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METHOD OF COVERING A CYLINDER ROLL

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Fig. 1

Fig. 2

Fig. 3
This invention relates to improvements in cylinder and dandy rolls for use in paper making, and more particularly to a method of joining the ends of wire cloth in order to produce more effective covers for cylinder rolls than heretofore has been possible.

In the forming of cylinder and dandy rolls for paper making, a sheet of wire cloth is wrapped around a cylindrical frame, which frame is from 30 to 36 inches in diameter and from 5 feet to 12 feet in length. The ends of the wire cloth are usually joined together by a seam produced by sewing.

In the making of cylinder rolls, heretofore, it has been the custom to cover the cylinder mold with wire cloth having the warp or chute wires extending longitudinally of the mold. This has been done because the crimped warp wires enable the cloth to be stretched to cause accurate fitting of the ends together. The chute wires cannot stretch and accordingly heretofore have extended longitudinally of the mold as above described. However, this manner of putting the wire cloth cover on a cylinder mold is objectionable in that an extremely smooth surface is presented which does not offer sufficient resistance to properly rotate the cylinder roll; and the smooth surface also does not pick up the water and pulp evenly which results in spots and holes in the paper.

This form is further objectionable in that after a certain amount of use the cramped warp wires have a tendency to stretch and loosen the wire cloth cover on the mold.

It has been found desirable to join the warp wires together, but the joining of the warp wires has been heretofore possible only by a sewed seam as the cylinder frame is not uniform in diameter throughout its length, which necessitates that the ends of the wire cloth be uneven and ragged so that they will fit together. The sewed seam has been found objectionable in that it presents raised portions which have an effect upon the paper. Accordingly it is highly desirable that a soldered seam be used. But heretofore, it has not been found possible to solder the irregular warp wires together, and all soldered seams have been confined to the joining of weft wires, that is, the straight wires.

In the making of paper, when the weft wires are joined to form a seam, the cylinder roll has an extremely smooth surface which does not properly carry the water and pulp as desired. When the warp wires are used, the cramped warp wires produce a multitude of little cups which pick up the water and properly carry it over the cylinder rolls.

Accordingly the joining of the warp wires is highly desirable.

When the warp wires are extended longitudinally of the cylinder roll, the chute or straight wires encircle the roll and no stretching is possible which provides greater strength, and also a rougher surface offering the necessary resistance for properly rotating the roll, and consequently enabling greater speed of rotation.

An object of the invention is to provide a method of making a cover for a cylinder roll which enables the joining of the warp wires of wire cloth by means of a soldered seam.

These and other advantages of the invention, which will appear to one skilled in the art, will be more clearly understood from the following description and from the accompanying drawings, and from what is set forth in the appended claims.

Referring to the diagram, in Fig. 1 there is shown a cylinder roll which comprises a frame 2, which is covered by wire cloth 3, the ends of which being joined by a soldered seam. Inasmuch as it is difficult to make the cylinder roll of uniform diameter throughout its length, the ends of the wire cloth will necessarily be uneven and ragged to cause them to fit together.

In the making of the wire cloth, a solder coated warp wire 5 is woven into the cloth. When the wire cloth is placed upon the frame of the cylinder roll, one end there of is trimmed to the solder coated wire 5 and the other end of the wire cloth is then cut so that it will fit evenly against the solder coated wire 5. The uneven end of the wire cloth is then rubbed with a soldering compound comprising silver solder powder mixed with paraffin wax or a similar carrying means.

Heat is then applied to melt the wax and distribute the silver solder over the uneven edge of the wire cloth, the intense heat causing the wax to disappear. An abrasive is then passed over the uneven edge to grind the ends of the projecting chute or weft wires smooth. The ends of the wire cloth are then brought together and heat applied to melt the solder on the solder coated wire 5 and also the silver solder on the uneven edge of the cloth. By means of the mix-
ture of wax and solder powder the irregular end of the wire cloth can be effectively provided with solder to enable joining to the even end carrying the solder coated wire 5. Therefore, this was not possible with any of the known soldering methods as the solder powder per se, without the wax, would not stay in the proper places.

By means of my method it is possible to cover a cylinder roll with wire cloth in which the warp wires 6 are joined and extend longitudinally of the roll, thus presenting a rough surface for the roll which will carry the water and pulp over the roll in the proper manner. Also, there will be no stretching of the cover after a period of use, as the chute wires 7 resist stretching. The degree of friction is greatly increased, thus enabling increased speed.

The foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which obviously embodiments may be considered including many modifications, without departing from the spirit and scope of the invention herein set forth and denoted in the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. The method of covering a cylinder roll, comprising placing wire cloth upon a cylindrical frame so that the crinkly warp wires of the cloth extend longitudinally of the frame, said wire cloth having a solder-coated warp wire woven therein adjacent one of its edges, heating said edge having the solder coated wire to melt the solder to cause the wires of said edge to the firmly secured to each other, covering the adjacent edge of said wire cloth with a mixture of powdered solder and wax, applying heat to said adjacent edge to melt the solder and wax to firmly secure the wires of said adjacent edge together, and then applying heat to secure the two edges of said wire cloth together to form a seam and to provide a substantially uniform cylinder of wire cloth.

2. The method of covering a cylinder roll, comprising placing a wire cloth having a solder coated crinkly warp wire woven therein adjacent one edge thereof upon a cylindrical frame so that the warp wires of the cloth extend longitudinally of the frame, heating said edge having the solder coated wire to melt the solder to cause the wires of said edge to be firmly secured to each other, securing the wires of the adjacent edge of said wire cloth by means of solder, and then applying heat to secure the two edges of the wire cloth together to form a seam and provide a uniform cylinder of wire cloth.

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