(No Model.) 2 Sheets—Sheet 1.

J. WEGMAN, Jr.

MIDDLINGS PURIFIER BRUSH.

No. 319,763. Patented June 9, 1885.

Fig. 1.

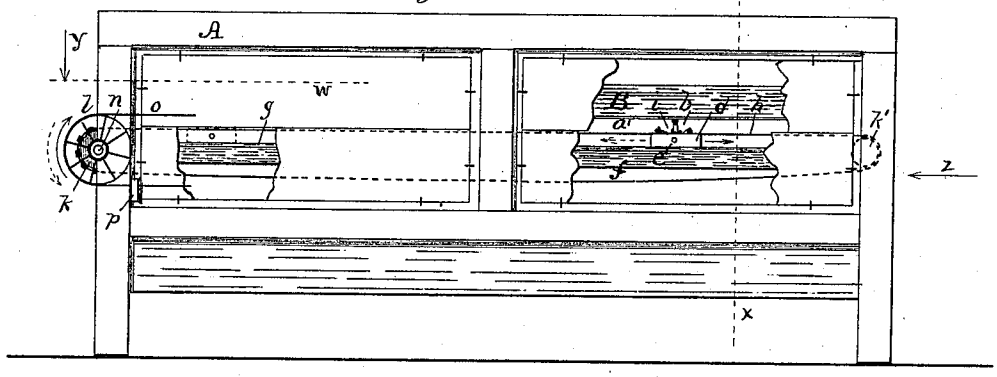


Fig. 2.

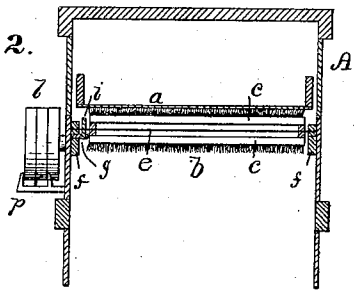
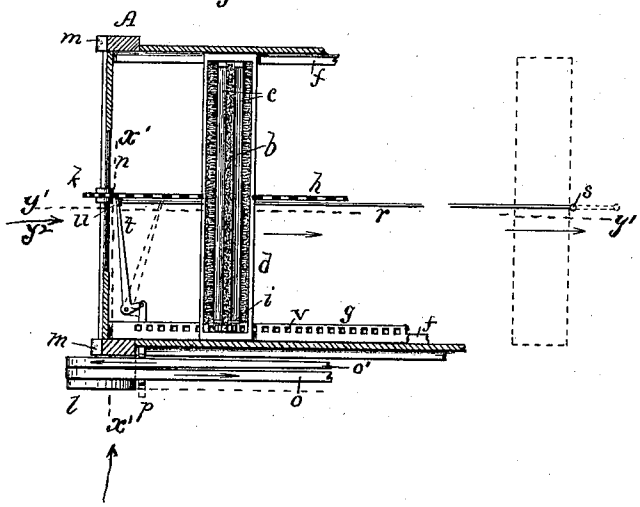


Fig. 3.



Attest:

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E. A. Safford.

Inventor:

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By E. B. Whitmore, Atty.

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(No Model.) 2 Sheets—Sheet 2.

J. WEGMAN, Jr.

MIDDLINGS PURIFIER BRUSH.

No. 319,763. Patented June 9, 1885.

Fig. 4.

