

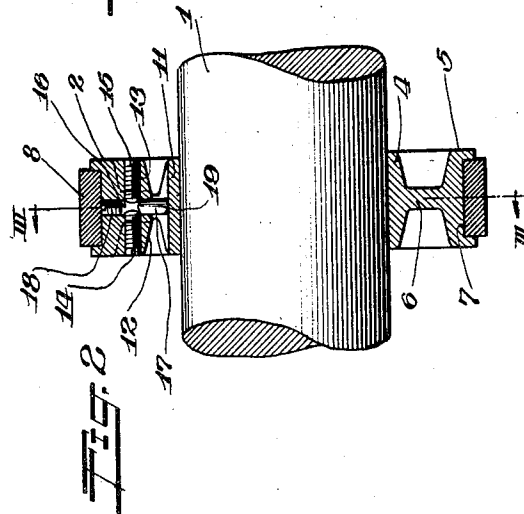
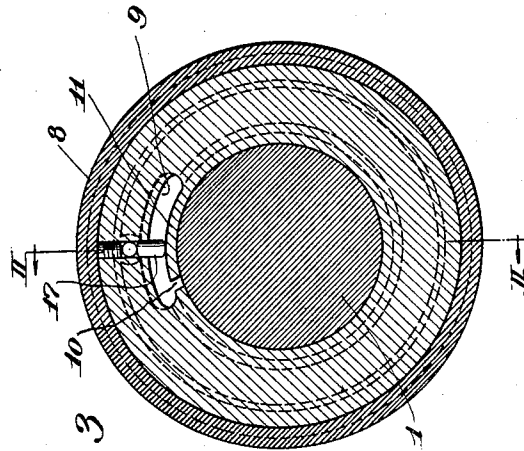
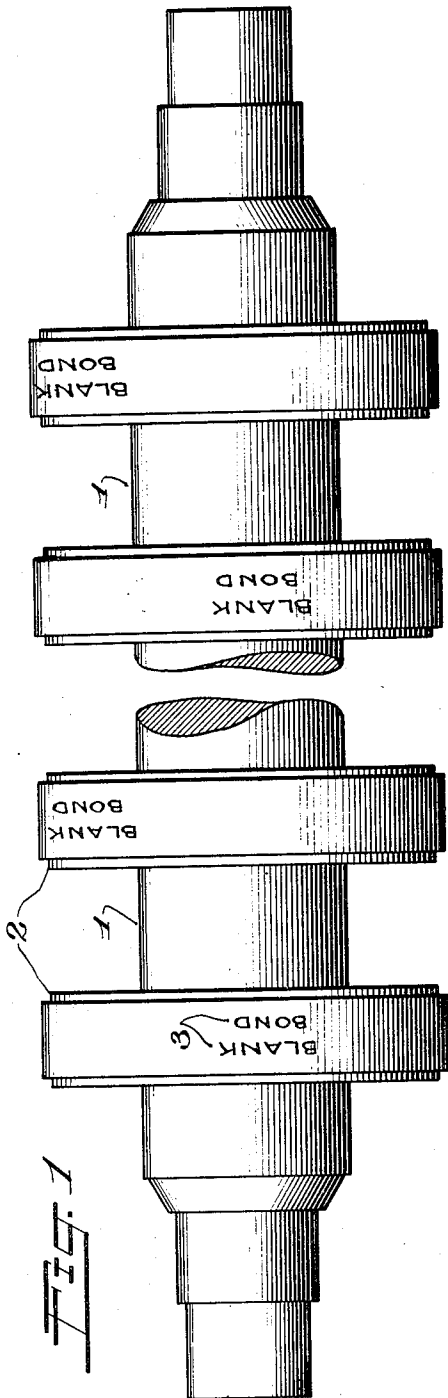
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R. H. KELLY

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SURFACE MARKING ROLL

Filed March 28, 1928



Inventor:
Roy H. Kelly.

By: Charles H. Kelly
Attys.

UNITED STATES PATENT OFFICE

ROY H. KELLY, OF ROTHSCHILD, WISCONSIN, ASSIGNOR TO MARATHON PAPER MILLS COMPANY, OF ROTHSCHILD, WISCONSIN, A CORPORATION OF WISCONSIN

SURFACE-MARKING ROLL

Application filed March 28, 1928. Serial No. 285,314.

This invention relates to a surface marking roll and the like, and more particularly to a marking roll for use in connection with paper machines for the marking of the paper prior to drying the same but after the web has been fully formed by passage through the presses.

In one of the types of marking rolls now in use, the construction is such that difficulty is experienced, when the paper machine is running at high speeds, in obtaining proper impressions on the paper. This is due to the construction of this type of marking roll, wherein a number of wheels, each carrying its own bracket, are secured by means of the brackets to a carrier shaft mounted transversely of the paper machine, no provision being made for properly holding the wheels in constant spaced relation or for properly synchronizing the various wheels. As a consequence, the spacing of the marks is permitted to vary and the rolls chatter and vibrate at high speeds, making imperfect impressions on the paper and occasionally tearing it.

Furthermore, in the usual type of surface marking roll no provision is made for relative angular adjustment of the marks about the periphery of the roll in order to obtain zig-zagging of the marks across the paper.

