H. H. BENTON.

GRAIN-SEPARATOR.

No. 179,441. Patented July 4, 1876.

Fig. 1.

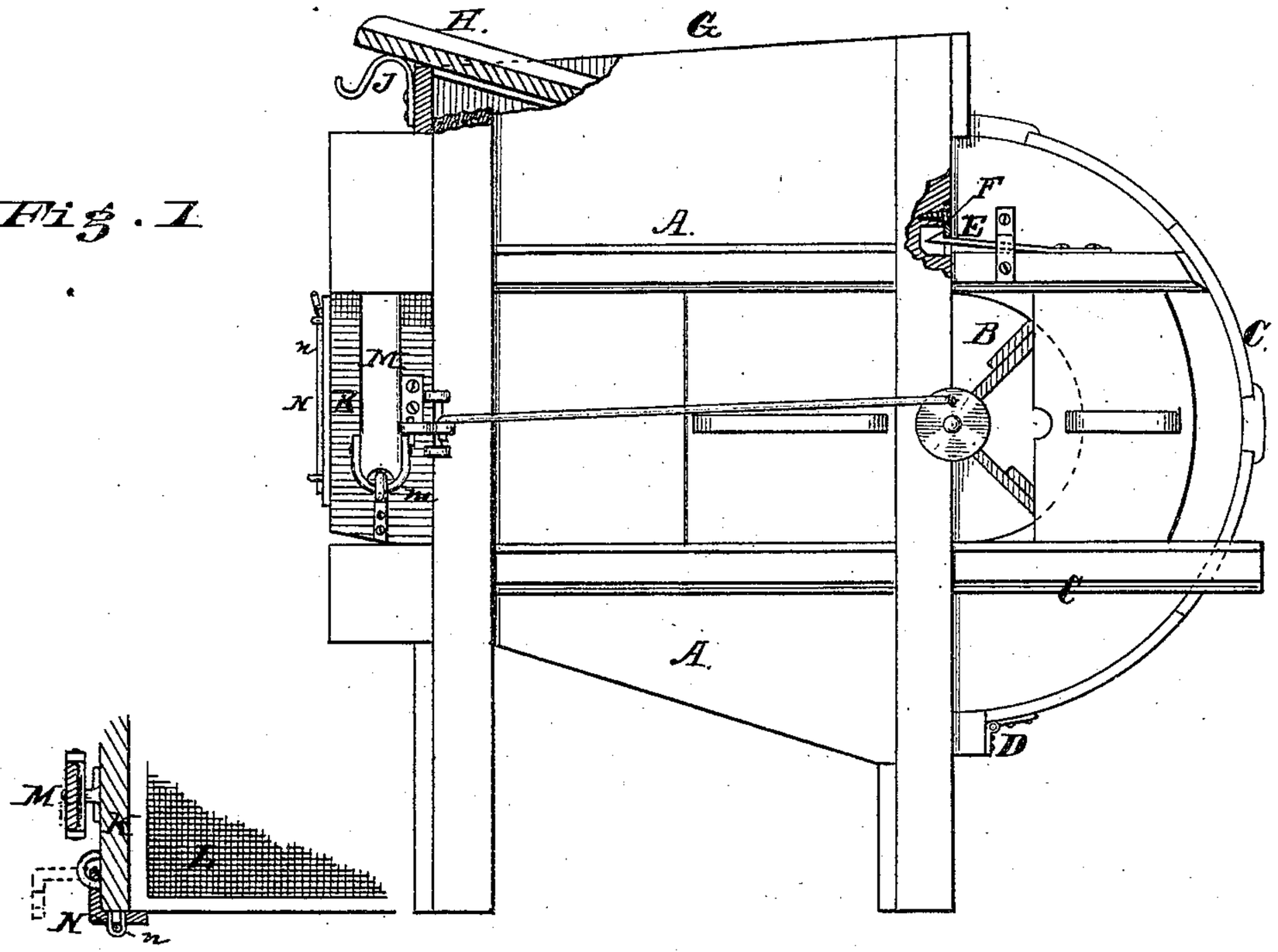
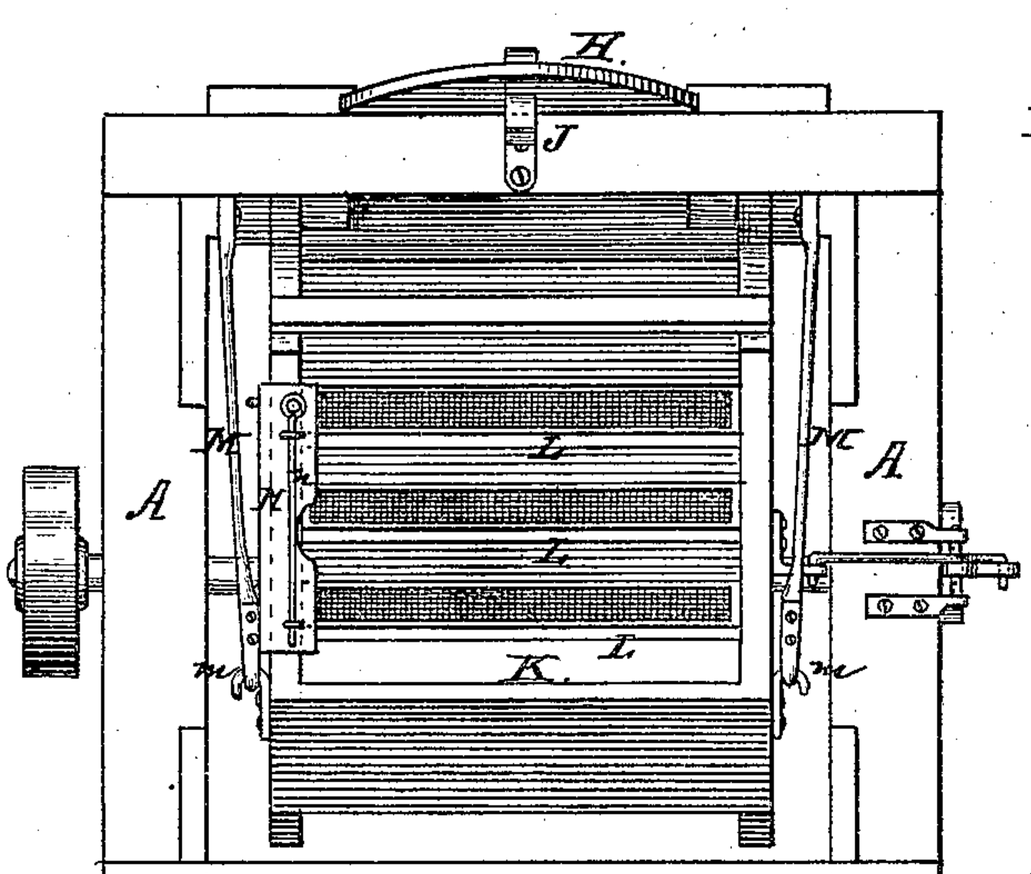


