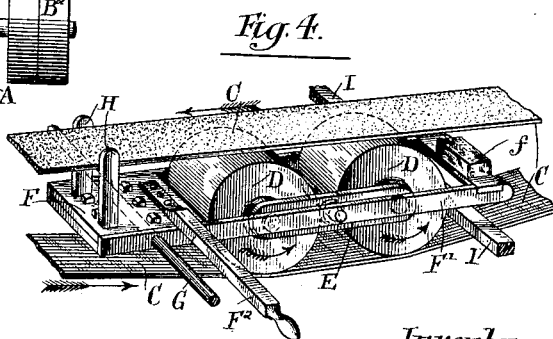
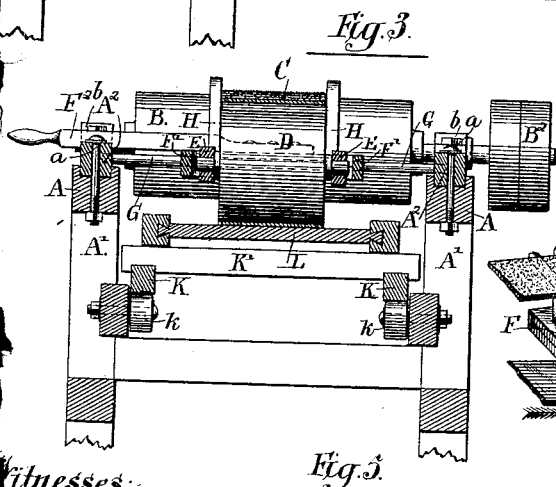
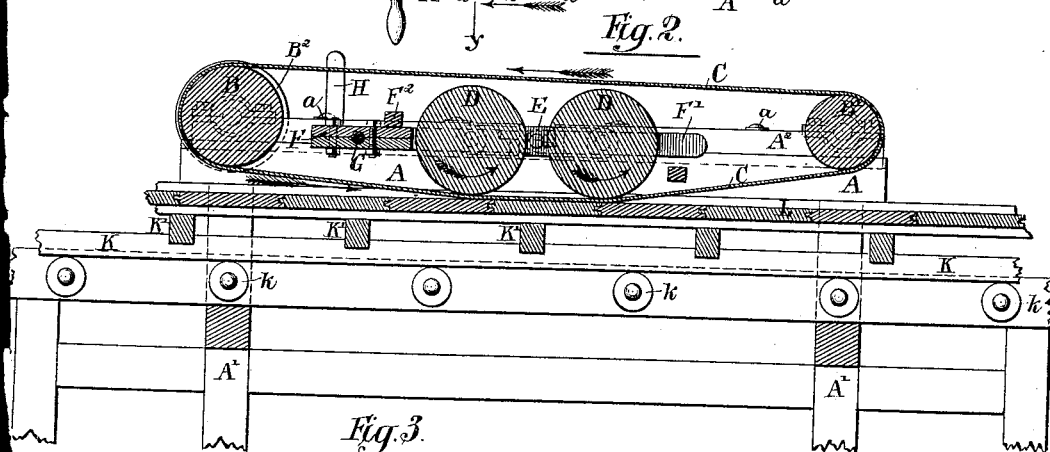
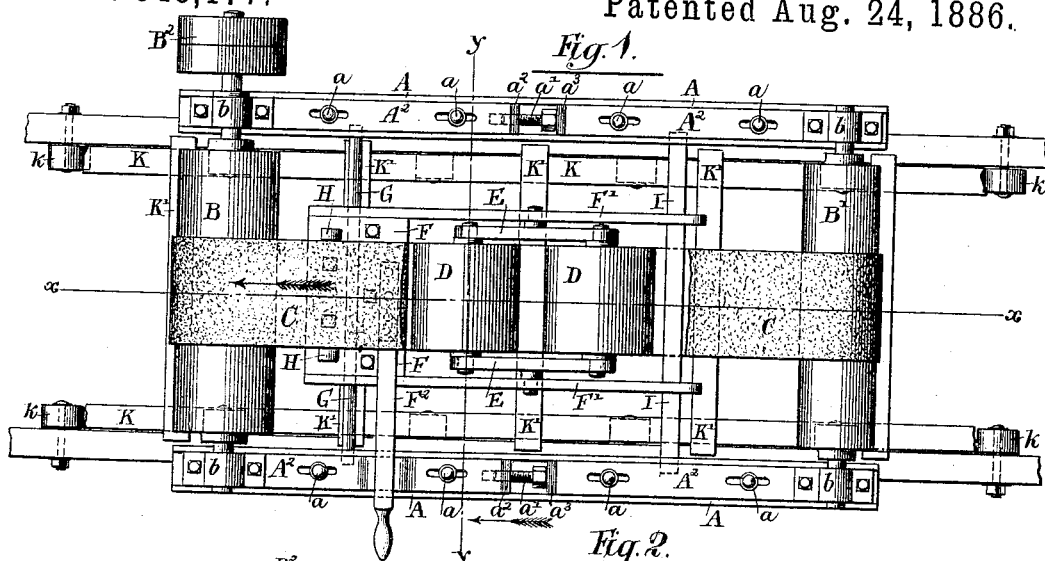


