

(No Model.)

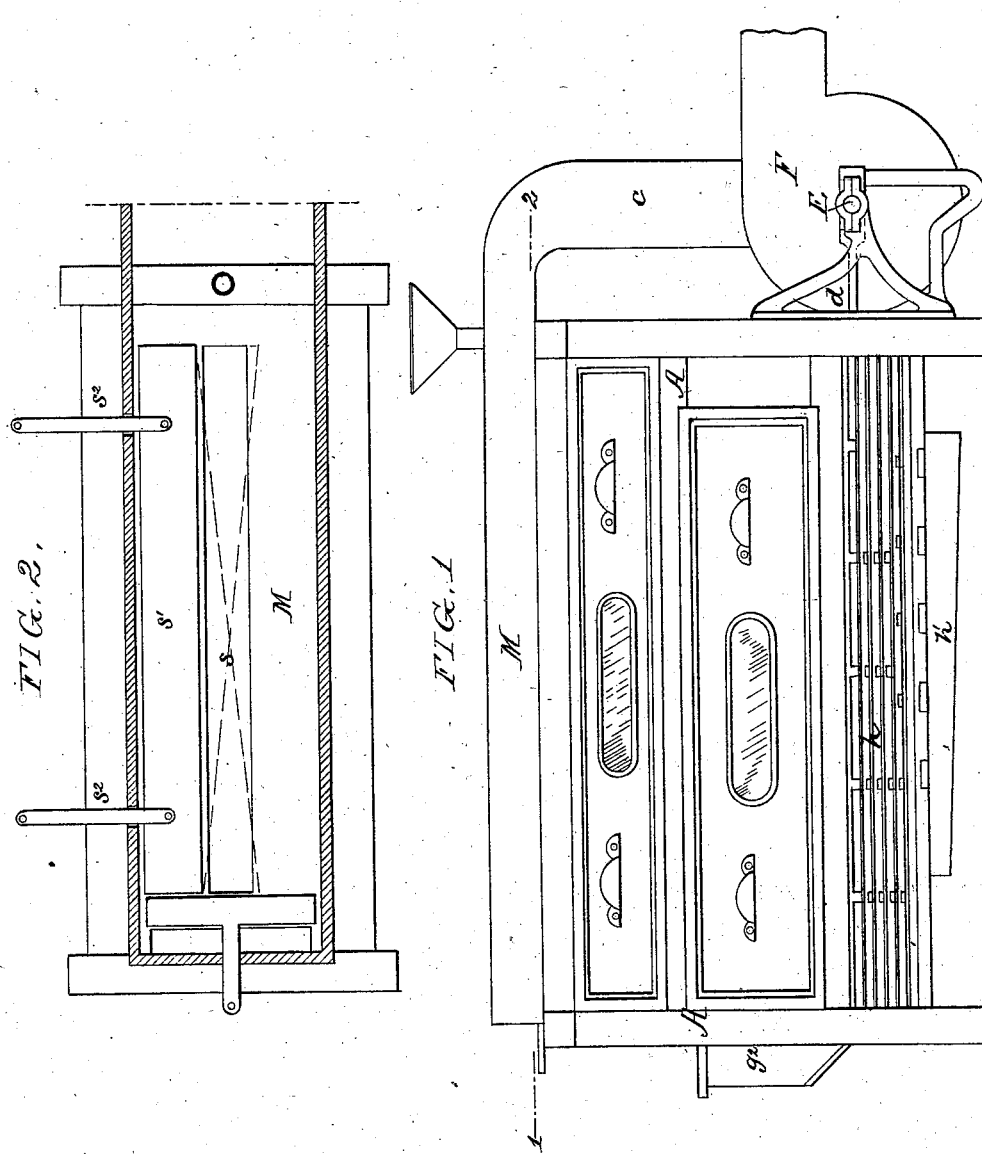
3 Sheets—Sheet 1.

A. WOLF.

MIDLINGS PURIFIER.

No. 259,968.

Patented June 20, 1882.



