Dec. 23, 1930. H. F. BUSCH 1,786,190

FRICTION SURFACE

Filed April 28, 1926

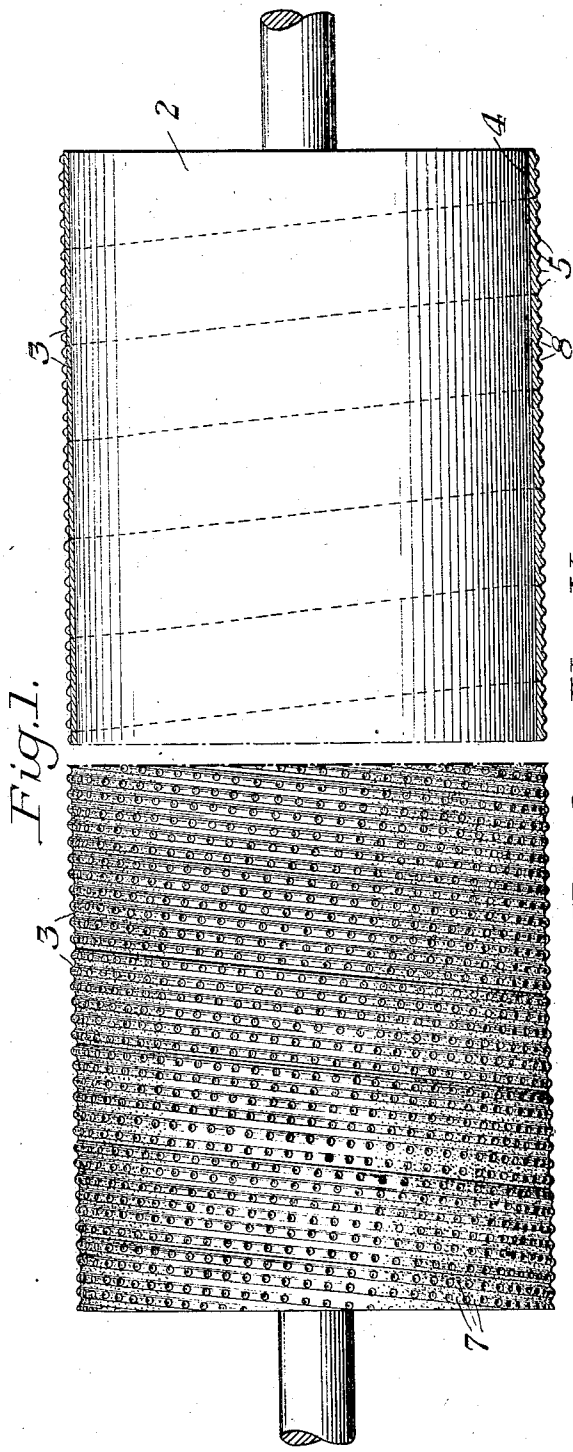


Fig. 1.

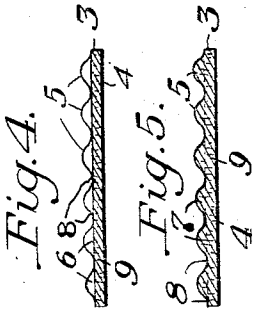


Fig. 4.

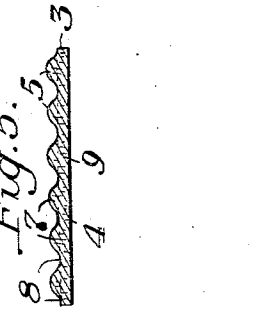


Fig. 5.

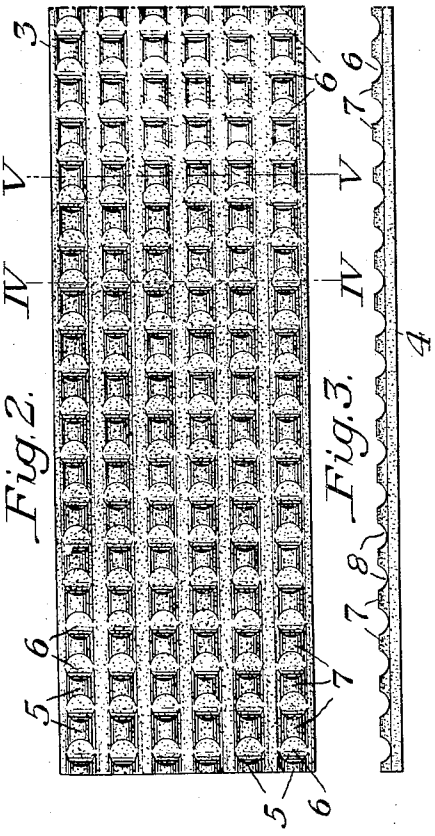


Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE

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FRICTION SURFACE

Application filed April 28, 1926. Serial No. 105,200.

This invention relates to a friction surface and is particularly adaptable to the covering for the take-up roll of a loom.

