(No Model.)

J. A. INGRAM.

FANNING MILL.

No. 351,511. Patented Oct. 26, 1886.

Fig. 1.

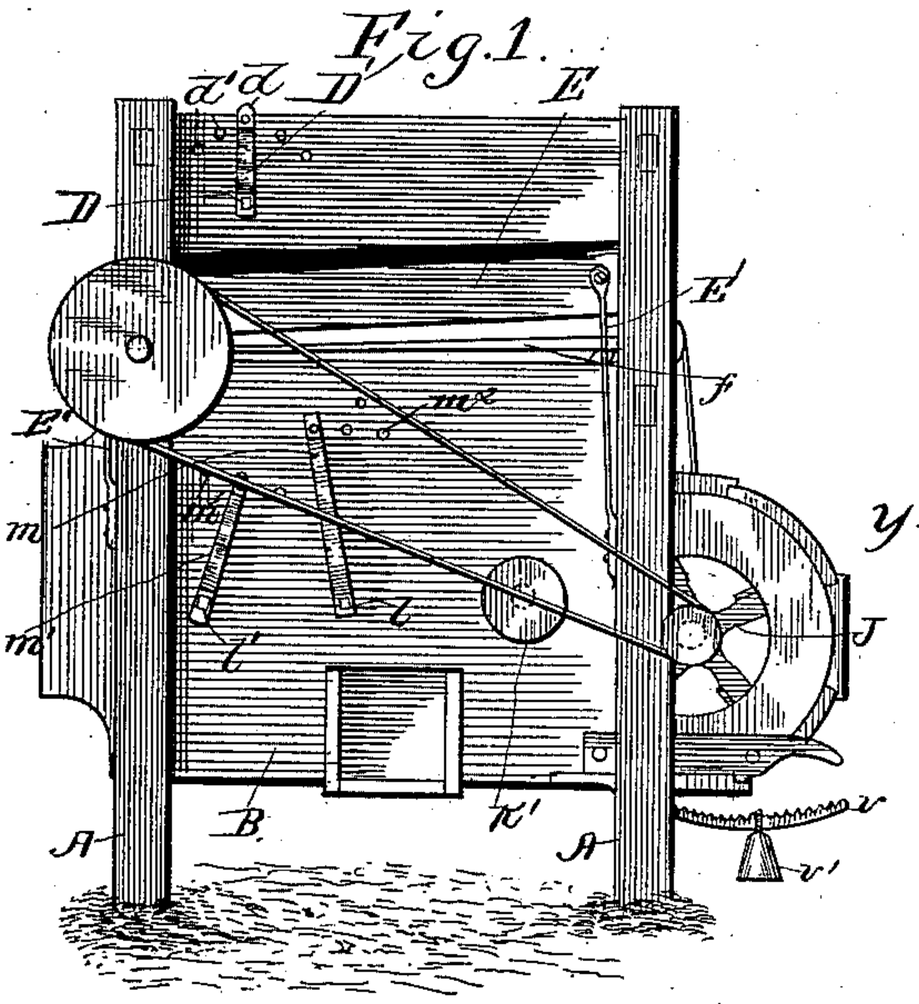


Fig. 2.

