

A. HUNTER.
Middlings Purifiers.

No. 150,578.

Patented May 5, 1874.

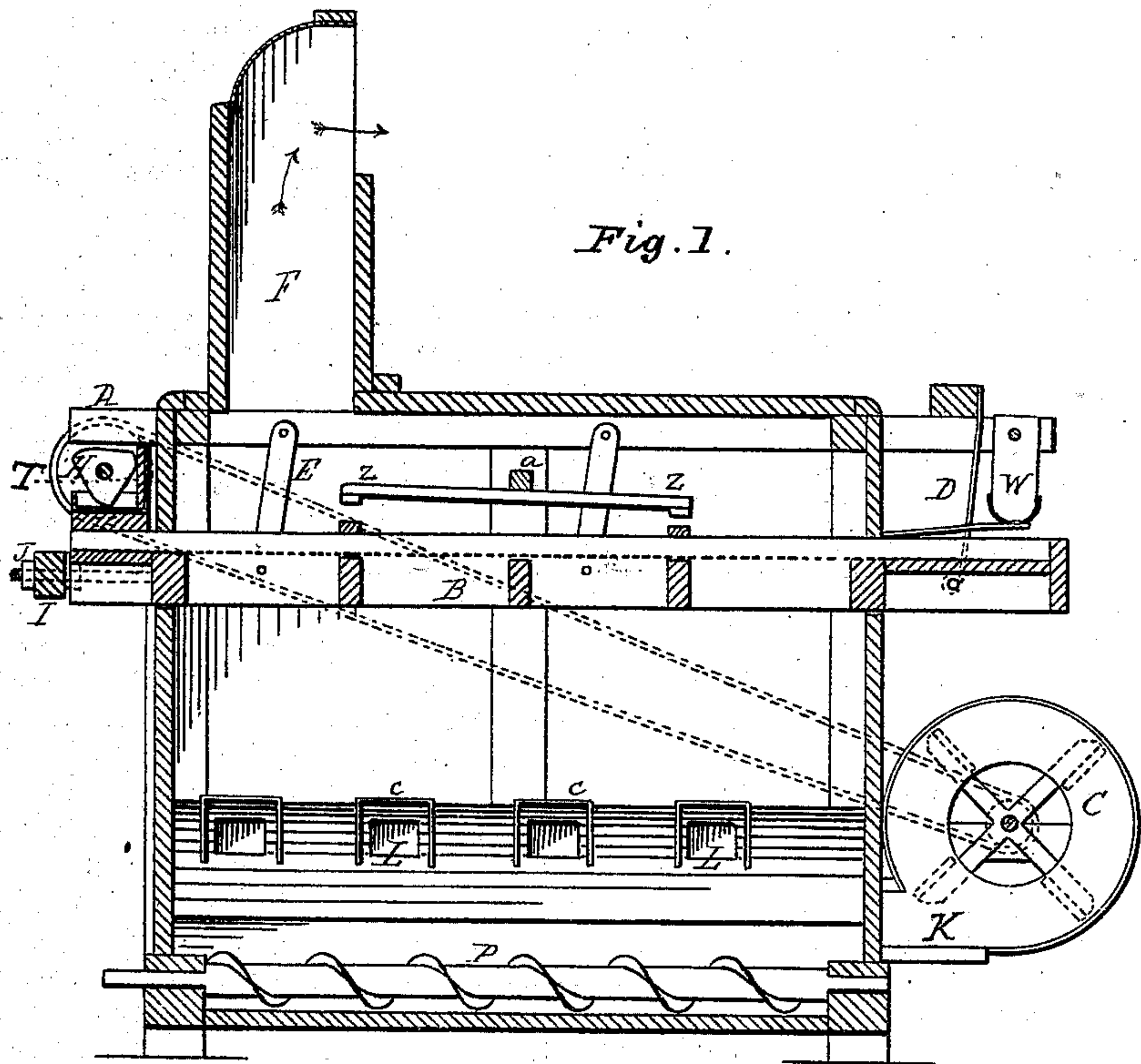


Fig. 1.

