

J. A. VAUGHN.
Grain Separator.

No. 28,026.

Patented April 24, 1860.

Fig. 2.

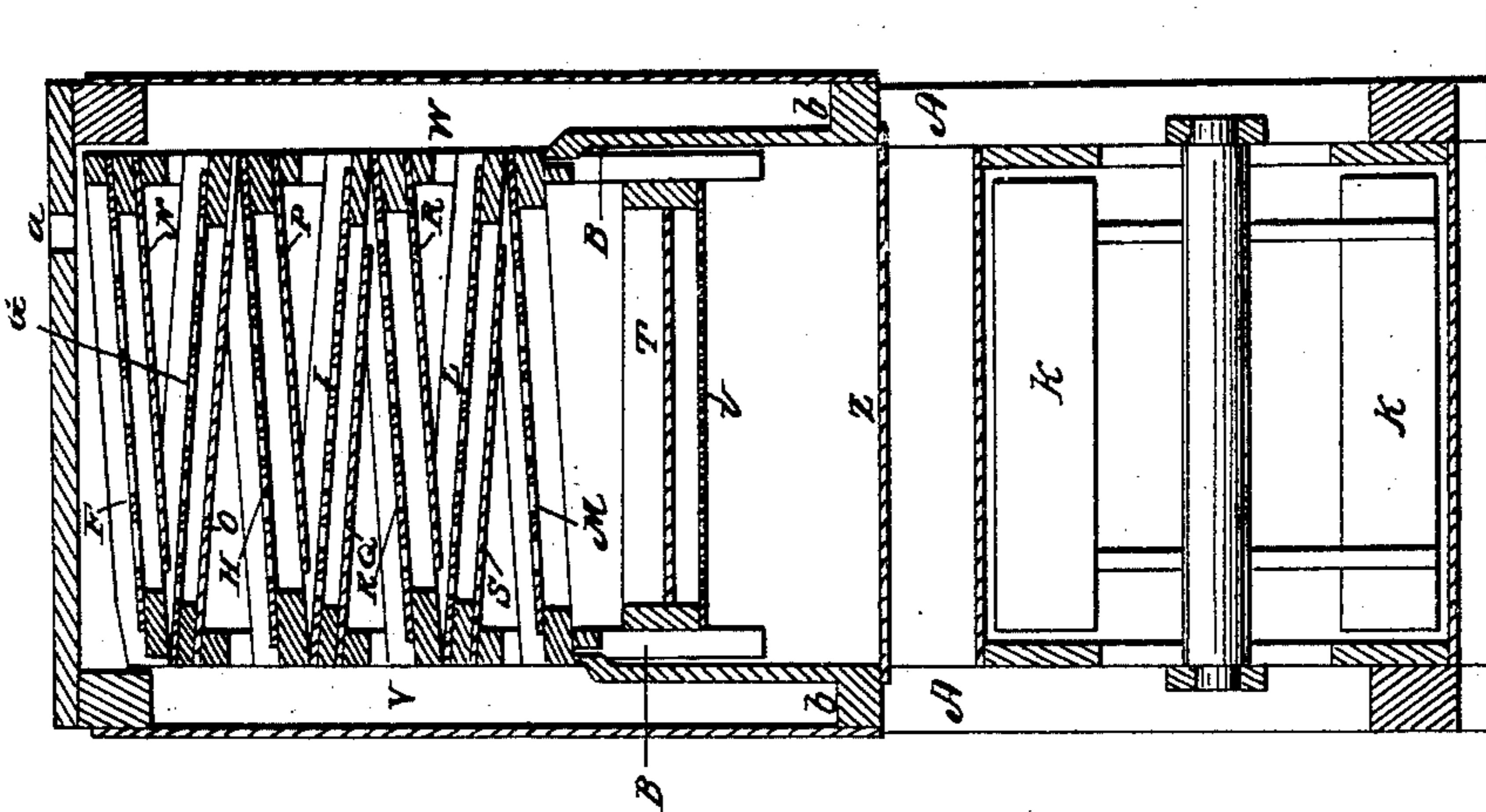
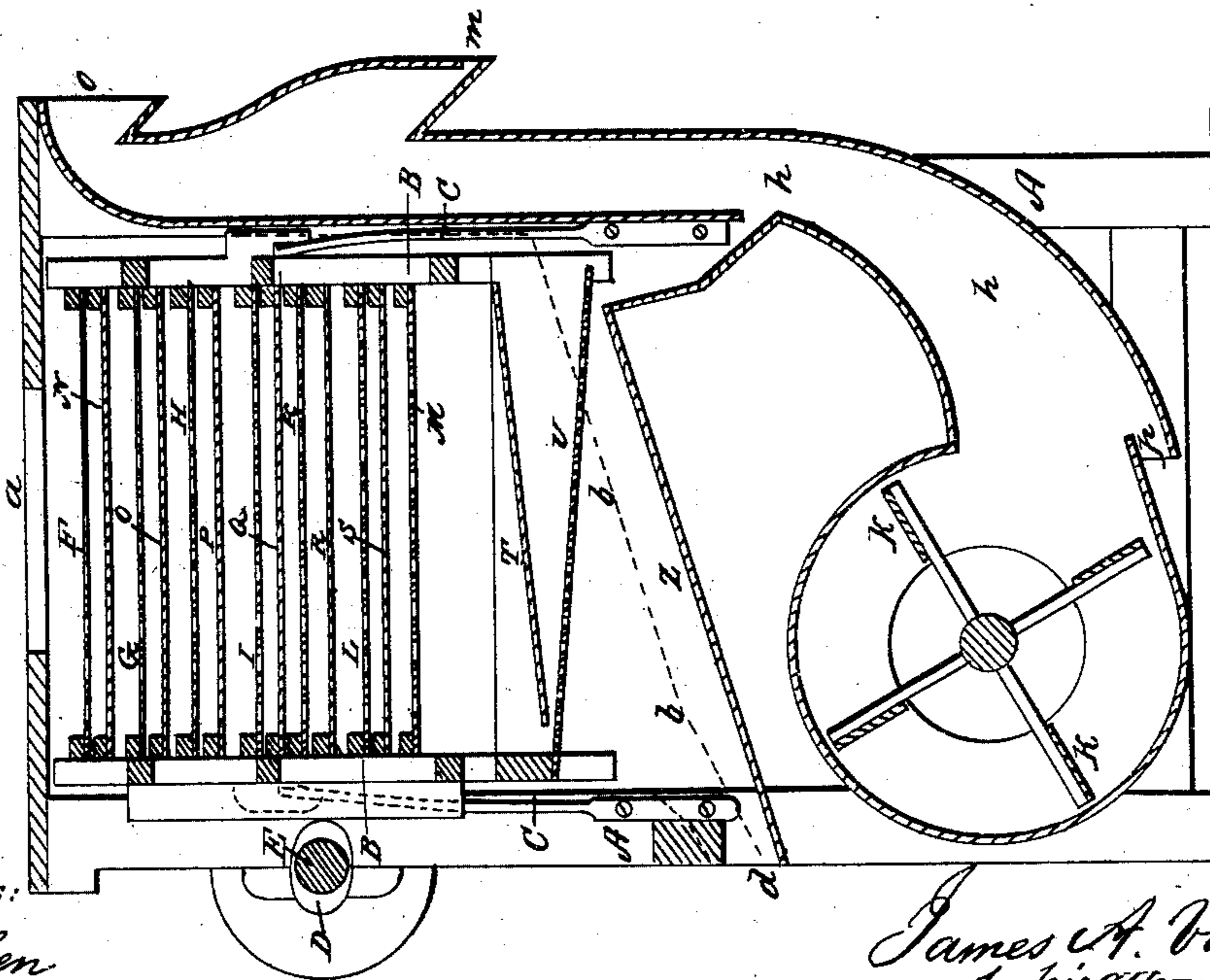


