L. KLEMM.

Middlings-Separator.

No. 211,165. Patented Jan. 7, 1879.

Fig: 1.

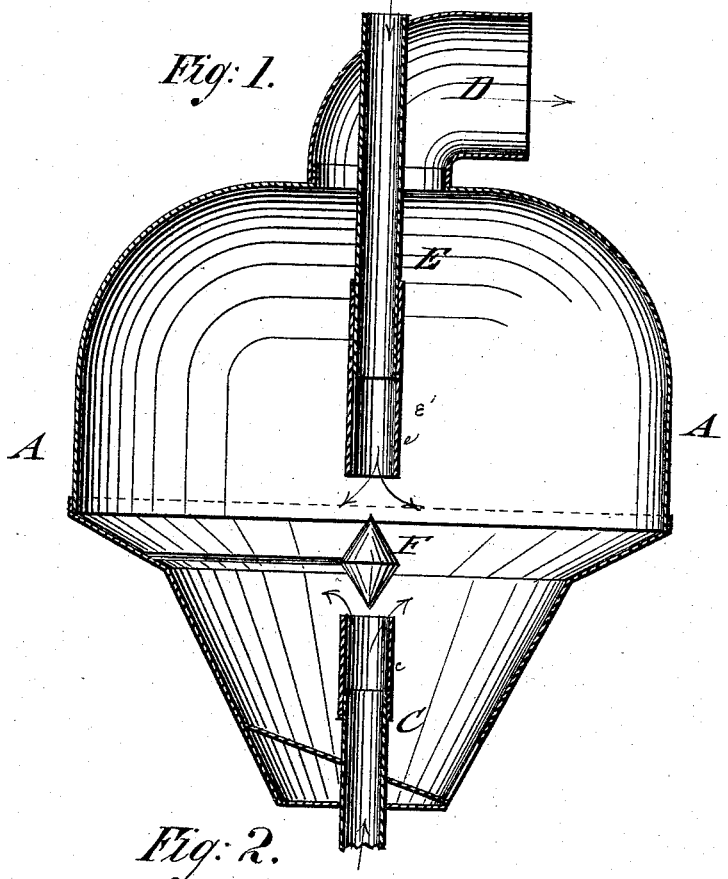
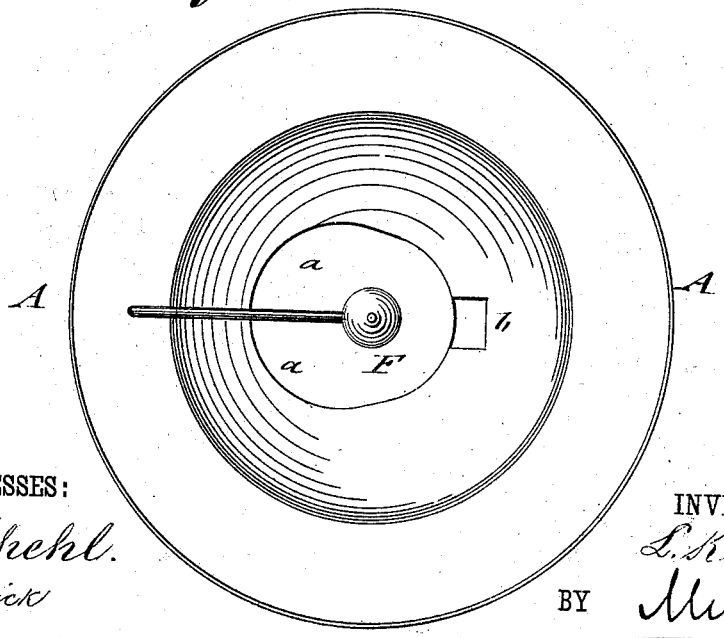


Fig: 2.



WITNESSES:

A. Schehl.

C. Sedgwick

INVENTOR:

L. Klemm

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

LAWRENCE KLEMM, OF TERRE HAUTE, INDIANA.

IMPROVEMENT IN MIDDLINGS-SEPARATORS.

Specification forming part of Letters Patent No. **211,165**, dated January 7, 1879; application filed September 26, 1878.

To all whom it may concern:

Be it known that I, LAWRENCE KLEMM, of Terre Haute, in the county of Vigo and State of Indiana, have invented a new and Improved Middlings-Purifier, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a vertical central section of my improved middlings-purifier, and Fig. 2 is a top view of the conical bottom part of the same with top part removed.

Similar letters of reference indicate corresponding parts.

This invention relates to an improved apparatus for cleaning middlings by means of a force and suction draft, the device being of simple construction, and requiring less power than the complicated machinery at present employed for separating the middlings from the lighter particles.

The invention consists of an annular vessel or receptacle having rounded-off top part and conical bottom part, in connection with a central suction-pipe at the top and a central force-pipe at the bottom.

A feed-pipe passes vertically down through the suction-pipe, and discharges on a deflector of double conical shape, placed between the feed and force pipes, and vertically in line therewith. The cleaned middlings are conducted over the inclined bottom of the lower conical part of the vessel and through a side aperture to the outside.

Referring to the drawings, A represents an annular vessel or receptacle of suitable sheet metal, which is made with a larger top part, having rounded-off corners, and with a conical lower part, that is closed at the bottom.

A force-pipe, C, enters centrally through the bottom of the lower part, while a curved suction-pipe, D, at the top passes off to one side of the vessel.

A feed-pipe, E, passes through the curved suction-pipe into the interior of the vessel, being placed vertically above and in line with the force-pipe C. The upper end of the force-pipe C and the lower end of the feed-pipe E are provided with sliding adjustable pipe sections or extensions *c e*, for regulating the quantity of air and middlings supplied to the vessel A.

Intermediately between and in line with the force-pipe C and feed-pipe E is supported on a fixed arm a deflector, F, of double conical shape, over which the middlings pass, so as to be divided and spread around in a circle, to be acted on by the air-blast from the force-pipe. The blast is correspondingly deflected by the inverted lower half of the deflector. The blast scatters the middlings, and throws them toward the side walls of the vessel, while the specks and light particles are raised and drawn out by the action of the suction-pipe.

The blast and suction are produced by suitable fans. The middlings are conducted by the conical lower part of the vessel A to an inclined second bottom, *a*, of the same, and then to the outside through a side aperture, *b*.

The middlings are cleaned in a quick and effective manner by the joint action of the force and suction drafts, the cleaning of the middlings being accomplished by simple means, requiring less power and dispensing with the complicated machinery hitherto used.

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

The combination, with the vessel A, provided with top suction-pipe, D, of a vertical feed-pipe, E, a double conical deflector, F, and a bottom suction-pipe, C, the pipes E C being provided with adjustable extensions *c e*, substantially as shown and described.

LAWRENCE KLEMM.

Witnesses:

GEORGE WHARRY,

A. E. PHELAN.