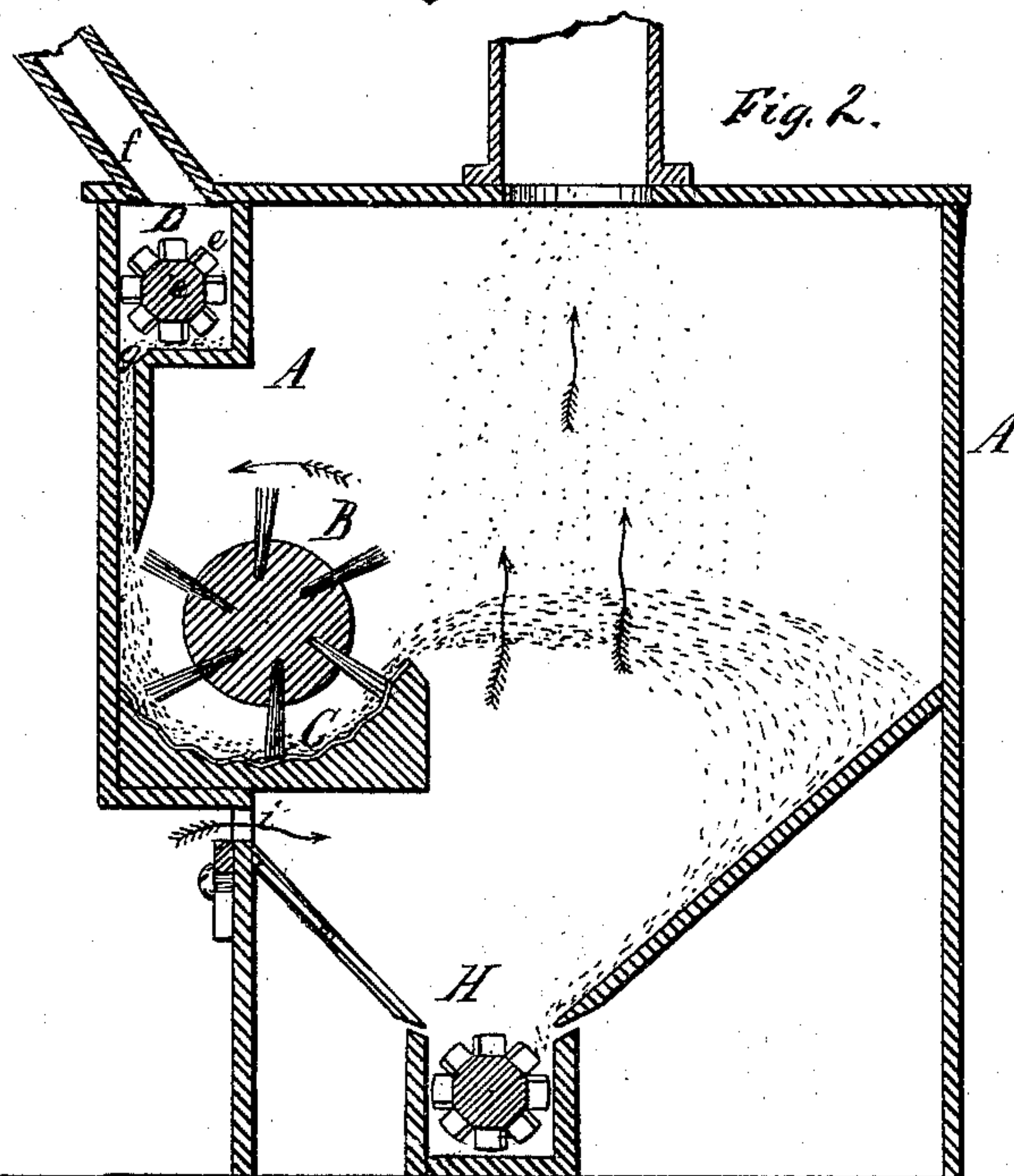
