

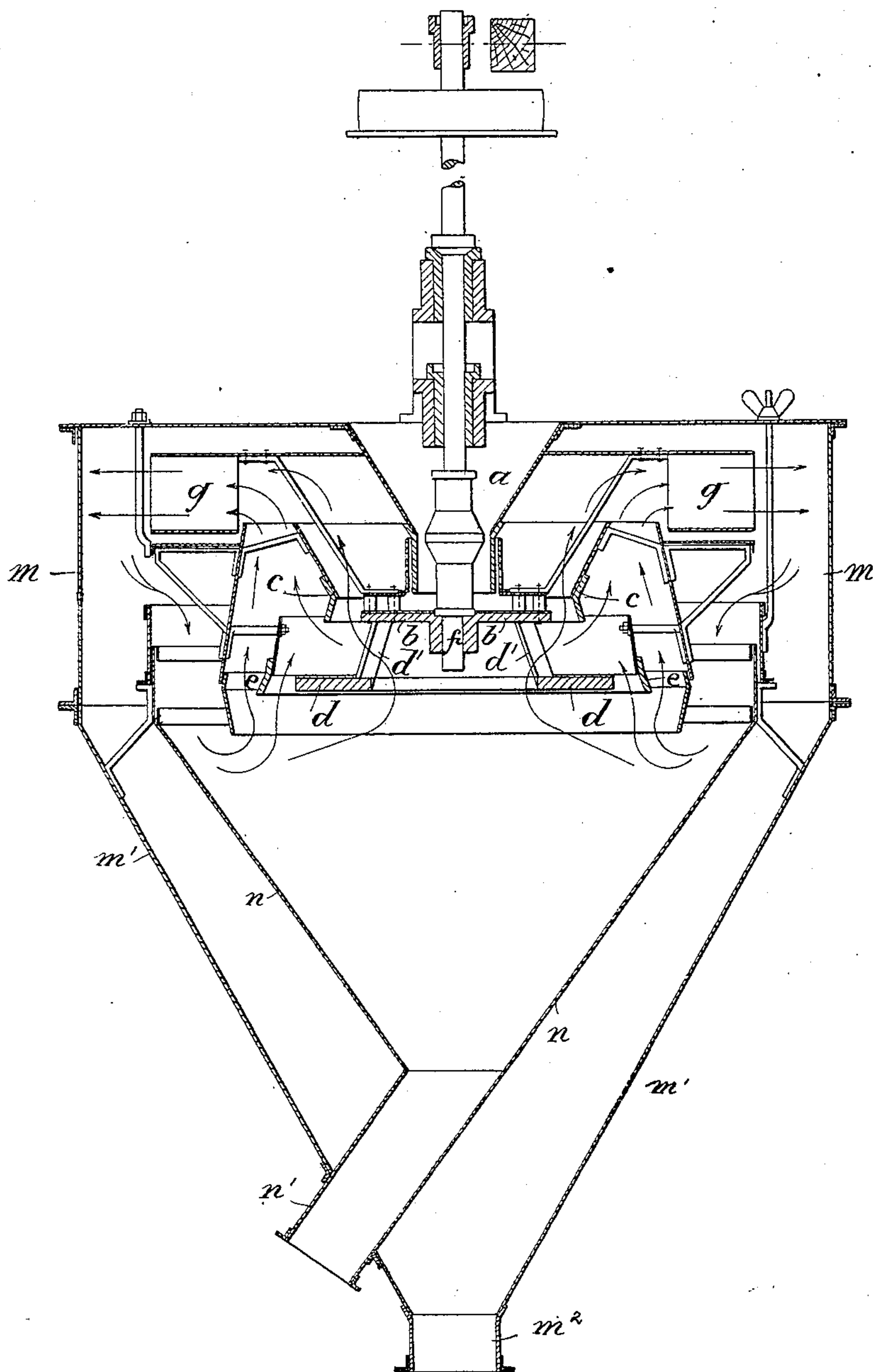
No. 667,573.

Patented Feb. 5, 1901.

J. PFEIFFER.
SORTING DEVICE.

(Application filed Sept. 8, 1899.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

JACOB PFEIFFER, OF KAISERSLAUTERN, GERMANY.

SORTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 667,573, dated February 5, 1901.

Application filed September 8, 1899. Serial No. 729,861. (No model.)

To all whom it may concern:

Be it known that I, JACOB PFEIFFER, a subject of the King of Bavaria, residing at Kaiserslautern, in the Kingdom of Bavaria, German Empire, have invented certain new and useful Improvements in Sorting Devices, of which the following is a specification.

My invention relates to machines for separating and cleaning comminuted or pulverulent materials, such as separating flour from dust and from semolina, and has for its purpose to attain such object efficiently with a comparatively simple construction.

The invention will be fully described hereinafter and the features of novelty pointed out in the claim.

Reference is to be had to the accompanying drawing, which shows my improved separator in central sectional elevation.

The material to be sorted passes from the grinding apparatus through the feed-hopper *a* to a centrifugal disk *b*, throwing the material against a ring *c*. The latter is so arranged and is of such a shape (cylindrical casing or a casing widened downward) that the material is deviated from its direction and falls downward in a finely-divided condition upon a second revolving centrifugal disk *d*, having a larger diameter than the upper disk *b*. The material is thrown by this disk *d* again outward against a second ring *e*, which deviates the material in the same manner and divides it. The disk *d* is provided in its center with an opening. The two disks *b* and *d* are supported by the vertical shaft *f*. This shaft carries, moreover, the ventilator *g*, arranged above the centrifugal disks, and it is actuated from without by means of conical wheels or pulleys. The ventilator and centrifugal disks are inclosed by a casing *m*, terminating below in a funnel *m'*. In the interior of this funnel *m'* there is arranged a second funnel *n*, collecting the material falling down from the lower disk *d*. The air-current produced by the ventilator *g* flows in the apparatus in the direction indicated by the arrows. On its way from the upper disk *b* to the lower disk *d* the stream of material is crossed by the air-current coming through the holders *d'* of the lower disk *d* and the fine flour particles follow the air-current. The material collected upon the lower disk *d* is

dispersed a second time with violence and loosened still more completely by this repeated operation and owing to the larger diameter of the centrifugal disk, so that the flour particles are easily separated from the semolina particles. The separation of the fine flour is then effected by the air-current flowing upward and carrying away the dust particles, while the too heavy semolinas falling downward into the funnel *n* are discharged from the latter through the discharge-pipe *n'*.

The dust carried away by the air is separated after having passed through the ventilator from the latter by centrifugal action or by the greater specific gravity, and the air freed from dust and flour, respectively, flows again underneath the centrifugal disks, while the flour passes into the funnel *m'* and is discharged from the latter through the discharge-pipe *m''*. The centrifugal action may be repeated also more than twice by leading the material, for instance, from the second disk *d* to a third one below.

I claim—

In a separator or grader, a series of superposed rotary disks or spreaders of a diameter increasing downwardly from disk to disk so that the material will be subjected to centrifugal action of progressively-increasing strength, the disk or disks below the top disk being apertured centrally, individual rings surrounding each of said disks at a distance and flaring downwardly to throw the material scattered by the spreaders, upon the next spreader below, the several rings being of progressively-increasing diameter from top to bottom, a ventilator for causing an upward current of air to pass through the apertured disk or disks and between the peripheries of the disks and their surrounding rings, an upwardly-flaring annular deflector extending from the upper contracted edge of the uppermost ring, and means for collecting the several grades of material.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JACOB PFEIFFER.

Witnesses:

CARL KRAFFTS,
WILHELM KUBIG.