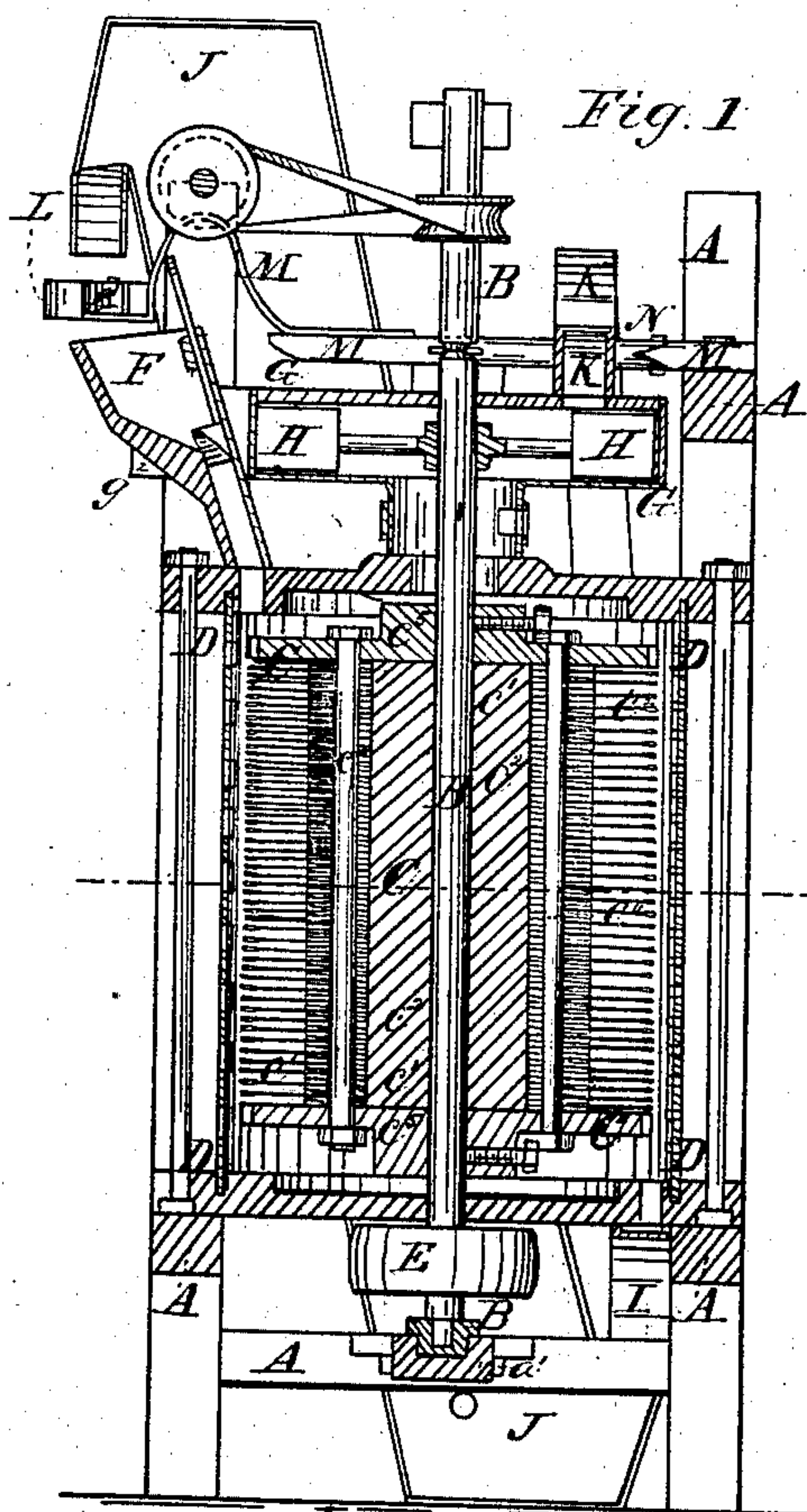


W. Rickard.
Pearl-Barley Machine.
N^o 74595 *Patented Feb. 18, 1868.*



Witnesses
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United States Patent Office.

W. RICKARD, OF CHICAGO, ILLINOIS.

Letters Patent No. 74,595, dated February 18, 1868.

PEARL-BARLEY MACHINE.

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, W. RICKARD, of Chicago, in the county of Cook, and State of Illinois, have invented a new and improved Machine for Making Pearl-Barley, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a vertical longitudinal section of my improved machine, taken through the line *x x*, fig. 3.

Figure 2 is a side view of the same, partly in section, through the line *z z*, fig. 4.

Figure 3 is a horizontal cross-section of the same, taken through the line *y y*, fig. 1.

Figure 4 is a top view of the same.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for making pearl-barley, pearl-wheat, hulling buckwheat, splitting peas, removing a part of the bran from wheat before making it into flour or farina, and other similar purposes, which will do its work quickly and well, and which will not be liable to get out of order; and it consists in the construction, combination, and arrangement of the various parts, as hereinafter more fully set forth.

