(No Model.)

W. LAWRENCE.

APRON DUSTER FOR BISCUIT MACHINES.

No. 418,728. Patented Jan. 7, 1890.

Fig. 1

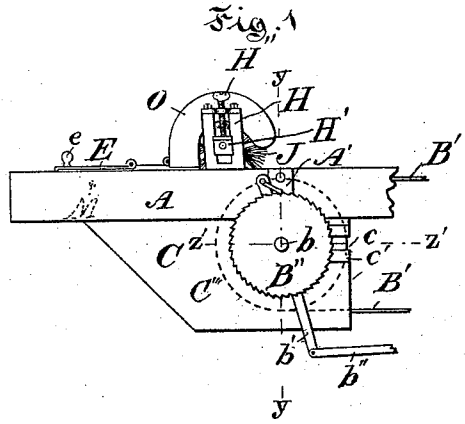


Fig. 3.

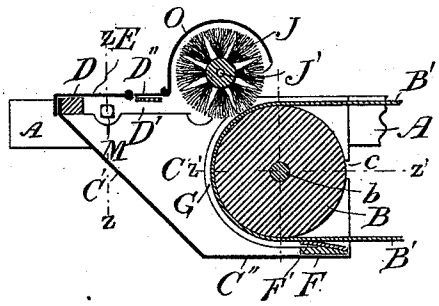


Fig. 2

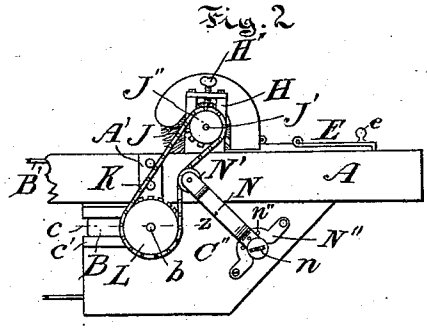


Fig. 4

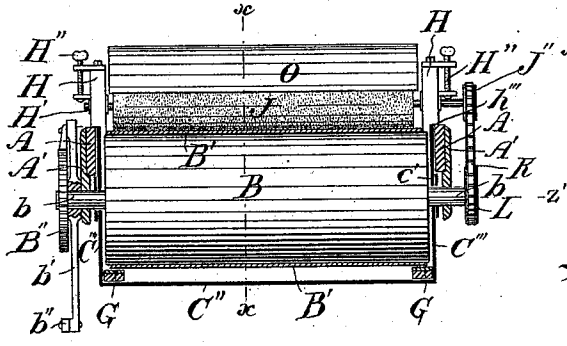


Fig. 5

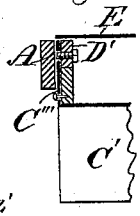


Fig. 6.

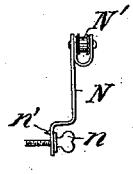
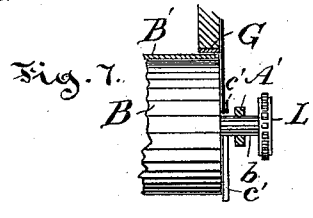


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM LAWRENCE, OF COLLINGWOOD, ONTARIO, CANADA.

APRON-DUSTER FOR BISCUIT-MACHINES.

SPECIFICATION forming part of Letters Patent No. 418,728, dated January 7, 1890.

Application filed July 29, 1889. Serial No. 319,016. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LAWRENCE, of Collingwood, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Apron-Dusters for Biscuit-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part hereof.

My invention, which will be hereinafter fully set forth and claimed, relates to devices for dusting with flour the feed-apron of a biscuit-machine.

The object of my invention is an apparatus for dusting with flour the apron of a biscuit-machine that may be placed on the machines at present in use, and adjusted and filled without stopping the machine.

Figure 1 is a side elevation of my device. Fig. 2 is a side elevation of the same, the view being taken from the opposite side of Fig. 1. Fig. 3 is a transverse section of the same on line *x x*, Fig. 4. Fig. 4 is a longitudinal section on line *y y*, Fig. 1. Fig. 5 is a partial section on line *z z*, Fig. 3, showing the device for securing my duster to the frame. Fig. 6 is a side elevation of the device for tightening the sprocket-chain. Fig. 7 is a horizontal section on line *z' z'*, Figs. 1, 2, 3, and 4.

A A are parts of the rear end of the frame of a biscuit-machine.

A' A' are brackets secured to the frame A, in which is journaled the axle *b* of the feed-roller B, which carries and gives motion to the endless apron B'. At one end of the axle *b* is secured a ratchet-wheel B'', worked by a pawl on the lever *b'*, operated by a pitman *b''*.

Thus far is described the ordinary parts of the feed end of a biscuit-machine.