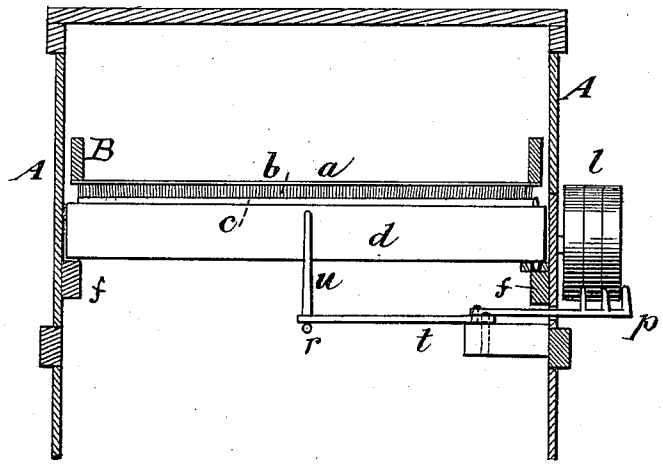
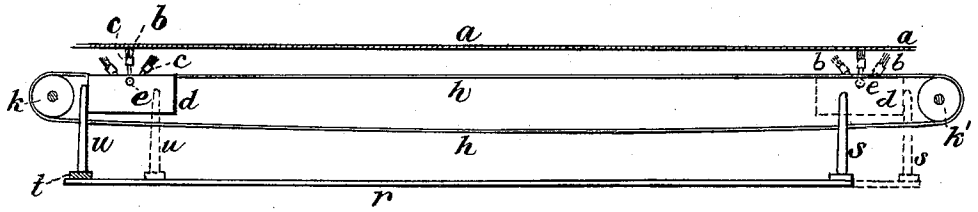


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN WEGMAN, JR., OF ROCHESTER, NEW YORK.

MIDDLINGS-PURIFIER BRUSH.

SPECIFICATION forming part of Letters Patent No. 319,763, dated June 9, 1885.

Application filed July 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN WEGMAN, Jr., of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Middlings-Purifier Brushes, which improvement is fully set forth in the following specification and accompanying drawings.

It is well understood in flour-milling that the screen of the shoe holding the middlings has to be constantly brushed or kept clear of the particles of the middlings adhering to it, so as to furnish free passage for the purified middlings through the same.

The object of my invention is to produce a cylindrical rotating brush or brush-cylinder that shall traverse backward and forward from end to end along the screen and brush the latter in both directions, and which more perfectly clears the screen than do the brushes heretofore used; and the invention consists in parts and devices constructed and operating as hereinafter fully described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1, Sheet 1, is a side elevation of an ordinary middlings-purifier with my improved parts attached in place, parts being broken away to uncover interior parts of the device. Fig. 2 shows a transverse vertical section of the same, taken upon the dotted line *x* in Fig. 1, viewed as indicated by arrow *z*, showing more clearly the rotating brush with parts of the device omitted; Fig. 3, a horizontal sectional view or plan of a portion of the same, showing more clearly the rotating brush and the manner of driving the same and of shifting its direction of motion at each end of the screen; Fig. 4, Sheet 2, a transverse section of the frame, taken on the dotted line *x'* in Fig. 3, and viewed as indicated by the arrow y^2 in Fig. 3, showing more fully the manner of operating the belt-shifting mechanism of the machine; and Fig. 5, a longitudinal section of parts of the machine, taken on the dotted line *y'*, Fig. 3, further assisting to show the manner in which the carriage at either end of its run shifts the belts to reverse the direction of its motion, said Figs. 4 and 5 being drawn to a larger scale than that to which the first three figures are drawn.

Referring to the parts, A is the frame of the purifier; B, the ordinary vibrating shoe for holding the unpurified middlings, being of common form and placed within the body of the purifier in the usual manner.

a is the silk screen of the shoe in common use, through which the purified middlings fall.

b is the brush for brushing or clearing the under surface of the screen, the same in my invention being in substantially cylindrical form corresponding in length to the width of said screen. This brush device consists of parallel slats *c*, provided with bristles or other suitable material to form brushes for the screen. The brush is mounted in a carriage, *d*, resting transversely beneath the shoe upon horizontal longitudinal slats *f*, attached to the inner sides of the frame. The brush *b* is provided with an axial shaft, *e*, which has its bearings in the end pieces of the carriage *d*, and is provided at one end with a toothed wheel, *i*, the teeth of which mesh in spaces *v* of a horizontal rack, *g*, attached to the rest or slat *f*, holding one end of the carriage, as shown. Now, it will be understood from this description of parts that if the carriage be by any means moved longitudinally along its ways or supports *f* the brush will be caused to rotate upon its axis on account of the tooth-wheel engaging with the rack, as stated.

