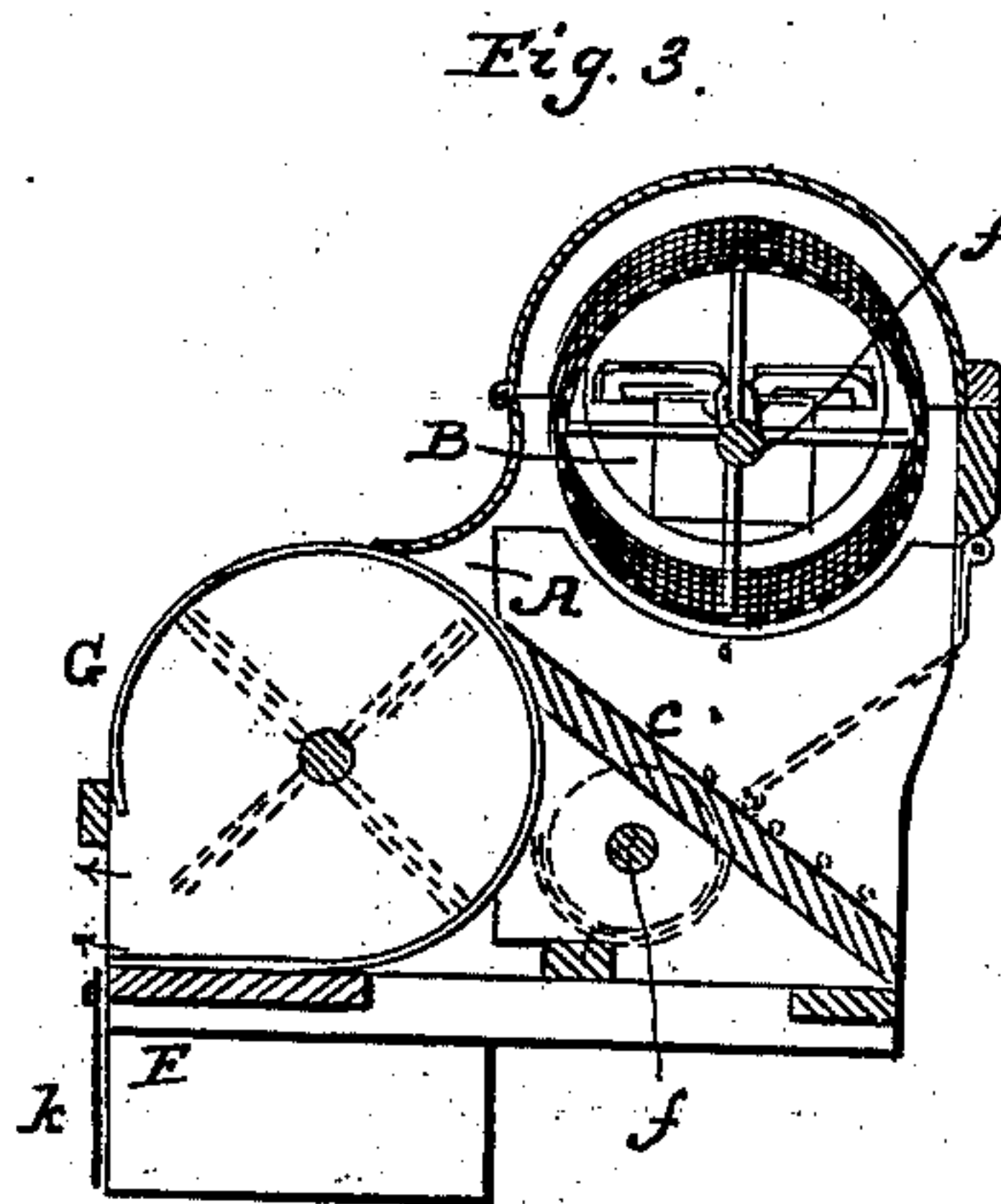
