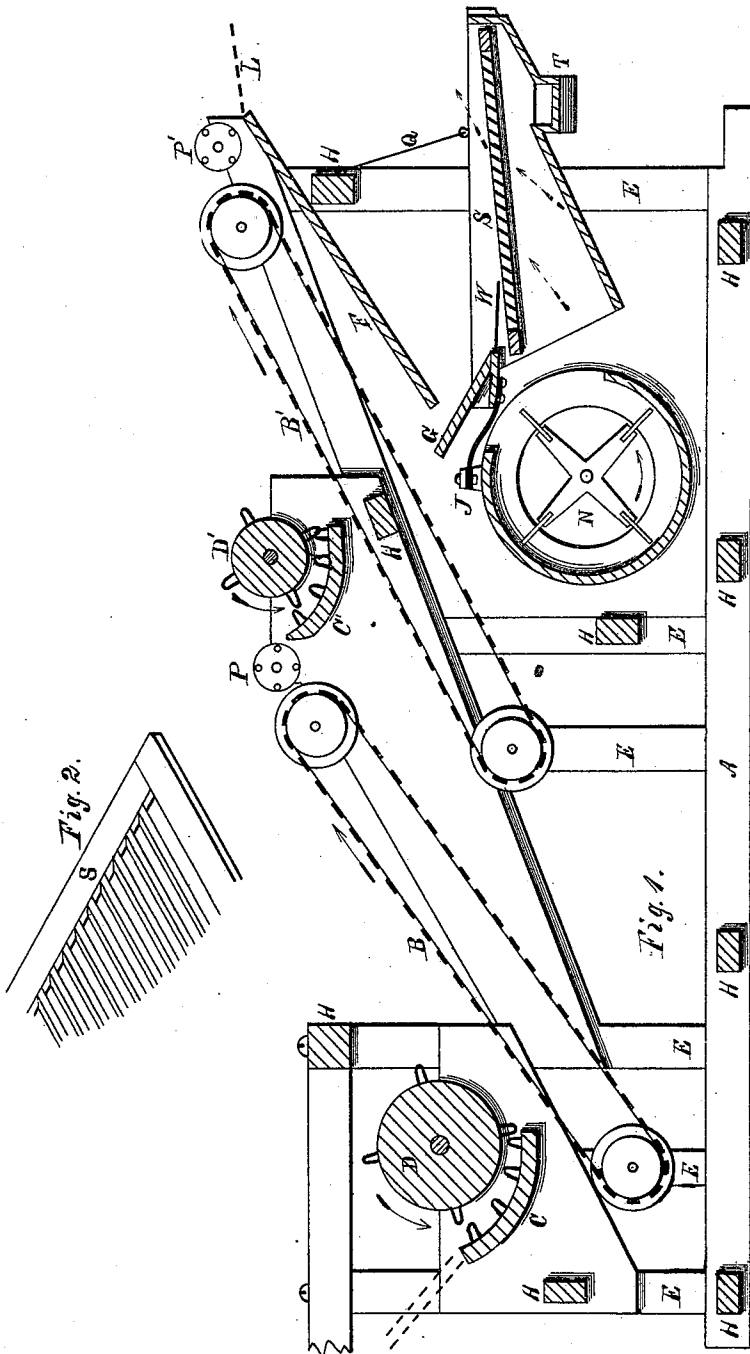


C. S. HALL.

BEAN-THRASHER AND SEPARATOR.

No. 171,724.

Patented Jan. 4, 1876.



Witnesses:

C. B. Whitmore
Geo. B. Selden.

Inventor:

Charles S. Hall
By H. M. Goughborough
Att'y.

UNITED STATES PATENT OFFICE.

CHARLES S. HALL, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN BEAN THRASHERS AND SEPARATORS.

Specification forming part of Letters Patent No. **171,724**, dated January 4, 1876; application filed September 20, 1875.

To all whom it may concern :

Be it known that I, CHARLES S. HALL, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Machine for Thrashing and Cleaning Beans; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical longitudinal section of my invention. Fig. 2 is a detached perspective of a portion of the blind-slat screen.

One serious objection heretofore experienced in attempting to thrash beans or pease by machinery has been the large proportion which would unavoidably get crushed or broken. The object of this invention is to provide a machine which shall obviate this difficulty, and thoroughly thrash and clean beans or pease without breaking or cracking the kernels; and it consists in the employment for that purpose of a succession of thrashing cylinders and concaves of peculiar construction, elevating-belts, and "pickers."

A, E, and H represent, respectively, the sills, posts, and cross-girts of the frame; B and B', the belts; C and C', the concaves; D and D', the cylinders; P and P', the pickers; N, the fan, and S the screen.

This machine is similar in its general construction to that set forth in my patent of February 25, 1873, No. 136,238; but, for thrashing beans, pease, &c., I prefer to use a "tight cylinder," D, and also a "tight" concave, C. I have also found it extremely desirable, if not absolutely necessary, to employ an auxiliary or secondary cylinder, D', and concave, C', both of similar construction to the former, but of less radius.

All the beans thrashed out or shelled by the passage through the first or primary cylinder are discharged from the top of the primary belt B, and deposited upon the secondary belt B', and only the vines, the thrashed and the unthrashed pods are taken up by the picker P and delivered into the secondary or auxiliary concave C', where they are rethrashed by the cylinder D'. The speed of this cylinder is also considerably reduced.

The vines and all thrashed pods are taken up by the picker P' and discharged upon the ordinary raddle-belt, running out, as indicated by the dotted line at L, or upon the straw-carrier, while the thrashed beans or pease are discharged from the auxiliary belt B' upon the return-board F, from which they are delivered to the screen S, after passing over the ordinary chute-board G and wire fingers W.

I found it quite impossible to use the ordinary wire screen in cleaning beans, for the reason that the little spur at the end of the pods, or as often the short, husky leaf at the stem end thereof, would catch in the meshes of the screen, so as to entirely obstruct it in a short time.

This difficulty I have successfully overcome by substituting a screen composed of slats running laterally across the machine, and arranged obliquely, as shown more clearly in Fig. 2, their lower edges being nearer the fan, so as to offer no obstruction to the blast (indicated by the dotted arrows) from said fan, and, at the same time, permit the free passage of the beans (or other grain) through between them. It will also be seen that by this position of the slats with relation to the direction of the blast, and the travel or movement of the pods and other refuse matter, there is no possibility of pods or anything else catching or lodging thereon.

Any unthrashed fragments of pods will work through at the rear end of the screen and be conveyed, through the spout T, into the ordinary "tailings-elevator," by which they are carried up into the secondary concave and rethrashed.

The front end of the shoe is pivoted centrally at J, and the rear end is suspended by the adjustable side links Q, in the usual way.

I prefer "staple" teeth for the cylinders and concaves. I also preferably employ shallow troughs upon the elevating-belts B and B'.

The pickers may be dispensed with by using smaller pulleys for the upper end of the first elevating-belt to run over, to insure the delivery therefrom to the second cylinder.

What I claim as my invention is—

The combination, substantially as shown,

of the primary thrashing cylinder and concave D C and belt B, with or without the picker P, with the secondary or auxiliary belt B', and thrashing cylinder and concave D' C', all relatively arranged as described, whereby the thrashed beans escape a rethrashing, while the imperfectly-thrashed material is

subjected to such rethrashing before passing out of the machine, as set forth.

CHAS. S. HALL.

Witnesses:

WM. S. LOUGHBOROUGH,
GEORGE B. SELDEN.