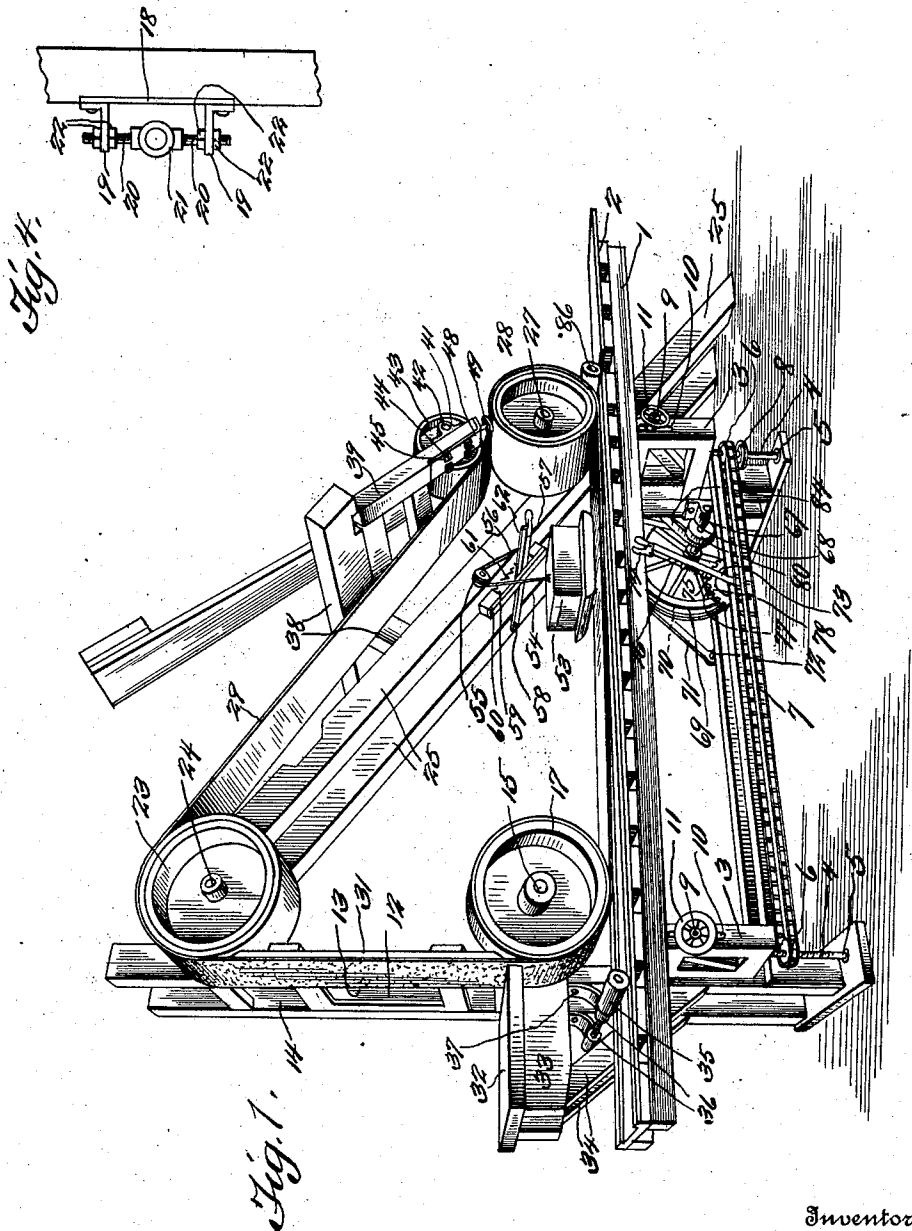


1,022,827.

E. G. COX.  
SANDING MACHINE.  
APPLICATION FILED MAR. 29, 1911.

Patented Apr. 9, 1912.  
3 SHEETS-SHEET 1.



Witnesses

Francis J. Powell.  
L. Dunn

By

Inventor  
E. G. Cox,  
D. Swift & Co.  
Attorney.