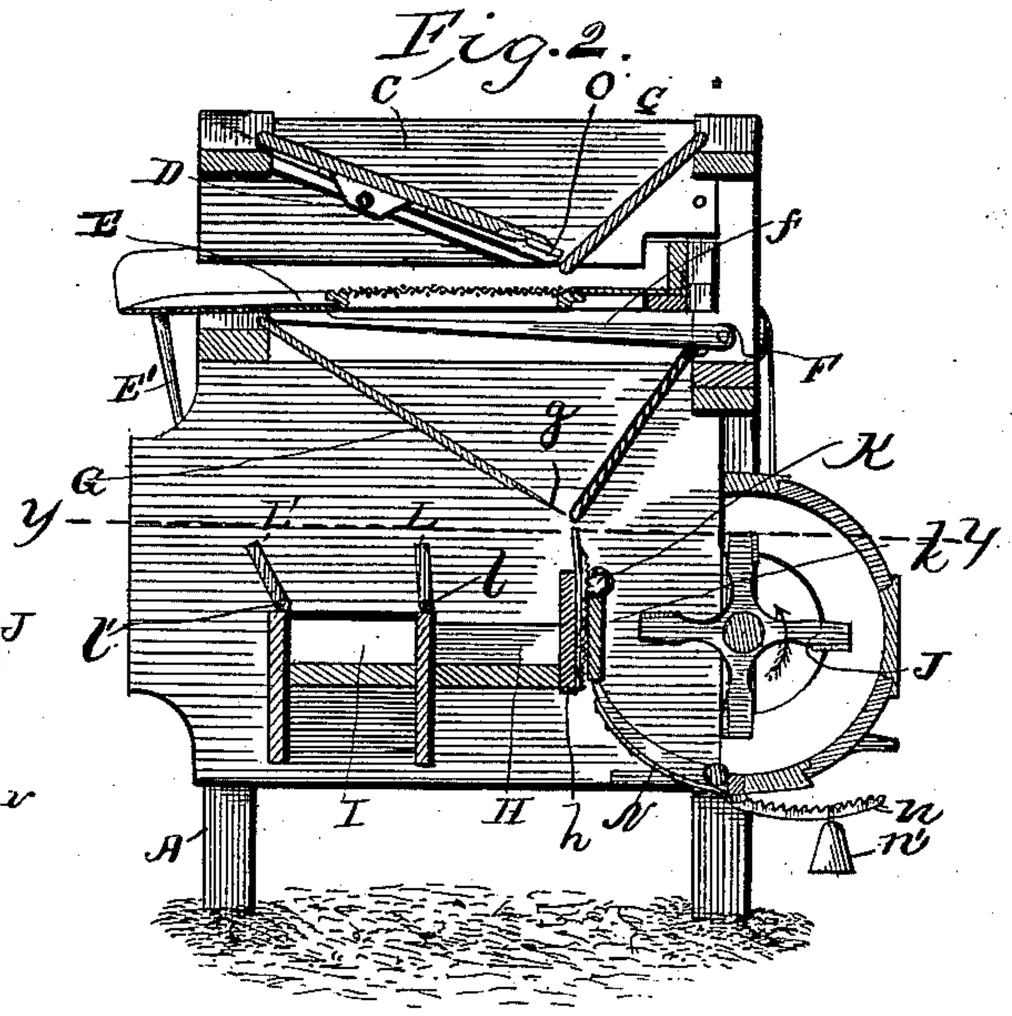


Fig. 4.

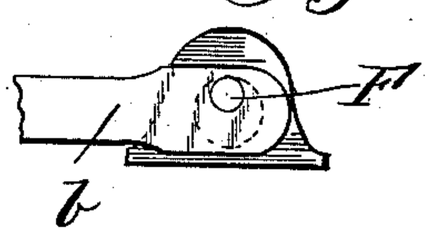


Fig. 6.

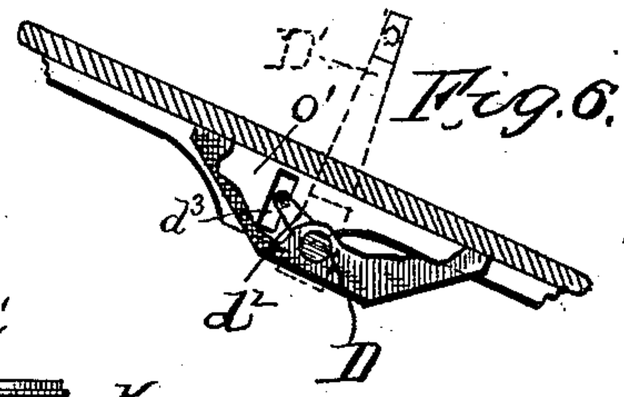


Fig. 3.

