

(No Model.)

J. C. WELLING.
GRAIN CLEANER.

No. 564,491.

Patented July 21, 1896.

Fig. 2.

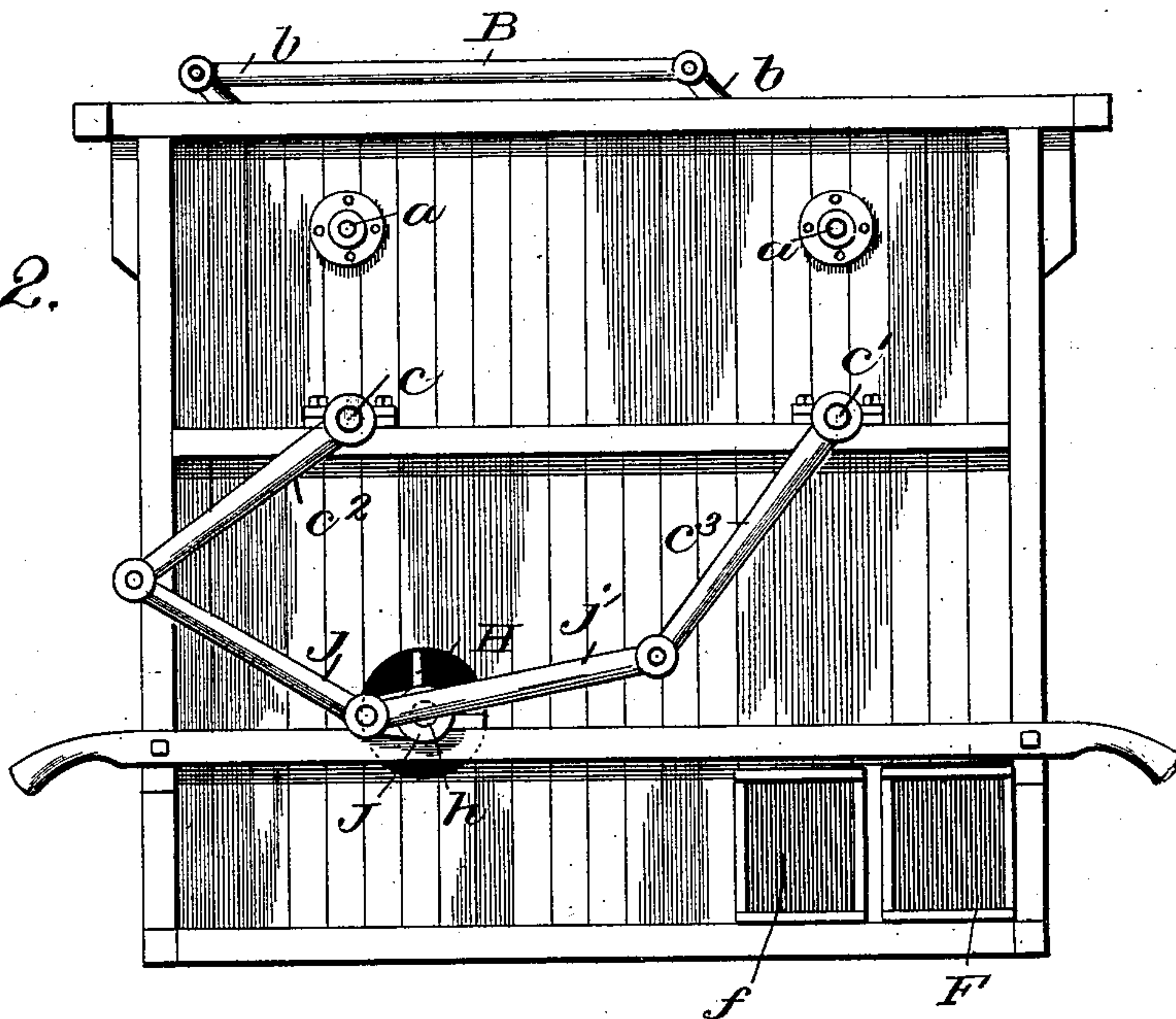
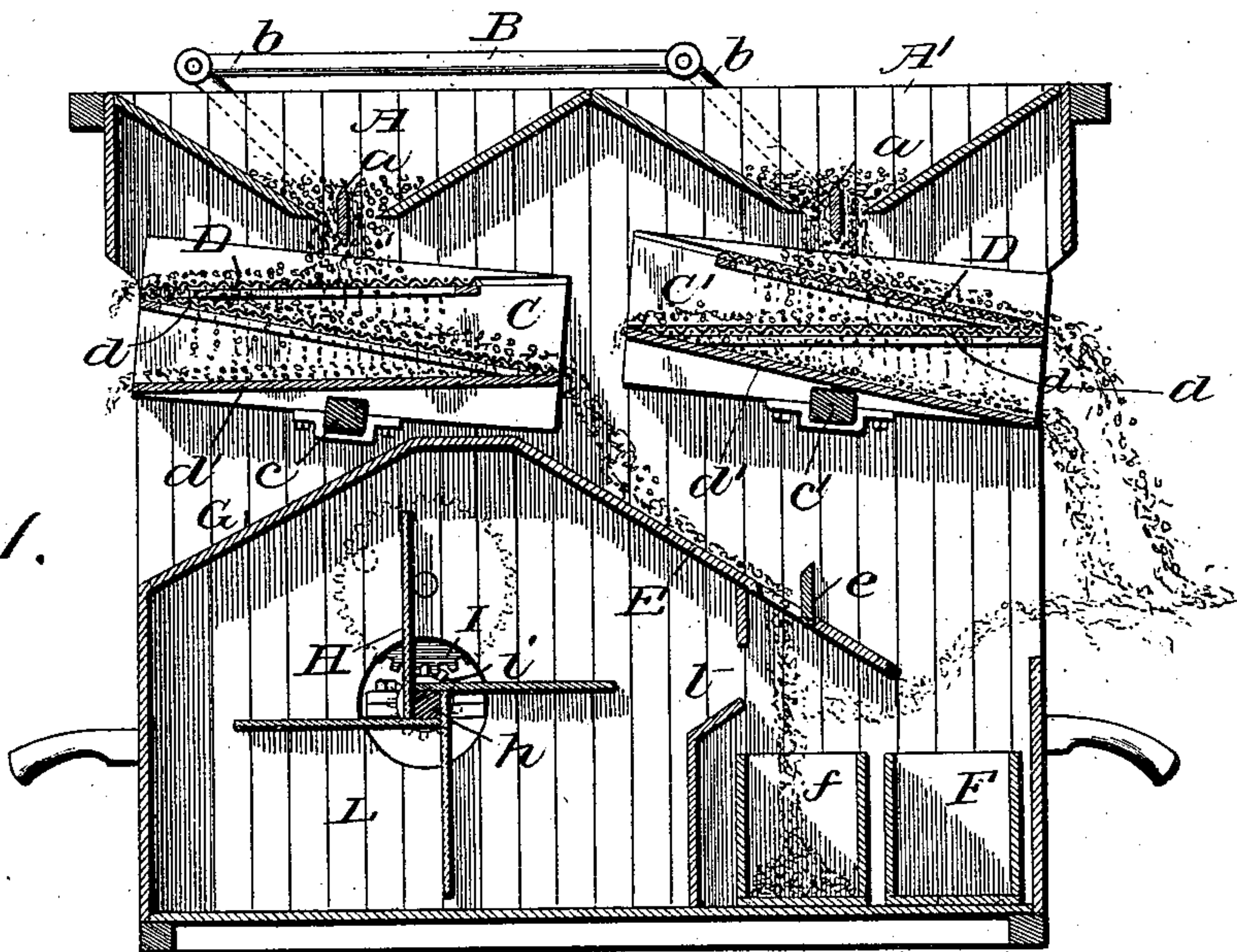