Witnesses:  
James F. Tobins  
Harry Drury

Inventor:  
Augustus Wolf  
By his Attorneys  
Howe and Ford

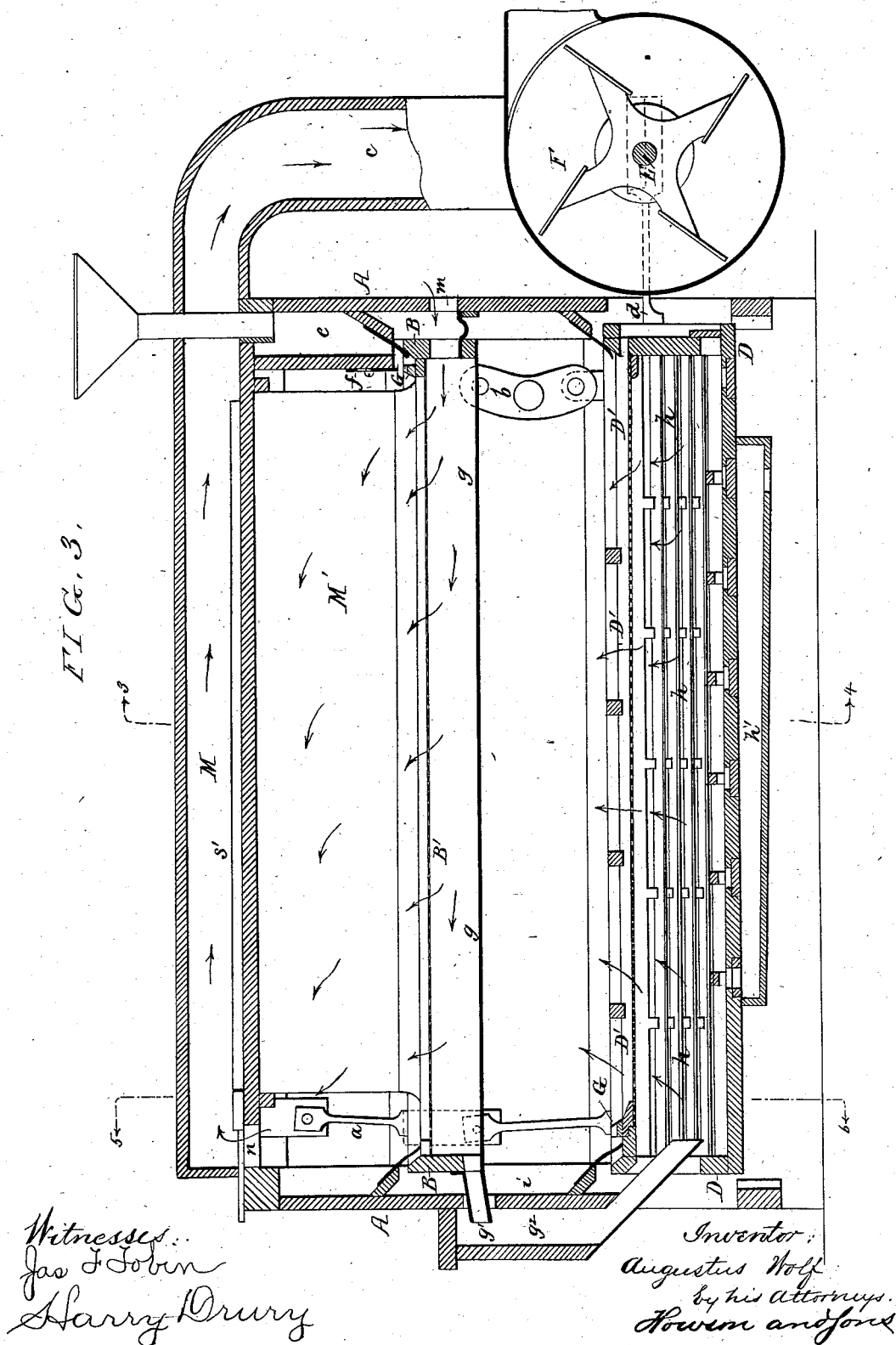
(No Model.)

3 Sheets—Sheet 2.

A. WOLF.  
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3 Sheets—Sheet 3.

A. WOLF.

## MIDLINGS PURIFIER.

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FIG. 2.