C is a flour-box, which may be made of sheet iron or tin, consisting of the side C', bottom C'', and ends C''', open at one side and partly at the top. The closed side C' of the box C slopes down to the bottom C''. The ends C''' are provided with horizontal slots *c*, open at the open side of the box, the edges of the slots being stiffened by plates *c'*, secured to the ends C'''. A metallic frame is provided to give the necessary rigidity to the box, and consists of bar D, end pieces D', which reach about two-thirds of the width of the box, and a top piece D''. To one edge of the top piece D'' is hinged a lid E, provided with a knob or handle *e*. Along the edge of the bottom at the open side of the box C is secured a block or strip F. On this is secured a strip F', of rubber, covered with canvas, adapted to bear against the apron and prevent the escape of flour from the box C. The ends C''' of the box are recessed opposite the ends of the roller B, the edges of said recess conforming to the outline of the apron B' from the top underneath the brush to the inner edge of the block F. The edges of said recess are lined with rubber G, covered with canvas, to fit easily the edges of the apron B' and prevent the flour escaping by the ends of the roller and into the bearings. To each of the ends C''' of the box is secured a box-slide H, in which slides the bearing H', which is adapted to be raised and lowered by a screw H'' in the usual manner. The lower end of each slide H projects over the end of the box C, forming a shoulder *h'''*, which is adapted to rest on the frame A and support the box. In the adjustable bearings H' is journaled the axle J' of the rotary brush J. On one end of the axle J' is secured a sprocket-wheel J'', driven by a chain K from a sprocket-wheel L on the axle *b* of the feed-roller B. In order to compensate for the variations in the length of the chain K, the distance between the two sprocket-wheels being variable, I provide an adjustable arm N, carrying a friction-pulley N', adapted to bear against the chain K, as shown in Fig. 2. This arm is held by a thumb-screw *n* to the end C''' of the box, and is provided with a pin *n'*, Fig. 6, adapted to engage one of the perforations *n''* in the segmental plate N'', thus holding the arm N in any desired position against the chain K.

The box C is prevented from slipping on the frame A by means of set-screws M, passing through the frame-bar D', which may be tightened against the frame A on either side of the box C. A hinged cover O for the rotary brush J is provided.

This dusting apparatus, which is especially designed for self-panning machines and peelers, is placed on the end of the frame of the machine, the slots *c* allowing the box to be

slid on the axle *b* within the frame A, the shoulders *h'''* resting on the top of the frame A, and the set-screws M holding the box in position. The flour is placed in the box C, the lid E being used for filling the box. The endless apron B′, which moves in the direction of the arrow, passes up through the flour, the brush J taking off the surplus, and can be so adjusted by setting it higher or lower in the box H as to let the desired amount of flour pass on the apron. The cushions F′ and G are covered with canvas to prevent the rubber blackening the apron, and also to protect the rubber.

I claim as my invention—

1. In an apron-dusting apparatus for biscuit-machines, the combination of a flour-box having an open side and provided with slots in the ends to pass on the axle of the apron-roller and having a cushioned rim along the open edge of the bottom to bear against the face of the apron and circular cushioned rims at the ends to bear on the edges of the apron within said box, and said box provided with means for holding it in place, box-slides secured to the top of the ends of said box and projecting over and resting upon the frame of the machine, a rotary brush journaled in adjustable bearings in said slide-boxes, a sprocket-wheel on the axle of said brush, a sprocket-wheel on the axle of the apron-roller, a pitch-chain on said sprocket-wheels, and an arm with friction-roller bearing against said chain secured adjustably to the box end, substantially as set forth.

2. In an apron-dusting apparatus for biscuit-machines, the combination, with the frame A, roller B, and apron B′, of a flour-box C, having sloping side C′, bottom C″, provided with cushioned rim F F′, and ends C, having slots *c* and cushioned rims G, and provided with lid E and box-slide H, and the rotary brush J, provided with means for giving a rotary motion to the same, substantially as set forth.

3. In an apron-dusting apparatus for biscuit-machines, the combination of the rails A, box C, brush J, sprocket-wheels J″ and L, and chain K, a bracket N, pivotally secured to the box C and having a friction-roller N′, bearing against the chain K, and a pin *n′*, engaging the segment N″, a segment N″, secured to said box and having perforations *n″*, adapted to engage the pin *n′*, and the thumb-screw *n*, pivotally securing and holding said bracket, substantially as set forth.

4. In a flour-box for dusting apparatus for biscuit-machines, the combination of the sloping side C′, bottom C″, having slots *c*, provided with stiffening-plates *c′*, bottom C″, having at its open edge a strip F, with rubber packing F′, covered with canvas, the ends C‴, recessed for the ends of the apron-roller and having the edges of the recess provided with a rubber strip G, covered with canvas, the stiffening-pieces D, D′, and D″, the lid E, hinged to the bar D″, set-screws M in the piece D′, and the slide-boxes H, substantially as set forth.

In testimony whereof I have signed in the presence of the undersigned witnesses.

WILLIAM LAWRENCE.

Witnesses:
G. E. MOBERLY,
GEORGE MOBERLY.