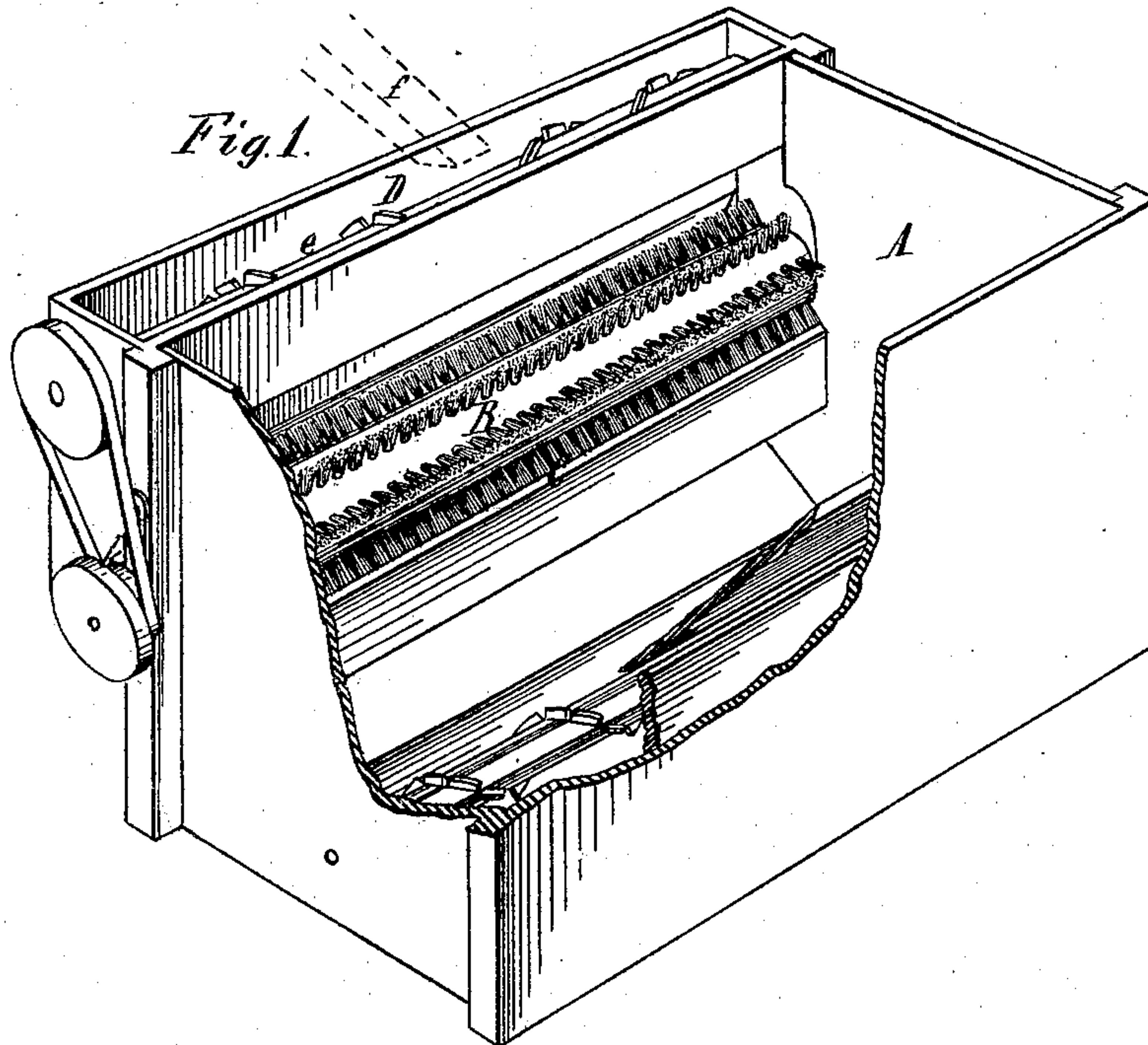


