WILLIAM A. COCKRILL.

Improvement in Grain Cleaners and Separators.

No. 115,707. Patented June 6, 1871.

Fig. 1.

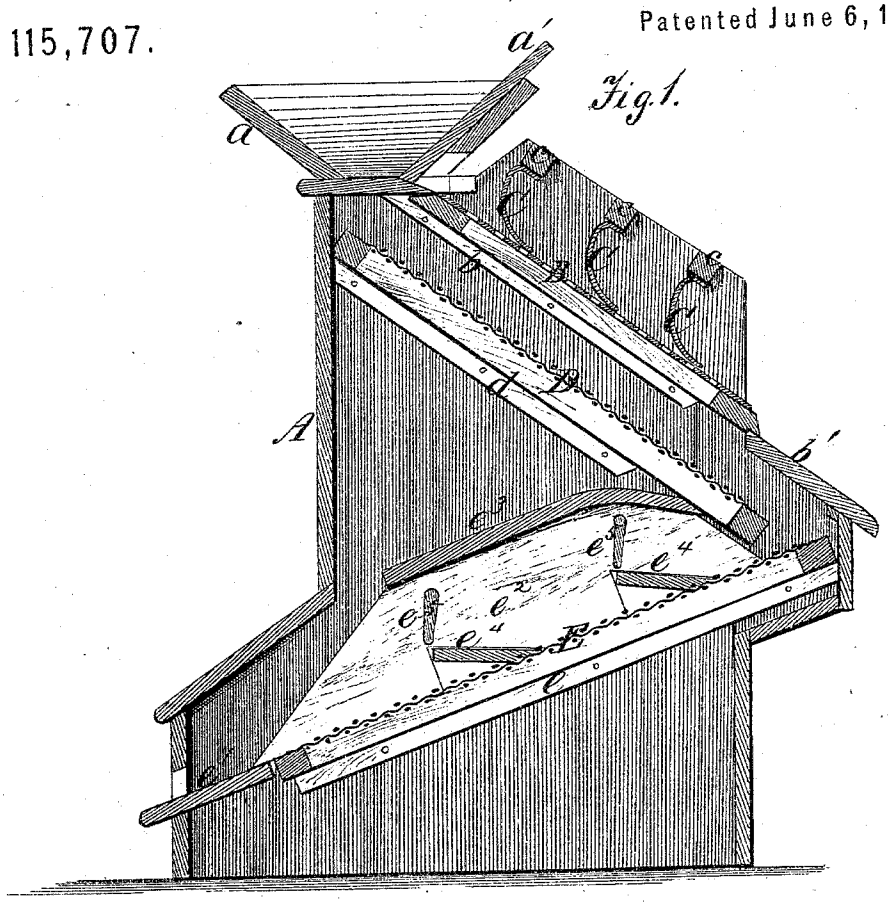


Fig. 3.

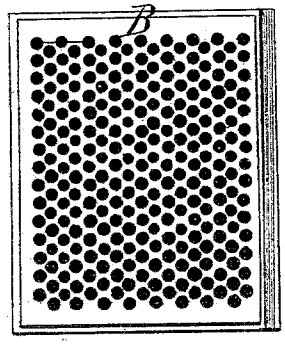
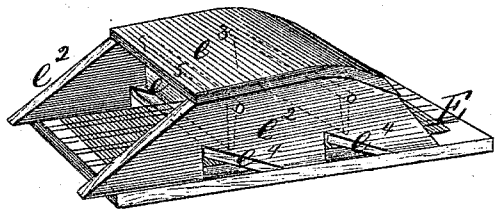


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM A. COCKRILL, OF ZANESVILLE, OHIO, ASSIGNOR TO HIMSELF AND CHARLES H. DURBAN, OF SAME PLACE.

IMPROVEMENT IN GRAIN CLEANERS AND SEPARATORS.

Specification forming part of Letters Patent No. 115,707, dated June 6, 1871.

To all whom it may concern:

Be it known that I, WILLIAM A. COCKRILL, of Zanesville, in the county of Muskingum and State of Ohio, have invented a new and useful Improvement in Grain Cleaner and Separator; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of the same, and in which—

Figure 1 represents a vertical central section of my improved grain cleaner and separator. Fig. 2 represents a perspective view of the lower screen thereof, detached therefrom; and Fig. 3, a plan view of the upper screen of the same, also detached therefrom.

Similar letters of reference in the several figures refer to like parts.

This invention refers to an improvement in grain cleaners and separators; and it consists of the means used in insuring the passage of the grain through the upper screen, falling thereon; of the means for protecting the lower screen from the screenings or dirt, &c., falling from the one above it; and of that for regulating the passage of the grain over the latter screen, and for giving it, the said screen, the desired vibratory or jarring motion to remove the grain therefrom, substantially as hereinafter more fully explained and claimed.