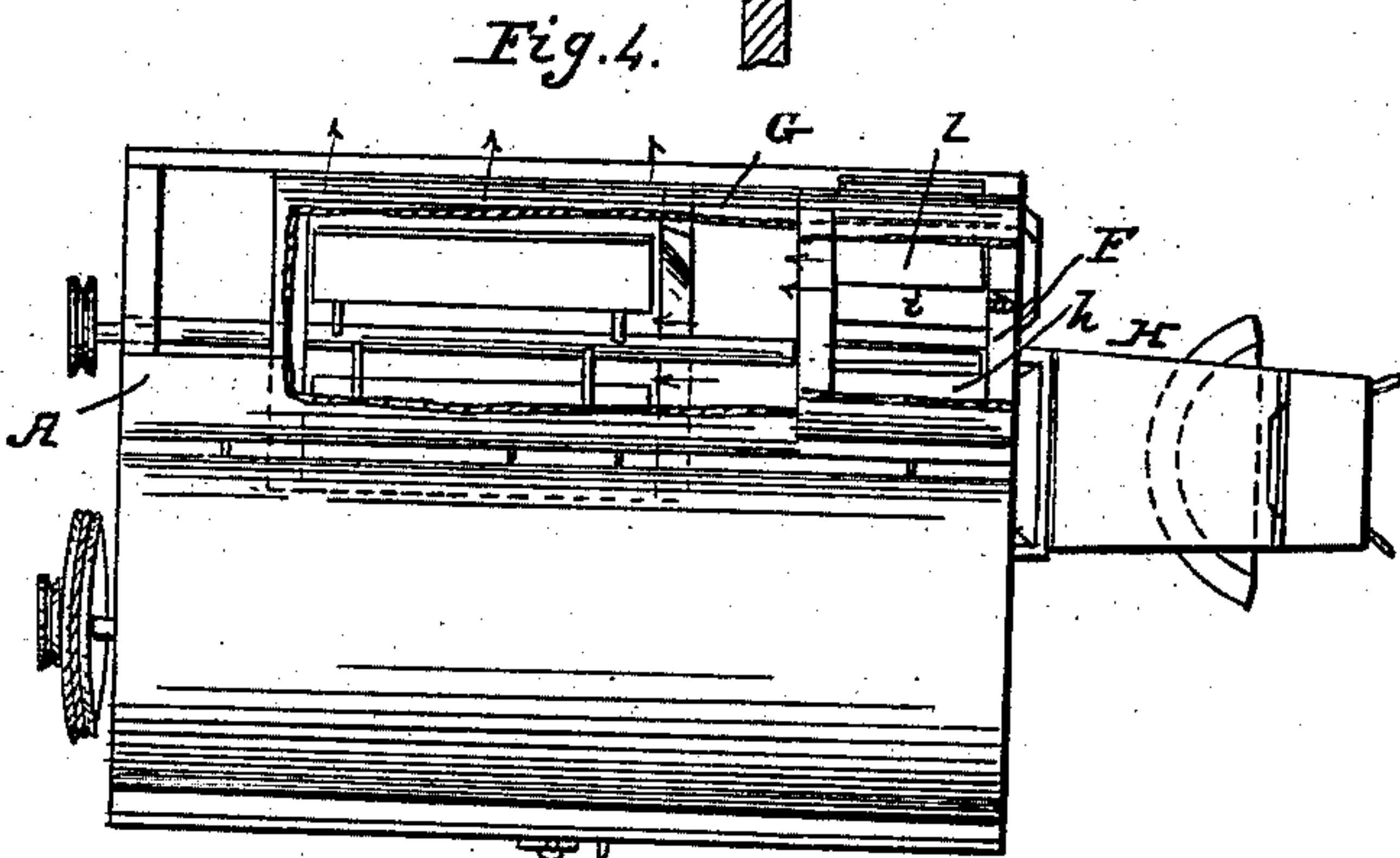
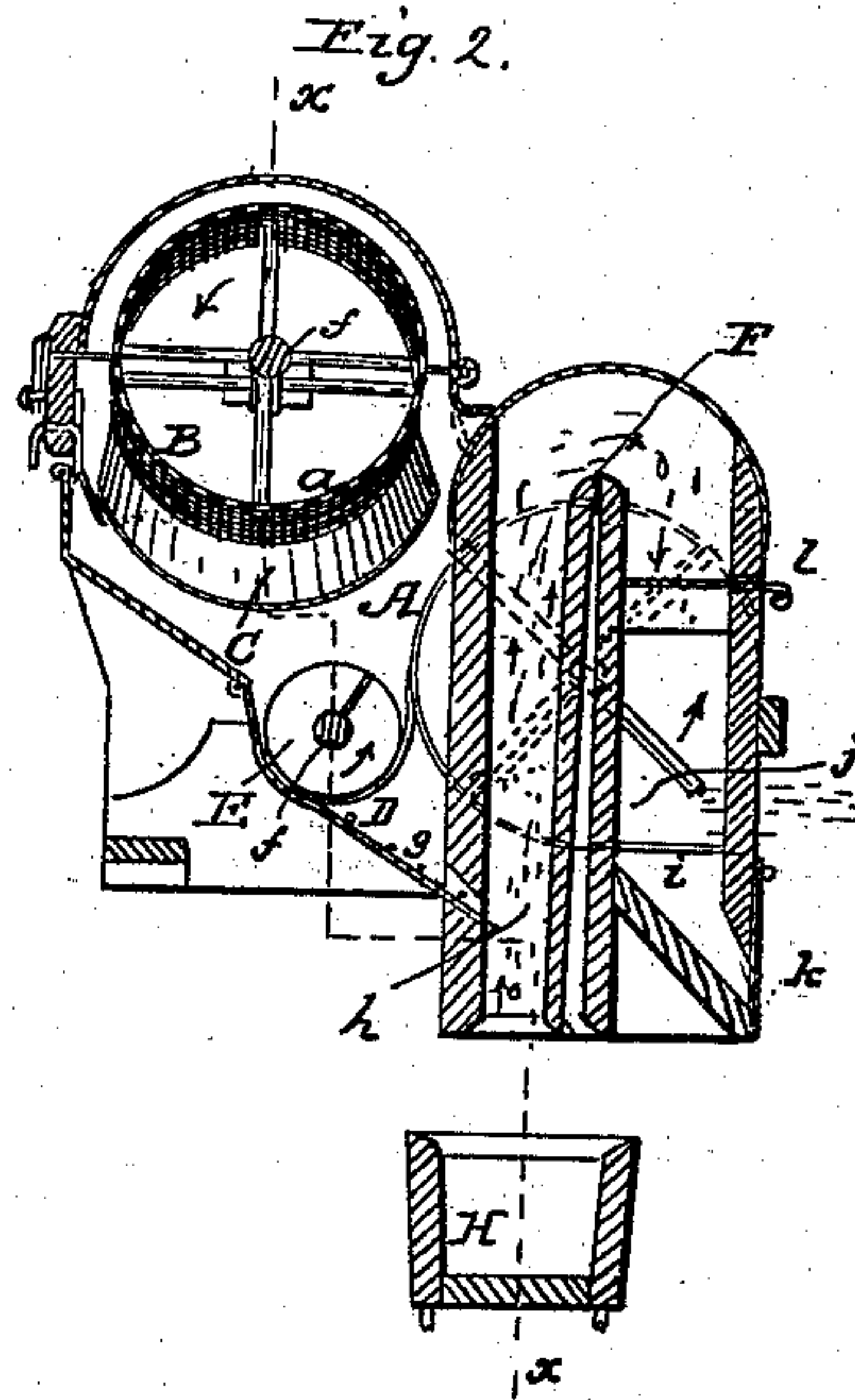
