

M. O'BRIEN.
Grain-Separator.

No. 161,147.

Patented March 23, 1875.

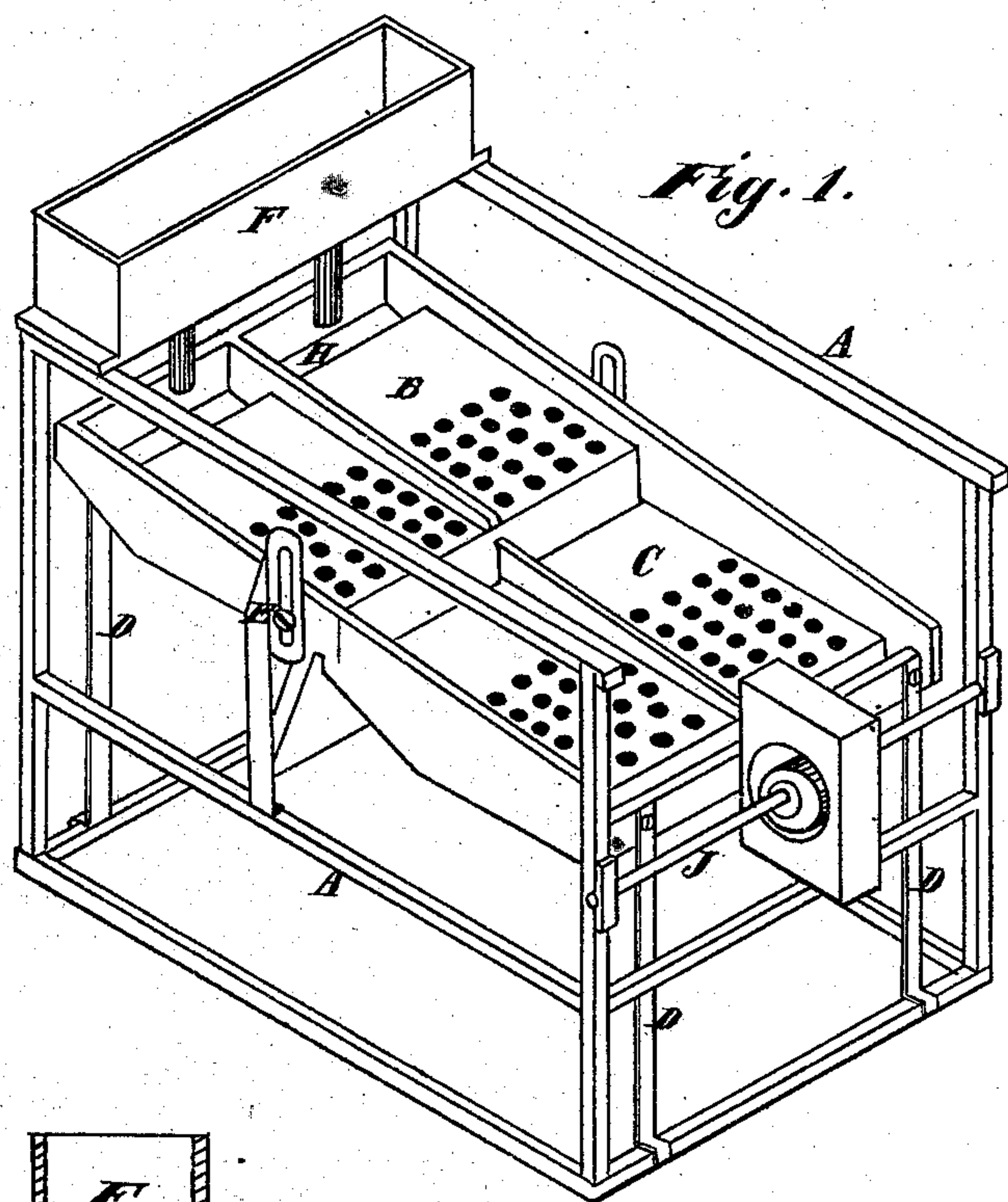
