LANDERS & LAMPMAN.

Grain Winnower.

No. 30,413. Patented Oct. 16, 1860.

Fig. 1.

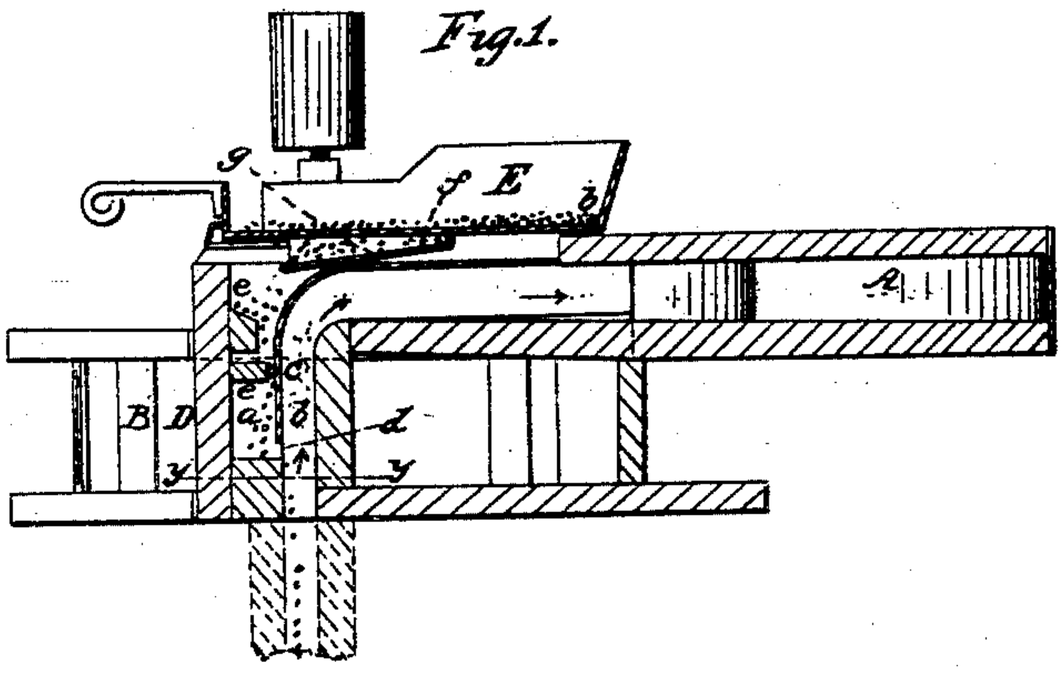


Fig. 3

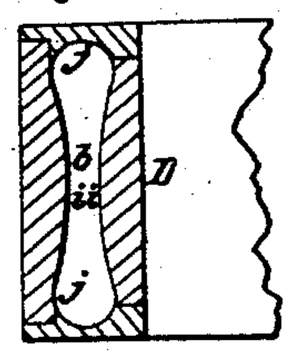
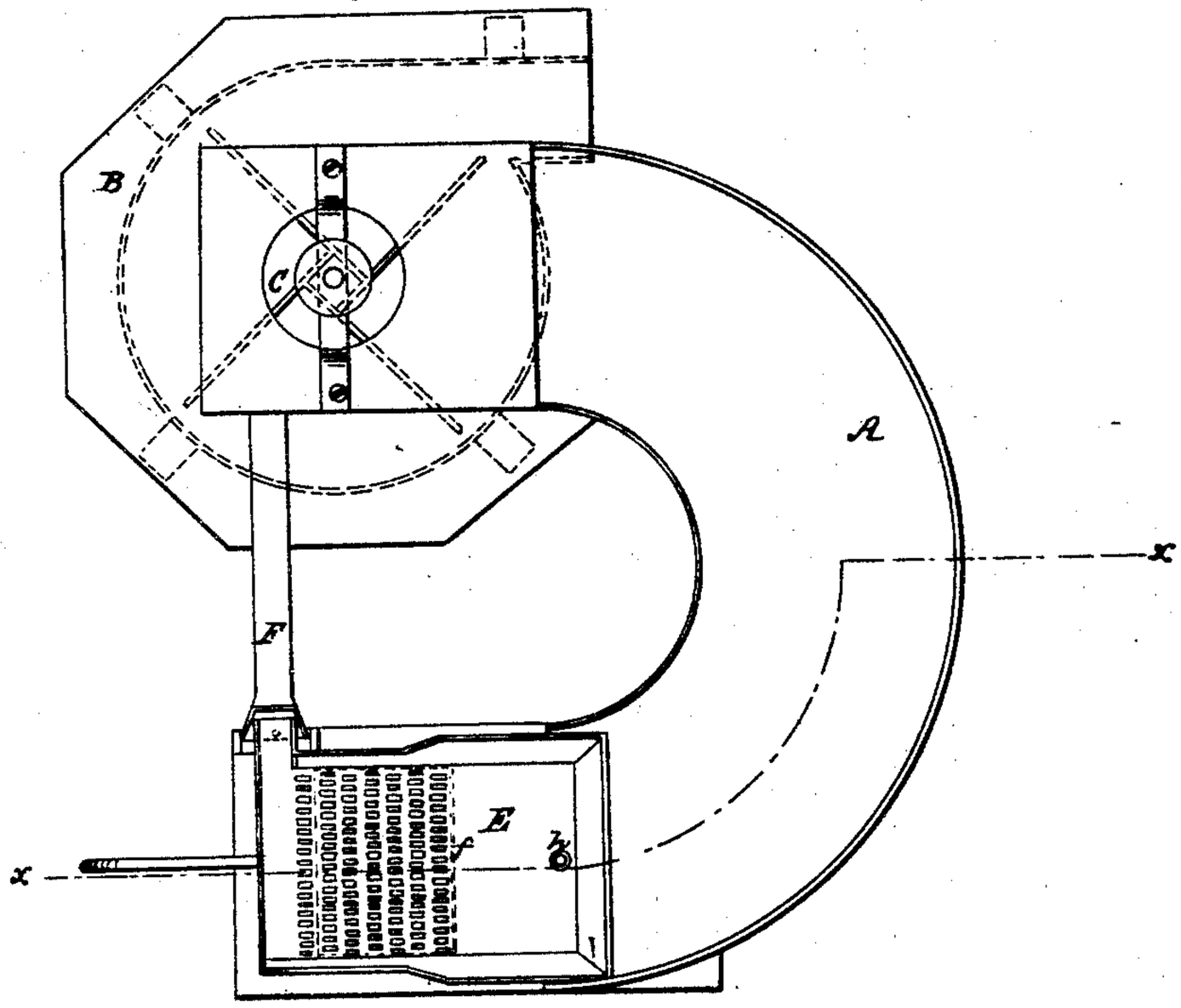