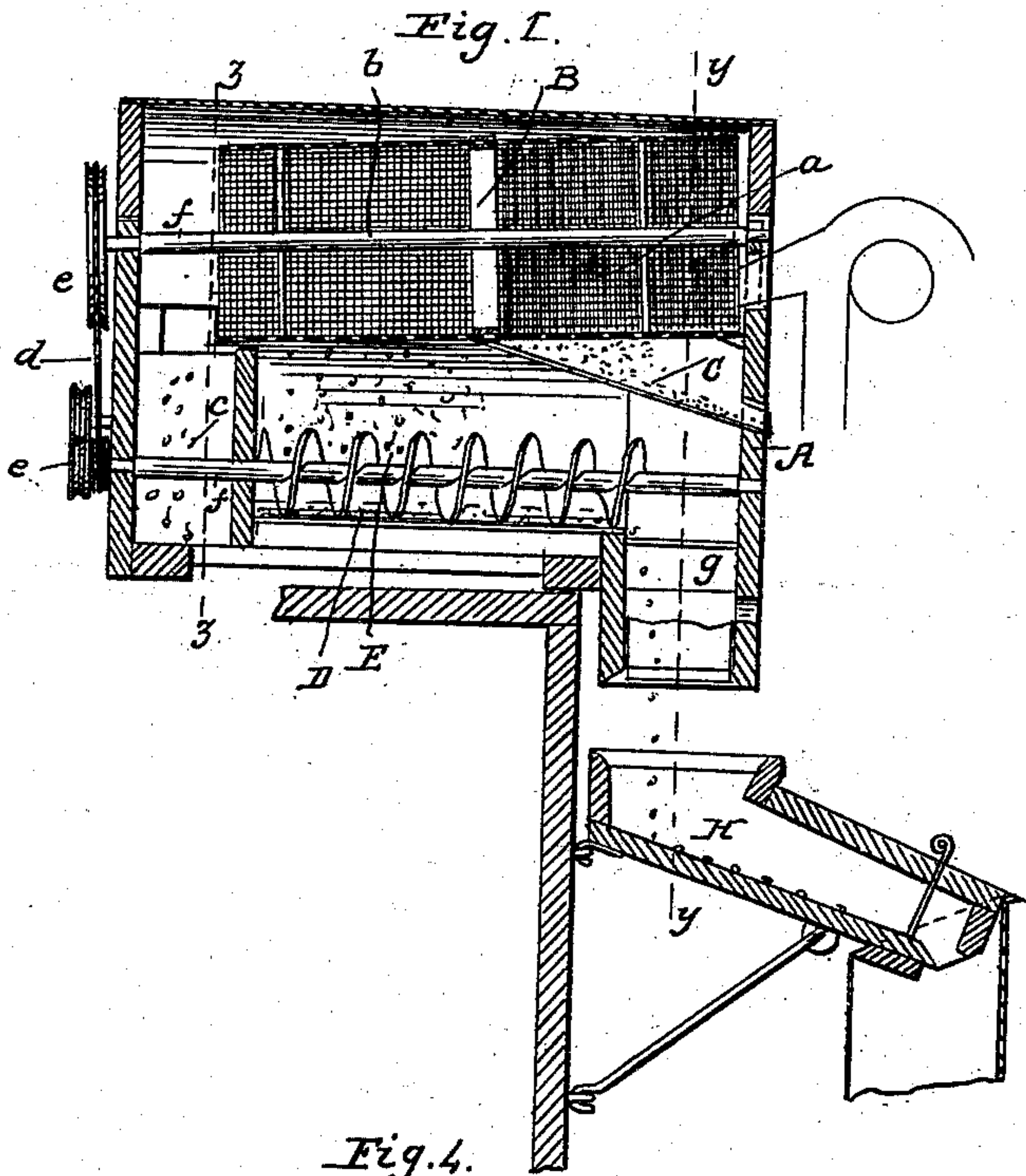


