

(No Model.)

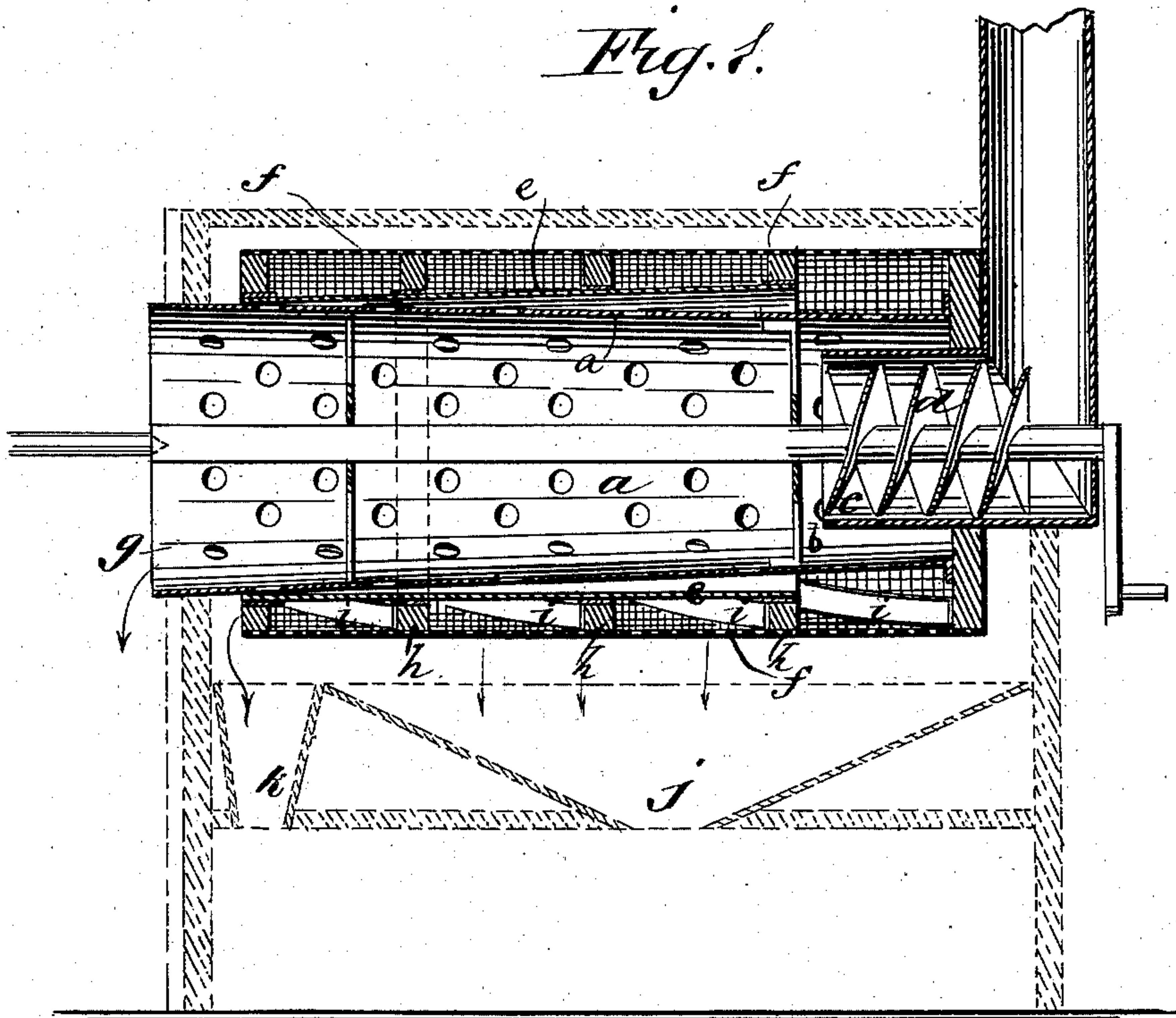
M. FORDER & T. H. PENDERGAST.

GRAIN SEPARATOR.

