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J. C. DE PENNING

SANDING MACHINE

Filed May 27. 1926

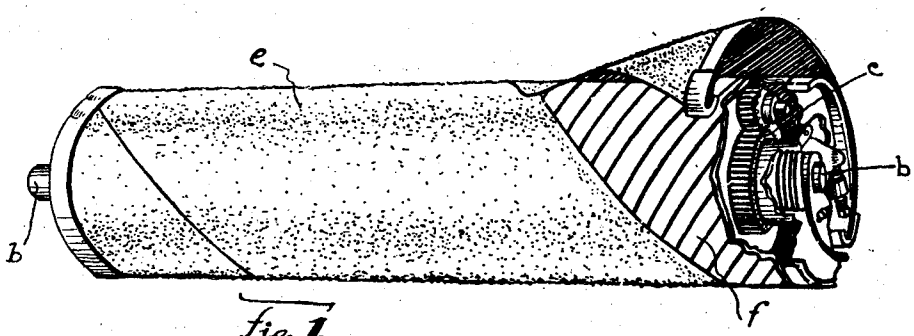


fig. 1

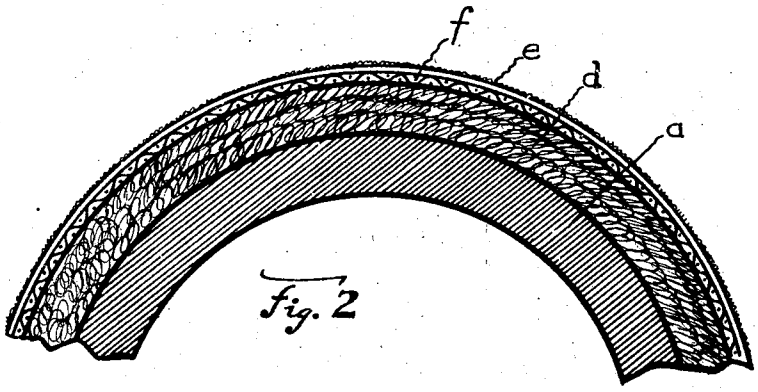


fig. 2

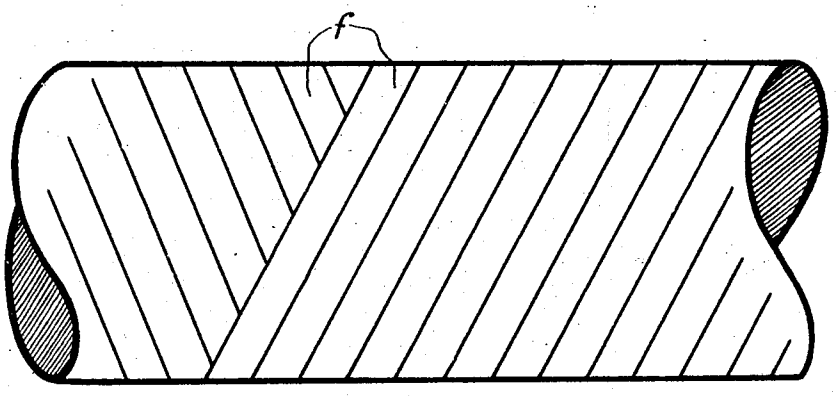


fig. 3

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UNITED STATES PATENT OFFICE.

JOHN C. DE PENNING, OF PORTLAND, OREGON.

SANDING MACHINE.

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My invention relates to the rolls in a sanding machine, used in woodworking, which rolls are covered with felt or other resilient materials serving as a cushion for the sand paper.

It is common practice at the present time to bind said felt or other resilient material to the roll by a wire or by a canvas covering. Wire is disadvantageous not only for the reason that grooves must be cut about the periphery of the roll into which said wire may seat, but also for the reason that such wire does not protect the felt against tearing. That is, a splinter which will tear through the sandpaper, will also tear the felt covering and require its replacement.