(No Model.)

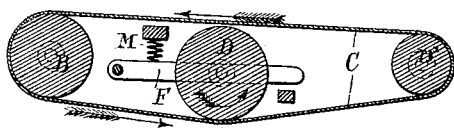
E. TOTMAN.
SANDPAPERING MACHINE.

No. 348,177.

Patented Aug. 24, 1886.



Witnesses:
Wm. H. Whitehead.
C. C. Poole



Inventor:-
Edsell Totman,
by:-
W. E. Dayton
Attorney:-

UNITED STATES PATENT OFFICE.

EDSELL TOTMAN, OF HINSDALE, ILLINOIS.

SANDPAPERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 348,177, dated August 24, 1886.

Application filed April 15, 1885. Serial No. 162,266. (No model.)

To all whom it may concern:

Be it known that I, EDSSELL TOTMAN, of Hinsdale, in the county of Du Page and State of Illinois, have invented certain new and useful Improvements in Sandpapering-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in sandpapering-machines; and it consists in the matters hereinafter described, and pointed out in the claims.

The machine herein shown as embodying my invention consists, essentially, of an endless traveling band or belt of canvas or other flexible material provided upon one side with an abrading-surface, suitable supporting-rollers for the belt, one of which is driven in order to properly actuate the said belt, and one or more loose rollers mounted in a pivotally-supported swinging frame, adapted to bear upon a part of the belt between the supporting-rollers thereof, said roller or rollers and the band being laterally movable upon the machine-frame, so that they may be shifted from side to side of the surface of the object operated upon, as will hereinafter more fully appear.

The invention will be more fully understood by reference to the accompanying drawings, in which—

Figure 1 is a plan view of the machine embodying my invention. Fig. 2 is a vertical section of the same, taken upon line *xx* of Fig. 1. Fig. 3 is a vertical transverse section of the same, taken upon line *yy* of Fig. 1. Fig. 4 is a detail perspective view of the loose or bearing rollers, the devices for supporting the latter, and the parts of the band adjacent thereto. Fig. 5 is a detail view illustrating the construction of the device containing but a single roller.

In the said drawings, A are longitudinal frame-pieces of the machine, supported upon suitable vertical posts, A'.

B and B' are the supporting-rollers for the band, which are mounted in bearings *b* at the opposite ends of said frame.

C is the endless abrading-band.

D D are loosely-pivoted rollers located between the upper and lower parts of the band.

E are side bars, in the ends of which the said rollers D are journaled, and F is a frame provided with side bars, F' F', to which the bars E are pivoted, said frame being itself pivoted and adapted to slide freely upon a stationary transverse rod, G, held at its ends in the side pieces of the frame.

The rollers B B' are arranged approximately in the same horizontal plane, and the loose rollers D D are placed between said rollers, and are adapted to rest upon the middle portion of the lower part of the band C, so as to press said lower part of the band downwardly upon an object placed beneath it. As herein shown, the roller B is driven to communicate motion to the belt, suitable belt-pulleys, B', being placed upon the shaft of said roller for this purpose.

