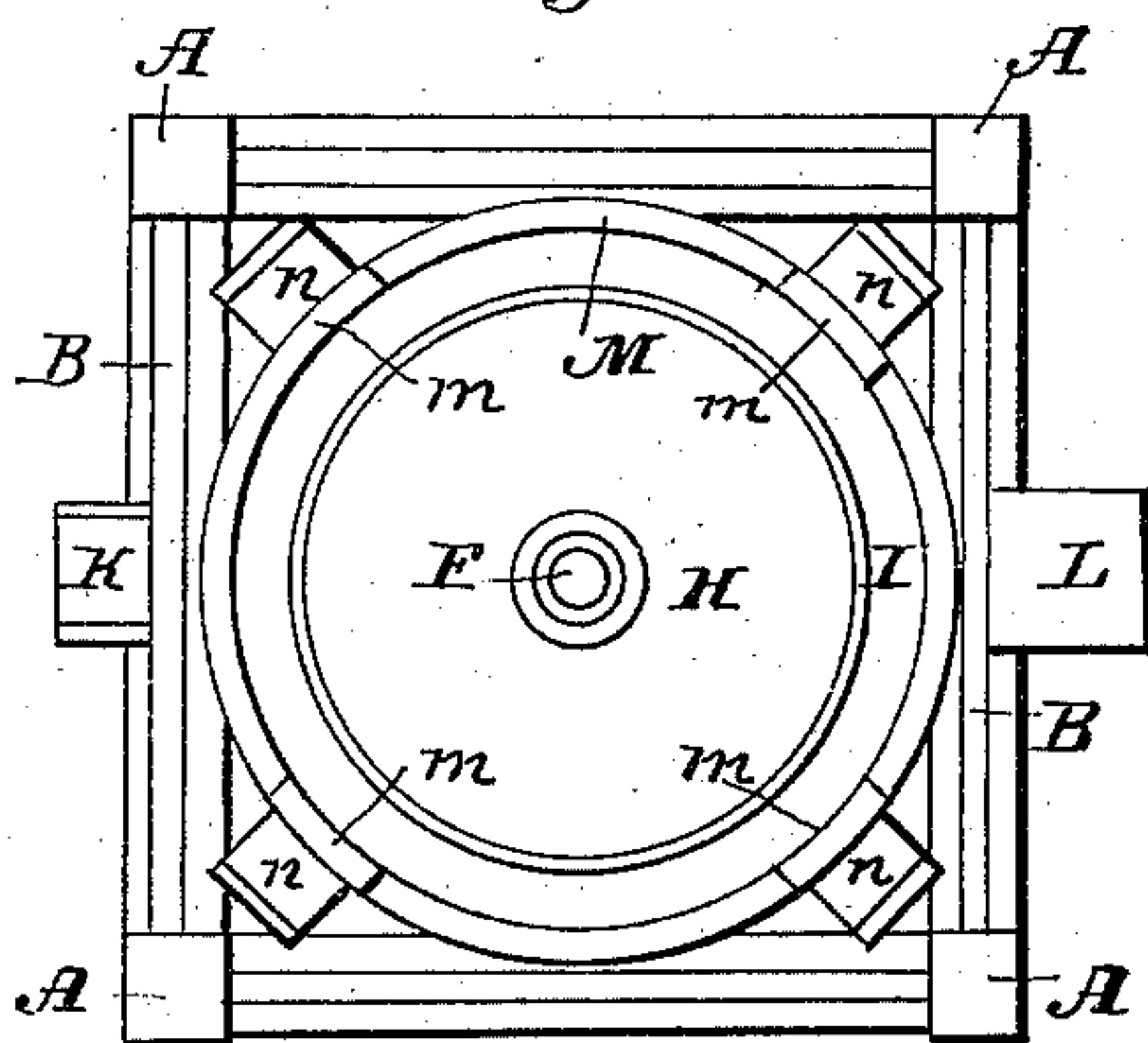


O. N. RICH.  
Grain Cleaner.

No. 80,666.

Patented Aug. 4, 1868.

