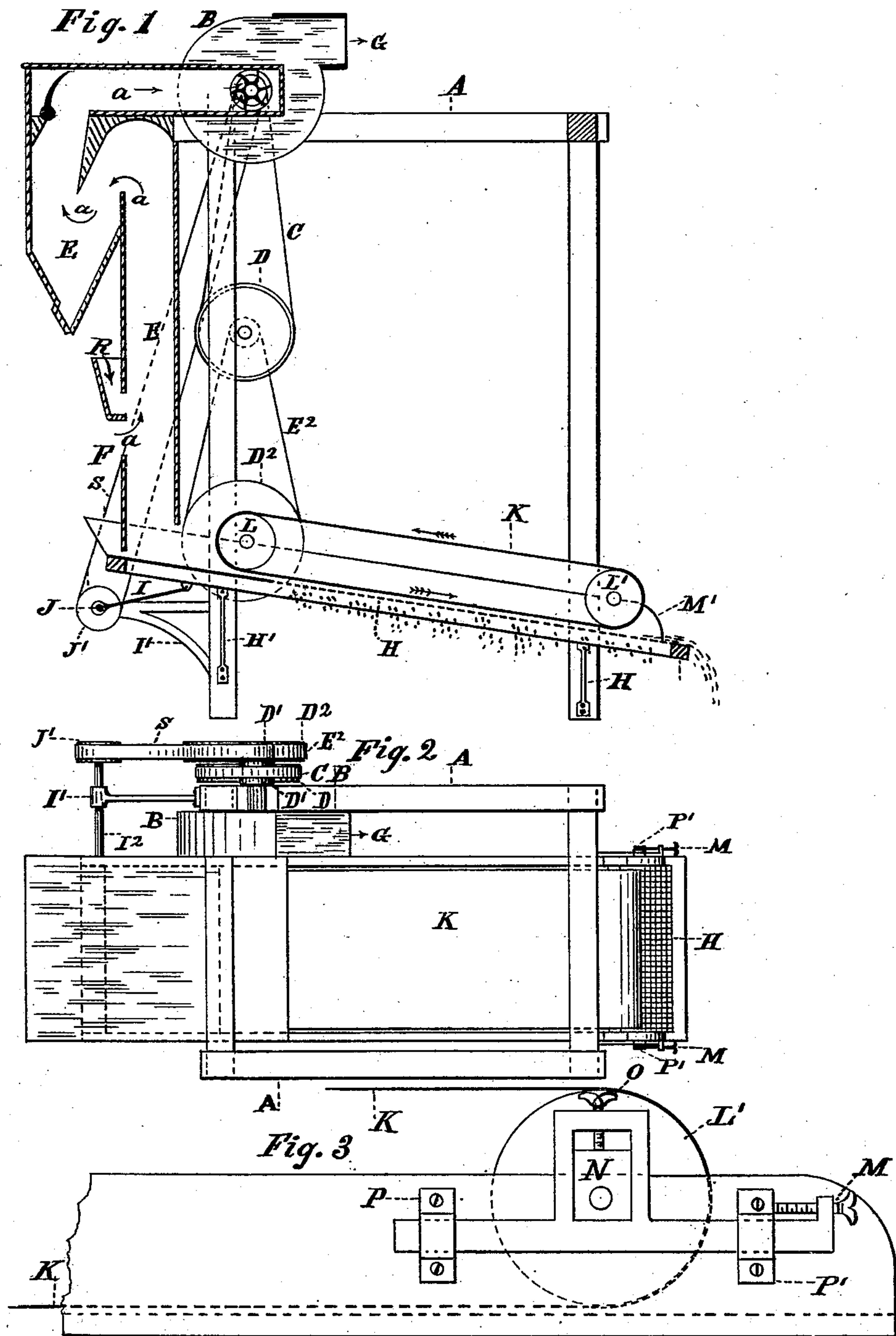


(No Model.)

C. E. McNEAL.
SEPARATOR FOR GRAIN, &c.

No. 253,547.

Patented Feb. 14, 1882.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES E. McNEAL, OF SILVER CREEK, NEW YORK, ASSIGNOR TO HIMSELF AND ALBERT H. SPAULDING, OF SAME PLACE.