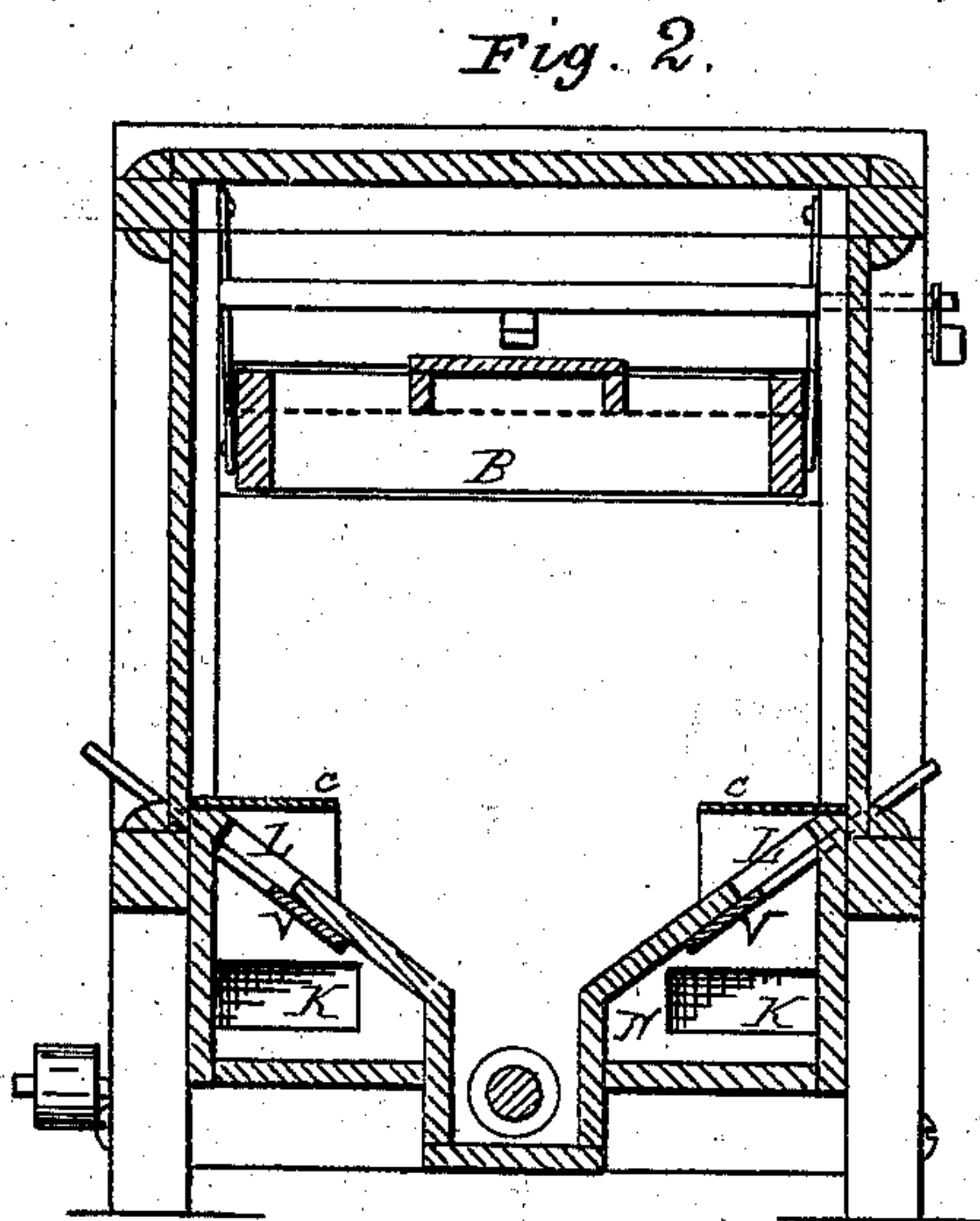


Fig. 2.