h is a chain having its ends attached to the respective sides of the carriage *d* about midway in the length of the latter, said chain passing over sprocket-wheels *k k'*, held respectively at the two ends of the purifier-frame. The sprocket *k* is secured to a horizontal shaft, *n*, resting in journal-boxes *m m*, as shown. The shaft *n* overhangs the frame of the purifier at one end, which overhanging end is provided with a nest of pulleys, *l*, the two outer pulleys being fitted to turn loosely upon the shaft, while the intermediate pulley is secured rigidly thereto. Two belts, *o o'*, one straight and the other crossed, rest upon these pulleys, leading from a driving-pulley (not shown) located at the opposite end of the purifier-frame. These belts operate like the shifting-belts of a metal-planer, the shaft *n* rotating in one direction or the other, according as the straight or crossed belt

occupies the middle or fixed pulley of the nest. From the chain being attached to the carriage, as stated, it will be seen that, by rotating the shaft *n* alternately in one direction or the other, the carriage will be caused to move backward and forward under the screen, the brush being rotated upon its axis, as before stated, during the advance movement of the carriage in either direction. The shoe and the ways or track of the brush-carriage are relatively so placed that the brush comes in contact with and sweeps the screen as it advances.

The belts are shifted upon the pulleys by means of a shifter, *p*, operated by a bent lever or bell-crank, *t*, the free upward-turned end *u* of which latter being in position to be encountered by the carriage as it approaches the end of the screen, as shown in Figs. 4 and 5. A rod, *r*, connected with the lever *t*, lying longitudinally beneath the carriage and reaching to the opposite end of the frame of the purifier, has an upward projection, *s*, similar to the part *u* of the bell-crank 4, in position to be encountered by the carriage as it approaches the opposite end of the screen, by means of which the shifter *p* is moved by the carriage while at the farther end of the screen to shift the belts, reversing the motion of the shaft *n*, and causing the carriage to return. Thus this rotating brush is caused automatically to move from end to end of the screen, having its direction of rotation reversed as its direction of advance is changed, and brushing the surface of the screen in both directions as it moves along under the same. By means of this rotating-brush, and the fact that its motions, both of advance and rotation, are reciprocated, the screen is much more perfectly swept or cleared of the adhering particles than is the case with the old method, the result of which is the screen is kept unclogged at all times and a much greater quantity of the purified middlings pass through the same within a given time. The brush-cylinder shown is provided with six parallel brush-bars, *c;* but the number of brush-bars may be increased or decreased if found convenient in practice. I prefer to use a rack (not shown) similar to the one shown at *g* at the other end of the carriage, and provide the brush-cylinder thereat with a toothed wheel similar to that at *i*, so that both ends of the carriage shall move along the ways alike when the carriage is drawn backward and forward along the chain, as above described.

What I claim as my invention is—

1. In a device for brushing the screen of a middlings-purifier, the combination of the reciprocating brush-carriage *d*, ways *f f* for the same, rack *g*, and brush *b*, with its toothed wheel *i*, substantially as and for the purpose set forth.

2. In a device for brushing the screen of a middlings-purifier, the combination of the brush-carriage *d*, ways *f f*, and the bell-crank *t*, with its projection *u*, and belt-shifter *p*, for reciprocating the motion of the carriage, and means, substantially as shown and described, for driving the carriage.

3. In combination with the screen of a middlings-purifier and a clearing-brush therefor, a reciprocating shaft, sprocket-wheel, and connecting-chain for driving the brush, loose and fast pulleys and belts to turn them, and means, substantially as described, for shifting the belts and alternately changing the direction of motion of the shaft, for the purpose specified.

JOHN WEGMAN, JR.

Witnesses:
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E. A. SAFFORD.