March 6, 1934. D. TURCOTT 1,949,700

BELT SANDER

Filed July 29, 1929 2 Sheets-Sheet 1

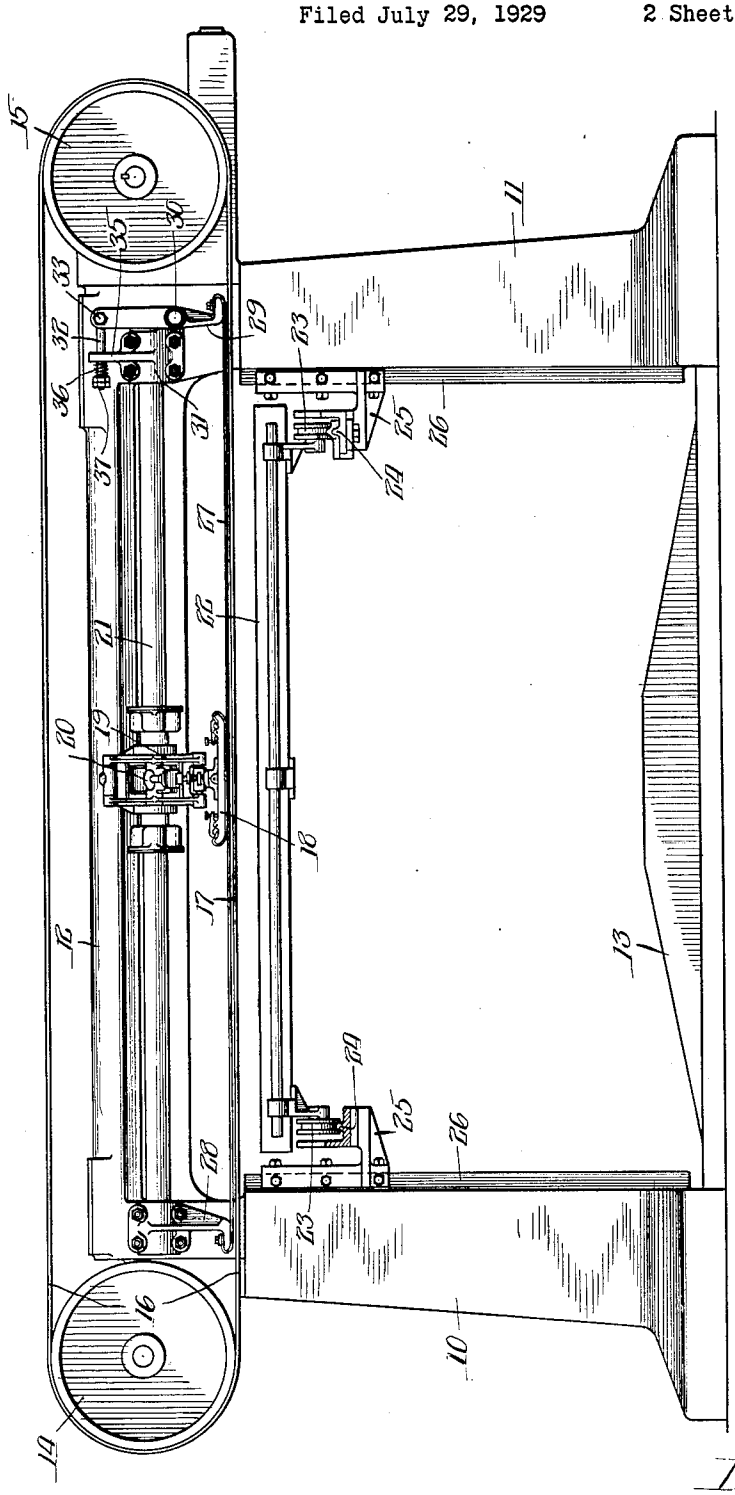


Fig. 1

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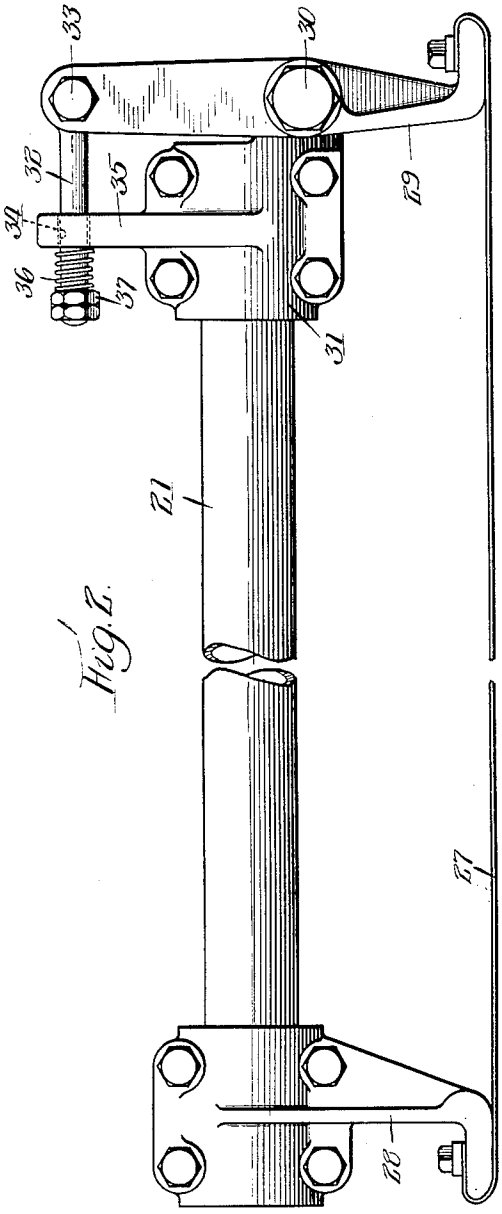


Fig. 2.

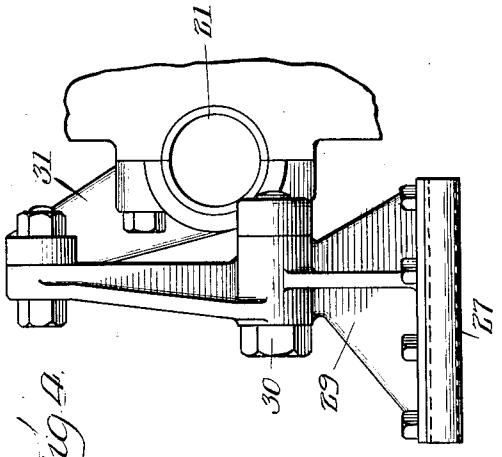


Fig. 4.

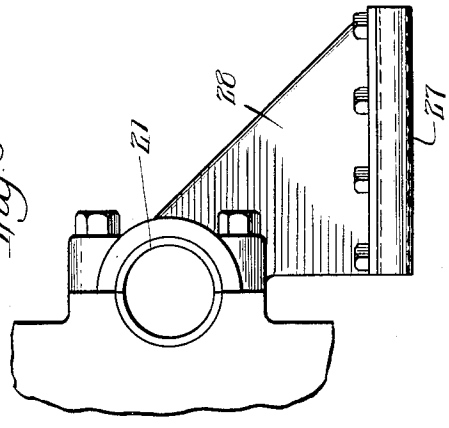


Fig. 3

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UNITED STATES PATENT OFFICE

1,949,700

BELT SANDER

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Application July 29, 1929, Serial No. 381,709

6 Claims. (Cl. 51—141)

This invention has to do with sanding machines, and is particularly concerned with machines of the type known as belt sanders, in which a rapidly traveling belt of suitable sanding material is pressed against the surface of the work by means of a small padded shoe manipulated by the operator.

The principal object of the invention is to provide improved means in a belt sander for relieving the pressure shoe from the pull of the belt during the sanding operation without sacrificing any of the fine hand stroke sanding effects obtainable when such a shoe is skillfully used in direct contact with the belt.

Other objects and advantages of the invention will be apparent to those skilled in the art upon a full understanding of the construction, arrangement and operation of the improvement constituting the subject-matter of the invention.

In order that the invention may be readily understood, one form of the same is herein illustrated and described, but it will of course be appreciated that the invention is capable of embodiment in other structurally modified forms coming equally within the scope of the appended claims.

