Oct. 7, 1930. G. WILSON 1,777,457

SILK WARP OIL SATURATOR

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Fig. 1.

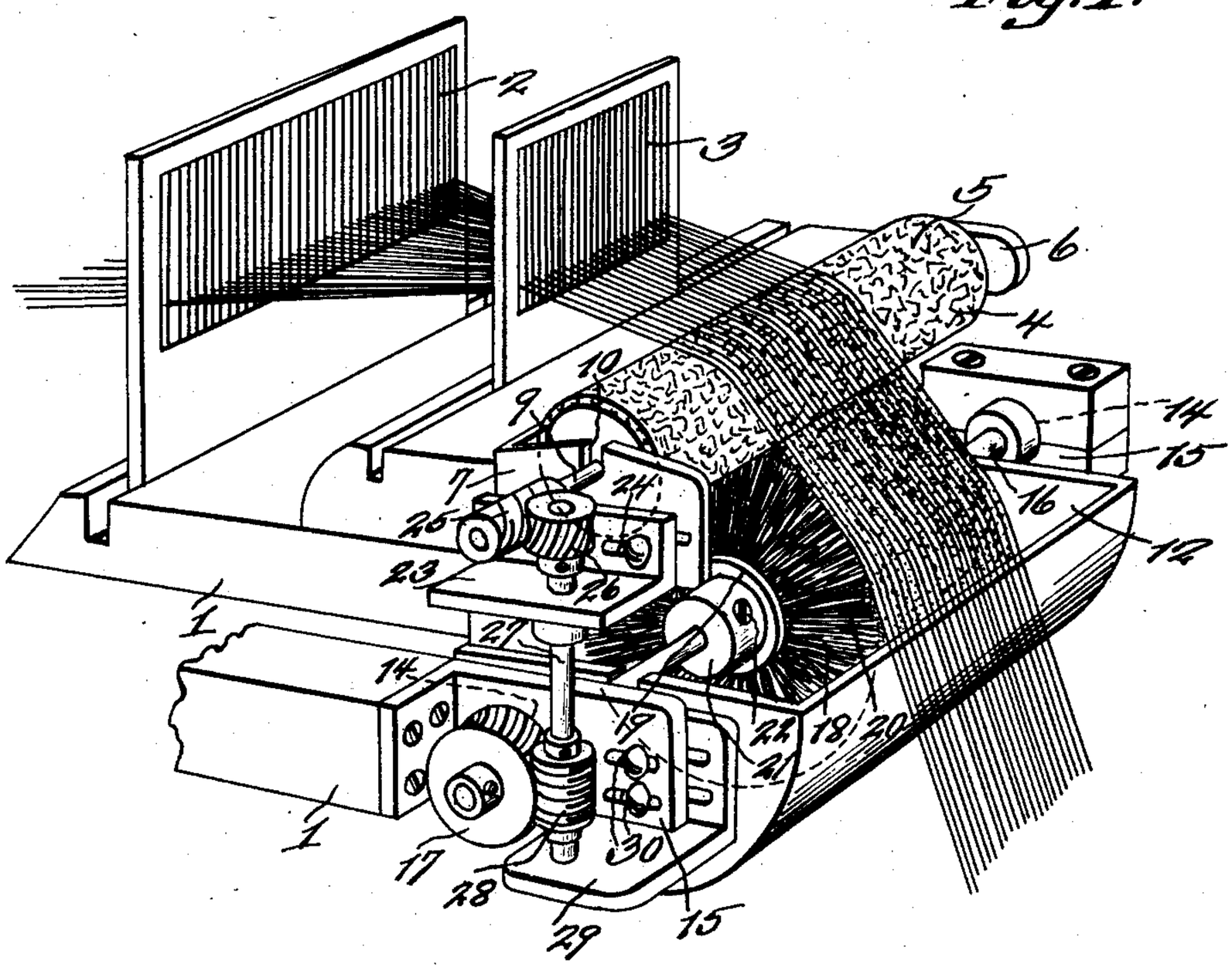

Fig. 2.