To enable others to make and use my invention, I will proceed to describe it.

A in the annexed drawing refers to a receptacle or casing, constructed preferably of the form shown in the drawing, and supplied with the hopper *a*, which is provided with an opening communicating with an opening in the casing above referred to, and over which slides a board or gate, *a'*, which, when withdrawn from over said opening, allows the grain placed in said hopper, for which purpose it is designed, to enter the said casing and fall upon the upper screen. B refers to the screen above alluded to, the side pieces of the frame of which rest upon rails *b* secured in an inclined position to the sides of the receptacle or casing A, and upon which the grain, encumbered by the substances to be separated therefrom, falls from the hopper *a*, the grain and fine screenings or dirt, &c., passing through the openings of said screen, and the coarse screenings being carried off the same by means of its inclination and the inclined board *b'* to the floor. C C refer to pendants, which constitute means for insuring the passage of the grain through the openings of the screen B, the upper extremities thereof being secured to transverse bars *c c* fastened to the casing A, while their lower extremities are caused to rest upon the said screen and retard the grain passing over the screen sufficiently to cause the grain to readily enter its apertures, and at the same time allow the coarse dirt or screenings to pass from the said screen and be precipitated upon the floor. These pendants are constructed preferably of some flexible material, such as cloth and the like, whereby they may have a gentle or slight pressure upon the passing grain, so as not to arrest the motion of the grain further than to let it readily enter the openings of said screen, and not prevent the coarse dirt from being carried therefrom, as already stated. *b'* is a movable board, which rests upon inclined surfaces of the casing or receptacle A, and with its upper edge fitting within a recess cut in the lower end of the frame of the screen B, its lower side being supplied with a longitudinal projection, which rests against the inner side of one end of the casing A. This board, in addition to the office it performs, as above stated, also retains the upper screen B in place in the receptacle A. D refers to a second screen, made of wire, and upon which the grain falls in leaving the screen B, the side pieces of the frame of which rest upon rails *d* secured in an inclined position to the inner sides of the casing or receptacle A. The grain falling upon this screen is conveyed therefrom to a third screen. E designates a third or the lower screen, of the same nature as the screen D, and so arranged with reference to the latter as that its upper end shall extend a sufficient distance beyond the lower end of the said latter screen as to receive the grain falling therefrom and be elevated above the same sufficiently to allow the grain to pass between it and the said screen. (See Fig. 1.) The screen E is supported on rails *e* fastened to the inner sides of the receptacle or casing A, in an inclined position contrary to that of the rails of the other two screens, for the sake of convenience and economy of space. This screen is held upon its rails or supports by means of a

board, e^1, placed within the opening through which the grain is delivered or conveyed from the casing A, and fastened to the latter in such a manner as that it shall have the same inclination as that of the said screen, and be brought in contact with the lower edge of said screen. This board also furnishes a means for receiving and permitting of the grain being conducted to its destination. To the upper side, and flush with the longitudinal edges of the frame of the screen E, are secured, edgewise, boards e^2 e^2, which are furnished with a cover or board, e^3, (see Fig. 2,) the object of which being to protect the said screen and grain from the dirt or screenings falling from the one directly above it and the said grain. For the purpose of removing the screenings or dirt from the said cover, it is intended to construct the casing A at a suitable point with an opening, through which the same can be conveyed therefrom. e^4 e^4 refer to boards, with their ends entering and secured within openings made in the side pieces or boards e^2 e^2, and so arranged with reference to the screen E as to have an inclination contrary to that of the said screen, as plainly shown in Fig. 1. The object of these inclined boards is to facilitate the passage of the grain over its screen, as it will be seen, by the grain falling from the said board upon the said screen, that the latter will receive a jarring or vibratory motion, causing the grain to be carried therefrom. e^5 e^5 refer to check-boards or guards, the upper edges of which are supplied with projections which enter apertures made in the side pieces or boards e^2 e^2, the said projections and apertures furnishing means whereby they may have a swinging motion when operated upon. These guards may be made of flexible material, if desired, as such will answer the purpose for which they are designed as well as if not better than hard or heavier substances, of which they are represented in the drawing as being made. By means of these check-boards or guards it is intended to arrest or retard the motion of the grain passing over the inclined boards e^4 e^4 of the screen E, should such be desired, as will be readily seen from the practical operation of the machine.

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

1. The guards or check-boards e^5 e^5, in combination with the inclined boards or steps e^4 e^4 of the screen E, arranged to operate substantially as and for the purpose described.

2. The screen E, side pieces e^2 e^2, cover e^3, inclined boards or steps e^4 e^4, and guards or check-boards e^5 e^5, all combined, constructed, and arranged to operate substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this 27th day of March, A. D. 1871, in presence of two subscribing witnesses.

WM. A. COCKRILL.

Witnesses:
DANIEL B. GARY,
REUBEN H. MORGAN.