(No Model.)

E. WEISS & L. FRAENKEL.

MIDDLINGS PURIFIER.

No. 383,262. Patented May 22, 1888.

Fig. 1.

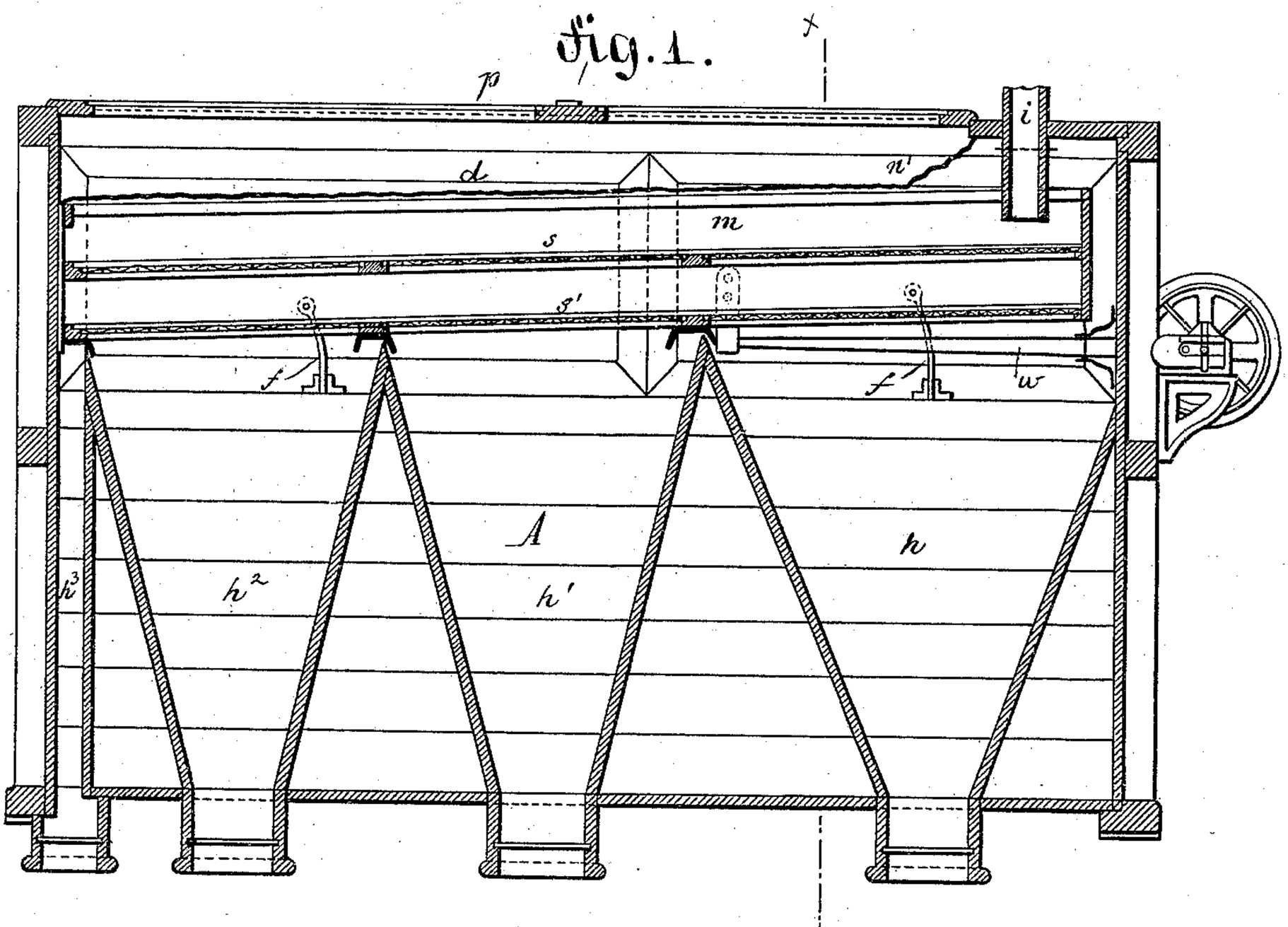
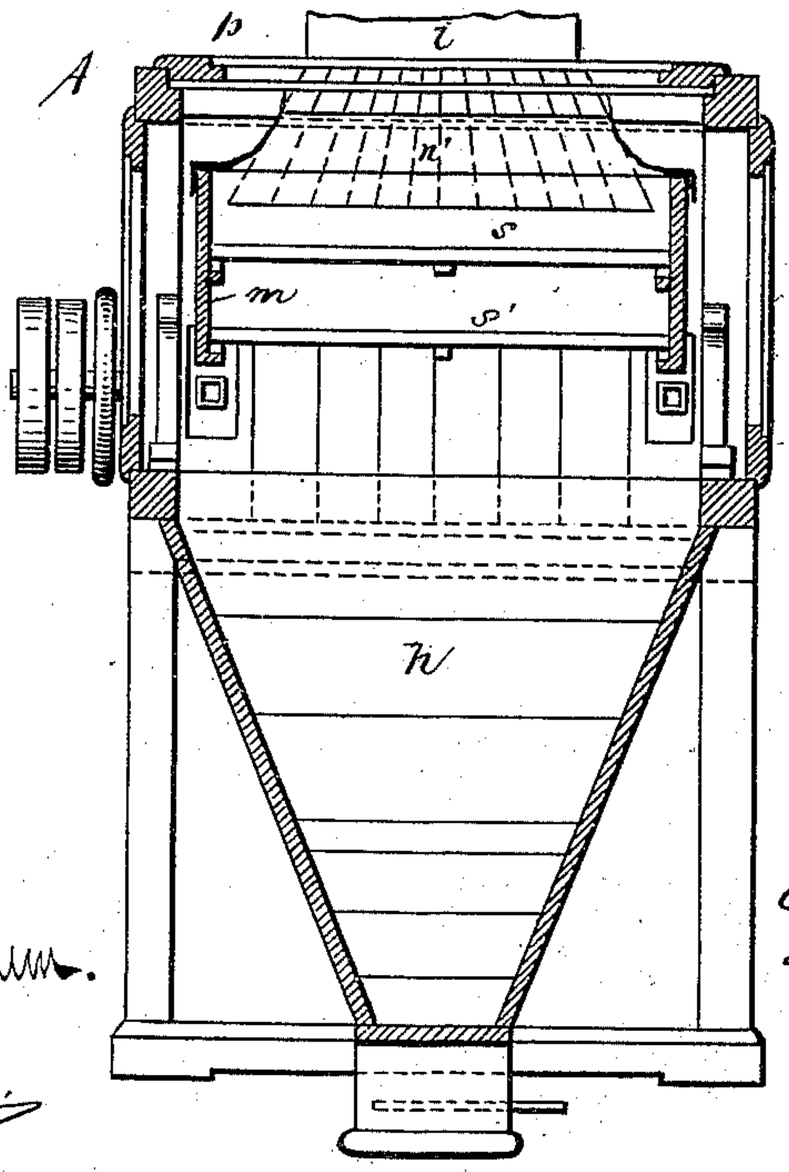