A canvas covering for the felt is disadvantageous because of its tendency to slip upon the felt, its bulk tends to stiffen or nullify the cushioning effect of the felt and also a canvas covering provides less frictional grip for the sandpaper or other abrasive material.

I have discovered that the advantages of both modes of binding the felt to the roll may be attained without involving the disadvantages of either, by binding the felt to the roll by friction tape. Said tape preferably is wound spirally about the roll for its entire length, the successive courses being arranged in abutment without overlapping, and the tape is preferably wound about the roll in two layers, one over the other, the layers being wound opposite hand to each other, so that the frictional contact of the overlapping tape portions will prevent the rotation of the roll from spreading the courses of binding tape apart.

My invention is hereinafter described in greater detail, with reference to the accompanying drawings in which:

Fig. 1 is an elevation of the roll with a portion of the sandpaper lifted up and other parts shown broken away to show details of the felt wrapping and its slack take-up devices;

Fig. 2 is a fragmentary section taken thru the roll with the various layers shown diagrammatically, but with their thicknesses exaggerated; and

Fig. 3 is a fragmentary diagrammatic view illustrating the manner in which the friction tape is wrapped about the roll showing a portion of two layers, wrapped opposite hand, over the felt.

Sander rolls preferably are made up of a series of sheaves or drums *a* mounted about a common central shaft *b* and provided with devices *c* for taking up the play or stretch in the various coverings therefor.

Wound about the periphery of the sheaves or drums *a* is a layer of felt *d* which provides resiliency for the sandpaper *e* which constitutes the active outer abrasive surface of the roll. Inasmuch as the roll attains considerable rotary speed the felt must be bound firmly to the sheaves or drums *a* and thus it is common practice either to bind the felt to the drums by piano wire, or by fitting over the felt a tight fitting wrapper-like canvas jacket.

My invention consists in substituting for said common binding means a continuously wound strip of friction tape *f* preferably arranged so that the adjacent edges of the succeeding courses are in abutment without overlaping. This eliminates any raised portions which would tend to cause the sandpaper *e* to become worn unevenly.

As shown in Fig. 3 I preferably arrange the friction tape in two layers one over the other and wind the same opposite hand so that the adjacent surfaces of the frictional tape will stick together, to prevent the longitudinal displacement of the spiral courses under the action of the roll in operation.

In practice I find that friction tape approximately 1½ inches wide is the most convenient width. Wider tape tends to buckle somewhat and narrower tape makes the wrapping operation more difficult because of the greater number of courses to be laid. Friction tape when applied is quite "tacky" and grips the upper surface of the felt so firmly that it is not displaced when the roll is used and the adjacent surfaces of the layers of tape also tend to stick tightly together to prevent their relative slippage.

The fine dust thrown from the work operated upon, however, soon glazes the exposed surface of the outermost layer of tape, and allows the sandpaper to slide easily upon said surface and enables the slack taking up devices to function properly to prevent "pouching" or "bulging" of the sandpaper.

The glazed surface of the friction tape, caused by dust lodging upon and adhering to said "tacky" surface, also forms a protecting sheathing for the felt which sheathing will turn, effectively, splinters that will puncture and tear the sandpaper covering. That is, the exposed surface of friction tape

soon glazes with use and presents virtually a tear-proof covering, but one which readily yields with the felt.

I claim:

1. In a sander roll of the character described, means for fastening a resilient covering to the drum portion thereof, comprising a relatively narrow strip of adhesive tape wound in a series of laterally adjacent convolutions about such covering, whereby each convolution of tape is adhesively bound to the covering to form a continuous protective sheathing for such covering in which the convolutions individually hold the covering.

2. In a sander roll of the character described, means for fastening a resilient covering to the drum portion thereof, comprising a relatively narrow strip of adhesive tape wound in two series of laterally adjacent convolutions, one over the other and about such covering, and opposite hand to each other, whereby each convolution of tape in the inner series is adhesively bound to the covering, and each convolution of the outer series is bound to the inner series to form a continuous protective sheathing for such covering in which the convolutions individually hold the covering.

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