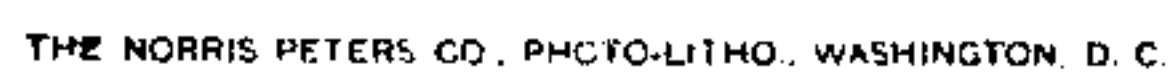


Patented April 8, 1879.



UNITED STATES PATENT OFFICE.

AUGUSTUS WOLF AND ABRAHAM N. WOLF, OF ALLENTOWN; SAID A. N. WOLF ASSIGNOR TO SAID AUGUSTUS WOLF AND DAVID L. HAMAKER, OF EAST HEMPFIELD TOWNSHIP, LANCASTER COUNTY, PA.

IMPROVEMENT IN MACHINES FOR SEPARATING MIDDINGS, &c.

Specification forming part of Letters Patent No. 214,073, dated April 8, 1879; application filed January 24, 1879.

To all whom it may concern:

Be it known that we, AUGUSTUS WOLF and ABRAHAM N. WOLF, of Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain Improvements in Machines for Separating Middlings, &c., of which the following is a specification.

This invention relates to that class of machines for separating middlings from the bran on the one hand and fine flour on the other in which suction or blast is employed by means of a fan or blower.

The novelty consists in the simultaneous reciprocatory shaking movement imparted to an upper and lower combined sieve-frame and receiver attachment, said frames carrying the several sieves being provided with adjustable cord-beaters or whippers, which act against the under side of the bolting-cloth on the sieve-frames, and minor improvements, herein more fully set forth.

The accompanying drawings, with letters of reference marked thereon, and a brief description, will enable those skilled in the art to make and use the same.

Figure 1 is a perspective view of one side and front end of the machine, with the two side doors removed and the upper sieve lifted out to show the interior arrangement. Fig. 2 shows the outside of the other or rear end. Fig. 3 is to represent a longitudinal plan view, the frame being removed; Fig. 4, a vertical section in front, with the fan removed to show the several discharge-openings. Fig. 5 is a perspective view of the upper sieve removed.

Short uprights T on each side in the lower section of the cross-pieces A' A'' are used for pivot-fastenings, on which the central portion of an elbow-lever, N, imparts an oscillating or shaking motion to two frames, C' C. These frames are connected to the ends of said elbow-levers by a pin at two points on each side, respectively. The lower frame, C', is connected, by rigid pitmen P, with an eccentric or crank attachment made in the shaft or spindle J of the fan incased at K, driven by any gear or power by connecting it with the strap-pulley I. These coupled frames have air and vibrating spaces between their ends and the ends of the box which incloses them, and are jointly supported parallel with each other on the os-

cillating lever-arms N. On the lower edge of these frames and rounded end pieces there is shown a sheet-metal concave receiver, L L', having a cross-section of nearly half a circle. There is also a cross-piece or cord-holder, D, extending from one side to the other at one end, to which three or more cords, E, are affixed and carried through slots to the outside of the case or box, and connected with rollers F F', for tightening the cords. A pawl and ratchet may be applied to hold them in the adjustment made. These are reversed in position, as shown, and tend to elevate the closed end of the sieves G G'. Fig. 5 shows one of these sieves and its position when set into the upper frame, C. Said sieve G has a raised edge along the two sides and across the back, the other end being open, the cross-piece joining the two sides being beneath the bolting-cloth, so that the coarser matter on the sieve passes unobstructed through a slot in the outer frame, C, and falls down upon the lower sieve, G', made in the same manner as the one shown. Each has a bridge-piece, H H', centrally on top of the frame to strengthen it, under which space is left for the matter to pass under it freely.

The finer flour sifted through the upper and finer meshes of the bolting-cloth drops down into the receiver L, and discharges through a tube at O into a suitable receiver or conveyer on the outside. The material now passes over the lower sieve, G', which separates the middlings from the bran. These middlings are discharged from the receiver L' through a central end opening, R, Fig. 4, while the tailings pass from the open end of the sieve into an oblique spout in Q, and discharge on one side at S. Adjusting-valves W may also be made in the receiver L'.

The ground wheat is fed in through the top of the box A at one end by the ordinary tube or hopper B, and falls upon a deflecting device, b, on the inside, to distribute it over the front part of the sieve G. The fan-case K has an adjusting-valve, V. The air is discharged at M, and circulates under, through, and over the sieves, and finds ingress chiefly through the end opening in the receiver L'.

The suction-blast may be made to act in the direction of the arrow, Fig. 3, and, together

with the whipping-cords or cleaners E, is so readily adjusted as to cause the material to bounce up more or less forcibly, as the open end of each sieve rests on the cross-piece D only, and the other end is more or less elevated by the tension of the cords, which are also on top of the cross-piece, so that the cords are in close contact with the cloth on the frame of the sieve, which is otherwise disconnected with the outer frames, C, in which they fit and receive their reciprocatory shaking motion aforesaid.

What we claim is—

1. The combination of frames C C', sieves G G', concave receivers L L', elbow-levers N,

pitmen P, fan K, and crank-shaft J, all arranged and operating substantially as set forth.

2. In combination with the frames C C', the cord-holding cross-piece D, the cords E, adjusting-rollers F F', and detachable sieves G G', set on said cords and cross-piece within the frames, and receiving from them a reciprocating motion and whipping of the cords, the whole operating substantially as and for the purpose set forth.

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Witnesses:

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