SEPARATOR FOR GRAIN, &c.

SPECIFICATION forming part of Letters Patent No. 253,547, dated February 14, 1882.

Application filed August 11, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. McNEAL, a citizen of the United States, residing in Silver Creek, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Separators for Grain or other Materials, of which the following is a specification.

My invention relates to certain improvements in separators for grain, in which an endless apron or belt is arranged above the screen and made adjustable vertically and horizontally, as will be more clearly hereinafter shown by reference to the drawings, in which—

Figure 1 represents a vertical longitudinal section through a grain-separator of ordinary construction, in which my invention is shown combined therewith; but it may be adapted to or combined with a separator of any other construction. Fig. 2 is a plan or top view of the machine; and Fig. 3 is an enlarged portion of the screen-shoe, showing a portion of the movable belt and device for adjusting it.

A represents the frame-work of an ordinary grain-separator; B, the fan, operated by a belt, C, and pulleys D D'.

E represents the usual air space and passage to the fan, the direction of the air as it enters the opening F and leaves the mouth G of the fan being shown by the arrows *a*.

H represents the shaking screen, which is made to vibrate by the well-known connection I and eccentric or crank J, operated by a belt or other means, and pulleys suitably connected to the driving-pulley. The screen may be made to shake or vibrate either in a line with the movements of the traveling belt K or transversely, or at any angle to its movement, if desired; or it may be made to operate as a stationary screen. It is connected to the shoe in any well-known way, and is supported on the ordinary springs, H'. The belt K is set in the frame of the screen, and is supported on rollers L L', and is provided with the usual tightening devices, M, which are fastened to the sides of the shoe M' by caps and screws P P'; and the said rollers L L' are also fitted in vertically-adjustable boxes N, operated by thumb-screws O. The object in making it adjustable

vertically is to adapt it for different kinds of grain or other material.

I have shown the traveling belt attached to the shoe so as to vibrate with it; but this construction is not necessary, as it may be easily connected in bearings which are independent of and separate from the shoe or screen, so as to operate without being made to vibrate or shake. The belt is run over the rollers L L', so that its lower surface will be just over the screen, an eighth of an inch (more or less) above it, so as to adapt it to the material to be operated upon. The motion of the belt K assists in drawing the wheat or other material fed into the machine onto the screen evenly, and presses said material as it passes along the screen. The wheat, being shorter than the oats, will fall through the perforations or meshes of the screen, while the oats, sticks, straw, white caps, &c., which are longer than the wheat, cannot tip up or "up-end" so as to pass through or clog, but are kept in a horizontal position between the belt and the screen and in motion by the action of the belt, so as to be carried along down and off from the end of the screen, thereby preventing the clogging of the same.

My invention is also well adapted for separating cockle from wheat, as the belt operates so as to pass the wheat along and off from the end of the screen, while the cockle, being round and having the pressure of the moving belt upon it, is made to pass through the perforations of the screen and away from the wheat. It will be readily seen that without the use of the traveling belt the motion of the screen will cause the wheat to "end-up" and get into the holes intended for the cockle to pass through, and in a very short time the screen will become entirely clogged up and rendered useless. The space between the belt and screen being limited to the kind of material intended to pass through the screen, all other material of greater length will be kept in a horizontal position and caused to pass along over and off from the end of the screen instead of passing through it.

My invention can be used in connection with an air-separator, both before and after the grain goes onto the shaking shoe or screen. When used without an air-separator the grain may be

fed directly onto the screen. When used in connection with an air-separator the grain may be fed into the usual hopper or opening, R, from which it passes down to the screen, and the
5 lighter matter is carried by the current of air which enters the opening F in the direction of the arrows *a* and out from the mouth of the fan, being the usual operation of an air-separator.

10 I claim as my invention—
The combination of a grain-screen, H, and a

movable endless belt, K, on rollers L L, arranged in boxes N in a frame supported by the caps P P', and provided with the adjusting-screws O M, whereby the belt and its support-
15 ing-rollers may receive both a horizontal and vertical adjustment, substantially as and for the purposes described.

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Witnesses:

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