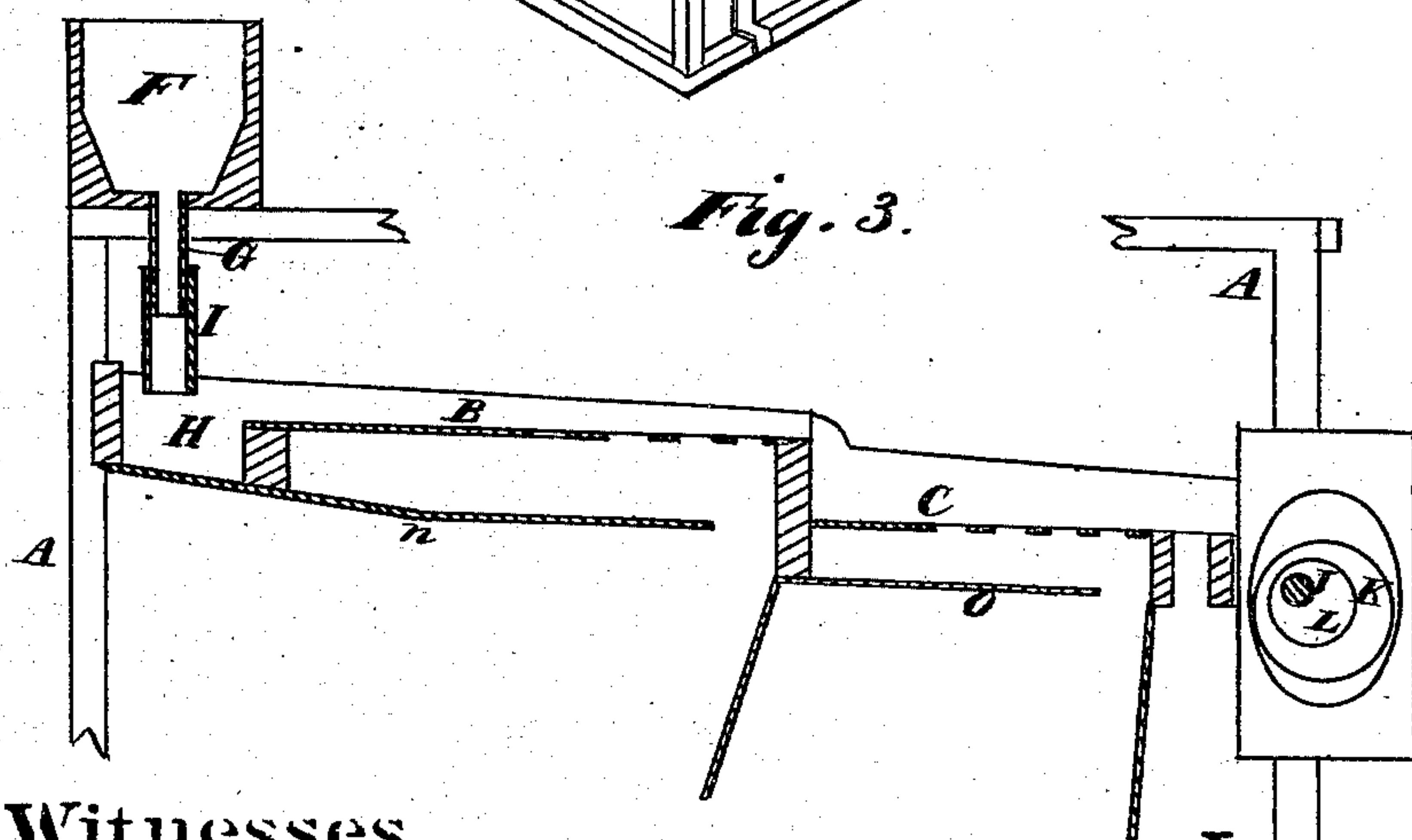
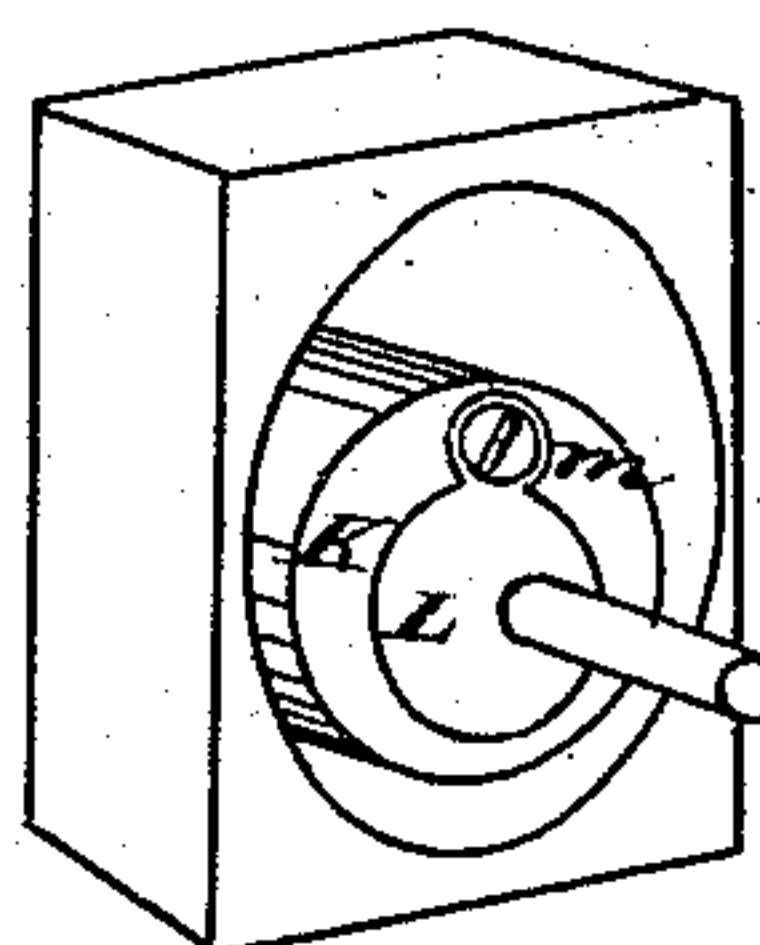