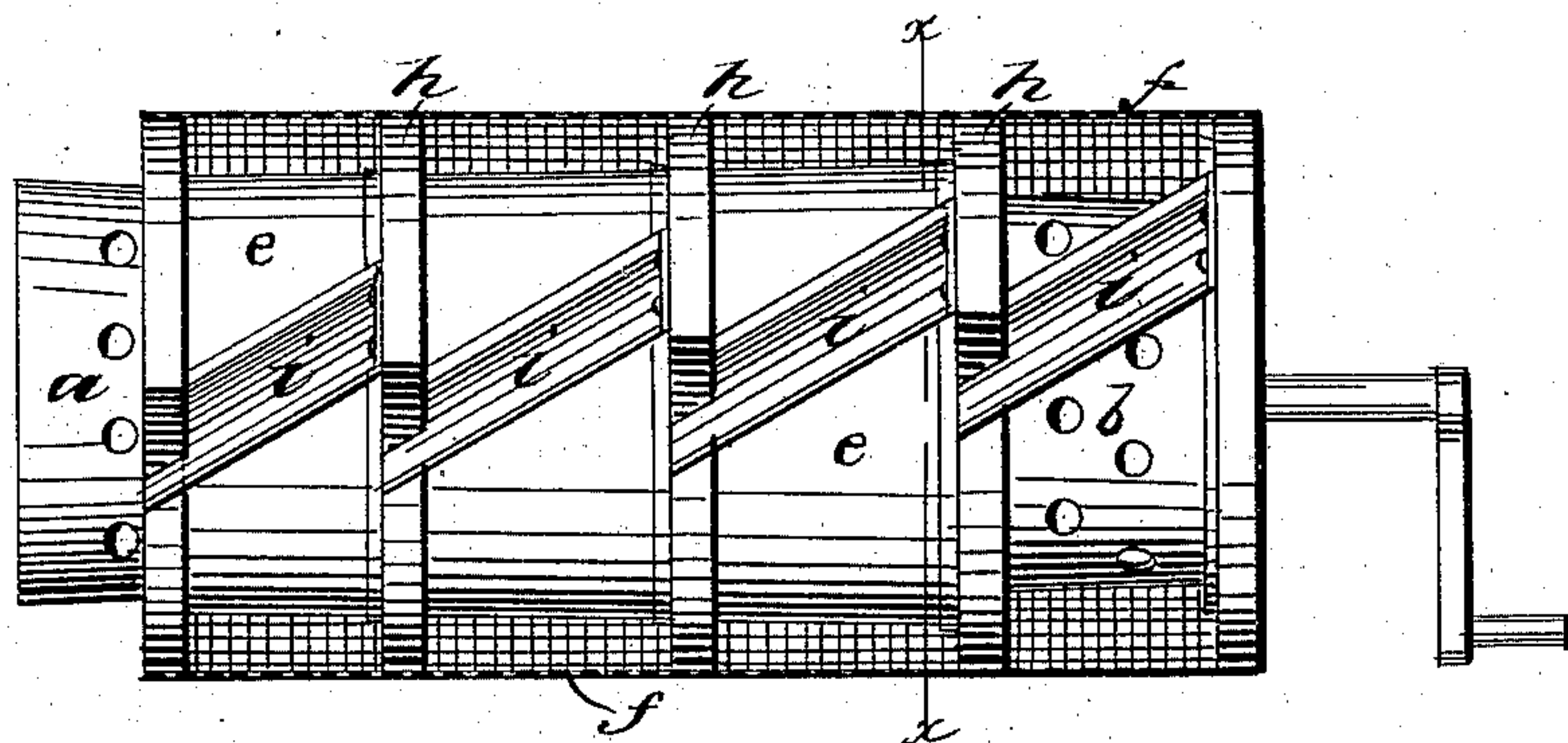
No. 284,405.

Patented Sept. 4, 1883.

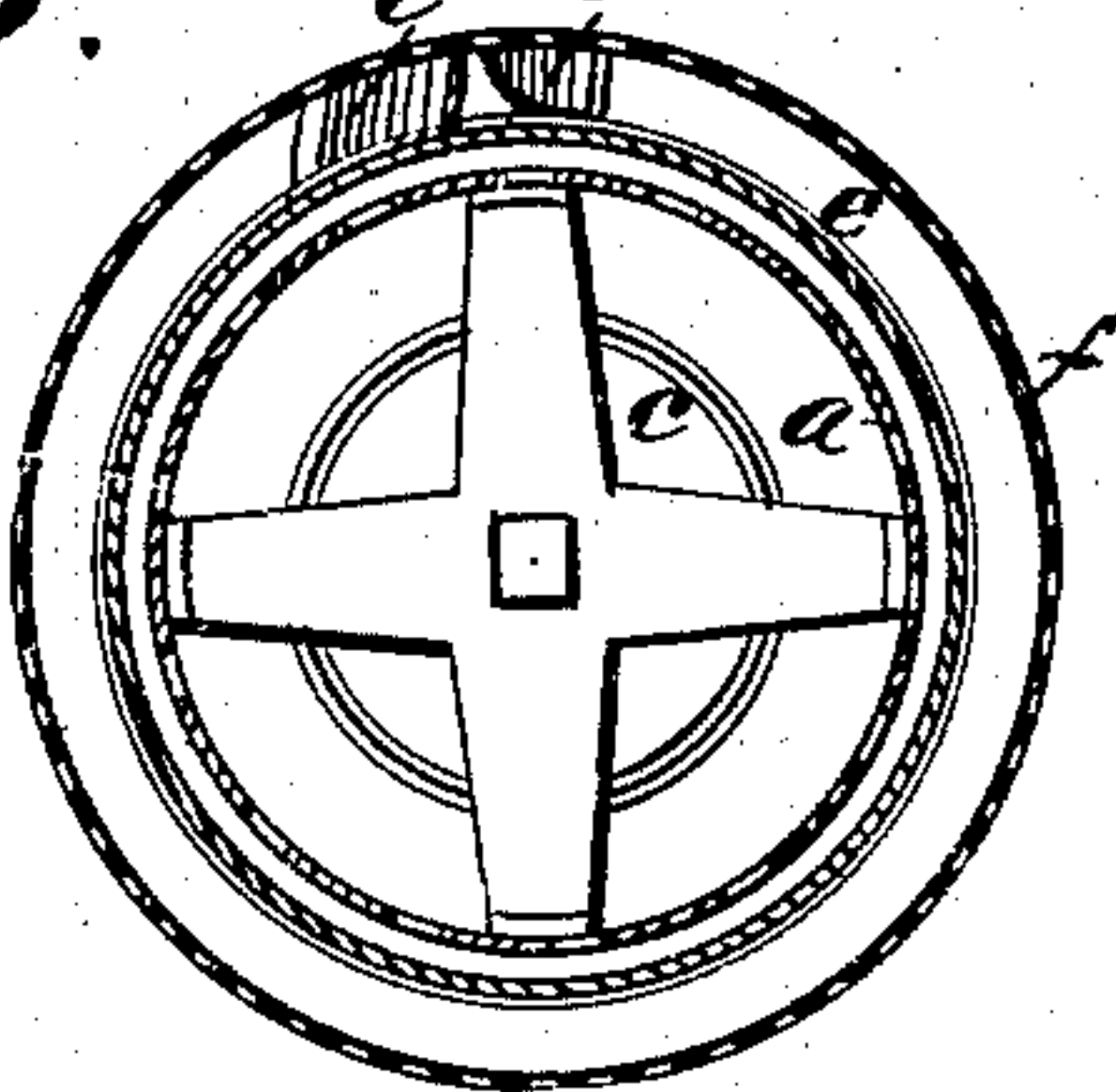
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