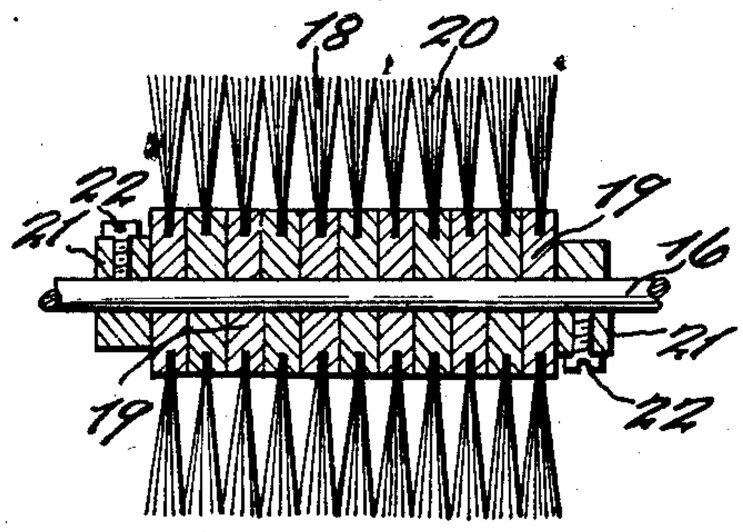

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Fig. 3.