Fig. 3.

Fig. 2.



Witnesses:

Ford R. Smith

James L. Murray

Inventor:

Henry H. Benton

by Munday, Evarts & Adcock

his attys.

UNITED STATES PATENT OFFICE.

HENRY H. BENTON, OF LA PORTE, INDIANA.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **179,441**, dated July 4, 1876; application filed March 20, 1876.

To all whom it may concern:

Be it known that I, HENRY H. BENTON, of La Porte, in the county of La Porte and State of Indiana, have invented certain Improvements in Fanning-Mills, of which the following is a specification:

In the accompanying drawing, which forms a part of this specification, Figure 1 is a side elevation of a fanning-mill embodying the invention. Fig. 2 is an end view of the same. Fig. 3 is a fragmentary view of a portion of the mill.

Like letters of reference made use of in the several figures indicate like parts wherever used.

In the said drawing, A represents the frame-work and casing of the mill, which is of the usual construction. B is the fan, mounted upon a shaft, having suitable bearings in the usual location. This fan is inclosed by a semi-cylindrical casing, C, which is all made separate from the rest of the casing and frame-work of the mill, and is attached thereto by hinges D, connecting the lower edge of the said casing C to the mill, and held at the upper edge by spring-latches E, which set into lipped mortises F.

By this construction and hinging of the fan-casing convenient access is given at any time to the interior of the fan from the rear, for the purpose of cleaning, repairing, or examining the internal mechanism. This I have found to be a great convenience.

G is the feed-hopper, the corner of which is shown at Fig. 1 of the drawing to be partially broken away. This is for the purpose of exhibiting in partial section the feed-hopper slide H and the friction-spring J, which latter, secured to the outside of the hopper, presses constantly upon the under side of the slide H, producing sufficient friction to firmly hold said slide in any position that may be given to it in regulating the feed. K is the vibrating screen-carriage, or "shoe," as it is sometimes called, containing the usual number of wire screens L. This shoe is suspended from the frame-work of the mill by means of four wooden spring-bars, M, rigidly fastened to the mill frame-work at their upper ends, and loosely attached by a joint, *m*, at their lower ends to the shoe. This means of suspension gives a very steady, smooth, and uniform motion to the shoe, and is much more durable, and less likely to get out of order, than the common iron-rod suspension. The screens L each consist of the usual wire-netting, mounted in a rectangular frame-work fitted to slide into place in grooves in the inner walls of the shoe, so that they may be changed about, or removed upon occasion.

In order to secure these screens in place against their being shaken out by the motion of the shoe, I provide the corner of the shoe with a hinged flap, N, (shown clearly at Fig. 2, and also more particularly in horizontal section at Fig. 3 of the drawing,) in which latter figure the dotted lines show the said hinged flap thrown back, or open in position, to allow of the removal or insertion of the screens. When closed this flap may be locked by means of a bolt, *n*, inserted through staples, as shown.

This contrivance of a hinged flap extending vertically nearly or quite the whole height of the shoe affords a simple means of securing or holding all of the screens by a single device, so that all may be locked or unlocked at once.

Of course, it is not necessary that the flap be made of the angle form shown. I employ this form because it is more convenient to hinge the flap thus than to the narrow edge of the wall of the shoe.

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

1. The fan-casing C, inclosing the fan, and hinged at its bottom to the frame-work of the mill, combined with a latch, E, engaging with a keeper, F, substantially as and for the purpose specified.

2. The feed-hopper slide H, combined with a friction-spring, J, permanently attached to the outside of the frame of the machine, and its upper end bent over outward, so as to be accessible to the hand, and bearing with a uniform pressure against said slide.

3. The combination, with the shoe and screens, of the hinged flap N, locking all of the screens, substantially as specified.

HENRY H. BENTON.

Witnesses:

I. D. PHELPS,

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