It is therefore an object of this invention to provide a surface marking roll or the like that will not chatter nor vibrate at high speeds but will under all circumstances make clear-cut and properly spaced impressions on the paper.

It is a further object of this invention to provide a surface marking roll comprised of separate collars bearing the mark, design or the like and adjustably mounted upon a shaft, with means provided for the positive securing of said collars in adjusted position, both longitudinally of the shaft and with respect to the angular relation of the marks upon adjacent collars.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawings.

This invention (in a preferred form) is

illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a broken elevational view of a surface marking roll embodying the principles of my invention.

Figure 2 is a sectional view taken on line II—II of Figure 3 with parts in elevation.

Figure 3 is a sectional view taken on line III—III of Figure 2 with parts in elevation.

The reference numeral 1 indicates the shaft of a surface marking roll of my invention having mounted thereon a plurality of collars 2 bearing a mark, as represented by the indicia 3. As best shown in Figures 2 and 3, each of the collars 2 comprises a ring formed with inner and outer flanges 4 and 5 respectively connected by means of an intermediate web 6. The inner flange 4 is bored to receive the shaft 1 and to permit the collars 2 to be adjusted lengthwise of the shaft 1 and relative to each other. The outer flange 5 is formed with an annular groove, or recess 7, to receive a flexible band 8, preferably formed of rubber and bearing the raised indicia 3.

In order to provide means for securing the collars 2 in any desired position relative to each other and to the shaft 1, an elongated slot 9 is formed in the web 6 and a transverse connecting slot 10 is formed in the inner web 4 adjacent one end of the elongated slot 9 to provide a more or less flexible tongue 11. The web 6 is strengthened immediately above the slot 9 as at 12 and provided with a transverse threaded bore 13 for receiving set screws 14 and 15. A second bore 16 extends radially through the upper flange 5 and the thickened web portion 12 to intersect said bore 13. A short pin 17 is adapted to be positioned in the bore 16 to bear against the tongue 11. The upper portion of said bore 16 is threaded to receive a set screw 18, which is normally threaded into said bore 16 until flush with the surface of the recess 7, thus closing said bore 16 and preventing a depression in said flexible band 8 at that point. The length of the pin 17 is such that its upper spherical end 19 extends slightly into the path of the bore 13.

Accordingly, when the set screws 14 and 15 are screwed in, the round ends of said set screws contact the spherical head 19 of the pin 17 and force the pin down against the tongue 11. The result is that the tongue 11 is sprung downwardly into frictional engagement with the surface of the shaft 1, thus preventing relative rotation or movement longitudinally of said shaft 1.

It will be apparent that the collars 2 may be readily adjusted to different positions upon the shaft 1 by merely unscrewing the set screws 14 and 15 and moving the collars 2 into the desired position. In this way the spacing between adjacent collars may be varied or the angular advance of adjacent marks 3 may be changed at will. It should further be noted that the set screws 14 and 15 are readily accessible and that no set screws come into direct contact with the shaft to score or in any way injure the surface of the shaft. This construction obviously makes possible greater flexibility in the use of marking rolls and does away with the necessity of having in storage a large number of different rolls to suit the various conditions under which they may be used. In the case of rolls of my construction, a single shaft may be used for mounting various sizes and types of collars as all of the collars may be made with uniform inside diameters to be interchangeable.

The savings that can thus be effected are obvious, since with the interchangeable collars one shaft will serve where formerly many complete rolls were required. Furthermore, the positive positioning of the collars on rolls of my construction prevents chattering and vibrating of the rolls and insures the obtaining of clear impressions on the paper when the machine is running at high speeds without danger of tearing the paper.

I am aware that numerous changes may be made and many details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention:

1. A surface marking roll, comprising a shaft, collars mounted thereon bearing a mark, design, symbol or the like, each of said collars being slotted to form a tongue adapted to frictionally engage said shaft throughout its length, to thereby prevent the collar from rotating in either direction on said shaft, and means for bringing pressure to bear against said tongue to increase the friction and maintain the collars in position on said shaft.

2. A collar for mounting upon the shaft of a roll, comprising a ring formed of spaced flanges and an intermediate connecting web,

said web being provided with an elongated slot and said inner flange with a transverse slot opening into said elongated slot adjacent one end thereof, a tongue being formed thereby on said inner flange, a pin extending radially against said tongue and set screws adapted to be threaded into angular engagement with the outer end of said pin to increase the bearing pressure of said pin against said tongue.

3. A collar for mounting upon the shaft of a roll, comprising a ring formed of spaced flanges and an intermediate connecting web, said web being provided with an elongated slot and said inner flange with a transverse slot opening into said elongated slot adjacent one end thereof, a tongue being formed thereby on said inner flange, the web above said elongated slot being thickened and provided with transverse and radial intersecting bores, a pin slidably mounted in said radial bore and bearing against said tongue and set screws threaded into said transverse bore from opposite sides for engagement with the outer end of said pin.

4. A collar adapted to be adjustably mounted on a roll, a flexible member on said collar for contact with the periphery of said roll throughout the length of said member and means for causing said flexible member to frictionally engage said roll to hold said collar in adjusted position and against rotation in either direction on said roll.

In testimony whereof I have hereunto subscribed my name at Rothschild, Marathon County, Wisconsin.

ROY H. KELLY.