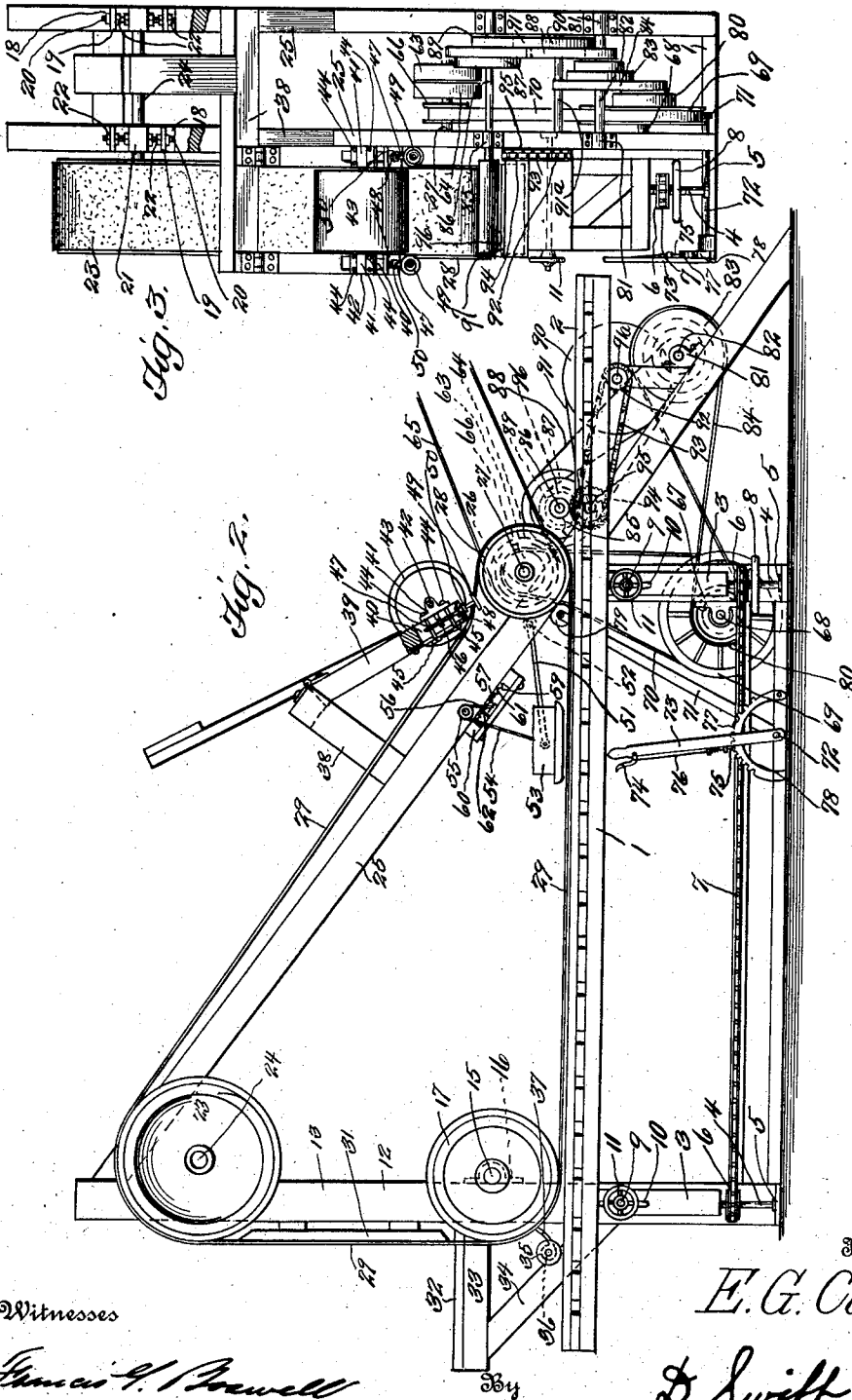
E. G. COX.  
SANDING MACHINE.

APPLICATION FILED MAR. 29, 1911.

1,022,827.

Patented Apr. 9, 1912.

3 SHEETS-SHEET 2.



Witnesses

Francis H. Powell  
L. Duran

Inventor

E. G. Cox,

D. Swift & Co.

Attorney

1,022,827.

E. G. COX.  
SANDING MACHINE.  
APPLICATION FILED MAR. 29, 1911.

Patented Apr. 9, 1912.  
3 SHEETS-SHEET 3.