Fig. 2.



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UNITED STATES PATENT OFFICE.

EMIL WEISS AND LOUIS FRAENKEL, OF BERLIN, GERMANY.

MIDDLINGS-PURIFIER.

SPECIFICATION forming part of Letters Patent No. 383,262, dated May 22, 1888.

Application filed November 13, 1886. Serial No. 218,755. (No model.) Patented in Germany April 1, 1886, No. 39,227; in France June 30, 1886, No. 177,115; in England July 26, 1886, No. 9,648; in Belgium October 20, 1886, No. 74,971; in Sweden October 25, 1886, No. 886; in Italy December 21, 1886, XX, 20,773; in Spain January 20, 1887, No. 10,485; in Norway February 9, 1887, No. 262, and in Austria-Hungary March 28, 1887, No. 44,446 and No. 11,183.

To all whom it may concern:

Be it known that we, EMIL WEISS and LOUIS FRAENKEL, subjects of the King of Prussia, residing at Berlin, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Middlings-Purifiers, (which have been patented to us in Germany April 1, 1886, No. 39,227; in Belgium October 20, 1886, No. 74,971; in Norway February 9, 1887, No. 262; in Austria-Hungary March 28, 1887, Nos. 44,446 and 11,183; in Spain January 20, 1887, No. 10,485; in France June 30, 1886, No. 177,115; in Italy December 21, 1886, Vol. XX, No. 20,773; in Sweden October 25, 1886, No. 886, and in England July 26, 1886, No. 9,648,) of which the following is a specification.

This invention relates to middlings-purifiers; and the object of our invention is to provide a new and improved middlings-purifier, in which the air above the screen is alternately compressed and released, thereby producing alternate compression and suction, and thus facilitating the separation of the flour from the granular parts.

The invention consists in the construction and combination of parts and details, as will be fully described and set forth hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of our improved middlings-purifier; and Fig. 2 is a cross-sectional view of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The casing A, provided with a suitable frame, has closed sides and ends, closed bottom and top, said side walls being made of canvas, fabric, or wood; but in all cases the casing should be as nearly air-tight as possible. Two screens, *s* and *s'*, are held in the rocking screen-frame *m*, the tail end of which is open, and which frame is mounted on springs *f*, one end of the screen-frame being slightly higher than the other. The meshes of the screen are smallest at the raised end of the frame, and gradually increase in size toward the lower end. The sides and raised end of the screen-frame are closed and the lower end is open.

i is an inlet-pipe which conveys the material to be purified upon the screen. A blanket or sheet, *d*, of canvas, muslin, or other suitable material, is fastened to the upper edges of the side pieces of the screen-frame *m*, and extends transversely over the top of said frame, as shown in Fig. 2, and said blanket or sheet of canvas extends from the tail end of the screen-frame to within a short distance from the inlet-pipe *i*.

A sheet, *n'*, of flexible material, is fastened to the under side of the top of the casing adjacent to the inlet-pipe *i* and extends transversely over the screen-frame, the bottom edge of said sheet *n'* being connected with the upper end of the blanket *d*, the function of said sheet *n'* being to prevent light material from passing upon the top of the blanket *d*. Four chutes, *h* *h'* h^2 h^3, are provided below the rocking screen-frame, the chute *h* for receiving the finer material being the largest. The chutes *h'* and h^2 are intermediate in size, and the chute h^3 the smallest. A reciprocating rod, *w*, is connected with the screen-frame, and with an eccentric on a shaft provided with a suitable driving-pulley, by means of which the screen-frame can be rocked or reciprocated.

The operation is as follows: Through the inlet-pipe *i* the material to be screened drops upon the screens. By the reciprocating motion of the screen-frame the air in the closed exterior casing is set in motion—that is, motion is imparted to the air, which is approximately a reciprocating motion. The result of this is that in the screen-frame the air is alternately compressed and expanded. This compression and expansion of the air is facilitated by providing the yielding blanket or canvas on the screen-frame, as the same distributes the motion of the air in the screen-frame uniformly throughout the entire space inclosed by said screen-frame. This alternate pressure and suction in the screen-frame causes the lighter particles to work up toward the surface of the grain or material on the screen and the heavier particles to descend and pass through the meshes of the screen.

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

1. In a middlings-purifier, the combination,

with a reciprocating screen-frame open at its tail end, and screens in the frame, of a flexible cover applied to the screen-frame above the screen and approximately parallel with the same, substantially as herein shown and described.

2. In a middlings-purifier, the combination, with a closed casing, of a reciprocating screen-frame open at its tail end, a screen in said frame, a flexible cover applied to the screen-frame above the screen and approximately parallel therewith, a supply-pipe and a sheet of canvas secured across the top of the screen-frame and to the under side of the top of the casing, substantially as herein shown and described.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

EMIL WEISS.
LOUIS FRAENKEL.

Witnesses:
BENAS KEILER,
EDUARD NEISSER.