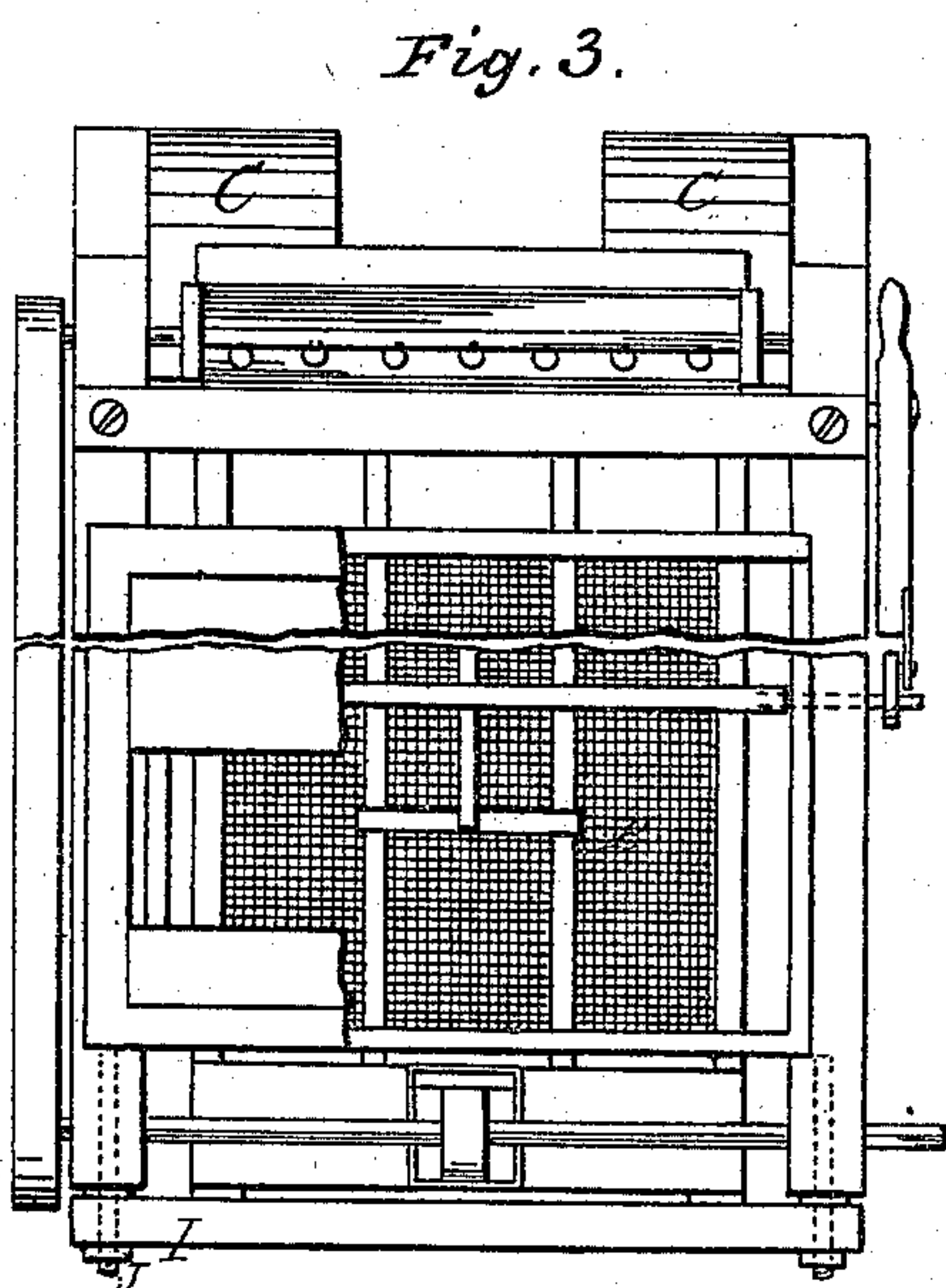


Fig. 3.

Witnesses
N. B. Smith
A. Moore

Inventor.
Andrew Hunter
 by *A. M. Smith*
 Attorney

UNITED STATES PATENT OFFICE.

ANDREW HUNTER, OF QUINCY, ILLINOIS.

IMPROVEMENT IN MIDDLEINGS-PURIFIERS.

Specification forming part of Letters Patent No. 150,578, dated May 14, 1874; application filed March 14, 1874.

To all whom it may concern:

Be it known that I, ANDREW HUNTER, of Quincy, county of Adams, State of Illinois, have invented certain new and useful Improvements in Middlings-Purifiers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a longitudinal vertical section through the machine, showing the interior arrangement. Fig. 2 is an end view with the end board removed. Fig. 3 is a plan or top view, being shortened by being broken away in the center.

Similar letters of reference denote corresponding parts in all the figures.