In the accompanying drawings:

Fig. 1 is a front view of a belt sander equipped with the improvement of the invention;

Fig. 2 is a detailed front view of the support for the stationary strip or soft flexible material positioned between the pressure shoe and the sanding belt;

Fig. 3 is an end view of the stationary bracket to which one end of the strip is attached; and

Fig. 4 is an end view of the spring-pressed bracket to which the other end of the strip is attached.

The belt sander shown in the drawings is of the same general construction as that illustrated and described in Young Patent No. 1,684,464, and therefore need not be described here in detail. Briefly, the frame of the machine is made up of vertical end columns 10 and 11 which are rigidly connected together by horizontal top and bottom girts 12 and 13. The frame carries an idling pulley 14 at one end and a driven pulley 15 at the other end, about which pulleys a sanding belt 16 is trained with the lower operating stretch 17 of the belt in a substantially horizontal plane.

A padded pressure shoe 18 is positioned directly above the lower stretch 17 of the belt and is mounted on a carriage 19 in such a way as to be moved up or down by means of a forwardly extending operating handle 20. The carriage 19 is in turn mounted on a rod 21 in such a way as to be slid horizontally with the handle 20 from one end of the rod to the other, whereby to allow the shoe 18 to be moved downwardly toward the lower stretch of the belt at any point lengthwise thereof.