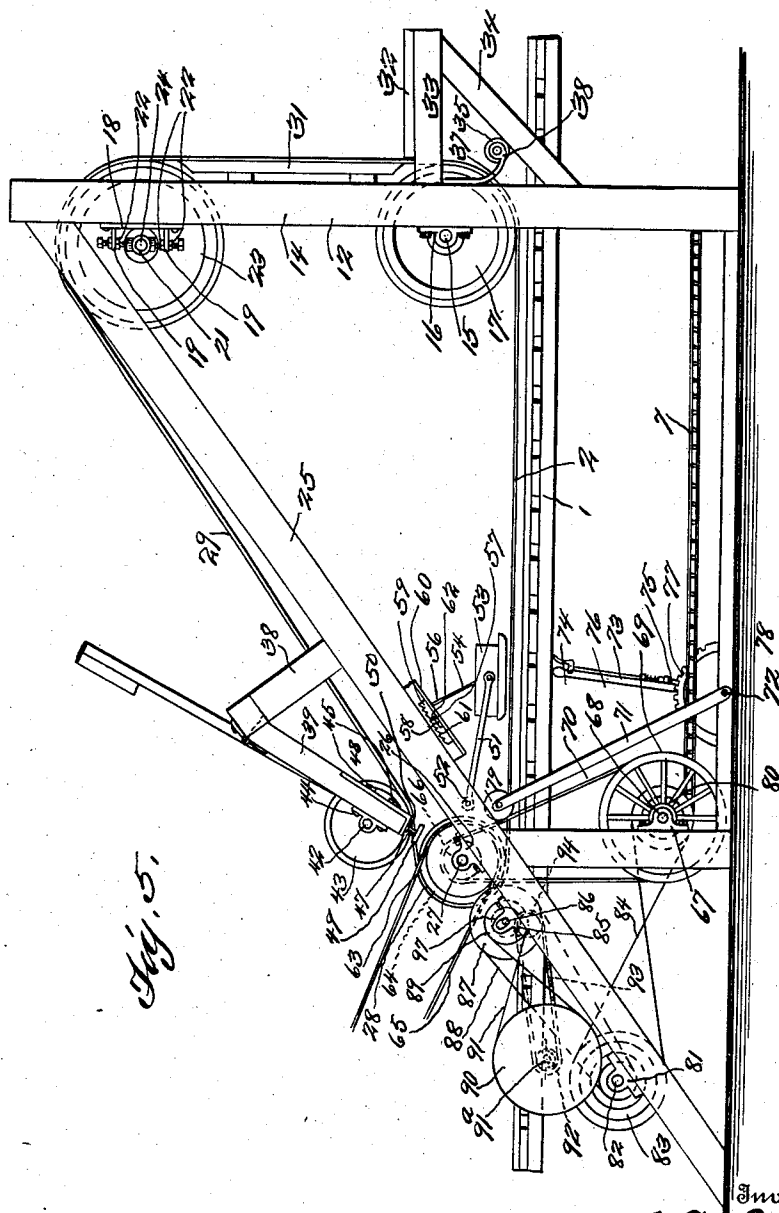


Fig. 5.

Witnesses

Francis L. Powell,  
L. Duran

By

S. Swift & Co.

Attorney

Inventor  
E. G. Cox,

# UNITED STATES PATENT OFFICE.

EDWIN G. COX, OF WALLA WALLA, WASHINGTON.

## SANDING-MACHINE.

1,022,827.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Application filed March 29, 1911. Serial No. 617,769.

*To all whom it may concern:*

Be it known that I, EDWIN G. COX, a citizen of the United States, residing at Walla Walla, in the county of Walla Walla and State of Washington, have invented a new and useful Sanding-Machine; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention belongs to the art of buffing machines and the like, and it particularly pertains to a new and useful sand-papering machine, adapted for abrading, smoothing or polishing plane or substantially plane surfaces, such, for instance, as table tops, flooring, and the like.

This invention relates more especially to machines of that class in which abrading or sanding material is carried by an endless belt running over suitable pulleys, and having means for pressing the belt in contact with the work between the belt and the bed of the machine.