The object of the pivoted frame F is to retain the rollers D in proper position upon the belt during the movement of the latter, and the bars E, which are pivoted centrally to the bars F' of the frame F, as before described, obviously permit a relative vertical movement of said rollers, so that the latter may operate with equal pressure upon the belt. As herein shown, the arms F' are preferably extended at their ends beyond the rollers, and a cross-bar, I, is located upon the machine-frame, so as to form a stop or rest to limit the downward movement of the arms and rollers when the panel or other object is removed from beneath the belt.

By the construction above set forth, it is obvious that when the belt C is driven in the direction, for instance, of the arrows in the drawings, the rollers D D, which are adapted to press and roll freely upon the lower part of the belt, will press the latter against the surface of the object placed beneath said belt, with a pressure depending upon the weight of the rollers. The abrading-surface of the band is thus held in contact with the surface to be operated upon by a constant and yielding pressure calculated to cause an effectual and even abrading action. The rollers being free to rise and fall through a considerable distance, and also having a relative vertical movement, they will obviously adjust themselves perfectly to variations in the position of the surface be-

ing operated upon—such, for instance, as may be caused by differences in the thickness of panels or by slight irregularities in the surface thereof.

5 The band C may be made of any width found desirable or convenient, depending upon the width of the articles to be operated upon and other considerations. It is often found desirable, however, to operate upon panels
10 with raised edges, and for this purpose the belt may be desirably made relatively narrow, and means provided for shifting it laterally, so that it may be used upon narrow sunken surfaces, and moved laterally so as to operate
15 upon all parts of such sunken surfaces wider than the belt. This latter construction is present in the machine illustrated in the drawings, in which the band C is made considerably narrower than the rollers B B', and the
20 frame F, carrying the rollers D D, is adapted to slide laterally upon the pivot-rod G, and is provided with arms or guides H H, arranged to engage the opposite edges of the belt C, so as to hold the edges of the belt flush with the
25 ends of the said rollers D D. By this construction, when the frame F is moved laterally, the belt C will obviously be carried with it.

As shown in the drawings, the frame E is
30 provided with an arm or handle, F², extending laterally over the side pieces of the frame, which may be grasped by the hand to move the belt and rollers laterally in operating upon the entire width of the panel or other object.

35 In carrying out my invention, any suitable supporting devices may be provided for properly sustaining beneath the belt the panel or other object to be finished. As herein shown, a longitudinally-movable carriage, K, is provided, which is supported upon suitable rollers, k, upon the machine-frame, said carriage
40 being provided with cross-pieces K', upon which the object—such, for instance, as a panel, L—may be placed. The carriage K may
45 be moved by hand to carry the panel endwise beneath the belt, or any suitable well-known device for giving a longitudinal reciprocatory movement to said carriage may be employed for actuating it automatically. Any well-
50 known automatic means may also obviously be used for giving a lateral reciprocatory movement either to the frame F or to the supporting device for the work, so as to cause the said belt to operate upon the entire width of the
55 panel.

In Fig. 5 another form of the device is illustrated, in which is used only a single roller, D, journaled in a frame, F, so as to freely rise and fall in the manner before described. In
50 this figure a spring, M, is shown as applied to the frame F, so as to aid in forcing the roller toward the work. Such spring may be found desirable in cases in which the roller or rollers are not sufficiently heavy to give the required
55 pressure, or when the belt is arranged otherwise than horizontally, as shown. The form of the device embracing a single roller, D, may

sometimes be found desirable in practice, but preferably two rollers set close together (as shown in Figs. 1, 2, 3, and 4) are used, for the
70 reason that by this construction a greater area of the belt is presented to the work, and the said belt is prevented from cutting into the surface of the wood in case the movement of the latter is temporarily arrested, as is liable
75 to occur when the pressure is given by a single roller. In case it is found desirable to use a weight, instead of the spring M, (shown in Fig. 5,) such weight may be applied to the
80 frame E in any desired manner—as, for instance, is shown in Fig. 4, in which such weight, as indicated at f, is placed upon a cross-piece attached to the extremities of the arm F'. The band C may be made of canvas
85 or other suitable material, and the abrading-surface thereof may be formed by a layer of sand or emery paper applied to the band, or by a coating of sand, emery, or other abrading material applied in any suitable way to the said
90 band.