*Fig. I.*



*Fig. 3*

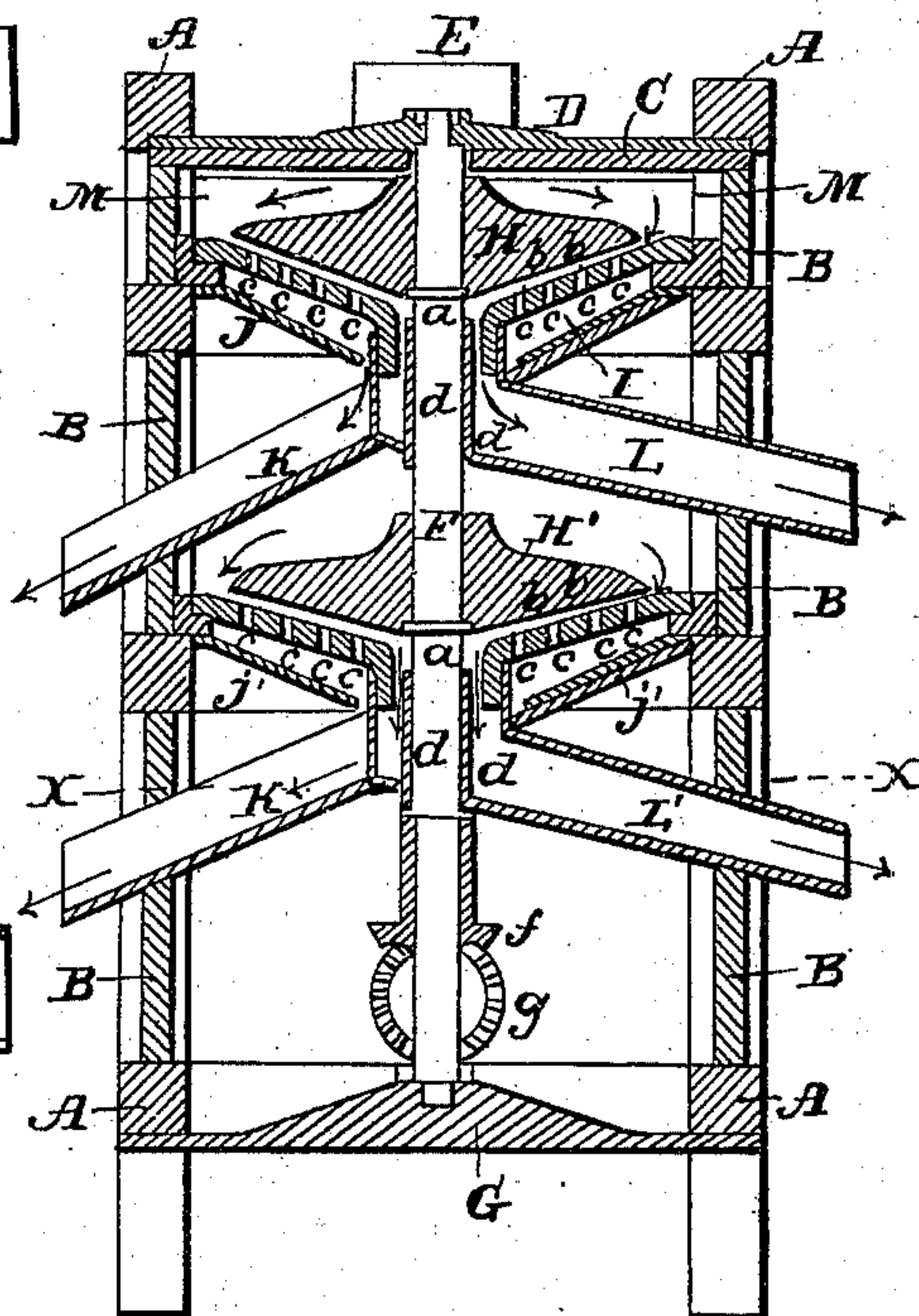