MILTON FORDER AND TIMOTHY H. PENDERGAST, OF DASSEL, MINNESOTA.

## GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 284,405, dated September 4, 1883.

Application filed January 10, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, MILTON FORDER and TIMOTHY H. PENDERGAST, both of Dassel, in the county of Meeker and State of Minnesota, have invented a new and Improved Grain-Separator, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in grain-separators; and it consists in a screen having a series of annular compartments, and obliquely-arranged chutes adapted to gather the grain in one part of the revolution of the screen in one compartment and discharge it in a different part of its revolution in another compartment; and it consists, also, in a screen of the aforesaid construction, in combination with an inner apertured cylinder and a return imperforate cylinder, substantially as hereinafter more fully set forth and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional elevation of our improved screen and the case, the latter being in dotted lines. Fig. 2 is a longitudinal section of the outer screen-cylinder, and Fig. 3 is a transverse section of the screen on line *x x* of Fig. 2.

The first part of the screen consists of the inner screen-cylinder, *a*, of perforated sheet metal or other approved material, into which the grain is discharged at the upper and smaller end, *b*, from the spout *c* by the conveyer *d* or other approved means. This cylinder *a* works within the imperforate cylinder *e*, located in and carried by the outer screen, *f*, and discharges the grain into cylinder *e*, to be carried back and discharged into the upper end of the outer screen, while the heads, straws, and other large matter separated by the cylinder *a* from the grain are discharged from the end *g*, outside of the screen-case separately from the grain.

We divide the outer screen into four or more sections by means of the internal annular flanges, *h*, to cause the grain to make one complete circuit of the screen in each section,

for more effectual action of the screen on it, also for greater uniformity of action, which is attained by the confinement of the grain in the sections separately until the due measure of action therein, while in the ordinary screens, where the whole amount in the screen mixes together indiscriminately, some portions may pass along sooner than others, and thereby fail of the same measure of treatment.

In each section of the outer screen, *f*, we arrange an oblique chute or bucket, *i*, in such form that the grain will be gathered by it in one part of the revolution of the screen and discharged over or through the flange *h* into the next section. These chutes are arranged in a line to act at once, so that as each section is emptied by its chute it receives a new charge from the preceding section.

The screen *f* is designed for separating the cockle and other matters smaller than the wheat, which matters are discharged into the hopper *j*, while the good grain is discharged through the spout *k*.

It will be seen that a screen of this improved construction will have nearly double the capacity for a given space than screens of the ordinary kind, and, besides, the sectional arrangement of the outer screen makes it much more efficient for separating the grain than the ordinary form.

We make the screen *a* slightly increasing in size from the receiving end outward, for causing the descent of the grain along it, and we increase the size of the returning-cylinder *e* in the opposite direction, for carrying the grain back to the head of screen *f*. This latter screen we make cylindrical in form, relying on the chutes to convey the grain along it; but it may be in taper form; or the whole may be set with a downward inclination from the head, in which arrangement the inner screen may be cylindrical also; but the taper of the returning-cylinder would have to be greater.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a grain-separator, the screen having a series of annular compartments, and obliquely-



arranged chutes adapted to gather the grain in one part of the revolution of the screen in one compartment and discharge it in a different part of its revolution in another compartment, substantially as set forth.

5 2. In a grain-separator, the screen provided with annular compartments or sections, formed by annular flanges, and with the obliquely-arranged chutes, in combination with the inner

apertured cylinder and the return imperforate cylinder, substantially as and for the purpose set forth. 10

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