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEO. LANDERS AND HENRY LAMPMAN, OF AFTON, NEW YORK.

GRAIN-SEPARATOR.

Specification of Letters Patent No. 30,413, dated October 16, 1860.

To all whom it may concern:

Be it known that we, GEORGE LANDERS and H. LAMPMAN, both of Afton, in the county of Chenango and State of New York, have invented a new and Improved Grain-Separator; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of our invention taken in the line *x*, *x*, Fig. 2. Fig. 2 a plan or top view of the same. Fig. 3 a horizontal section of the same taken in the line *y*, *y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and improved grain separating device to be used simultaneously with the grinding mechanism, and interposed between the grain hopper and the eye of the stone.

The invention consists in the employment or use of a fan, riddle, conveying spout and blast trunk provided with shelves, all arranged and applied as hereinafter described, whereby the desired end is attained by a very simple and economical means, the same dispensing with the comparatively complicated and expensive devices, which require a separate operation and involve the necessity of manual labor or some special mechanism to convey the cleaned grain from the separator to the stones or grinding mechanism.

To enable those skilled in the art to fully understand and construct our invention we will proceed to describe it.

A, represents a trunk of semi-circular form, one end of which communicates with a fan box B, in which a fan C, is placed of usual or any proper construction. The opposite end of the trunk A, terminates in a vertical spout D, which is divided into two vertical parts *a*, *b*, by a partition plate *c*, the lower part of said plate *c*, not extending quite to the bottom so as to leave an opening *d*, by which communication is allowed between the two parts *a*, *b*, as shown clearly in Fig. 1. The part *b*, of the vertical spout D, communicates directly with the trunk A, and is unobstructed or contains no internal parts, but the part *a*, of said spout contains a series of shelves or horizontal plates *e*, which project from one side of the spout and extend nearly across it room being left for the grain to pass down said part.

On the upper part of the trunk A, and directly over the part *a*, of the spout D, there is placed a shoe E, which contains a screen *f*, and a chute or spout *g*, the latter discharging into the part *a*, of the vertical spout D. The back part of the shoe E, is attached to the trunk A, by a pivot *h*, and from the screen *f*, of the shoe, a spout F, leads into the fan box B, as shown clearly in Fig. 2.

The vertical spout D, although it may be of rectangular form externally is internally provided with curved sides *i*, *i*, and rounded ends *j*, *j*, the ends being of semi-circular form and the sides of convex form gradually approaching each other from the ends toward the center as shown clearly in Fig. 3. This form may if desired extend entirely through the trunk A, and it performs an important function, to wit, the equalizing of the draft or blast through the spout and tube. The ordinary rectangular blast spouts have their blasts retarded at the angles, so much so as to permit much imperfect grain to escape down the corners of the spout and mingle with the good sound grain and if the blast be strengthened to carry up all the imperfect grain at the angles the blast will be sufficiently strong at the center to carry up along with it sound grain. By our arrangement of the spout D, this contingency is avoided and the draft or blast equalized.

The part *b*, of the spout D, is placed over the eye of the stone and the grain hopper discharges into the shoe E. The shoe has a shake motion communicated to it in any proper way and all large foreign substances pass from the screen *f*, into the spout F, the latter conducting said substances into the fan box B, from which they are expelled by the action of the fan. The grain passes through the screen *f*, into the chute or spout *g*, and from thence into the part *a*, of the spout D, the shelves or plates *e*, spreading the grain and causing it to enter the part *b*, of the spout D, in a thin sheet so as to be acted upon in the most favorable manner by the blast generated by the fan C, and all light impurities will be drawn up the spout D, through the trunk A, and into the fan box B, and will be expelled therefrom by

the fan C. The sound and clean grain passes down the part *b*, of the spout D, into the eye of the stone.

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

1. The arrangement of the spout F with the shoe E, screen *f*, trunk A and divided spout D as and for the purposes herein shown and described.

2. The arrangement of the curved partition plate *c*, and shelves *e*, *e*, with the spout D, trunk A, spout *g*, screen *f* and hopper F, as and for the purposes herein shown and described.

3. The construction of the interior surface of the spout D with convex sides *i*, *i*, the convex portions made to approach each other and with enlarged concave ends *j j*, as and for the purposes herein shown and described.

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