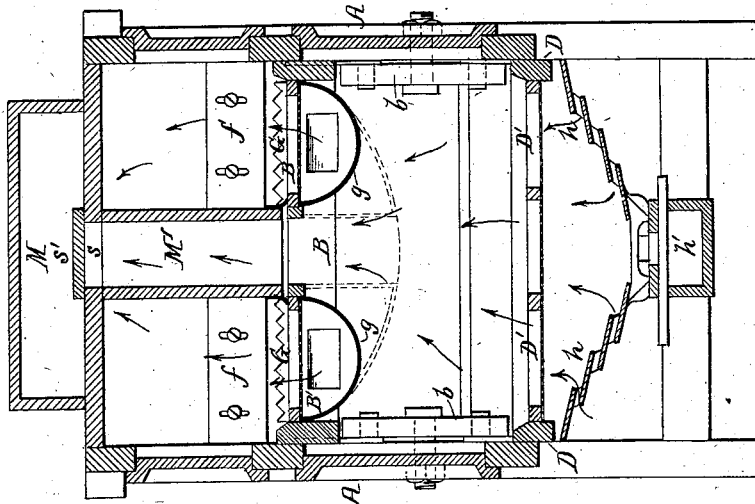
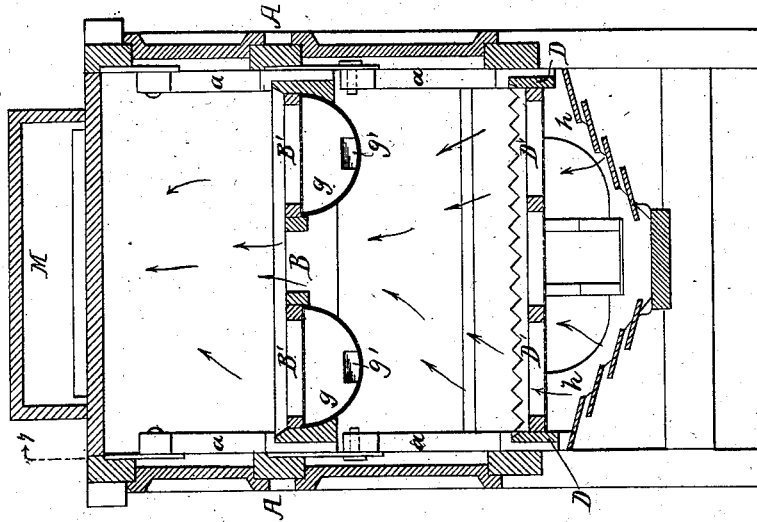
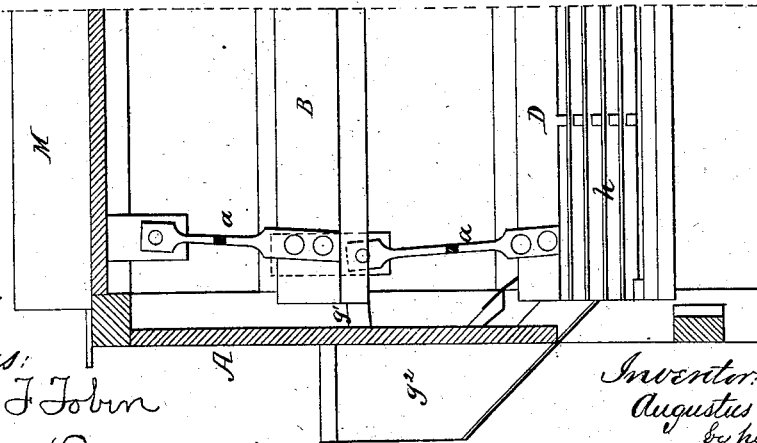


FIG. 5.



FILE



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By his Attorneys.  
Howen and Sons

# UNITED STATES PATENT OFFICE.

AUGUSTUS WOLF, OF ALLENTOWN, ASSIGNOR OF ONE-HALF TO DAVID L. HAMAKER, OF EAST HEMPFIELD, PENNSYLVANIA.

## MIDDLINGS-PURIFIER.

SPECIFICATION forming part of Letters Patent No. 259,963, dated June 20, 1882.

Application filed March 13, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS WOLF, a citizen of the United States, residing in Allentown, Pennsylvania, have invented certain Improvements in Middlings-Purifiers, of which the following is a specification.

The objects of my invention are to readily control the feeding of the machine and to regulate the drafts of air through the same; and these objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1, Sheet 1, is a side view of my improved middlings-purifier; Fig. 2, a sectional plan on the line 1 2, Fig. 1; Fig. 3, Sheet 2, a longitudinal section of the machine on a larger scale than Fig. 1; Figs. 4 and 5, transverse sections of Fig. 3 on the lines 3 4 and 5 6, respectively; and Fig. 6, a longitudinal section on the line 7 8, Fig. 5.

A is the outer casing of the machine, and B and D are two screen-frames arranged one above the other, each frame being supported at one end by links *a*, hung to the casing A, and at the other end by levers *b*, pivoted to the casing A at points between the screen-frames, the upper frame, B, being attached to the upper arms of the levers and the lower frame, D, to the lower arms of said levers, as shown in Figs. 3 and 4, so that when the lower frame is reciprocated in one direction the upper frame will be reciprocated in the opposite direction. This feature forms no part of my present invention, however, as it is shown and described in a separate application which I have made for a patent, said application having been filed May 19, 1881.