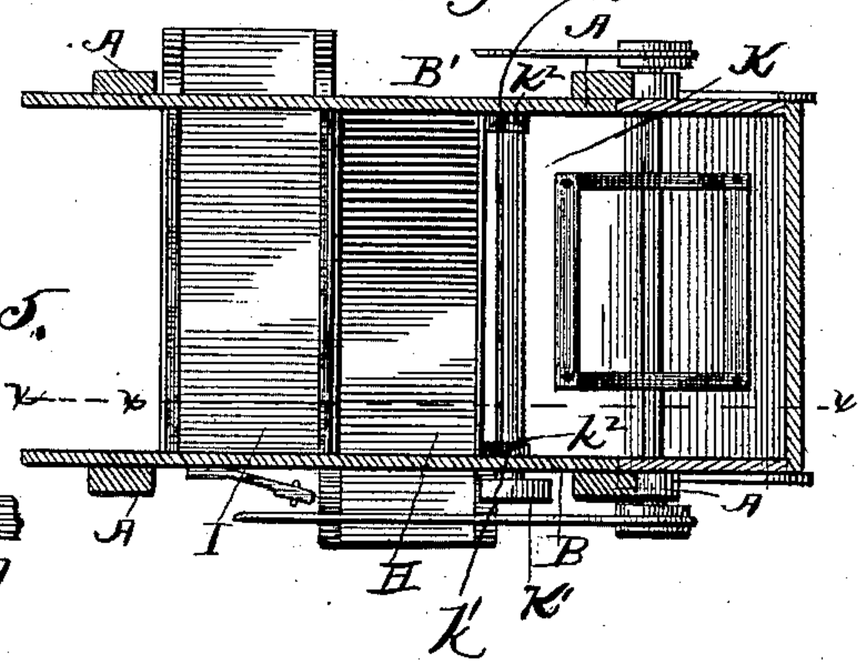


Fig. 5.

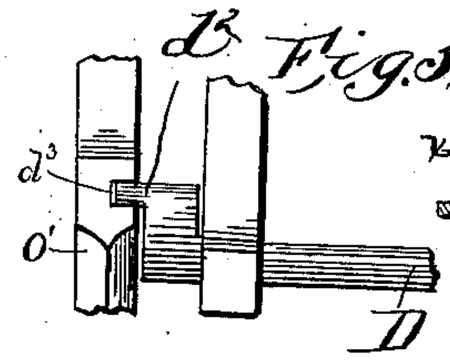
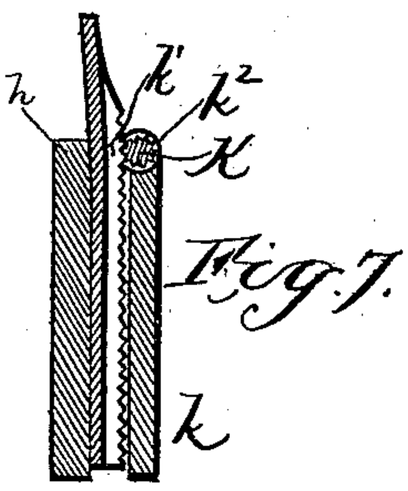


Fig. 7.



Witnesses:
R. C. Laurie
R. H. Bishop.

Inventor;
John A. Ingram
By R. S. & A. P. Lacey Atty's.

UNITED STATES PATENT OFFICE.

JOHN A. INGRAM, OF CANTON, KANSAS, ASSIGNOR OF ONE-HALF TO WILLIAM B. KILE, OF SAME PLACE.

FANNING-MILL.

SPECIFICATION forming part of Letters Patent No. 351,511, dated October 26, 1886.

Application filed April 24, 1886. Serial No. 200,064. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. INGRAM, a citizen of the United States, residing at Canton, in the county of McPherson and State of Kansas, have invented certain new and useful Improvements in Fanning-Mills; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to fanning-mills, and pertains to the peculiar construction of the same, whereby simplicity, durability, efficiency, and ease are attained at a minimum outlay.

It consists in the novel features of construction and combinations of parts, more fully hereinafter set forth, claimed, and shown in the annexed drawings, in which—

Figure 1 is a side view of a fanning-mill embodying my invention. Fig. 2 is a sectional view of the same on the line X X of Fig. 3. Fig. 3 is a sectional view taken on the line Y Y of Fig. 2. Fig. 4 is a detail view of the end of the shaft which vibrates the screen and a part of the rod which connects it with the screen. Figs. 5 and 6 are detail views of the devices for operating the slide or cut-off in the bottom of the hopper, and Fig. 7 is an enlarged detail view of the slide for cutting off the blast and the means for operating it.