Fig. 1.



Witnesses:
E. Cohen
J. Hirsch.

Inventor:
James A. Vaughn
by his attorney
A. B. Stouten.

UNITED STATES PATENT OFFICE.

JAMES A. VAUGHN, OF CUYAHOGA FALLS, OHIO.

GRAIN-SEPARATOR.

Specification forming part of Letters Patent No. 28,026, dated April 24, 1860; Reissued January 8, 1861, No. 1,120.

To all whom it may concern:

Be it known that I, JAMES A. VAUGHN, of Cuyahoga Falls, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Grain-Separators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1, represents a longitudinal vertical section through said grain cleaning machine. Fig. 2, represents a vertical cross section through the same.

My invention consists in the manner, in which I have arranged my zig-zag screens and inclined boards, with regard to the side chambers, into which the coarser impurities are carried and the exit therefrom, and the inclined cockle board, and its delivery, as will be explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, represents the frame of the machine. Within this frame is hung the frame B, which is supported by two elastic rods C, which at their lower ends are secured to the frame A. The frame B, is vibrated by the action of the cam D, on the shaft E, the elastic rods C, pressing it toward said cam.

F, G, H, I, K, L, and M, represent a number of inclined or zig-zag screens, and N, O, P, Q, R, S, a number of inclined boards, which are secured within the frame B, and which incline toward the sides of the machine, as represented in Fig. 2. T, represents another inclined board, and U, a screen which are also secured to the vibrating frame B, and which incline respectively toward the end of the machine.

The operation of the machine is as follows: The grain to be acted upon is fed down on the screen F, through the aperture *a*, the holes of this screen are somewhat larger than the grain, and a part of the coarser impurities passes together with the grain through them down on the inclined plate N, while the balance passes over its lower edge down into the space V; the grain then by the vibration of the frame B, passes down on the plate N, and thence on the screen G, the holes of which are just sufficiently large to permit the passage of the grain through them, which together with the

finer impurities passes down on the plate O, while, that which remains on the screen G, passes over its lower end, and down into the chamber W. Thus the operation continues, the coarser impurities which cannot pass through the holes of the screens, F, G, H, I, K, L, M, being consecutively discharged at both sides of the frame B, into the chambers V, W, and it will be seen that each of the inclined plates N, O, P, Q, R, S, discharges the grain onto the upper part of the next consecutive screen thereby causing it to pass over the entire surfaces of said screens. The coarser impurities which are collected in the chambers V, and W, slide down their inclined bottoms *b*, shown in dotted lines in Fig. 1 and are discharged from the machine at *d*. The grain and smaller impurities as they pass through the screen M, drop down on the inclined board T, and are thence discharged on the upper part of the screen U, the perforations of which are so small, as not to permit any grain to pass through them, while the cockle, small seed, and other small impurities pass through them, and drop down on the inclined cockle board Z, by which they are discharged from the machine. The grain passes over the lower end of the screen U, down into the blast trunk *h*, where it meets the blast of the fan *k*, which drives the dust and other light impurities up through the trunk *h*, the heavier parts of which escape through the passage *m*, and the lighter ones through the passage *o*, while the grain escapes through the passage *p*. By this construction and arrangement the impurities are mainly brought out of the machine at one end of it, while the cleaned grain comes out at the opposite end, as shown by Fig. 1, the impurities coming out on the left the grain on the right side. The particular manner too, in which I incline my zig-zag screens—viz., across the machine—admits of their being more easily cleansed, as the attendant from the end of the machine with a brush, can clear every screen of the straw, chaff &c., which accumulates in them, the whole end being open—my zig-zag screens incline in a direction exactly the reverse of the grain sieve U, and of the cockle board Z, and their arrangement thus differs from the zig zag screens.

I have shown six sets of zig zag screens, and boards underneath them,—of course less

or more than six may be used. A series of three answers a good purpose, but the number may vary with the purpose to which the machine is to be applied.

5 Having thus fully described the nature of my invention, I would state that I do not claim a series of zig zag screens, as those are well known, but

10 What I do claim therein as new and desire to secure by Letters Patent is—

Arranging the grain board T, screen U, and cockle board Z, so as to incline in the

direction of the length of the machine, while the series of zig-zag screens and their boards incline toward the sides of the machine as 15 described, so that while the chaff is delivered at one end of the machine, the cockle and the screenings shall be delivered at the opposite end thereof, substantially as described.

JAMES A. VAUGHN.

Witnesses:

J. ENDIE,

C. W. WETMORE.