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END SUPPORT FOR HOLLOW ROLLS

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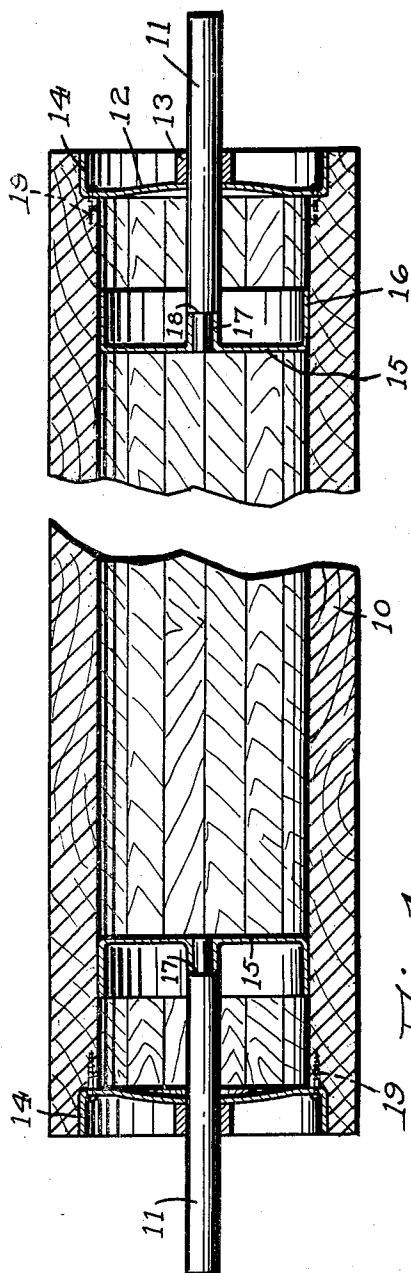


Fig. 1

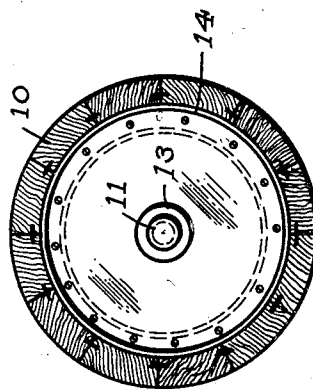


Fig. 2

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UNITED STATES PATENT OFFICE.

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END SUPPORT FOR HOLLOW ROLLS.

Application filed November 9, 1923. Serial No. 673,789.

To all whom it may concern:

Be it known that I, CARL C. HARRIS, a citizen of the United States, residing at Orange, in the county of Franklin and State of Massachusetts, have invented a new and useful End Support for Hollow Rolls, of which the following is a specification.

This invention relates to rolls that are used on wet finishing and other textile and paper machines and the like.

The principal objects of this invention are to provide means for supporting the roll at each end in a more substantial and durable way than has been the case heretofore; to avoid ruining the shaft by fatigue of the metal and save in its expense; and to provide improvements in the details of construction of the supporting means by which it is held firmly in the roll and the studs with which it is connected are not likely to get out of position.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a longitudinal central sectional view of a roll constructed in accordance with this invention, and

Fig. 2 is an end view of the same.

Although the invention is applicable to metal rolls I have shown a roll 10 formed of a series of pieces of wood secured together at their edges and forming a circle, the roll being turned off on the outside to bring it into true cylindrical form for use in textile and wet-finishing machinery of several kinds. Ordinarily such a roll is mounted on a shaft extending all the way through and projecting from the two ends to provide the necessary journals. The rolls are heavy and are subjected to hard usage and, being supported only at their extreme ends on the shaft, they are likely to sag a little at the center or be subjected to so much pressure at some point between their ends as to cause the shaft to bend back and forth as the roll rotates. This crystallizes the metal of the shaft and then the roll is practically useless. For that reason I have provided two entirely separate studs 11 at opposite ends of this roll in axial alignment. They project into the roll only a short distance, but instead of supporting them entirely at the extreme ends of the roll I provide means for supporting them at two points. This

means comprises a sheet metal disc 12 fitting on the stud and up against a hub 13 secured thereto and provided with a cylindrical flange 14. Also a part of this supporting means is in the form of a second disc 15 having a cylindrical flange 16 at the outside and an internal flange 17 at the center. This flange has a cylindrical passage therethrough in which the end of the stud 11 is centered, and it also comes up against the end of a shoulder 18 near the end of the stud. The flange 16 is smaller in diameter than the flange 14 so as to necessitate a different opening for the latter. In this way both flanges can have a right fit. This also furnishes a ledge into which fastening screws 19 can be inserted.

The end of the roll is provided with a bore in which the flange 14 accurately fits. Then inside this is a smaller bore extending into the roll far enough to receive the flange 16 therein. Both of these discs 12 and 15 are driven into their respective bores, their flanges being constructed to have a driving fit therein. Furthermore, they are driven in while in position on the stud as shown, so that the stud is perfectly centered by them. It is held firmly in position by the two discs and prevented from lateral motion by being anchored to the center of both of them.

As the disc 15 is at a considerable distance inside from the end of the roll this anchoring means is sufficient for the heavy usage to which this roll is to be put. As there is no shaft extending through the roll there is no chance of its giving out from constant bending back and forth.

Although I have illustrated and described only a single form of the invention I am aware of the fact that modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the details of construction herein shown and described, but what I do claim is:—

1. The combination with a wooden roll having a bore in the end thereof with a sheet metal disc having a cylindrical peripheral flange driven into the bore and having a central perforation, a stud centered in said perforation and projecting inwardly and outwardly from it, a second sheet metal disc having an external cylindrical flange

supported in the roll at a distance from the first disc, and an integral central cylindrical flange provided with a central bore for receiving the end of the stud.

- 5 2. As an article of manufacture, a wooden roll having a bore extending in a short distance from the open end, and a second bore of smaller diameter extending in to a greater distance and on the same axis, a sheet metal
10 disc having a cylindrical peripheral flange driven into the first named bore and having a central perforation, a stud centered in said perforation and projecting in both directions from it, a second sheet metal disc
15 having a cylindrical external flange driven into the inner bore and an integral central cylindrical flange provided with a central bore for the end of the stud, the stud having a shoulder for engaging the end of said stud.
20 3. As an article of manufacture, a roll having a bore at the end thereof and a smaller bore extending inwardly therefrom and concentric therewith, a disc having a circular flange driven into the first named

bore, a disc having a smaller flange driven 25 into the second bore and spaced materially from the first disc, and a stud connected with both discs and projecting therefrom to furnish a journal, said discs having means for accurately centering and holding the 30 stud with respect thereto.

4. As an article of manufacture, a roll having a bore extending in a short distance from the open end, and a second bore of smaller diameter extending in to a greater 35 distance and on the same axis, a sheet metal disc having a cylindrical flange driven into the first named bore and having a central perforation, a stud centered in said perforation and projecting in both directions from 40 it, a second sheet metal disc having a cylindrical flange driven into the inner bore and provided with a central bore for the end of the stud, the stud having a shoulder for engaging the end of said stud. 45

In testimony whereof I have hereunto affixed my signature.

CARL C. HARRIS.