**C. S. FULLER.**  
**Middlings-Purifiers.**

No. 144,329.

Patented Nov. 4, 1873.



*Geo. J. Bonner.*  
*S. Dexter Welch* } *Witnesses.*

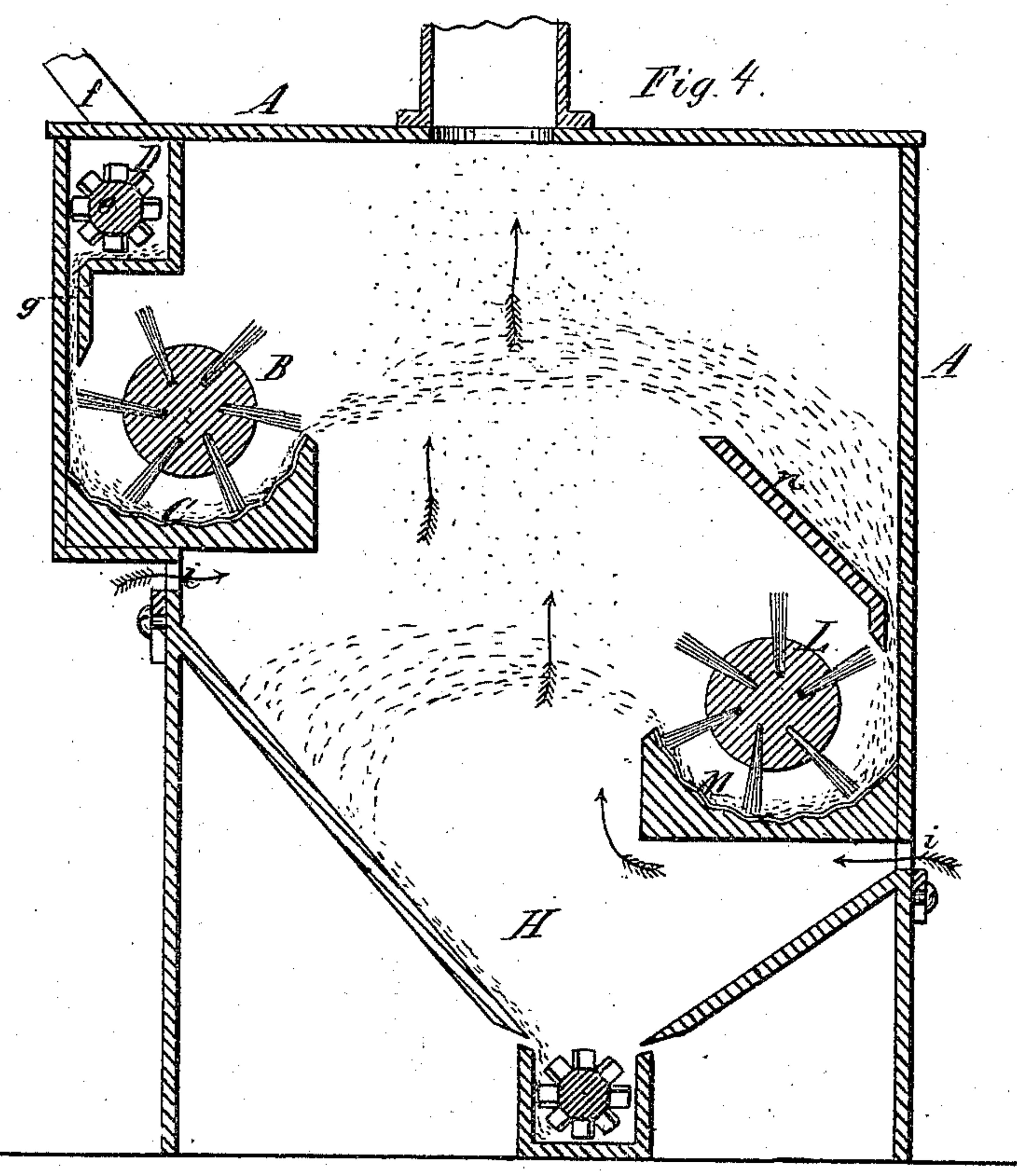
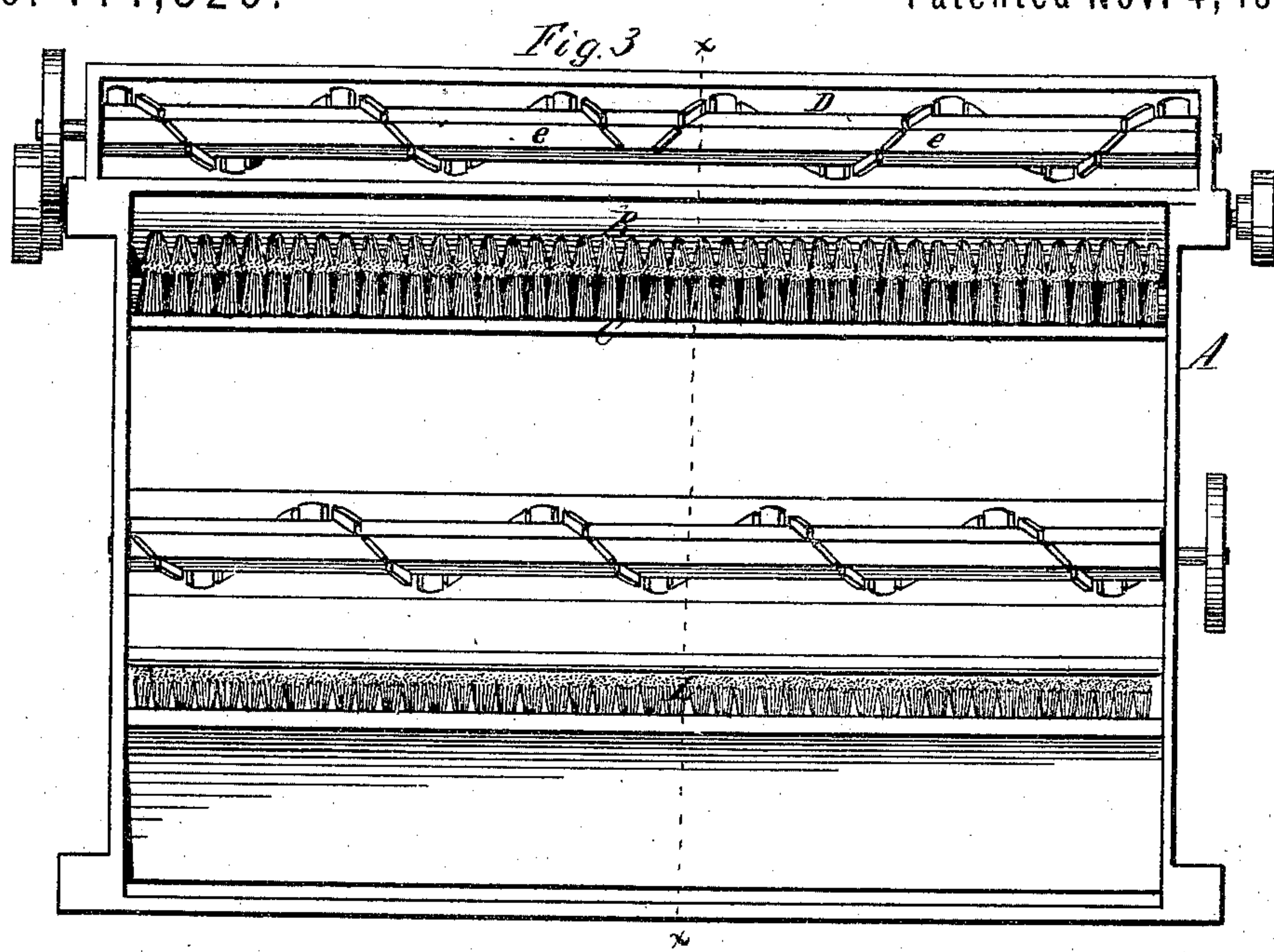
*Clark S. Fuller*  
*by Jay Hyatt*  
*Atty.*