A work-supporting platform 22 is positioned below the lower stretch 17 of the belt and is mounted on rollers 23 which ride upon rearwardly extending tracks 24. The tracks 24 are carried by brackets 25 which are mounted in guides 26 for simultaneous vertical movement toward or away from the lower stretch of the belt.

The features thus far described are more or less typical of the ordinary belt sander. The present invention resides in the novel provision, between the pressure shoe 18 and the lower stretch 17 of the belt, of a longitudinally extending strip 27 of soft, flexible material which is normally maintained by spring tension in slightly spaced relation to the belt.

The strip 27 is of about the same width as the belt and is normally disposed in slightly spaced parallel relation to the same. It is preferably made of canvas, and is waxed and graphited to reduce the friction, but it may be made of any other strong fabric or fibre material which is both soft and flexible. Sheet metal is not suitable for this purpose, however, as it is not soft and is not sufficiently flexible to give the operator the proper feel with the pad.

The end of the strip 27 adjacent the idling pulley 14 is attached to a stationary bracket 28 which is mounted on the rod 21, while the end of the strip adjacent the driven pulley 15 is attached to a movable arm 29 which is pivoted at 30 to a bracket 31 mounted on the rod. A bolt 32 is pivoted at 33 to the upper end of the arm 29 and extends through an aperture 34 in a projection 35 on the bracket. A spring 36 is compressed on the bolt between the projection 35 and an adjustably positioned nut 37 and serves to hold the strip 27 sufficiently taut to prevent it from sagging onto the lower stretch of the belt.

The strip 27 entirely relieves the pressure shoe 18 from the pull of the lower stretch 17 of the belt, and permits the shoe to be moved longitudinally in both directions with equal facility. When the shoe is shifted downwardly to bring the section of the belt therebeneath into contact with the work, the spring 36 yields enough to permit the portion of the strip between the shoe and the belt to move downwardly with the shoe. The spring 36 also serves to prevent any fullness

developing in the strip when the shoe is moved back and forth along the same.

I claim:

1. In a belt sander, a pair of pulleys, a sanding belt trained over the pulleys, a movable pressure shoe above the lower stretch of the belt, a work support below the lower stretch of the belt, a strip of soft, flexible material extending lengthwise of the lower stretch of the belt between the latter and the shoe, and spring means for normally maintaining the strip in slightly spaced relation to the belt.

2. In a belt sander, a pair of pulleys, a sanding belt trained over the pulleys, a movable pressure shoe above the lower stretch of the belt, a work support below the lower stretch of the belt, and a spring-tensioned strip of soft, flexible material extending lengthwise of the lower stretch of the belt between the latter and the shoe.

3. In a belt sander, an idling pulley, a driven pulley, a sanding belt trained over the pulleys, a movable pressure shoe above the lower stretch of the belt, a work support below the lower stretch of the belt, a stationary bracket above the lower stretch of the belt adjacent the idling pulley, a spring-tensioned arm above the lower stretch of the belt adjacent the driven pulley, and a strip of soft, flexible material connected to and extending between the bracket and the arm lengthwise of the lower stretch of the belt between the latter and the shoe for engagement with the belt upon downward movement of the shoe.

4. In a belt sander, a pair of pulleys, a sanding belt trained over the pulleys, a movable pressure shoe above the lower stretch of the belt, a work support below the lower stretch of the belt, and a spring-tensioned convas strip extending lengthwise of the lower stretch of the belt between the latter and the shoe for relieving the shoe of the pull from the belt without modifying the action of the shoe on the belt.

5. In a belt sander, an idling pulley, a driven pulley, a sanding belt trained over the pulleys, a movable pressure shoe above the lower stretch of the belt, a work support below the lower stretch of the belt, a stationary bracket above the lower stretch of the belt adjacent the idling pulley, a pivotally mounted arm above the lower stretch of the belt adjacent the driven pulley, a strip of soft, flexible material positioned lengthwise of the lower stretch of the belt between the latter and the shoe and connected at one end to the stationary bracket and at the other end to the lower free end of the arm, and a spring connected with the arm for urging the lower free end of the latter in a direction away from the stationary bracket whereby to maintain the strip taut while permitting the same to yield downwardly toward the belt upon application of pressure thereto by the shoe.

6. In a belt sander, a pair of pulleys, a sanding belt trained over the pulleys, a movable pressure shoe above the lower stretch of the belt, a work support below the lower stretch of the belt, a strip of soft, flexible material extending lengthwise of the lower stretch of the belt between the latter and the shoe, and spring means for normally maintaining the strip in slightly spaced relation to the belt, said spring means being located at that end of the strip toward which the lower stretch of the belt moves and acting longitudinally on the strip in the direction of movement of the lower stretch of the belt.

DAVID TURCOTT.