The frame of the machine, comprising the four corner-posts A and the two sides B B′, supports a hopper, C, having inclined sides, with a discharge-opening at its lower end, which is regulated by a cut-off slide, O, operated by a crank, d^2, on the end of a shaft, D, working in a transverse groove, d^3, in the side of an arm, O′, extending from the cut-off. The end of the shaft D projects through the side of the hopper, and a spring-arm, D′, keyed thereto, is provided with a pin, d, on its free end, to engage one of a series of notches or depressions, d', formed in the side of the hopper, thereby holding the cut-off in an adjusted position. A shaking screen, E, supported beneath the hopper at both ends on spring-arms E′, is actuated from a crank-shaft, F, mounted in suitable bearings at the front end of the machine by means of a spring-pitman, f, connecting the screen and crank-shaft.

The grain, passing through the screen, falls into a hopper, G, having a double inclined bottom and a discharge opening, g, between the two parts of the bottom. Compartments H and I, located beneath the hopper G and to the rear of a vertical line passing through its discharge-opening, are designed to receive the grain as it leaves the hopper, said grain being directed to said compartments by a blast of air from a fan, J, located in front of the compartments. The space between the top of the front wall, a, of the compartment H and the opening g of the hopper G is regulated by a slide, k, actuated by a shaft, K, mounted in the sides of the frame. A hand-wheel, K′, on the outer end of shaft K, serves as a means to rotate it in its bearings. A rack, k', secured near each end of the slide k, meshes with a corresponding pinion, k^2, near each end of the shaft K, and effects a positive connection between the slide and shaft.

The walls of the compartments farther from the fan are provided with valves L L′, pivoted on the upper edges of the walls on shafts l l', respectively, which project through the side B, and have spring-arms m m' keyed thereto, the outer ends of which engage depressions m^2 m^3, respectively, and hold the valves in an adjusted position. The adjustment of the valve varies more or less the size of the openings of the compartments, so as to regulate the grade of the grain delivered into each. The valves are of such width that they may entirely close the compartment I, thus catching only one grade. The bottoms of the compartments are inclined, forming chutes, which extend through the opposite sides of the mill, so that the different grades of grain may be collected from the opposite sides thereof.

The side N of the fan-case adjacent the compartment H is pivoted, and a graduated lever, n, projecting beyond the pivotal point and having a weight, n', movable thereon, holds the pivoted section N in place against the force of the blast. In case the blast should become too strong by running the machine at a higher rate of speed than usual, the section, by turning on its pivot, allows the excess of blast to

escape, thus preventing the grain being blown away.

The fan-shaft is driven by any suitable power, and motion is communicated therefrom to the shaft F by belt and pulley in any well-known manner.

In practice, grain fed to the hopper C falls therefrom onto the screen, the supply being regulated by the slide O, by which foreign matter—such as straw, &c.—is removed and conveyed to the end or rear of the machine. The grain, relieved of its bulky impurities, falls into a second hopper, from which it escapes forward of the compartments H and I, and is subjected to a blast of air from the fan. The heavier grain falls into the nearer compartment, H, and the lighter grain is carried back farther by the blast and falls into a compartment, I, while the dust and chaff is conveyed and escapes from the rear of the machine. A uniform blast is maintained by adjusting the weight *n'* into the proper notch in the graduated arm *n* of the hinged section N of the fan-case, so that if the fan should become accelerated and the blast be increased the section N will open and allow a portion to escape proportionate to the increase of the pressure.

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

1. The combination of the shaking screen, the hopper beneath said screen, having a discharge-opening, compartments located beneath the hopper in the rear of the discharge-opening, a slide for regulating the space between the opening in the bottom of the hopper and the front wall of the nearer compartment, a fan, and a fan-case having a hinged section provided with a graduated weighted arm secured thereto and projecting beyond its hinge, substantially as and for the purpose set forth.

2. A fanning-mill comprising a hopper, a shaking screen located beneath it, a second hopper, G, arranged beneath the screen and having a discharge-opening, a series of compartments located beneath the hopper G, in rear of its discharge-opening, and discharging at opposite sides of the machine, a fan located in front of the compartments, the slide for regulating the space between the openings in the bottom of hopper and the front wall of the nearer compartment, the rack-and-pinion shaft operating the cut-off, and the valves pivoted upon the tops of the rear walls of the compartments, as and for the purpose described.

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

JOHN A. INGRAM.

Witnesses:

JOHN SINCLAIR,

S. A. BEVIN.