The take-up roll of a loom takes the cloth after it is woven and draws it through the loom to keep the proper tension on the warp threads. Heretofore, sand paper covered rolls have been commonly used for this purpose, or rolls which have been made of sheet metal punctured to have outstanding protrusions somewhat similar to an ordinary nutmeg grater. These rolls have been objectionable in that they have a tendency to roughen fine goods and pull up the threads. Further difficulties are encountered in the use of these metal rolls, roughened as indicated, in that provision must be made to change the roll for different qualities and weights of cloths, because one sheet metal roll may be too rough for a finer quality of cloth, although it may be usable on heavier goods.

I provide a frictional surface, applicable to such rolls, which will give the proper grip on the cloth, and which will be applicable to the finer goods without danger of roughening the goods or pulling up the threads. I obtain improved frictional qualities combined with smoothness of operation by the use of a cork surface which has been indented to form an irregular or bumpy surface.

In the accompanying drawings illustrating the present preferred embodiment of the invention,—

Figure 1 is a side elevation of a loom take-up roll embodying my invention;

Figure 2 is a top plan view of the cork friction strip employed;

Figure 3 is a side elevation of the strip shown in Figure 2;

Figure 4 is a sectional view on the line IV—IV of Figure 2; and

Figure 5 is a cross section on the line V—V of Figure 2.

Referring to the illustrated embodiment, Figure 1 shows a roll 2 having a friction surface strip 3 made according to my invention wound helically thereon, the strip 3 being cemented to the roll 2 by any suitable adhesive. The strip 3 is preferably made comparatively narrow, so that its inner surface 4 may be made to conform quite closely to the surface of the roll 2. In practice a width of about two inches has been found to be satisfactory, but this width may be varied as desired depending upon the diameter of the roll 2, ease of application and convenience of manufacture of the strip.

As shown in Fig. 2, the frictional surface is preferably formed by a strip of cork having a regular, undulatory surface from which ridges have been cut at spaced intervals. The strip of cork is of indeterminate length, and is cut from a block of compressed artificial cork so that the planes of compression of the cork granules are at an angle, preferably normal, to the surface.

The artificial cork is composed of granulated cork pressed and held in a solid resilient mass by means of an elastic binder. Any of the usual formulæ for making artificial cork may be followed but preferably that of the Busch Patent 1,532,682 of April 7, 1925. The strip is cut from a block of artificial cork so that the flattened granules are normal to the flat surface of the cut strip as described in said Busch Patent 1,532,682. While the cork strip may be otherwise cut, it is of advantage to have the pressed flattened cork granules disposed edgewise to the working surface, as this arrangement of the granules gives better wear resisting qualities to the surface as more fully described in said Busch patent. The strip 3 thus formed is then cut to form a plurality of parallel ridges 5 extending longitudinally on the strip and being spaced substantially equidistant across the strip. The ridges are then cut away at spaced intervals to form notches 6, thereby forming substantially regularly spaced projections 7. It will be understood that the regularity of spacing of the projections 7 presents a method of making the surface whereby a large number of projections are obtained on a relatively small area by a simplified process of manufacture.

The number of projections the surface is of more importance than the particular geometrical arrangement employed.

As shown in Figures 3 and 5, valleys 8 be-

tween the ridges 5 and the notches 6 between the projections 7 are cut to such depth that the remaining solid portion 9 has a thickness substantially equal to the height of the projections 7. It is obvious that any other thickness may be employed for the solid portion 9 which will leave the strip strong and at the same time be economical with material; in practice the above proportion has been found to give good results.

The improved frictional surface above set forth is applicable not only to a take-up roll but also to a measuring roll or other frictional device where no slippage can be tolerated.

I thus provide an improved frictional surface particularly adaptable to friction rolls which engage a material which is to be securely gripped, but which must not be roughened or torn apart.

I further provide a frictional surface which is free from sharp edges, and which may, therefore, be employed for engaging fine cloth as well as for heavier goods. Additionally, the surface is supplied, preferably, in convenient strips which may be readily applied to various frictional devices.

While I have illustrated and described the present preferred embodiment of my invention, it will be understood that the invention is not limited to the details above set forth, but that the invention may be otherwise embodied within the scope of the following claims.

I claim:

1. A compressed artificial cork body having a plurality of integral projections thereon forming an irregular frictional surface, the planes of compression of the cork granules being at an angle to the working surface at the top of the projections.

2. A frictional roll for cloth having a compressed artificial cork frictional surface thereon, from which projects a plurality of integral spaced cloth engaging portions, the granules of the artificial cork being flattened and being so disposed that the planes of the granules extend at a substantial angle to the cloth engaging surface of the projecting portions.

3. A take-up roll for a loom having a compressed artificial cork frictional surface provided with a plurality of integral cloth engaging projections, the granules of the artificial cork being flattened and being so disposed that the planes of the granules extend at an angle substantially normal to the working surface of the roll.

4. A frictional roll for cloth comprising a body having a strip of cork wound thereabout to form a cloth engaging surface, the strip having projections thereon arranged in rows lying substantially parallel with the length of the strip, the strip being helically wound on the body whereby the projections are helically arranged on the surface of the roll.

5. A frictional roll for cloth comprising a body having a strip of cork wound thereabout so as to form a cloth engaging surface, the strip having projections formed on its surface in rows substantially perpendicular to the length of the strip, the strip being wound in a helical manner on the body whereby the projections in a row lie in non-axial relation to one another.

In testimony whereof I have hereunto set my hand.

HERMAN F. BUSCH.