

(No Model.)

2 Sheets—Sheet 1.

C. R. REDEL.
GRAIN SEPARATOR AND CLEANER.

No. 467,198.

Patented Jan. 19, 1892.

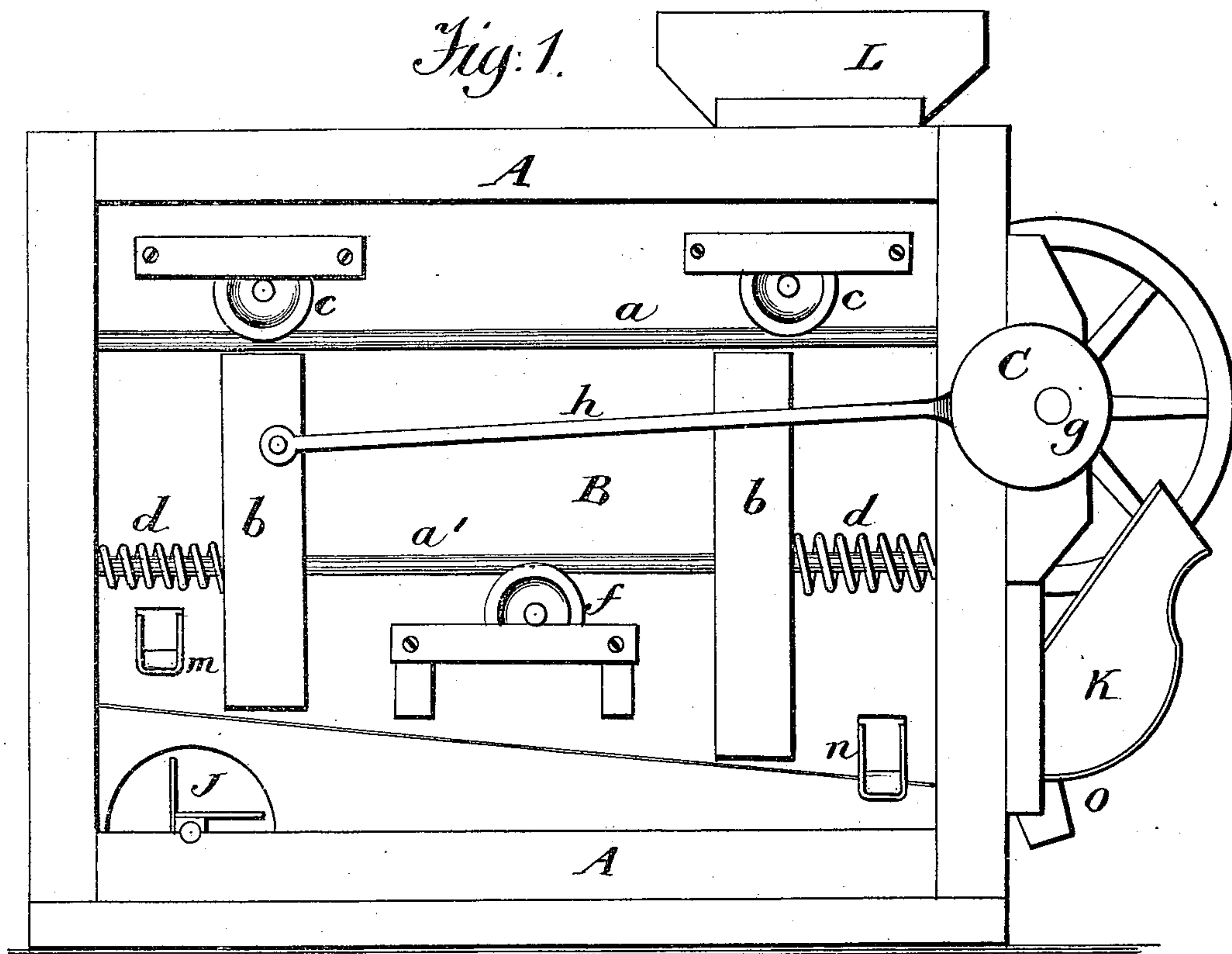