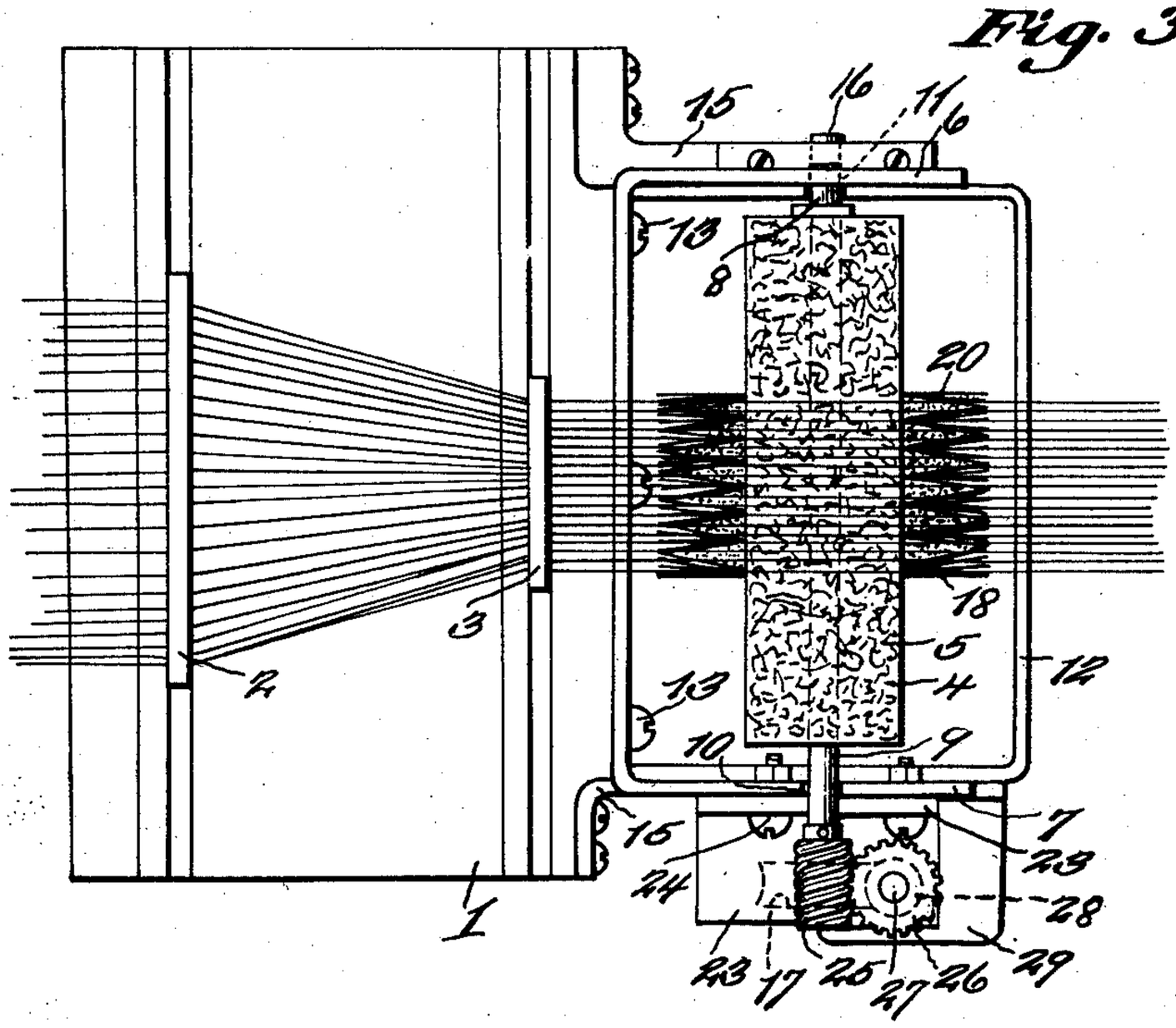
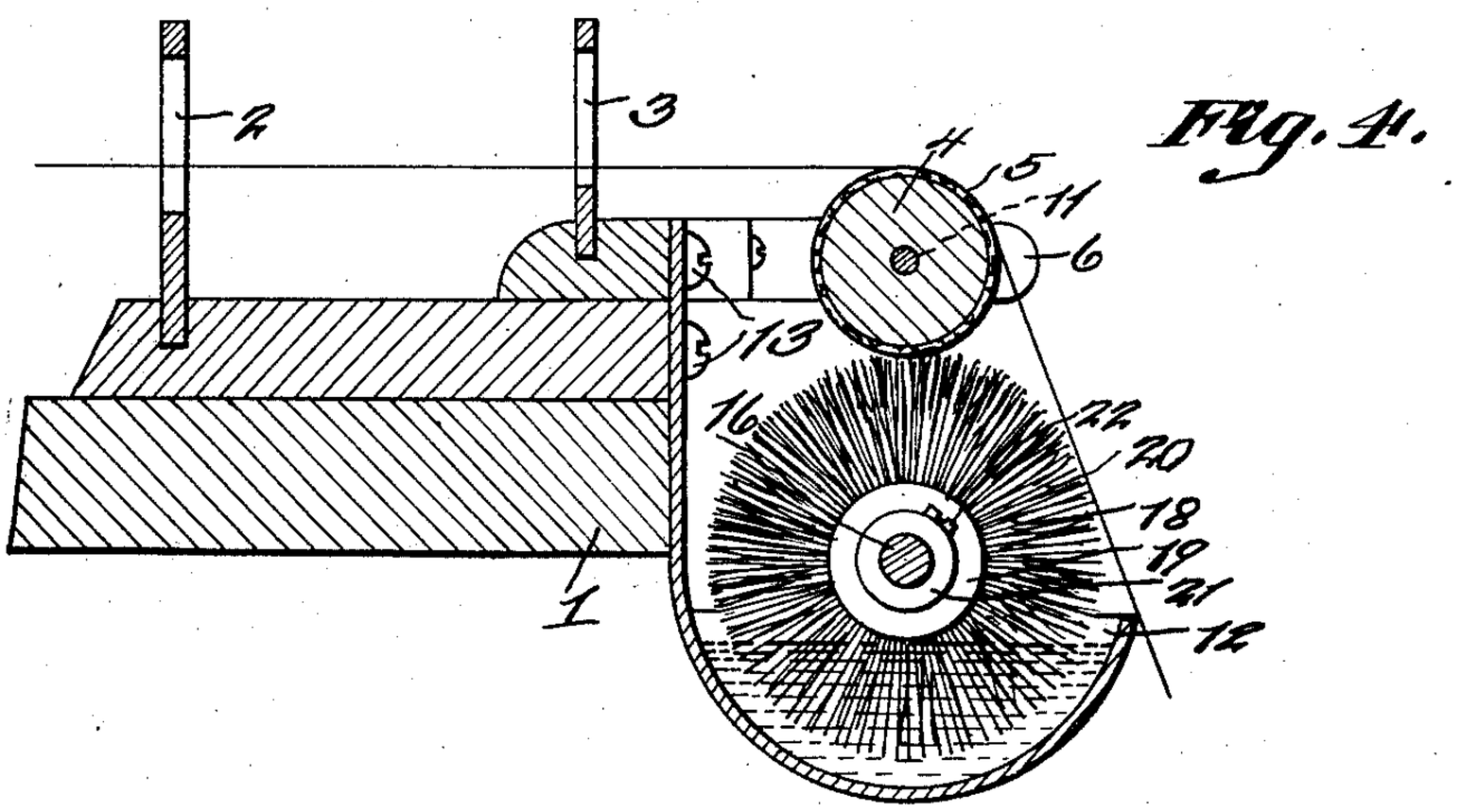