As a means of tightening the belt C when desired, the bearings b of the rollers B B', instead of being attached directly to the frame-pieces A, are mounted upon separate longitudinal bars A² A², which are held upon the upper
95 surfaces of the said frame-pieces by bolts a inserted through slots in the said bars, so that the latter may be moved longitudinally and clamped at a desired distance apart. The said bars are desirably held in grooves in the upper
100 surfaces of the frame-pieces, and are brought close together at their inner ends, and tap-bolts a' inserted in the end of one bar in position to bear against the adjacent
105 end of the other bar at each side of the machine, so as to enable the bars to be forced longitudinally apart for the purpose stated. As shown in the drawings, the bolts a' are inserted through plates a², secured to the end of one bar, and their heads are adapted to rest
110 against plates a², secured upon the opposing end of the other bar. The construction above described enables the belt C to be readily removed from the rollers for repairs or other purposes, the bars A² at the side of the machine
115 opposite from the pulleys B² in this operation being loosened by removing the bolts a', when the bars may be removed, together with the bearings b, and the belt slipped over the ends of the rollers.
120

I claim as my invention—

1. The combination, with the machine-frame, a traveling abrading-band, and supporting-rollers therefor, of one or more movable rollers adapted to hold and press the band upon
125 the work, and a horizontally-arranged swinging frame affording bearings for said movable roller or rollers and pivotally connected at one end to the machine-frame, substantially as described.
130

2. The combination, with a traveling abrading-band and supporting-rollers therefor, of one or more movable rollers bearing upon the inner surface of the band, a swinging frame

supporting the movable roller or rollers, and a stop for limiting the movement of the rollers toward the work, substantially as and for the purpose set forth.

5 3. The combination, with the machine-frame, a traveling abrading-band, and supporting-rollers therefor, of two movable rollers adapted to bear upon the inner surface of the band, a swinging frame pivoted upon the machine-
10 frame, and bars E E, affording bearings for the rollers and pivoted to the swinging frame, substantially as and for the purpose set forth.

4. The combination, with the machine-frame, a traveling abrading-band, and supporting-
15 rollers for the band, of a movable roller or rollers adapted to rest upon the inner surface of the band, said band and movable roller or rollers being laterally movable with reference to the work, substantially as and for the pur-
20 pose set forth.

5. The combination, with the machine-frame, a traveling abrading-band, and supporting-rollers for the band of greater length than the width of the band, of a movable roller or roll-
25 ers located in contact with the inner surface of the band, a swinging frame supporting the rollers and having laterally-sliding connection with the machine-frame, and guides H H, for the belt upon said frame, substantially as and
30 for the purpose set forth.

6. The combination, with the machine-frame and the abrading-band C, of rollers B B' for the band, means for actuating one of said rollers, rollers D D, resting upon the lower part of the band, a swinging frame, F, supporting
35 said rollers D D, a stationary pivot-rod, G, for the frame, and a cross-bar, I, affording a stop to the downward movement of the frame, substantially as described.

7. The combination, with the machine-frame
40 having longitudinal frame-pieces A, grooved in their upper surfaces, the abrading-band C, and the supporting-rollers B B' for the band, of sloited bars A² A², resting and sliding in the grooves of the frame-pieces and supporting
45 the bearings of said rollers, tap-bolts a', inserted in the ends of one bar of each pair of bars and bearing against the adjacent end of the other bar of the pair, and clamp-bolts inserted through the slots of the bars A² A² and
50 the frame-pieces, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

EDSELL TOTMAN.

Witnesses:

C. CLARENCE POOLE,
OLIVER E. PAGIN.