The invention relates to that class of middlings-purifiers in which a blast is used under the screen for cleaning the middlings; and consists, first, in providing the wind-compartments with openings along their sides, through which the air is discharged, and providing said compartments each with a valve, by means of which the currents of air from the several openings in said compartments are regulated and graded, as hereinafter explained; second, in combination with the compartments and valves, bonnets or hoods for preventing the middlings when passing to the conveyer from escaping into the compartments, and also for directing the currents of air; and, third, in a novel manner of mounting the feed-trough and its connection with the screen, whereby a rocking or pendulum movement is imparted to it, for a purpose which will be explained.

In the accompanying drawing, A represents the inclosing-case and frame, and B the screen, which is covered with the usual bolting-cloth. The screen is suspended in the frame by means of hangers E and springs D. This screen projects out through the frame at its ends, and is provided at one end, and centrally of its width, with a box or L-shaped stand, T, which is faced with leather, and against which a cam, H, in the form of an equilateral triangle, strikes in its revolution, said cam being mounted upon a shaft, which has its bearings in the frame, and on a line with the center of said box. Upon the outside of, and on a line with, the end piece of the screen, and at the same end

with the cam-shaft, is mounted a bar, I, which is supported by bolts secured to the frame, and having their threads cut upon their outer ends, said bar being placed between two nuts upon each of said bolts, which admits of the adjustment of said bar to or from the frame, and also regulates the extent of throw of the screen, the spring D holding the screen against said bar, except when forced away by the cam moving in the box T, and when said cam releases the screen the spring forces it back, and by forcing it against the bar a vibratory percussive movement is imparted to said screen. Upon the opposite end of the machine, and just above the projecting end of the screen, is mounted the feed-trough W, which is suspended by pivoted links. Said trough is also connected to the screen by arms or links, one at each end, and which, as the screen is vibrated back and forth by the cam H, also causes said trough to be vibrated or swung on the link, pivots giving to it a rocking or pendulum motion, and distributing the middlings evenly upon the end of the screen. In the top of the frame an outlet, F, is formed, through which the air, after passing through the screen, is conducted, carrying with it any dust or light particles, while the bran and coarser particles are carried off over the end of the screen. The frame is extended down and around the cant boards or inclines, upon which the middlings are conducted to the conveyer, forming in connection with said inclines triangular air compartments or boxes N, through which air is conducted from the fans C. The fans C are arranged one at the end of each compartment; but, if preferred, one fan of sufficient size to supply both compartments may be used and connected with them by means of pipes, one upon each side of said fan. The cant-boards or inclines are provided with openings L, through which the air is discharged into the machine to act on the middlings, and each opening is provided with a hood or cover, c, above, and extending around the sides for directing the currents of air, and preventing the escape through said openings of the middlings discharged from the screen. A slide or valve, V, is used to regulate and grade the blast discharged through the openings, and is of such length and width as to entirely close all of said open-

ings when desired, said valve being controlled by means of arms connected to it, one at each end, and projecting through the frame, and by raising one of said arms the valve is made to only close a portion of each opening—that is to say, each succeeding opening in the direction of the end raised is closed a little more than the last preceding one. P is a conveyer for removing the purified middlings out of the machine. Z is a knocker, for keeping the cloth clean, secured to a shaft pivoted in the frame above the screen, said knocker striking against bars placed across the screen, and being actuated by means of an arm or lever connected to the shaft. The edges of the box or stand T are turned up to form a receptacle for oil to lubricate the cam.

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

1. A wind-compartment lying parallel with the conveyer, and through which the air is conducted from a fan, and from which it is discharged into the machine through a series

of lateral openings, in combination with an adjustable valve, by means of which the openings may be unequally diminished or increased toward the end of the valve moved for graduating the blast, as described.

2. The longitudinal wind-compartment N, the inner side of which is formed by the cant-board through lateral openings, in which the air is discharged into the machine, in combination with the overhanging bonnets or hoods c for directing the blast and preventing the escape of the middlings, and with valves for adjusting the size of the openings, as described.

3. A feed-trough pivoted to frame A, and connected by straps or connecting-rods to bolt-frame B, and operated by the same, producing a rocking or pendulum motion, for the purpose described.

In testimony whereof I have hereunto set my hand this 2d day of March, A. D. 1874.

ANDREW HUNTER.

Witnesses:

J. C. BERNARD,

LEWIS MILLER.