Fig. 4.



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Patented Oct. 7, 1930 1,777,457

UNITED STATES PATENT OFFICE

GEORGE WILSON, OF PHILADELPHIA, PENNSYLVANIA

SILK-WARP OIL SATURATOR

Application filed May 7, 1928. Serial No. 275,893.

The present invention relates to an improved silk warp saturator or appliance adapted to be applied to a horizontal warping mill for oiling or saturating silk warps, including artificial silk and ribbon and broad silk, and the purpose of the invention is to increase production in a weaving department, as an oiled warp will weave much better and make a more even and better cloth.

Heretofore to soften and make the silk more pliable and slippery, it has been necessary to boil the skeins of silk in a solution of soapy water or to hand spray the skeins with oil. Such method and machine for treating skeins of silk are expensive and very unsatisfactory. Very often the silk warp is too greasy and damp, and at times the silk is not dried properly in order to produce the best weave.

However, the present invention is practical, relatively inexpensive, that is in the process of oiling or saturating the warp, for the reason that as the warp threads leave the reeds it passes over a felt covered roller, and then over a brush and as the roller rotates, it imparts movement to the brush through operatively connections therewith, therefore the brush picks up the lubricant or oil in the trough and transfers it to the warp threads, after which the threads pass on to the mill. The brush applies the lubricant or oil to the felt on the roller, so that as the warp passes over the roller it is saturated, at the engaging points with the roller and the brush the warp picks up sufficient oil for the purpose.

Another purpose is to provide in a silk warp oil saturator, operative connections between the felt covered roller and the brush, for the purpose of transmitting motion from the roller to the brush, it being a further purpose to provide such connections, which can be altered or changed, that is other connections substituted for the purpose of increasing and decreasing the speed of the roller and the brush, which will act to increase or decrease the supply of oil according to the character of silk thread warp. Some warps may be made up of heavier or finer threads, therefore the supply of oil must be increased or decreased accordingly.

Another purpose of the invention is to provide an oil transferring brush, which is made up in sections so as to be increased or decreased in length, in order to accommodate warps of different widths. Warps from one-half of an inch to five inches in width more or less may be saturated, it being obvious that oil is only applied to the felt covered roller according where the brush engages with it and where the warp passes over the roller.

Another purpose is to provide an appliance of this kind which is simple in construction, inexpensive to manufacture and may be sold at a reasonable profit, it being possible to disassemble the parts for repairs and for the purpose of increasing and decreasing the speed of the felt covered roller and the brush.