Fig. 1.



WITNESSES

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JOHN C. WELLING, OF CRISP, MICHIGAN.

GRAIN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 564,491, dated July 21, 1896.

Application filed March 7, 1896. Serial No. 582,188. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. WELLING, of Crisp, in the county of Ottawa and State of Michigan, have invented certain new and
5 useful Improvements in Grain-Cleaners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying
10 drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention is an improved machine for screening and fanning grain to purify the same and separate it from foreign substances
15 and cockles, burs, weed-seeds, chaff, &c.; and it consists in the novel construction and combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is
20 a central longitudinal vertical section through the machine. Fig. 2 is a side elevation thereof.

The machine consists of a pair of similar oppositely-facing double-rocking screening-
25 frames arranged end to end in the upper portion of the machine and fed from separate hoppers, both being adapted to deliver the screened grain onto a common chute in the center of the machine, below which is a
30 fan and fan-chamber, by which the grain is subjected to an air-blast as it falls into the conveyer-boxes or other receptacles for cleaned grain, the screenings being delivered from both screen-frames to the outside of the
35 machine, the chaff, &c., being also blown out of the machine by the air-draft.

In the drawings the machine is suitably incased and has two hoppers A A' in its upper end arranged side by side and provided
40 with regulating feed-gates *a* in their bottoms, which may be of any suitable construction. As shown, the shafts of these gates are provided with arms *b*, which are connected by a rod B, so that the feed from both hoppers will
45 be equal. Below the hoppers are rocking screen-frames C C', respectively mounted on transverse rock-shafts *c c'*, suitably journaled in the sides of the casing.