The principal object of the invention is to provide novel means for feeding the work between the endless sanding or abrading belt and the bed of the machine. This feeding means may be arranged so as to feed the work correspondingly with regard to the travel or speed of the sanding belt, that is, no matter how fast or slow the sanding belt may be traveling, the feeding means may be regulated so as to feed the work a little slower than the speed of the sanding belt.

Another object of the invention is to provide means for simultaneously adjusting both ends of the bed of the machine, so as to increase or decrease the contact between the sanding belt and the work.

A further object of the invention is to provide a table or support at one end of the machine, adjacent the vertical portion of the sanding belt, so as to support small blocks, boards and the like, whereby the edges and the ends of the blocks or boards and the like may be smoothed or abraded.

The invention incidentally aims as a further object to provide novel belt tighteners, for the various belts, special reference being

directed to the belt tightener of the sanding or abrading belt. In the belt tightener for the abrading or sanding belt, there exists novel means for adjusting the roller, whereby one side or the other of the sanding or abrading belt may be tightened, or the entire belt properly tightened. Upon an observation of the drawings, it will be evident that this belt tightener automatically tightens the belt, that is, if one side or the other of the sanding belt does not need tightening. In the drawings, however, there is only disclosed one particular form of the invention, but, in practical fields, this form may require alterations, to which the applicant is entitled, provided the alterations are comprehended by the appended claims.

The invention comprises further features and combinations of parts hereinafter set forth, shown in the drawings, and claimed.

In the drawings:—Figure 1 is a view in perspective, showing a sanding or abrading machine constructed in compliance with the invention. Fig. 2 is a view in side elevation of the machine. Fig. 3 is an end elevation. Fig. 4 is a view in detail showing the construction of the mounting of the roller of the belt tightener for the sanding or abrading belt, and clearly illustrating how the roller may be adjusted so as to tighten one side or the other of the sanding belt.

Referring to the drawings, 1 designates the frame of the machine, which is provided with a feed bed 2. This feed bed has projecting below it the extensions 3, one arranged at each end thereof. These extensions have threaded through their lower portions screws 4, the lower ends of which are journaled in bearings 5. Movable with the screws 4 are sprocket wheels 6, over which the sprocket chain 7 travels. One of the screws 4 is provided with a hand wheel 8, by the manipulation of which the screws are simultaneously rotated, which simultaneously adjust both ends of the feed bed. To clamp the feed bed in position, after once having been adjusted, screws 9 are provided, which extend through slots 10 of the extensions, and into the stationary portion of the frame 1, and on one end of the screws 9, hand wheels 11 are mounted, between which

and the frame 1 the extensions are clamped. At one end of the frame 1 of the machine, a standard 12 is arranged, which comprises the two uprights 13 and 14. At the lower 5 portion of the standard 12, a shaft 15 is journaled in bearings 16, and on said shaft a pulley 17 is mounted. At the top portion of the standard 12, a plate 18 is bolted. Projecting from the plate 18 are two arms 19, 10 and journaled in these arms are the projections 20 of a bearing 21. The projections 20 are threaded, and threaded on them are the nuts 22, one located below and above each of the said arms 19. By adjusting the nuts 15 22, the projections 20 may be adjusted up or down through the arms 19. When the projections 20 are so adjusted, the bearing 21 is correspondingly adjusted, which raises or lowers the pulley 23. The pulley 23 is 20 journaled on the shaft 24, which is mounted in the bearing 21. Extending at an inclination from the top of the standard 12 down to the front portion of the frame of the machine are beams 25. Mounted in bearings 25 26 of the beams 25 is a shaft 27, on which a pulley 28 is mounted. Traveling about the pulley 28, the pulley 17 and the pulley 23 is the sanding or abrading belt 29.

In the rear of the vertical portion of the 30 sanding or abrading belt, a backing 31 is arranged, which is supported rigidly with relation to the standard 12. This backing 31 is for the purpose of providing a foundation over which the abrading or sanding 35 belt 29 travels, so that when blocks, boards or the like are held against the sanding surface of the belt 29, a substantial surface is afforded, so that the edges of the blocks or boards may be smoothed. To smooth the 40 edges of such blocks or boards, a table 32 is arranged in front of the sanding or abrading belt. This table 32 is supported by the bracket 33, which is braced with relation to the standard 12 by the angularly arranged 45 member 34.