It is to be understood that the particulars herein given are in no way limitive, and that while still keeping within the scope of the invention, any desired modification of details and proportions may be made in the construction of the appliance according to circumstances.

The invention comprises further features and combination of parts to be hereinafter set forth, shown in the drawings and claimed.

In the drawings:—

Figure 1—is a view in perspective of the improved appliance constructed in accordance with the invention.

Figure 2—is a sectional view through the brush.

Figure 3—is a plan view of Figure 1.

Figure 4—is a cross sectional view on line 4—4 of Figure 3.

Referring to the drawings, 1 identifies a frame which may constitute a part of the mill and 2 and 3 are the reeds, through which the warp threads pass in a direction toward a roller 4 which has a felt covering 5.

The frame 1 is provided with bearings 6 and 7, in which the spindles 8 and 9 are mounted. The spindle 8 engages an open-

ing 11 in the bearing 6, while the spindle 9 engages in a notch 10 of the bearing 7.

A trough or oil container 12 is provided, and which is attached to the frame 1 by screws or other suitable means 13, and journaled in bearings 14 of the brackets 15 is a shaft 16, which is provided with a worm wheel 17 at one end. The shaft 16 carries a brush 18, which comprises a plurality of sections 19. These sections are in the form of discs provided with radiating bristles 20, and these discs are held in position, engaging with each other as shown in Figure 2, by means of collars 21, which are held in position by set screws 22. It is possible to remove the shaft 16 from its bearings and then remove one or the other of the collars 21 and thereby arranging the number of discs or sections 19 to be increased or decreased. Obviously the brush as shown in Figure 2 comprises eleven sections or discs 19, making it possible to saturate a warp corresponding to the length of the brush. However the brush may be made one-half an inch or may be made three inches, or four or five inches, according to the width of the warp.

Carried by the bearing 7 is a bracket 23, which is connected to the bearing adjustably as at 24, allowing the bracket to be adjusted laterally so as to permit of an increased or decreased diameter of worm 25 to be used on the spindle 9. This worm 25 meshes with a worm wheel 26 carried by a shaft 27 mounted in the bracket 23. The lower part of the shaft 27 carries a worm 28, and is mounted in a bearing of a bracket 29, which is connected adjustably to the bracket 15 as shown at 30. Thus the bracket 29 is adjustable laterally correspondingly to the adjustment of the bracket 23, permitting a larger or smaller worm wheel 17 to be applied to the shaft 16. By increasing or decreasing the size of worm 25 and diameter of worm wheel 17, it is possible to increase or decrease the speed of the brush and the felt covered roller, thus permitting the oil to be applied to the warp in increased or decreased quantities.

As the warp leaves the reeds it passes over the felt covered roller, imparts movement to the roller, and through its operative connections with the shaft 16 of the brush movement is imparted to the shaft and the brush and as the warp leaves the reeds and passes over the roller and the brush it is saturated due to the oil being picked up by the bristles of the brush from the trough or container 12.

The brush is as a rule of a length corresponding to the width of the warp, so that oil may only be applied to the roller accordingly to the width of the warp.

While the silk threads in passing over the roller 4 engages with the brush as shown in Figure 1 and in Figure 4 it is possible to make the brush smaller, so that the ends of the bristles of the brush 18 will not engage with the silk threads.

The invention having been set forth, what is claimed is:

In an appliance as set forth, the combination with a frame having an oil container connected thereto, of a brush including a shaft journaled in bearings of the frame and having its bristles dipping within the oil in the container, a felt covered roller journaled in bearings of the frame and disposed over the brush engaged with its bristles, and means operatively connecting the roller and the shaft of the brush, whereby as a warp passes over the roller revoluble movement is imparted to the brush thereby applying oil to the felt and the warp, said operative means being changeable, whereby the roller and the brush may be increased or decreased in speed, and bearings to support said operative means, said bearings being adjustable, therefore rendering said operative means capable of being changed.

In testimony whereof he affixes his signature.

GEORGE WILSON.