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

MICHAEL O'BRIEN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **161,147**, dated March 23, 1875; application filed November 19, 1874.

To all whom it may concern:

Be it known that I, MICHAEL O'BRIEN, of San Francisco city and county, State of California, have invented an Overflow and Separating Attachment for Grain-Cleaners; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to an attachment for grain-cleaning devices, and a novel mode of employing the same, by which I am enabled to skim off or separate the oats, barley, and lighter impurities from a large body of wheat, so that in place of running the whole quantity through the cleaners I separate the great bulk of clean grain from a very small proportion of wheat and all the foreign substances, and only this latter will have to be run through the ordinary cleaners, and thus the capacity of these cleaners can be reduced.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my attachment. Fig. 2 is an enlarged view of the case and box. Fig. 3 is a longitudinal section of the machine.

A is a suitable frame-work, having the screens B and C, supported upon springs or flexible standards D within the frame, and these screens are made adjustable in angle and with reference to each other by suitable screws E. This portion of my device does not differ greatly in appearance from many screens now in use. Upon the top of the frame A is a hopper or trough, F, into which the grain is fed. In practice the grain is brought into this hopper by a screw-conveyer, and a series of holes in the bottom of the hopper have spouts G extending downward just behind or at the rear edge of the screen B. A recess, H, is made at this point somewhat lower than the level of the screen, and into this recess the grain to be cleaned falls and fills it, overflowing from thence upon the screen B, which is thus kept full to a considerable depth. In order to regulate the flow of grain, and prevent its running too fast, the tubes G are provided with a telescopic exten-

sion, I, which can be readily adjusted up or down, so that the lower end will just dip into the wheat, and thus maintain it at the proper depth upon the screen at all times. The screen is not perforated for some little distance from its upper edge, for a reason to be hereafter given.

Motion is communicated to the screen from the shaft J by means of an eccentric. This eccentric is constructed in two parts, K and L, both of which are bored eccentrically. The inner part L is keyed to the shaft, and the outer one K is bored tapering, so as to fit over the tapering face of the inner one.

By turning the outer eccentric so that its throw is just opposite to that of the inner one no motion at all will be produced, while by turning it so that the throw of both will be in the same direction the maximum length of stroke will be produced. Any intermediate position may be taken, and any desired length of stroke produced by turning the eccentrics more or less between these points. They are held firmly by means of a set-screw, m, which enters one of the parts, and when turned draws the two conical portions together, so that the friction will hold them.

The operation of my machine will be as follows: A rapid shaking motion being communicated to the screens from the shaft J, wheat is allowed to flow into the space H until it is full and overflows upon the screen B, where it lies at a considerable depth. The rapid motion of the screen causes all the barley, oats, and lighter impurities which may be mixed with the wheat to arise to the top while it is in the space H, and before the grain has passed over the unperforated upper part of the screen B, so that when it does reach the perforations the lower portion of the mass will be perfectly clean wheat, fit for milling purposes; and as the whole surface of the screen B is covered with grain, there will be a steady stream of clean wheat flowing through the perforations all the time, while a small proportion of wheat and all the impurities will pass off upon the screen C, which retains some of the barley and oats, while the remainder, with the wheat, will fall through and pass directly into the ordinary cleaning apparatus placed below.

By this means it will be seen that, instead

of passing all the wheat through cleaning-machines and separating it from foreign substances, which would necessitate the use of a number of machines in a mill of ordinary capacity, I am enabled to separate the great bulk of the wheat in a clean state.

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

The hopper F, tubes I, chamber H, and screens B and C, in combination with the ad-

justable double eccentric K L and adjusting-screws E, whereby I am enabled to adjust and control both the pitch and the throw of the screens, substantially as and for the purpose set forth.

In witness whereof I hereunto set my hand and seal.

MICHAEL O'BRIEN. [L. S.]

Witnesses:

JNO. L. BOONE,

C. M. RICHARDSON.