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2 Sheets--Sheet 2.

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*& Dexter Welch* } *Witnesses.*

*Clark S. Fuller*  
*by Jay Hyatt* *Atty*



# UNITED STATES PATENT OFFICE.

CLARK S. FULLER, OF OSWEGO, NEW YORK.

## IMPROVEMENT IN MIDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. 144,329, dated November 4, 1873; application filed October 20, 1873.

*To all whom it may concern:*

Be it known that I, CLARK S. FULLER, of the city and county of Oswego, in the State of New York, have invented certain Improvements in Middlings-Purifiers, of which the following is a specification:

My invention consists in the combination, with an exhaust-chamber, of a rapidly-rotating brush or beater, arranged horizontally, and a concave provided with a corrugated or otherwise roughened surface, between which the unpurified middlings are fed and subjected to the scouring or beating action thereof, from and by which the material thus beaten and agitated is thrown into or across the exhaust-chamber, where it is subjected to the action of an upward air-current, which, in passing through the diffused and scattered material, separates and carries off with it the fibrous particles and other light impurities which have been detached by the beater, while the heavier granules or good middlings descend by gravity into a discharge-hopper at the bottom of the exhaust-chamber.

In the accompanying drawings, consisting of two sheets, Figure 1 is a perspective view with portions of the case broken away. Fig. 2 is a transverse vertical section. Fig. 3 is a plan, of a modified form, of my improved machine. Fig. 4 is a transverse vertical section thereof in line *x x* of Fig. 3.

Like letters of reference designate like parts in each of the figures.

A is the case of the machine, supported by any suitable frame. B is a cylindrical brush, arranged horizontally at one side of the case or chamber, and C is a concave arranged underneath the brush, and formed with longitudinal corrugations. D is a trough or chamber arranged at the top of the chamber, provided with a right-and-left-hand conveyer, *e*, which conducts the middlings fed through a spout, *f*, at the center toward each end, so as to distribute them uniformly into a passage, *g*, that discharges them between the brush and concave. H is a hopper at the bottom of the case A, terminating in a trough provided with a suitable conveyer for conducting the purified middlings to a discharge-spout at one end. Suitable openings, *i*, regulated by valves, admit air into the bottom of the case

or chamber A, while a tube leads from the top of this chamber to the eye of a fan or other air-exhausting apparatus. The shaft of the brush revolves in adjustable bearings, *k*, by which the friction between the brush and concave is regulated. Motion is communicated to the brush and conveyers by pulleys and belts in any suitable manner.

The effect of the corrugations of the concave is to give to the material as it is brushed by them a rebounding flinging action, by which the material is more thoroughly whipped and scoured, and the particles of fibrous matter, smut, and other refuse detached from the granules of good middlings, as they are thrown from the brush into and across the central portion of the chamber. The current of air passing upward arrests and carries upward with it to the fan the lighter impurities, while the granules or good middlings fall into the hopper and are discharged, as above described.

In Figs. 3 and 4, a second brush, L, and concave M, similar to B C, are arranged in the opposite side of the exhaust-chamber, a little below B C. The middlings are discharged from the first brush and cylinder with sufficient force to cause them to fall onto an inclined board or hopper, *n*, which conducts them between the brush and concave L M, where they are subjected to a second scouring or whipping, and from which they are thrown back into the central portion of the chamber, when they are a second time subjected to the action of the ascending current of air.

Plain beaters may be used instead of the brush-cylinder, with stationary brushes attached to the face of the concave, and used instead of the corrugations, or the concave may be left plain; but in the latter case a brush-cylinder should be employed. I prefer, however, to use the brush-cylinder and corrugated concave, as shown in the drawings.

My improved apparatus is specially adapted for the first treatment of middlings, although it is obvious that any of the other grading or separating machines may be used in connection with my improved machine, for operating on the material either before or after it has passed through my machine.

I do not wish to be understood as claiming, broadly, the combination of a whipper or dis-

integrator with an exhaust-chamber, as the same is shown and described in a previous pending application made by myself and another party jointly; but

What I claim as my invention is—

1. The combination of the brush B and concave C with an exhaust-chamber, across which the middlings are thrown by the brush, substantially as and for the purposes set forth.

2. The combination and arrangement in an exhaust-chamber, and with the beater and concave B C, of the beater and concave L M, substantially as and for the purpose hereinbefore set forth.

CLARK S. FULLER.

Witnesses:

O. H. BROWN,  
WM. C. McINTIRE.