Each screen-frame has an upper screen D,
50 which (when the frame is horizontal) inclines outwardly and downwardly, and a lower screen *d*, which is longer than screen D and

inclines inwardly and downwardly, the two screens nearly or quite meeting at their outer ends and diverging toward their inner ends. 55
Below the screens in each frame is a board *d'*, which is also inclined downward and outward, so that the screenings falling thereon will be cast out of the machine.

The good seed falling off the inner ends of
60 screens *d* drop onto an inclined board E, which forms part of the fan-casing, and drops from said board into a receiving-box F; or if the flap-valve *e* in board E be opened, as indicated in Fig. 1, it falls into box *f*. Two 65
boxes are used, so that when one is filled the cleaned seed can be directed into the other until the first is emptied; and I do not confine myself to the use of valve *e* for accomplishing this shifting of the grain into either box. 70

Below the left-hand screen-frame C, and behind board E, is another downwardly-inclined board G, (also forming part of the fan-casing,) and if any screenings fall thereon from the superimposed frame C they are di- 75
rected out of the machine.

Below boards E G is the fan-chamber L, which has a lateral opening *l* for the exit of air at the side adjoining the lower end of board E, so that the grain falling off said 80
board into the receiving-box is subjected to a strong draft of air created by the fan H in said chamber, which fan is mounted on a transverse shaft *h*, which is suitably journaled at the sides of the casing, and may be 85
driven by any suitable means. I have shown in dotted lines, Fig. 1, a crank spur-gear I, meshing with a pinion *i* on shaft *h*, by which means the shaft can be driven by hand. On the other end of shaft *h* (see Fig. 1) is a 90
crank J, which is connected by a pitman *j* to a crank *c*² on the adjoining end of shaft *c*; and crank J is also connected by another pitman *j'* to a crank *c*³ on the adjoining end of shaft *c'*, hence these shafts are rocked 95
when the fan is operated, and thus screen-frames C C' are simultaneously vibrated.

When the machine is in operation, the screen-frames are rapidly oscillated and the grain falls onto the upper screens D, and the 100
straws, sticks, and other large impurities pass on and off the outer ends of the screens and fall outside the casing, while the grain and small impurities drop onto screens *d*. The

dirt and small impurities drop through screens *d* onto the boards *d'*, and from the latter escape outside the casing, while the good seed drop off the inner ends of screens *d* onto board E, and the grain falling from said board is subjected to the blast of wind escaping through the opening *l*, whereby the small light impurities, &c., are blown out of the casing, while the cleaned grain drops into the receivers.

The machine may be provided with suitable handles for convenience in transportation.

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

1. In a grain-cleaner, the combination of a fan-chamber, a receiving-trough at one side thereof, over which the blast of air from the fan passes, a delivery-board forming part of the fan-casing, adapted to deliver grain into the receivers, and a delivery-board forming part of the fan-casing adapted to direct screenings out of the machine; with a pair of oscillating screen-frames arranged side by side above the fan-chamber and trough respectively, each screen being mounted upon a central rock-shaft, and each having an outwardly and downwardly inclined screen and board, and an inwardly and downwardly inclined screen between the first screen and board, and means for simultaneously oscillating said screen-frames in the same direction all substantially as and for the purpose described.

2. The combination of the casing a pair of feed-hoppers, arranged side by side therein, a pair of oscillating screen-frames arranged respectively below the hoppers, each screen-frame being mounted on a central rock-shaft, and each screen-frame having an upper down-

wardly and outwardly inclined screen, and a bottom downwardly and outwardly inclined board; and an intermediate downwardly and inwardly inclined screen longer than the upper screen, and means for simultaneously rocking said screen-frames in the same direction; with a fan-chamber below one screen-frame, a receiving-trough below the other, and a board adapted to direct the clean grain from both screen-frames into the troughs, substantially as and for the purpose described.

3. In a grain-cleaner, the combination of a fan-chamber, a receiving-trough at one side thereof, over which the blast of air from the fan passes, a delivery-board forming part of the fan-casing, adapted to deliver grain into the receivers, and a delivery-board forming part of the fan-casing adapted to direct screenings out of the machine; with a pair of oscillating screen-frames arranged side by side above the fan-chamber and trough respectively, each screen being mounted upon a central rock-shaft, and each having an outwardly and downwardly inclined screen and board, and an inwardly and downwardly inclined screen between the first screen and board, and means for simultaneously oscillating said screen-frames in the same direction; with a feed-hopper above each screen-frame, the crank-arms on the ends of the rock-shafts, and pitmen connecting said arms with a crank on the fan-shaft, whereby the screens are oscillated by and from the fan, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN C. WELLING.

Witnesses:

OTTO P. KRAMER,
CORNELIUS VER SCHURE.