

H. JONES.
Middlings-Purifiers.

No. 150,582.

Patented May 5, 1874.

Fig. 1.

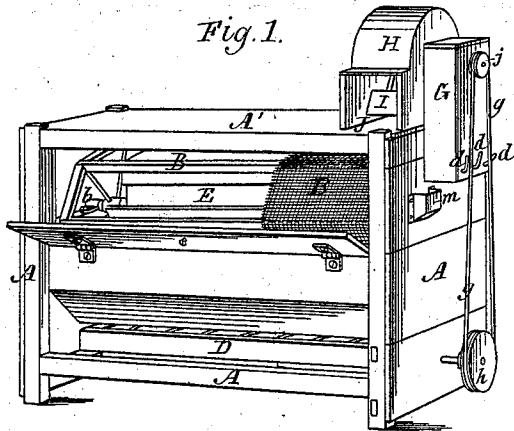


Fig. 2.

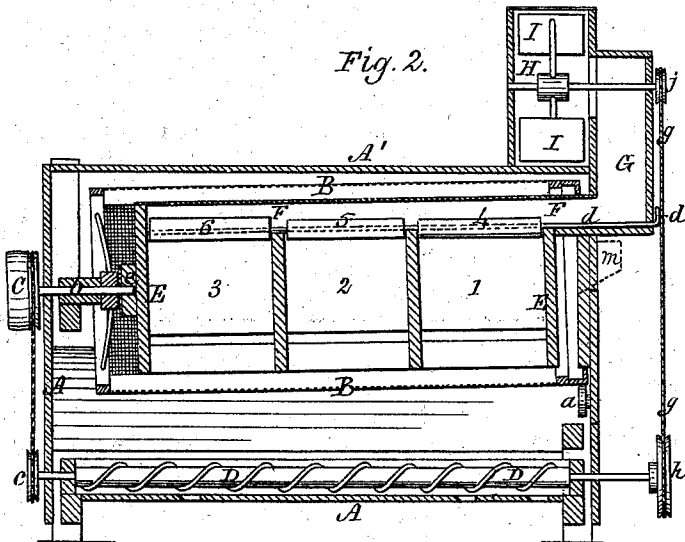
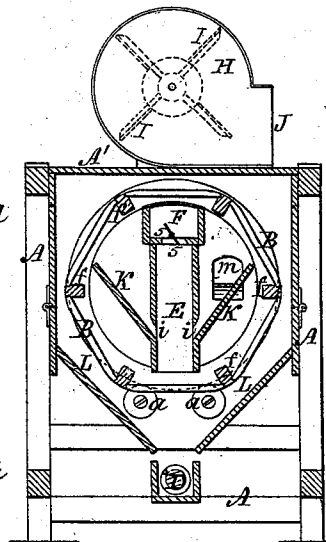


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

HENRY JONES, OF CUYAHOGA FALLS, OHIO.

IMPROVEMENT IN MIDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **150,582**, dated May 5, 1874; application filed April 16, 1874.

To all whom it may concern:

Be it known that I, HENRY JONES, of Cuyahoga Falls, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Middlings-Purifiers; and I do hereby declare the following to be 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 represents a perspective view of the machine partly thrown open, so as to show the interior. Fig. 2 represents a longitudinal vertical section, and Fig. 3 a vertical cross-section, through the machine.

My invention consists in the combination of a revolving reel, and a stationary suction separating-spout inside of said reel, with divisions and passages for removing the flour and fine specula from middlings, as will be explained.

The case or frame of the machine is shown at A, and within this case is arranged a revolving reel, B, made and turned without a through-shaft, as follows: At the upper end of the reel there are friction-rolls *a a*, which support that end, and at the other or lower end there is a short shaft, *b*, connected with the reel, upon which short shaft there is a pulley, C, over which an endless belt passes that may rotate the reel, said belt also passing around a pulley, *c*, on the axis of the conveyer D, to drive said conveyer. The reel should be covered with graduated cloth or other screening material to conform to the divisions in the suction separating-spout E placed in the inside of the reel, as will be explained. The stationary suction separating-spout E is made with three divisions, 1 2 3, more or less, over which there are valves or registers 4 5 6, each separately adjustable from the exterior by rods *d*—one for each valve. The compartments or divisions 1 2 3 communicate with a common air-trunk or passage, F, at the top of the spout through their respective valved openings, and the air-passage F leads first into the vertical air-passage G, and thence into the fan-chamber H, wherein an exhaust-fan I works, to cause an exhaust current of air from the separating-spout E, through the air-passages F G, into the fan-case H, and out through the opening J, to any suitable place of deposit.

The spout E, air-passages F G, fan-case H, and top A' of the machine may all be united, so that, in slipping or sliding the top or cover into its place from the front end of the machine, the spout E and its immediately-connected parts may at the same time be slipped into the interior of the reel B from said front end of the reel, which is left open for that purpose. The rear end of the spout E, as it comes to its proper place, takes upon the end of the short shaft *b*, as at *e*, Fig. 2, and is thus supported at that end. Other constructions may be used that will allow the spout E to remain stationary inside of the reel B, but the one I have described I find answers well in practice.

The shape, form, and position of the stationary suction separating-spout E are distinctly shown in Fig. 3, as also of the air-passage F and the conveyer D, and of their relation to the revolving reel B. On each side of the trough or spout E are inclined boards K, upon which the middlings, carried up by the ribs *ff* of the reel, fall, and whence they are directed into separating-spout E through the openings *ii*, and the light particles are caught and carried up and out of the machine by the exhaust-blast, and the heavier particles drop down onto the revolving reel B, and that portion of the material that is bolted through the reel drops upon the guide-boards L L, and thence passes into the conveyer, whence it is carried off in the usual way, while that remaining in the reel is again carried up and thrown into the separating-spout E to be acted upon by the exhaust-blast, as above described. The inclination of the reel is very slight, and hence the middlings move slowly from the upper toward the lower end of the reel, but it is caught, carried up, and thrown into the separating-spout several hundred times; and this repeated subjection to the exhaust-blast takes out all of the specula and other fine material, leaving the middlings pure. As the material advances from one compartment or division to the next, the force of the blast for that particular compartment may be regulated to suit the condition of the material at its then stage of separation; and the clothing of the reel may be regulated, as to fineness of mesh, to correspond with the particular divisions over

which that particular part of it works. The middlings to be operated upon are fed in at *m*, and what passes through or out of the lower open end of the reel falls upon the inclined boards *L*, and thence into the conveyer. When the interior apparatus is suitably arranged the outer case is suitably closed up, so as to cause the material, as well as the exhaust-blast, to follow the avenues provided for them, and none other. The fan *I* I have shown as driven by an endless belt, *g*, passing over a pulley, *h*, on the axis of the conveyer *D*, and a pulley, *j*, on the fan-shaft.

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

The combination of the revolving reel *B*, having carrying ribs, with the stationary suction separating-spout *E*, furnished with guide-boards *K* and inlets *i*, when the reel, in addition to its duties as a bolting device, carries up the middlings and delivers them onto the guide-boards over and over again, whence they pass into the separating-spout, to be repeatedly acted upon therein, as and for the purpose described and represented.

HENRY JONES.

Witnesses:

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