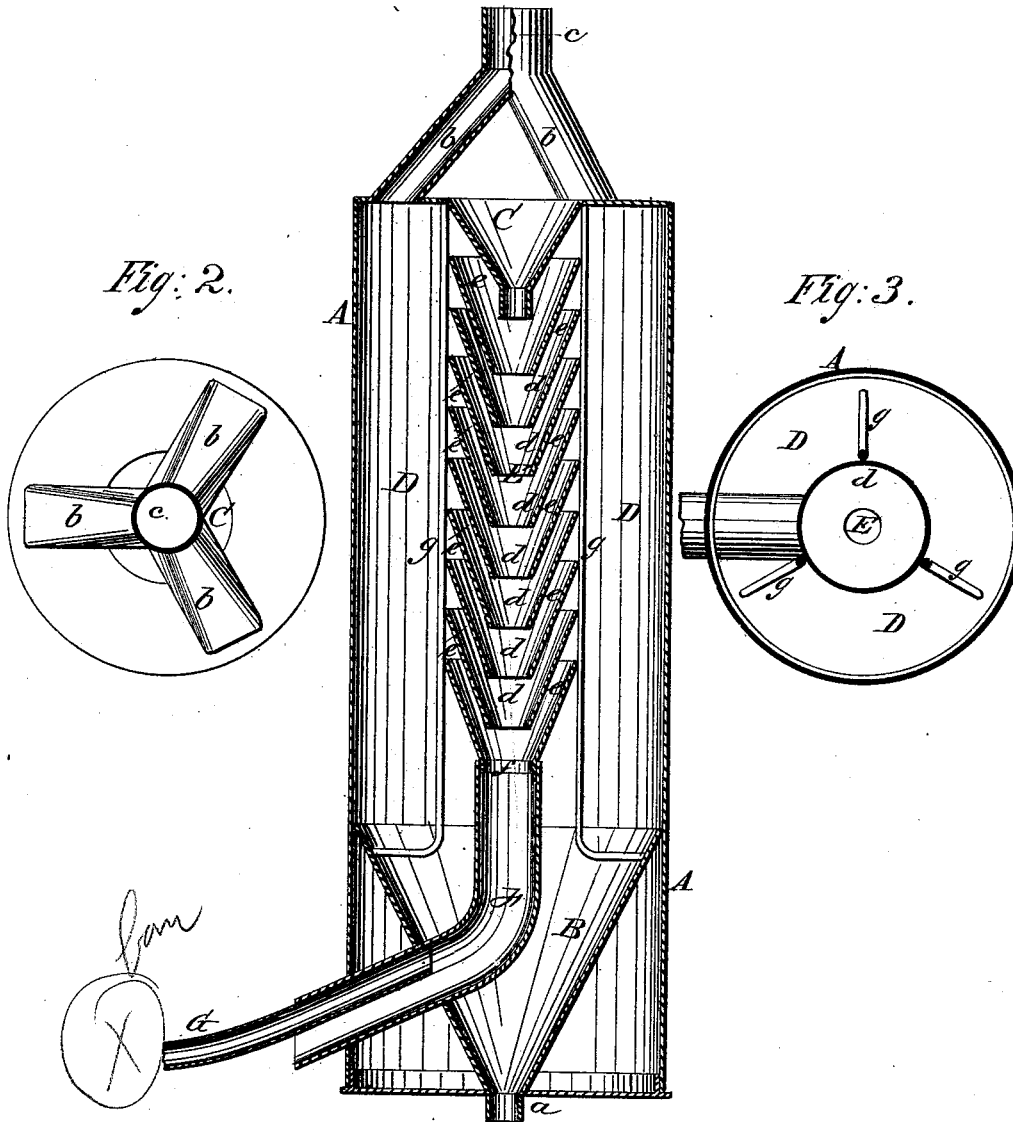


I. MORGAN.
Separator for Flour-Mills.

No. 213,678.

Patented Mar. 25, 1879.

Fig: 1.



