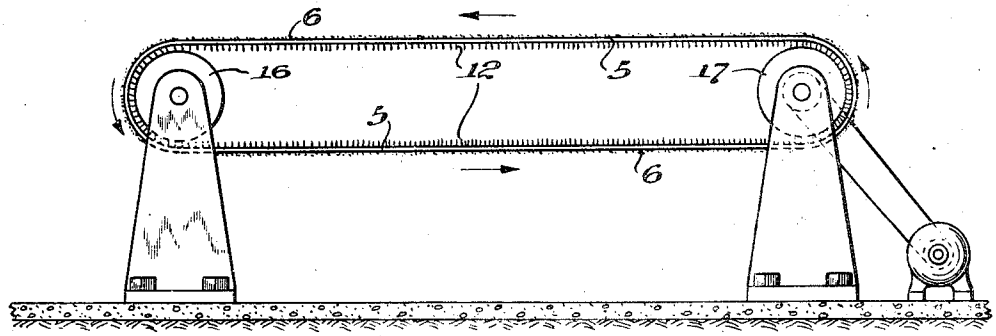
Sept. 27, 1949. R. G. MINARIK ET AL. 2,483,293

ABRASIVE AND BUFFING BELT

Filed Jan. 8, 1948

Fig. 1.



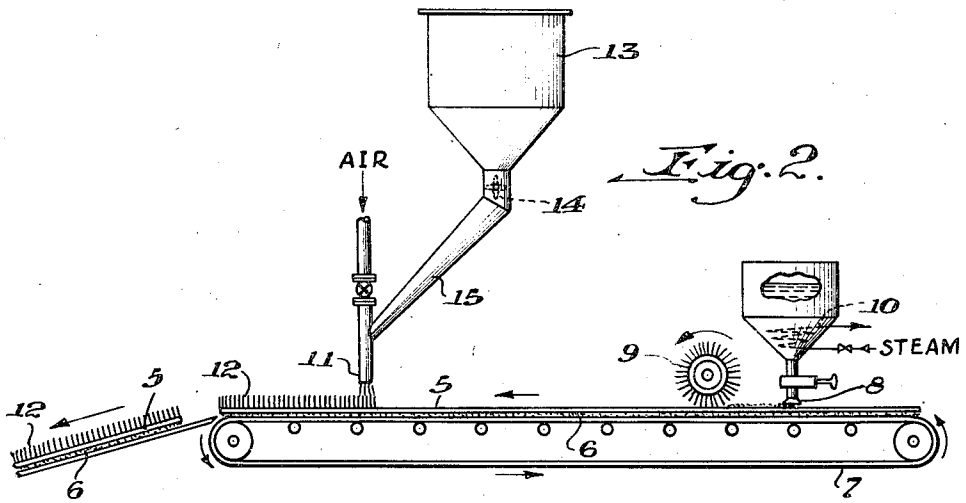


Fig. 2.

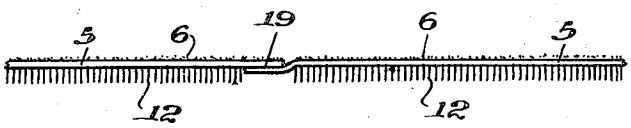


Fig. 3.

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ABRASIVE AND BUFFING BELT

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3 Claims. (Cl. 51—188)

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Our invention relates to surfacing belts such as are used in the grinding and buffing of various articles or utensils of metal or other materials wherein the work is held against the belt as the belt passes around a roll or drum.

In surfacing apparatus of this character, solidly mounted and unyielding rolls tend to cause chattering and unevenness of finishing surface on the work, partly because of variation in pull on the belt while the work piece is engaged therewith. Heretofore, attempts have been made to overcome this objection by having a hard-bodied peripheral surface on the roll and cushioning material between said surface and the hub of the roll or between the hard peripheral member and the roll shaft. These devices have not been entirely satisfactory partly because the drums tend to deform slightly under centrifugal forces, because of slight radial shifting of the hard peripheral member relative to the roll shaft, especially in the larger sizes, and they are expensive.