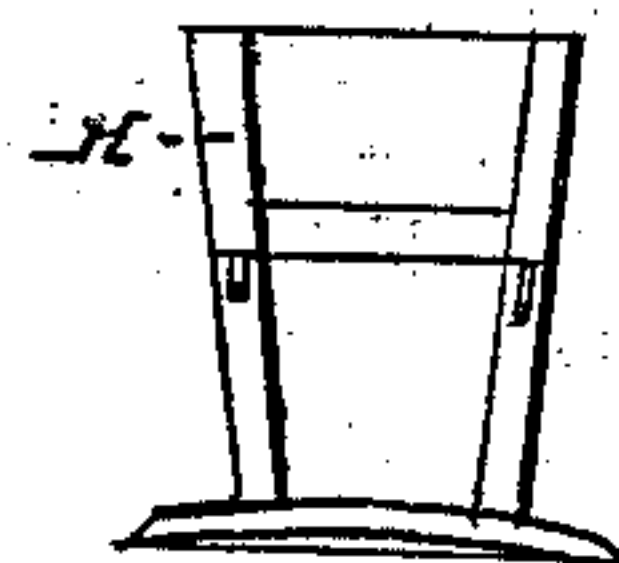
J. N. CLEES.  
Grain Separator.

No. 43,390.