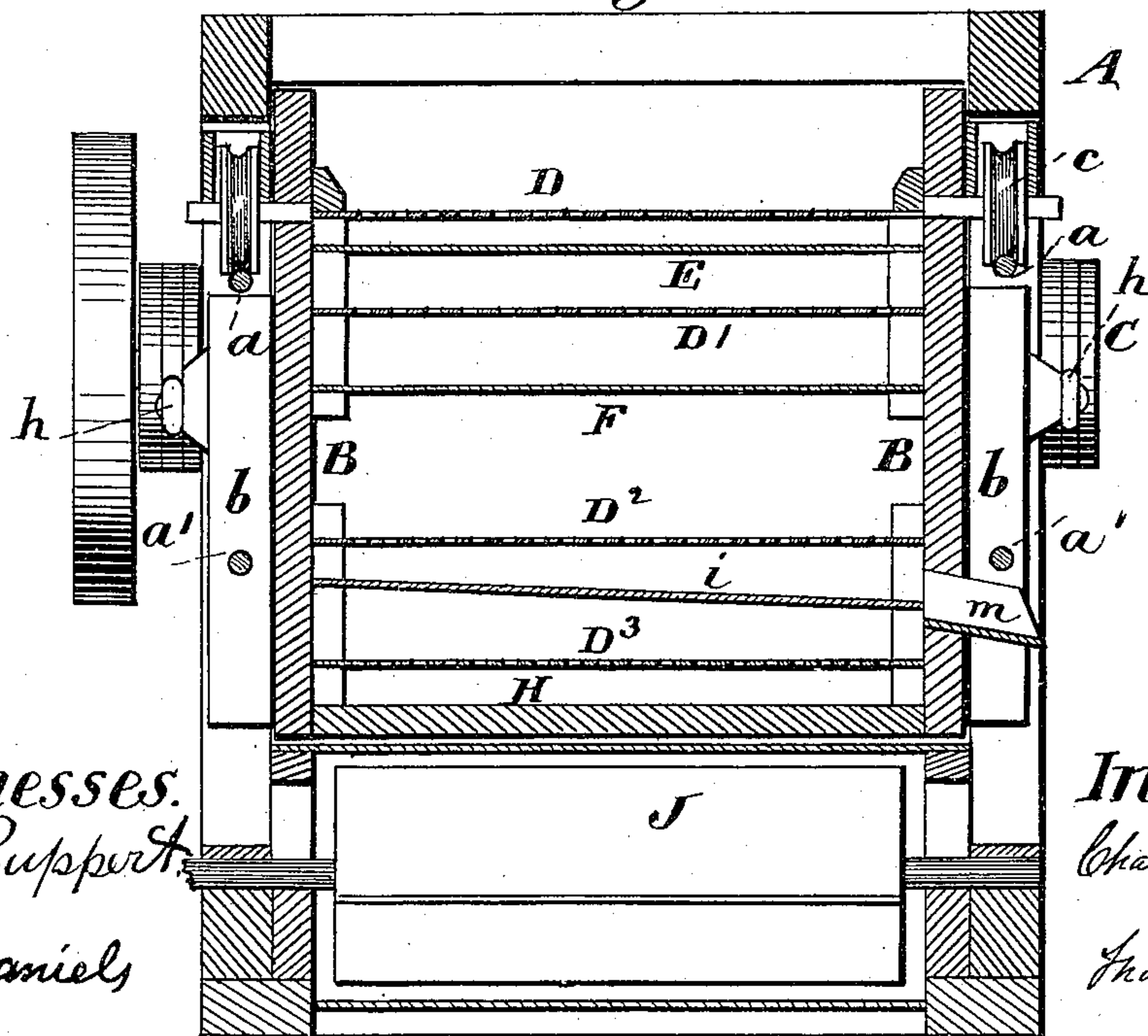


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES R. REDEL, OF ROCHESTER, MINNESOTA.