To hold the work, such as boards and the like, down against the feed bed of the machine, as they leave the space between the sanding or abrading belt and the feed bed, 50 a roller 35 is provided, which is mounted in bearings 36. The bearings 36 are yieldably mounted, as shown at 37.

Projecting laterally of the beams 25 is an offset frame 38. Hinged to the offset 55 frame 38 is a gravitating frame 39, the arms of which are slotted, as at 40. Bearings 41 are arranged slidably adjacent the lower portion of the arms of the gravitating frame 39, in which a shaft 42 is mounted. Journaled on the shaft 42 is a pulley 43. The 60 bearings 41 are adjustably secured to the arms of the gravitating frame 39 by the

bolts 44, which pass through the slots of the arms, and are secured by the nuts 45. Also extending into the slots 40 of the arms are 65 the projections 46 of the bearings 41. Threaded through the projections 46 are the screws 47, which are mounted in the angular plates 48, so as to rotate therein, in a swiveled manner. The screws 47 are provided with hand wheels 49, so as to adjust 70 the screws, and when the screws are adjusted, the bearings 41 may be arranged as desired, that is, when the bolts 44 are loosened.

To hold the screws 47 in place after once 75 being adjusted, lock nuts 50 are provided, the operations of which will be clearly apparent on an examination of the drawings. The pulley 43 engages the sanding or abrading 80 belt 29, in the manner shown in Figs. 1 and 2, so as to automatically hold the sanding or abrading belt tight. This pulley 43 remains in contact with the sanding or abrading belt by the gravitation of the 85 frame 39. It will be clearly understood by those skilled in the art, that either end of the shaft 42 may be adjusted, by adjusting the bearings 41, so that one side edge or the other of the sanding or abrading belt may be 90 tightened or loosened.

To hold the abrading or sanding belt in proper contact with the work, as it passes between the sanding or abrading belt and the feed bed, a gravitating arm 51 is pivoted at 52, and carried by the arm 51 is a 95 weight 53. Connected to the weight 53 is a cable 54, which passes over a pulley 55, the other end 56 of which cable is connected to a lever 57. This lever 57 is pivoted at 58 100 to one of the beams 25, as shown in Fig. 1. The lever 57 passes through a slot 59 of a projecting elongated portion 60 of one of the beams 25. One side of the slot is provided with ratchet teeth 61, with which a 105 metal strip 62 of the lever 57 coöperates, whereby the lever 57 may be held in adjusted positions. When the lever 57 is adjusted one way or the other, the weight 53 is raised or lowered, thus increasing or decreasing the friction between the abrading 110 or sanding belt and the work.

Power may be transmitted to this machine by any suitable means (not shown), 115 which may be belted to one or the other of the loose and fast pulleys 63 and 64, which are mounted upon the shaft 27. When the fast pulley is rotated by means of the belt 65, which is designed to be belted to the source of power (not shown), the abrading 120 or sanding belt is rotated. It is to be understood that one of the objects of the invention is to provide a sanding or abrading belt, which is absolutely endless, that is, without

splices. Also rotatable with the shaft 27 is a flanged pulley 66.

Mounted in bearings 67 of the frame of the machine is a shaft 68, and rotatable with the shaft 68 is a flanged pulley 69. Traveling about the flanged pulleys 69 and 66 is a belt 70. To hold the belt 70 properly tightened, a lever 71 is provided, which extends radially from the rocking shaft 72. At one end of the shaft 72, a lever 73 is arranged, which is provided with a hand grip 74, adapted for the purpose of manipulating the dog 75. This dog 75 is connected to the hand grip by means of a rod 76, and is adapted to cooperate with the teeth 77 of the quadrant 78. By swinging the lever 73 in one direction or the other, the shaft 72 will be rocked, which, in turn, throws the lever 71, at the upper end of which a pulley 78 is carried. By moving the lever 71 toward or away from the belt 70, the contact between the pulley 78 and the belt 70 is increased or decreased, thus tightening or loosening the belt 70.