A is the frame of the machine. B is the driving-shaft, which is vertical, and the lower end of which revolves in the lower central cross-bar *a'* of the frame A, and the upper part of which revolves in bearings in the upper central cross-bar of said frame. C is the cylinder, the central part of which is a wooden cylinder, *c'*, fitting upon the shaft B. Upon the cylinder *c'* are placed toothed and toothless rings, *c''* and *c'''*, alternating with each other. The rings *c''* should be made of steel or other suitable material, and in their edges are formed straight teeth, similar to the teeth of a fine circular saw, to which teeth a slight set may be given. The teeth upon all the rings or circular plates *c''* should all be of the same shape and size, and the plates should be so arranged upon the cylinder *c'* that the said teeth may be in line vertically. This enables the teeth to be sharpened with a file without removing the plates from their places. The rings or plates *c'''* should be made without teeth, and a little smaller than the rings *c''*, so as to leave a small space between the teeth of the said rings, to enable them to operate properly. The rings *c'''* may be made of any suitable light material. The rings or plates *c''* and *c'''* are all held in their proper relative positions by bolts, *c''*, passing through them and through the end plates *c''*, which are made heavier than the others, and which are secured to the shaft B by set-screws, as shown in fig. 1. D is the outer case, which is made of sheet or thin plate iron, surrounds the cylinder C, and is securely attached to the frame A. The casing D is perforated with four vertical rows of long holes or slots alternating with three or four rows of round holes. The holes in the case D are all punched inward, the lips of two rows of each set of long holes inclining to the right, and the lips of the other two rows inclining to the left, so that the machine may work equally well when revolved in either direction. The round holes are similar to the holes in an ordinary grater. E is the driving-pulley, which is secured to the lower part of the shaft B below the bottom of the casing D, as shown in fig. 1. The grain to be operated upon is introduced through one or the other of the hoppers *F'* *F''*. G is a fan-chamber, which is secured to the frame A above the top of the casing D, through the centre of which the upper part of the shaft B passes, and which is connected with the space between the cylinder C and casing D by a throat or passage-way, as shown in fig. 1, the draught through which is regulated by an opening in the tube that connects the fan-chamber with the top of the case D, and which opening is covered with a sliding ring, so that the strength of the draught may be regulated by the admission of more or less air through said opening. H are the fans, which are secured to the shaft B, so as to be operated by the revolution of said shaft. The fan-chamber G is provided with two discharge-spouts, *g'* and *g''*, furnished with sliding gates *g'''*, so that one or the other spout may be closed, according to the direction in which the cylinder C is revolving. I is the discharge-spout, through which the grain passes from the machine to the elevator J, being exposed, during its passage, to the blast of air exhausted through the exhaust-pipe K, the upper end of which terminates in the fan-chamber G. The elevator J, about the construction of which there is nothing new, is represented as being attached to the frame A, and as being operated from the shaft B by a band and pulleys, but its position is entirely immaterial, and it may be placed wherever most convenient. The grain

is discharged from the elevator J into the screen L, the holes of which should be of such a size as to permit the finished grain to pass through into some suitable receptacle, while the unfinished grain passes from the screen to one or the other of the hoppers, according to the direction in which the cylinder is revolving.

In using the machine, the grain to be operated upon is placed in one of the hoppers F¹ F², the gates of both of which are closed. The machine is then started; the gate of the proper discharge-pipe, g¹ or g², is then opened, and the grain is admitted to the machine. As the grain is passing through the machine, the draught of air exhausted through the interior of the machine carries off the lighter particles of bran, &c., and they are discharged from the fan-chamber G through the discharge-pipe g¹ or g². As the grain passes through the discharge-spout I to the elevator J, the draught of air exhausted through the pipe K carries the heavier particles of bran, &c., into the fan-chamber G, from which they are discharged through the spout g¹ or g². As the grain is discharged from the elevator J into the screen L, the finished grain falls through the screen, while the unfinished grain passes from the said screen into the empty closed hopper, from which it may be again admitted to the machine, the mouth of said screen being provided with a pivoted guide-board, V, so that the unfinished grain may be directed into either hopper, as desired. The screen L may be agitated or shaken by an arm, M, pivoted to the frame A, and operated by a cam formed upon or attached to the shaft B, said arm being held up against said cam by an elastic band, N, or other equivalent spring.

I claim as new, and desire to secure by Letters Patent—

1. The cylinder C, constructed substantially as herein shown and described, in combination with the perforated casing D and shaft B, as and for the purpose set forth.
2. Forming the long holes or slots in the casing D with their lips inclined to the right and to the left, substantially as herein shown and described, so that the machine may work equally well whether run backward or forward.
3. In combination with the cylinder C, case D, and shaft B, as constructed, I claim the fan-chamber G and fan H, as set forth, for the purpose specified.

W. RICKARD.

Witnesses:

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