GRAIN SEPARATOR AND CLEANER.

SPECIFICATION forming part of Letters Patent No. 467,198, dated January 19, 1892.

Application filed August 24, 1891. Serial No. 403,582. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. REDEL, a citizen of the United States, residing at Rochester, in the county of Olmstead and State of Minnesota, have invented certain new and useful Improvements in Grain Separators and Cleaners; and I do hereby 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.

The invention consists in certain improvements in machines for separating and cleaning flax-seed and other grains, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a side view of a grain separating and cleaning machine provided with my improvements. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 shows certain parts in transverse section.

A designates the main frame, in which is hung a shoe B, which contains a number of screens. At each side of said shoe two horizontal rails *a* and *a'* are fixed to the frame A, the extremities of said rails entering posts of the frame. Two grooved rollers *c* are journaled in bearings secured to the shoe B and are in position to move on the upper rail *a*. The lower rail *a'* extends through apertures in the vertical pieces *b*, made fast to the side of the shoe, as shown. Spiral springs *d* are placed on the rail *a'*, each of said springs bearing against one of the pieces *b* and a post of the frame. A grooved roller *f* is journaled in bearings carried by the shoe B and is located under the rail *a'* about midway of said rail, the latter bearing on the roller, as shown.

A reciprocatory motion is imparted to the shoe B through eccentrics C on the ends of a rotative shaft *g* and rods *h*, connected with said eccentrics and with the shoe B, the latter having by the action of the grooved rollers against the rails a direct forward and backward movement, the springs *d* tending to assist or make steady such movement.

D indicates the uppermost screen, the same being mounted in the shoe near the top in position inclined downward from the hopper. Under the screen D is placed a plate E, which extends rearward, following the inclination

of the screen D, but does not extend so far downward as said screen. Next below is placed a screen D', which in position is inclined downward in a direction opposite to the direction of the screen D, and under screen D' is secured a plate F, which is somewhat shorter and does not extend so far downward as the screen. Next below is placed a screen D², which is inclined downward in a direction opposite to that of the screen D', and under the screen D² is a plate G, which is intended to conduct refuse seed falling through screen D² to a channel *i*, from which a spout *m* extends out through the side of the shoe. A fourth sieve D³ is placed next below, and under said sieve is placed a board H, which conducts the refuse seed falling through the screen D³ to a channel leading to a side spout *n*, extending through the side of the shoe.

J indicates a fan on a shaft having bearings in the frame, the said fan being inclosed in a housing from which a blast-passage I extends to and connects with an upwardly-turned spout K. At the point of the connection of the passage I with the spout K is a discharge-spout *o*, which is under the lower end of the lowest screen D³.

The grain or seed, being turned into the hopper L, falls on the screen D at its upper end and passes through said screen to the plate E, by which it is conducted to the upper end of the screen D', the coarsest chaff or refuse passing out at the end of the screen. The grain passing through the screen D' is conducted by a plate F to the upper end of screen D² and passes down said screen to the upper end of screen D³, the refuse seed falling through screen D² to the plate G, by which it is conducted to a channel that leads to a discharge side spout. The grain falling to screen D³ passes down the latter, any refuse seed falling through said screen being conducted by the board H to a channel leading to a discharge side spout. The cleaned grain falls from the screen D³ through the discharge-spout *o*, while any remaining chaff or dust is driven by the blast from the fan J through the spout K. Four screens are shown as employed in connection with the shoe; but the number may be increased by adding a fifth screen if deemed expedient.

I claim—

A reciprocating shoe B, provided with apertured vertical pieces *b b*, combined with a frame having the rails *a a'* on the side, springs
5 *d d* on said rails, and grooved rolls *c f*, running on said rails and in said keepers, as and for the purpose set forth.

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

CHARLES R. REDEL.

Witnesses:

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