Patented July 5, 1864.



Witnesses:  
J. W. Loomis.  
Henry Morris.



Inventor:  
J. N. Clees  
per Mann & Co



# UNITED STATES PATENT OFFICE.

J. N. CLEES, OF DARBYVILLE, OHIO.

## IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. 43,390, dated July 5, 1864.

*To all whom it may concern:*

Be it known that I, J. N. CLEES, of Darbyville, in the county of Pickaway and State of Ohio, have invented a new and Improved Grain-Separating Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section of my invention, taken in the line *x x*, Fig. 2. Fig. 2 is a transverse vertical section of the same, taken in the line *y y*, Fig. 1. Fig. 3 is a transverse vertical section of the same, taken in the line *z z*, Fig. 1. Fig. 4 is a plan or top view of the same.

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

This invention relates to a new and improved grain-separator designed chiefly to be applied to thrashing-machines and to operate conjointly therewith, so that the grain may be thrashed and cleansed or separated from all impurities at one and the same operation.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a box or case which incloses the working parts of the machine, and which may be constructed in any proper manner. In the upper part of this box or case A there is placed an inclined rotating screen, B, one part, *a*, of which is provided with wire-cloth of a fine mesh to admit of foreign substances smaller than wheat passing through it—such, for instance, as sand, smut, cockle, chess, &c. The other portion, *b*, is provided with wire cloth having a mesh sufficiently coarse to admit of wheat passing through it, but not coarse foreign substances—such as wheat-heads, pieces of sticks, stones, &c. These latter substances fall from the depressed end of the screen upon an inclined board or chute, *c*, and are conducted to the feed end of the thrashing-machine to be subjected to a second thrashing operation. The fine foreign substances which pass through the fine part *a* of the screen fall upon a chute C, by which they are conveyed out of the case A and fall into any proper receptacle prepared to receive them. The wheat passes through the coarse part *b* of the screen and falls into a trough, D, in which a screw-conveyer, E, is placed. This conveyer may be constructed in the usual way, and from it the screen is rotated by means of a belt, *d*, which passes around

pulleys *e e* at the ends of the shafts *f f* of the screen and conveyer, as shown in Fig. 1. The conveyer E moves the wheat along in the direction indicated by the arrow 1, and discharges it upon a chute, *g*, which conducts it into the lower end, *h*, of a suction blast-spout, F, which is at one end of a fan-box, G, the latter communicating with the part *i* of the blast-spout by means of an opening, *j*. The lower end of the part *i* of the blast-spout is provided with a flap, *k*, opening outward, as shown in Fig. 2, and in the upper part of *i* there is placed a horizontal slide, *l*, by adjusting which the strength of the blast in F may be regulated as desired. The two parts *h i* of the blast-spout are placed side by side and connected at their upper ends by an arched or curved passage, as shown in Fig. 2. The sound wheat, on account of its superior gravity, is able to resist the action of the blast in the part *h* of the spout F, and it consequently falls from *h* into a hopper, H, which conducts it into a bag or any receptacle prepared to receive it. The light impurities—such as dust, smut, shrunken grain, &c.—is carried up the part *h* by the blast, and the heavier portions of such substances fall to the bottom of *i*, while the lighter portions are drawn into the fan-box G, and expelled from the lower part of the outer side thereof. The red arrows in Fig. 2 show the direction of these light impurities and the black arrows show the direction of the shrunken grain, &c. The latter accumulate in the bottom of the part *i* of F, and are discharged from time to time therefrom as their weight becomes sufficient to open the flap *k*.

This device is placed on the top of a thrashing-machine, and the grain is delivered into the elevated end of the rotary screen B by means of suitable elevators.

The device has been practically tested, and performs its work in a perfect manner.

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

The rotating screen B, composed of a fine and of a coarse portion, *a b*, the spiral conveyer E, and blast-spout F, all arranged and combined to operate in the manner substantially as and for the purpose herein set forth.

J. N. CLEES.

Witnesses:

F. M. BLACK,  
S. M. BRIGHT.