The lower screen-frame, D, is reciprocated by means of cranks on a shaft, E, adapted to bearings at one end of the machine, suitable rods, *d*, connecting the cranks to the frame. The shaft E also carries a rotary fan, F, the tendency of which is to withdraw the air through a pipe or passage, *c*, from an air-box, M, arranged on the top of the casing A and communicating with the interior of the latter through valved openings, in the manner hereinafter set forth.

The middlings are fed from a suitable hopper into a passage, *e*, at the top and one end

of the machine, and pass thence onto a pair of screens, B', on the frame B, through openings the area of which is governed by an adjustable valve or plate, *f*, so that the quantity of middlings fed to the machine can be readily and accurately regulated. The feeding is effected by transverse bars G at the end of the frame B, and in order that these bars may be made of sufficient depth to properly act on the middlings without at the same time presenting too great a surface I notch the upper edge of each bar, as shown in Figs. 3 and 4.

The middlings, owing to the agitation of the screens B', are fed along from the front to the rear end of said screens, such particles as pass through the screens being caught in troughs *g*, carried by the frame B, and being delivered therefrom, through spouts *g'* and a chute, *g''*, at the rear end of the machine, into the trough *h* of the lower screen-frame, D.

Particles too large to pass through the meshes of the screens B' are discharged from the rear end of the same and fall through a passage, *i*, onto the screen D' of the lower frame, D, along which they are fed by the action of a notched feed-bar, G, and are further screened, the meshes of the screen D' being of varying degrees of fineness, as shown in Fig. 3. Particles too large to pass through the coarsest meshes of the screen D' are delivered from the front end of the screen into a suitable tailing-spout, those particles which pass through the screen being collected in the trough *h*, and passing therefrom through valved openings into the box *h'* in the usual manner. The trough *h* has grated sides, for a purpose described hereinafter.

While the middlings are traversing the screens B' and D', and passing from one screen to the other, they are constantly subjected to the action of currents of air, which separate the light particles or "fluff" from the heavier particles, these currents being induced by the action of the fan F. The course of the currents is indicated by the arrows, and is as follows:

Air enters the casing A through an opening, *m*, at the front end of the machine and traverses the troughs *g* beneath the screens B', passing up through the meshes of the screens and through the layers of middlings thereon to

the space above the screens, from which it is drawn into the air-box M through a valved opening, *n*, in the top of the casing A.

Currents of air are admitted to the trough *h* through the grated sides of the same, the air thus admitted passing up through the screen D' and middlings thereon to the space above the screen, from which it passes to the air-box M through a central vertical tube, M', located between the screens B' of the upper screen-frame, B.

The opening *s* in the top of the casing A, which affords communication between the air-box M and tube M', is provided with a valve, *s'*, which has near each end a pivoted operating-rod, *s''*, so that it can be adjusted to properly control the area of the opening *s* in accordance with the desired character of the draft. For instance, when the valve is adjusted in a line directly across the opening, so as to partially obstruct the latter, there will be a reduced draft throughout the entire length of the opening; but if the valve is adjusted at an angle to the opening, as shown by either of the dotted lines in Fig. 6, there will be a draft through one corner only of the opening *s*. I am thus enabled to attain by means of a single valve the same effect as is at present reached by the use of a series of independent valves, each controlling a portion only of the opening.

The tube M' may in some cases be contracted in length, in which case the screen B' will extend continuously across the frame B at each end, the feed-bar G will also be continuous, and a single collecting-trough, *g*, and spout *g'* will replace the double spouts and troughs, the trough in such case having a central passage, forming a continuation of the tube M', as shown by dotted lines in Fig. 4.

I claim as my invention—

1. The combination of the outer frame or casing with a screen-frame hung to the casing so as to be free to reciprocate therein, and a trough-casing, *h*, secured to said reciprocating frame and having grated sides, whereby air is admitted to the trough directly beneath the screen, as set forth.

2. The combination of the outer casing of the machine, the air-box M on the top of the same, the upper screen-frame, with air-passage therein, the lower screen-frame, and the tube M' above the air-passage of the upper screen, whereby communication is afforded between the air-box and the space between the upper and lower screens, as set forth.

3. The combination of the air-box M, the casing A, having a longitudinal opening, *s*, and the valve *s'*, adjustable to any desired angle in respect to said opening *s*, whereby the area of the latter is regulated and the direction and force of the draft controlled, as set forth.

4. The combination of the upper screen having trough-casing and air-passage, the lower screen having trough-casing and air-inlet, the casing A, having an inlet, *m*, valved transverse outlet *n*, and valved longitudinal outlet *s*, the air-box M, and the tube M' above the upper screen and in line with the air-passage therein and with the outlet *s*, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUSTUS WOLF.

Witnesses:

HARRY DRURY,  
HARRY SMITH.