Carried by the shaft 68 is a cone pulley 80, and mounted in bearings 81 of the beams 25 is a shaft 82 with which the cone pulley 83 is rotatable. Traveling over the cone pulleys 80 and 83 is a belt 84. Journaled in bearings 85 of the beams 25 is a shaft 86, and movable with the shaft 86 is a cone pulley 87, over which and a portion of the cone pulley 83, the belt 88 travels. Also rotatable with the shaft 86 is a pulley 89, about which and the pulley 90 a belt 91 travels. The pulley 90 is carried by and rotatable with the shaft 91, which is mounted in bearings of the frame of the machine. Also rotatable with the shaft 91 is a sprocket 92, over which the sprocket chain 93 travels. This sprocket chain 93 also passes about the sprocket 94, which is mounted on the shaft 95. Movable with the shaft 95 is a feed roller 96, between which and the feed roller 97 the work, such as boards and the like, is fed. It will be seen that by the belt 70 and the flanged pulleys 66 and 69, power may be transmitted to the cone pulleys, the pulley 90 and the feed rollers 96 and 97. It will further be seen that by re-arranging or adjusting the belts 84 and 88, the speed of the feed rollers 96 and 97 may be regulated, so that the work may be fed between the sanding or abrading belt slower than the movement of said sanding belt, no matter how fast the sanding or abrading belt may be traveling.

From the foregoing description, taken in connection with the annexed drawings, it will be clearly manifest that a novel form of sanding or abrading machine has been devised, and one which is found to be practi-

cable and capable of fulfilling all the requirements in this particular art of industry.

The invention having been set forth, what is claimed as new and useful is:—

1. In combination, a plurality of pulleys, a sanding or abrading belt traveling about the pulleys in triangular outline, a gravitating arm, a weight thereon, a cable connected to the weight and passing over a pulley, and means connected to one end of the cable by which the weight and the arm may be raised or lowered, thus increasing the friction between the belt and the work.

2. In combination, a frame, a plurality of pulleys mounted in bearings thereof, an endless sanding belt traveling about the pulleys in triangular outline and having a vertically arranged traveling portion, a backing for said vertically arranged traveling portion, and a table arranged in front of the vertically arranged traveling portion.

3. In combination, a frame, a plurality of pulleys mounted in bearings thereof, a sanding belt traveling about the pulleys, said frame having a feed bed provided with downwardly extending projections, screws threaded vertically through the projections and provided with sprocket wheels having a sprocket chain connection, means carried by one of the screws for simultaneously adjusting both of the screws, whereby both ends of the feed bed may be simultaneously adjusted vertically toward or away from the sanding belt, screws passing through the projections at right angles to the first screws and threaded into the frame, hand wheels carried by the second screws between which and the frame the feed bed may be clamped after once having been adjusted vertically, said projections having slots through which the second screws pass, in order to permit the feed bed to be adjusted vertically.

4. In combination, a frame, a plurality of pulleys, mounted in bearings thereof, an endless sanding belt traveling about the pulleys in triangular outline and having a vertically arranged traveling portion, a backing for said vertical traveling portion, a table arranged in front of the vertical traveling portion, the sanding belt having a horizontally arranged traveling portion, a feed bed thereunder, the horizontal traveling portion acting to smooth the flat surfaces of the work, while the vertical traveling portion acts to smooth the end of the work, the two functions performed by the belt being carried on simultaneously.

5. In combination, a frame having a plurality of pulleys, a sanding belt traveling about the pulleys in triangular outline and

having a horizontally traveling portion, a  
gravitating arm, a weight thereon adapted  
to contact with the upper face of the sand-  
ing belt to increase the friction between the  
5 belt and the work, a pivoted lever on the  
frame, the frame having an elongated off-  
set portion provided with a slot through  
which the lever extends, the elongated off-  
set portion having ratchet teeth to be en-  
10 gaged by the lever, a pulley journaled on  
the frame, and a cable connection passing

over the pulley and connecting the lever and  
the weight, the lever constituting means for  
raising and lowering the weight.

In testimony whereof I have signed my 15  
name to this specification in the presence of  
two subscribing witnesses.

EDWIN G. COX.

Witnesses:

L. B. BURROUGHS,  
H. C. BRYSON.

---

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."

---