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O. BUTLER

PROCESS OF TREATING METAL FRICTIONAL SURFACES

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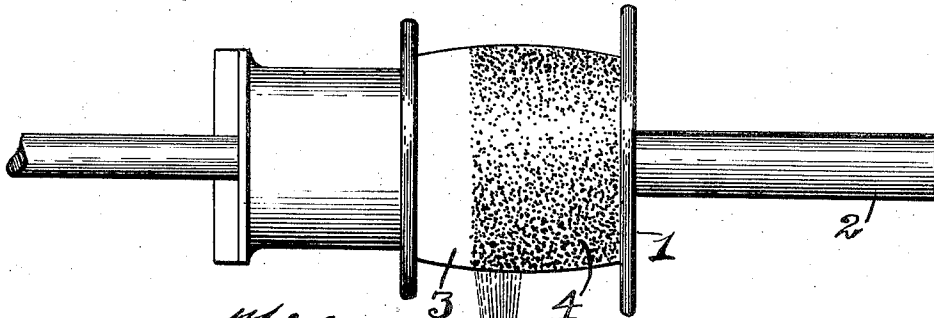


Fig. 1.

Fig. 2.

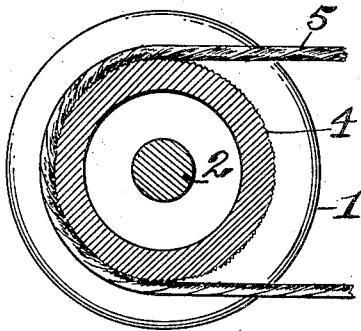
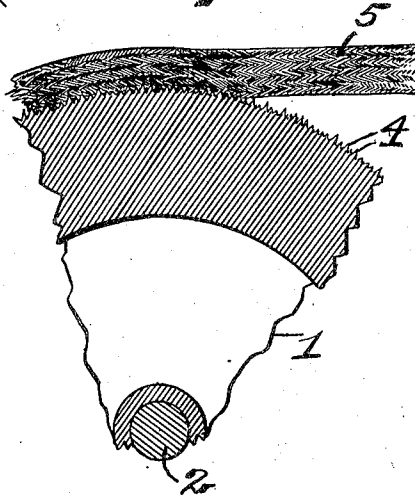


Fig. 3.



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PROCESS OF TREATING METAL FRICTIONAL SURFACES.

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This invention relates to a process of treating metal frictional surfaces, and the object of the invention is the construction of a simple, effective and efficient metal frictional surface that includes certain specific means for increasing the power which the metal frictional surface transfers to the surface coming in contact with it, and for increasing the "hold" and "grip" which the metal frictional surface has upon the material that comes in touch with it, thus rendering the metal frictional surface more efficient and useful.

With this and other objects in view, my invention comprises certain novel constructions, finishings, and treatments of metal frictional surfaces as will be hereinafter described, illustrated in the accompanying drawings and more particularly pointed out in the appended claim.

In the drawings:

Figure 1 is a view in elevation of a metal frictional surface upon a spindle, showing the process of uniformly roughening-up the entire surface of the element, in accordance with the present invention.

Figure 2 is a sectional view of a rotatable element, preferably in a knitting machine, showing a strand of yarn passing over or around the element, while

Figure 3 is an enlarged fragmentary view of the element shown in Figure 2, for illustrating the manner of engagement, and the gripping action of the yarn and element.

Referring to the drawings by numerals, 1 designates the rotatable element or pulley, on spindle 2, said pulley having its smooth surface, as shown at 3, roughened-up by, preferably, a direct sand blast, playing upon the surface to cause a uniform, minute pitting or roughening-up of the surface, as at 4, better shown in Figure 3, for slightly entering the yarn or strand 5 for the purpose hereinafter more fully explained. I have illustrated the specific process in Figures 1 to 3, whereby my invention is reduced to practice, which causes metal frictional surfaces to be roughened sufficiently to increase

the "hold" or "grip" upon the material coming in contact with them, but not enough to eat into, wear away and destroy the material engaged.

The advantage of my process of a roughened metal frictional surface lies in the fact that the roughened surface holds the matter that comes in contact with it from slipping; and, therefore, if the contact is for the purpose of transmitting power, as by an ordinary belt (not shown) by doing away with the slipping, more power is transferred. If the matter that comes in contact with it is pulled and drawn, as is the thread and yarn illustrated in Figures 2 and 3, then it pulls or draws the thread more certainly and increases the amount thrown.

Another advantage is that it prevents the surface that comes in contact with the metal frictional surface from slipping off sideways, as a belt slipping off the pulley, or the yarn slipping over the apex of a cone (not shown). These roughened surfaces are more effective than other regularly circumferential strips of nurling spaced laterally one from the other and extending across the rim surface and are an improvement thereover.

While I have described the preferred embodiment of my invention and have illustrated the same in the accompanying drawings, certain minor changes or alterations may appear to one skilled in the art to which this invention relates during the extensive manufacture of the same, and I, therefore, reserve the right to make such changes or alterations as shall fairly fall within the scope of the appended claim.

What I claim is:

The process of treating metal frictional surfaces, comprising subjecting the smooth travelling-element engaging surface of a rotary element to a sand blast to cause a uniform pitting or roughening-up of said smooth surface.

In testimony whereof I hereunto affix my signature.

OBADIAH BUTLER.