WITNESSES:

Achilles Schuhl.
P. Sedgwick

INVENTOR:

I. Morgan
BY *Mumford*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ISAAC MORGAN, OF AUGUSTA, GEORGIA.

IMPROVEMENT IN SEPARATORS FOR FLOUR-MILLS.

Specification forming part of Letters Patent No. **213,678**, dated March 25, 1879; application filed November 15, 1878.

To all whom it may concern:

Be it known that I, ISAAC MORGAN, of Augusta, in the county of Richmond and State of Georgia, have invented a new and Improved Separator for Flour-Mills, of which the following is a specification:

The object of this invention is to separate the half-ground bran, cracked-wheat cuttings, and other results of the grinding from the thoroughly-ground chop, and carry it off into a suitable receptacle, from which it can be taken and subjected to a second grinding.

It consists of a pipe or tube in a circular or cylindrical jacket, made of conical sections, put together so as to leave a space between each, through which the chop is passed and exposed to the action of a current of air passing up through the said pipe, whereby the lighter particles are driven out through the spaces between the sections into the surrounding chamber, whence they fall into a funnel-shaped bottom and are delivered into a suitable receptacle, while the heavier portions of the bran, &c., fall through the pipe, and are taken thence and carried off to be reground.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical section of my improved separator. Fig. 2 is a top view of the same, and Fig. 3 is a horizontal section of the improvement.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the cylindrical jacket or casing of my invention. In the lower part is a hollow inverted cone, B, the edges of the base whereof are fixed to the side walls of the casing, while the lower end is fixed to a short pipe, *a*, which projects through the bottom of the casing, and opens into a suitable receptacle placed under it.

The top of the jacket A is provided with a central funnel, C, hanging downward through the top, while outside the funnel are pipes *b b b*, opening at their lower ends into the chamber D, formed by the casing, while their upper ends are united in the pipe *c*.

The pipe or tube through which the chop is carried is designated by the letter E. It is composed of a number of sections, *d d d*, &c.,

each a frustum of a cone, put together in inverted order, so as to leave a space, *e*, between each. Thus the first one at the top is placed with the funnel C projecting well into it, but leaving a good space between its sides and those of the interior of the section *d*; and the smaller end of this section is entered into the larger end of the next, and so on to the last, which is provided with a short pipe or collar, *f*, and this projects into and is joined tightly with the open end of the pipe F, which passes down in cone B, and is turned out through the same, and thence through the casing, as clearly shown in the drawings.

The sections *d d d*, &c., are sustained in their places by being fastened, in any suitable way, to the vertical rods *g g g*, fastened in the casing so that they are in contact with the edge of the inverted base of each section. The blast-pipe is indicated by the letter G.

The operation of my invention is as follows: A current of air is sent up through pipe E F, from a blast-fan attached to the outer end of pipe G, and the chop is poured into funnel C, falling down through the same. It is met by the ascending air, and the thoroughly-ground chop is blown out through the spaces *e* into chamber D, whence it falls to cone B, and from there through pipe *a* into the receptacle provided for it; but the heavier matter, as half-ground chop, cracked-wheat cuttings, and all the imperfectly-ground material, fall through pipe E, thence through pipe F, and are deposited outside of the casing, from where they are carried to the stones and reground.

The separation between the perfectly-ground and that which is imperfect is thus made quickly and completely, and great economy of grain is effected.

Only the chop that has been already thoroughly bolted is thus treated, and it will be found that a great quantity of valuable flour can be rescued in this way and by the use of my improvement.

The pipes *b b b* are exits for the air from chamber D, to prevent compression thereof in said chamber.

I am aware that it is not new to use a se-

ries of hoppers or funnels in a purifier, or to employ a funnel-shaped bottom; but

What I claim as new and of my invention is—

The combination, with an end-closed tube, A, having air-pipes *b*, inlet-funnel B, and outlet-funnel C, of the conical sections *d*, at-

tached to rods *g*, so as to leave intermediate spaces *e*, and connected at the lower end with the tube F, as and for the purpose specified.
ISAAC MORGAN.

Witnesses:

J. W. STEPTOE,
DONALD FRASER.