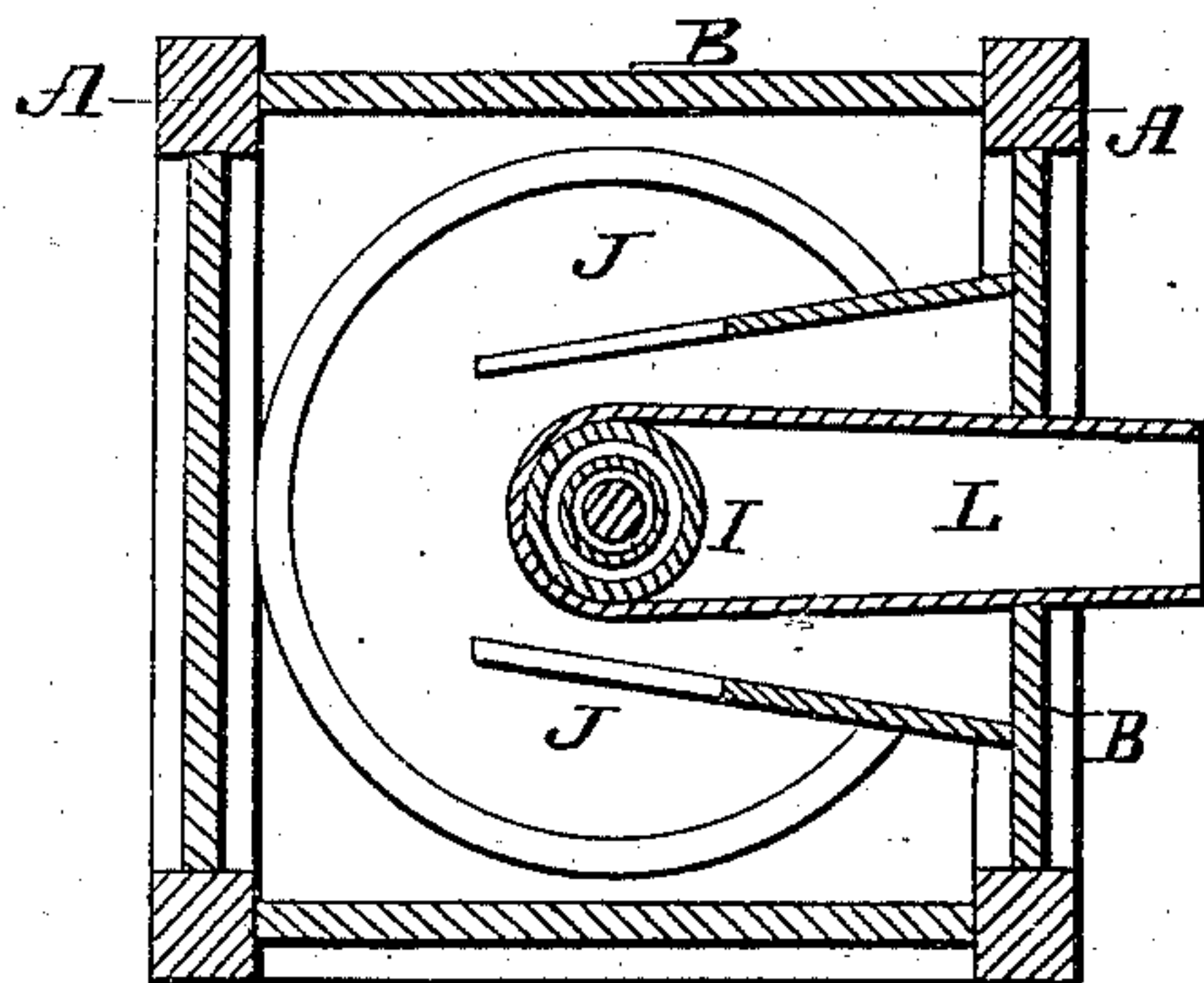