Our invention has for its object the provision of a surfacing belt of such form that it can be used on rigid rolls or pulleys without the objectionable features of the solid rolls heretofore employed and which also possesses advantages over the cushioned belt supporting surfaces as heretofore used, in that the belt inherently possesses the quality of yieldability to tensional stresses at the pulleys, thus relieving belt strains and avoiding chatter marks, and which also possesses the property of cushioning the pressures of work pieces on the belt.

A further object of our invention is to provide a belt which can be utilized for grinding and also for buffing, in that the opposite faces of the belt can be selectively exposed to the work.

Another object of our invention is to provide a belt which has an improved buffing surface on one side, and is usable in that manner whether or not the other side contains a surfacing material.

In the accompanying drawing, Figure 1 shows a conventional manner of mounting a surfacing belt such as that which we employ; Fig. 2 is a schematic view showing the manner in which cushioning and buffing material may be applied to one surface of an abrading belt, and Fig. 3 is an enlarged edge view showing the manner in which the belt is formed at the ends of a belt strip which are secured together to form the belt loop.

The belt strip or body 5 can be made of paper, cloth or other flexible material and is coated on one side with the usual abrasive grains 6. The

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belt strip 5 is moved by a conveyor 7 or other suitable means past an adhesive-applying spout at 8, the deposited adhesive being here shown as spread upon the belt by a rotating brush 9. The adhesive is preferably one of the well known non-hardenable types and is rendered fluid for distribution upon the belt by a steam-heated coil at 10, or other heating device.

The coated portion of the belt is advanced past an air-blast nozzle 11, or a group of such nozzles to which air under pressure is supplied from a suitable source. The air blast serves to blow flock 12 against the adhesive. Flock material such as short lengths of various fibers of cotton, wool, rayon, etc., can be used. The flock will be deposited mainly in an endwise position against the belt because the air blast will tend to orient it in that manner and will preferably be deposited thickly on the belt, although it is here shown as rather thinly deposited, for clarity of illustration.

The flock or short fibers which may suitably be about ¼ inch in length is supplied from a bin 13, the material being fed from said bin by a rotating spider or comb 14 so that it will slide down a chute or spout 15 in an unmatted condition and be then caught by the air stream and blown against the belt. The lengths of the fibers will be varied, according to the degree of resilience desired. The belt strip may be of great length when the flock is being applied thereto, and then cut to the desired lengths, or it can be fed through in the form of desired completed belt lengths. Also the granules 6 may be applied either before or after the flock 12 has been applied thereto.

The flock will serve to cushion somewhat the pressure of the work pieces that may be applied against the belt either at the roll 16 or the pulley 17, so that there is less danger of abnormally large grains of abrasive cutting unduly deep into the metal. Also, the flock yields in directions parallel with the belt travel to damp or absorb sudden tensional forces. The flock-coated belt is particularly useful in connection with abrasive grains in the smaller sizes, such as about 600 grain size, to give desired softness for good finishes, although it will be used with abrasive grains of other sizes.

In order to reduce vibrations or uneven movement of the belt, the flock will be omitted from the belt at the zone where the ends of the belt strip are overlapped, as shown at 19 in Fig. 3, thus avoiding or reducing the "bumping" effect usually present with spliced belts.

Another feature of importance resides in the

fact that the belt can be reversed or turned inside out, so that the flock will be outwardly exposed for engagement with the work pieces, to perform buffing operations. This reversal of position however, will usually be only after the granule coating has been worn down. Also, if the belt is to be used only for buffing, it will be flock-coated on only one face, for engagement with the work, and the grit omitted from its other face.

We claim as our invention:

1. An endless surfacing belt having an abrasive coating on one face thereof and provided throughout substantially its entire other face with fibers, the major number of which are cemented only at one end to the belt, the fibers being not greater than approximately one-quarter inch in length and for the most part normally extending in perpendicular relation to the plane of the belt.

2. An endless surfacing belt having an abrasive coating on one face thereof and provided throughout substantially its entire other face with fibers, the major number of which are not greater than approximately one-quarter inch in length and cemented only at one end to the belt.

3. An endless surfacing belt having an abrasive coating on one face thereof and provided throughout substantiallly its entire other face with fibers, the major portion of which are not greater than approximately one-quarter inch in length and cemented only at one end to the belt, the belt having a splice joint and fibers being omitted at said joint.

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