Fig. 2.



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# United States Patent Office.

OTIS N. RICH, OF GENEVA, ILLINOIS, ASSIGNOR TO HIMSELF AND WILLIAM H. HOWELL.

*Letters Patent No. 80,666, dated August 4, 1868.*

## IMPROVEMENT IN GRAIN-SEPARATOR.

*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, OTIS N. RICH, of Geneva, in the county of Kane, and State of Illinois, have invented a new and useful Improvement in Grain-Separators; and I do hereby declare and make known that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

My said invention consists in a novel machine to be used for the purpose of separating oats, sticks, or other impurities, of larger size or longer than the wheat-kernels, from wheat, so as to obtain the wheat clean and free from other grains or substances; and to enable those skilled in the art to understand how to make and use my said improvement, I will now proceed to describe the same with particularity, making reference, in so doing, to the aforesaid drawings, in which—

Figure 1 represents a plan or top view of my invention.

Figure 2 is an inverted plan section, taken at the line *x*, in fig. 3, and

Figure 3 is a vertical central sectional view of the same.

A represents a suitable frame, whereunto a case or enclosure is formed, marked B.

A vertical shaft, F, is arranged centrally in said frame, its lower end resting in a step in the cross-bar G, and its upper end having a bearing in a cross-bar, D, upon the cover C, which cover is provided with a suitable hopper, E, through which the grain is admitted into the said machine, said cover and cross-bar being made removable by removing the clamping-bars A A, as shown in fig. 3.

Upon the shaft F, a collar or shoulder, *a*, is formed, which supports a circular disk, H, whose under side is formed so as to conform to the concave perforated circular plate I, arranged and supported independent of the shaft, just beneath the said plate H, as shown.

Beneath the perforated concave plate I is a funnel-shaped receiver, J, whose discharge opens into a spout, K, while the space between the disk H and the perforated concave I continues down around the shaft, and terminates in a spout, L, a case, *d*, fitting up through the spouts L and K, allowing the shaft to revolve within the same, as shown.

The above constitutes all the features of my invention, a duplicate being shown in the drawings, arranged upon the same shaft, and any desired number of said devices may be used, to increase the capacity of the machine.

When more than one separator is used upon the same shaft, or in the same machine, I arrange, above the upper device or disk H, a circular rim, M, into which the grain is admitted, said rim being provided with notches, *m*, at the corners of the frame, at which points openings, *n*, are made, communicating with the separator next below.

The disks H revolve with the shaft F, and the grain is distributed around the circumference, and passes along down the passage or space between H and I, the wheat and the oats together. But the distance between the said concave and disk, and the thickness of the said concave, are such that the wheat is freely permitted to drop and pass through the openings or perforations *c* in the concave, falling upon the funnel-receiver J, and passing out at the spout K, while the length of the oats prevents their tipping up endwise to enable them to pass through said holes *c*, the size of said holes rendering such position necessary to their passage through the same, and the oats are therefore compelled to pass down the sloping walls of the concave, and pass out at the centre into the spout L, thus effectually separating the oats from the wheat, as desired.

If more than one separating-device is used, the wheat or grain can be fed through the hopper E faster than it can pass through the first of the series, in which case, the curb M becoming full, the grain will overflow at the outlets *m m*, and fall through the openings *n n* upon the top of the separating-device below; and, if more than two are used, by a similar device or curb around the second, the grain may be precipitated thence upon a third, and so on through a series of as many as may be desired.



It will be observed that the under side of the disks H is provided with short pins, *b b*, which act as stirrers to prevent the clogging of the wheat or oats between the surfaces, to impede the operation of the machine.

If preferred, the disk H may be stationary, and the concave revolve with the shaft, or both may be made to revolve in opposite directions.

The concave perforated plate may have its upper surface convex, and the lower side of the disk be made concave, in which case the feed could be made at the centre of the disk, and the oat-discharge be at the circumference, if desired; all the above-mentioned modifications being changes in form simply, and being equally of my invention.

Having described the nature, construction, and operation of my improvement, I will specify what I claim, and desire to secure by Letters Patent.

1. I claim the combination of the disk H and perforated plate I, with their adjacent faces inclined downwards, substantially in the manner and for the purpose set forth.

2. In combination with said disk H and plate I, I claim the arrangement of a receiver, J, substantially as specified and shown.

3. I claim the combination of the disk H, perforated plate I, receiver J, and chutes K L, arranged to operate substantially in the manner described.

4. I claim the rim M, provided with openings or notches, *m*, when arranged with respect to the passages *n*, in the manner specified.

OTIS N. RICH.

Witnesses:

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