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METHOD FOR COVERING CYLINDERS
WITH FORAMINOUS MATERIALS
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2,711,575

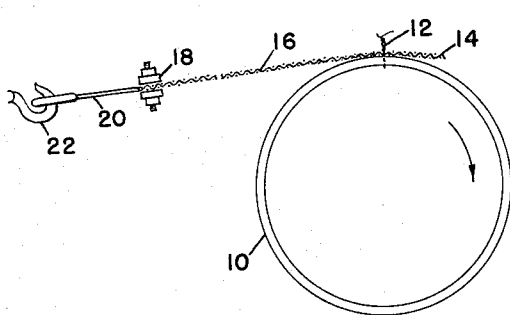


FIG. 1

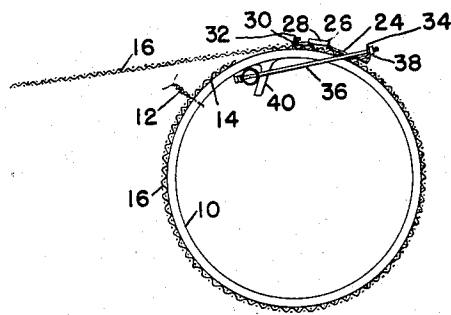


FIG. 2

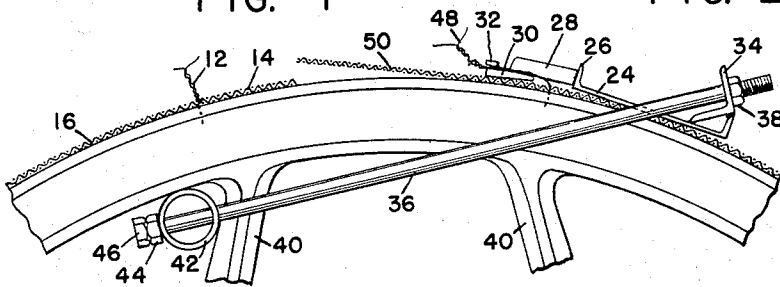


FIG. 3

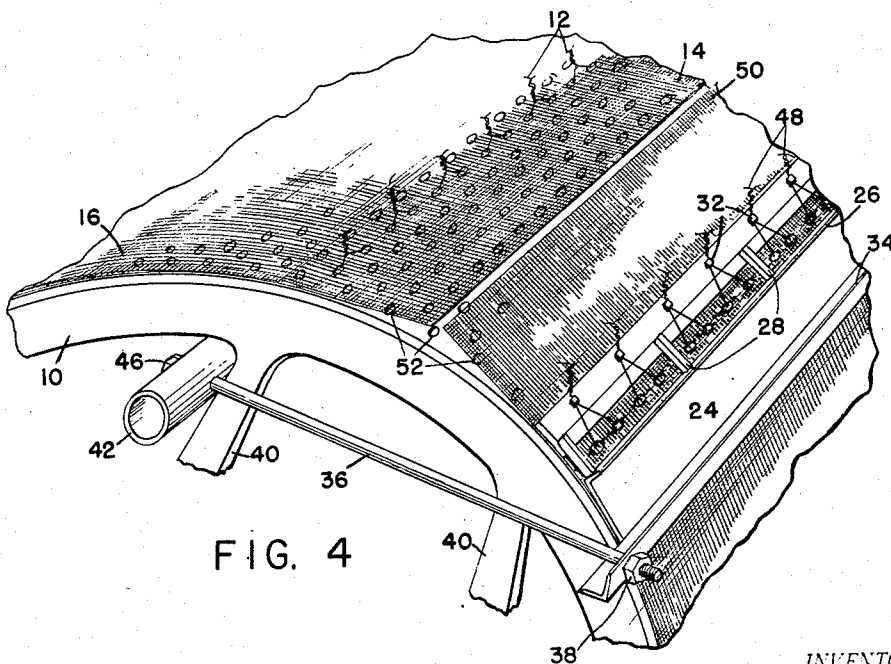


FIG. 4

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1

2,711,575

METHOD FOR COVERING CYLINDERS WITH FORAMINOUS MATERIALS

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4 Claims. (Cl. 29—148.4)

This invention relates to a new and useful improvement in the method of securing foraminous covering to a cylinder and more particularly to the method for securing a screen to a forming roll used in connection with making fiber composition board.

In the manufacture of fiber composition board, pulp slurry is supplied to a forming apparatus which may consist of two cylinders which form the sheet and remove a large portion of the water. The pulp, when furnished to the forming apparatus, usually has a high percentage of water—around 98% to 99%. This water has to be removed in the forming of the board and the greater amount of water removed, the less the drying problem that occurs later. Fiber composition boards are usually made in widths of 8' to 12' and are divided into sheets after forming of about 12' square. On the surface of a forming roll there must be secured a screen or like material over the perforated surface of the cylinder so that when the water is forced out by the pressure applied to the sheet being formed it can be quickly removed. The screen secured to the surface of the forming cylinder must be secured under tension, which tension must be substantially uniform if the life of the screen is to be of any extended length.

One of the principal objects of this invention is to secure a screen on a forming roll under tension so that the tension is substantially uniform for the full circumference of the forming cylinder.

Other and further objects of the invention and the advantages of the same will be pointed out hereinafter and specifically indicated in the appended claims or be obvious to one skilled in the art upon the understanding of the present review.

Referring to the drawings:

Figure 1 is a view of the first step of securing a screen to a cylinder surface;

Figure 2 is a view showing the screen laid upon the surface of the cylinder under tension prior to securing the ends of the screen together;

Figure 3 is a sectional view with parts broken away of the forming cylinder just before the connecting of the ends of the screen together; and

Figure 4 is a fragmentary view of the forming cylinder with portions broken away showing how the screen is held under tension while the ends are to be secured together.

Referring to the drawings in detail, 10 represents a forming cylinder of the kind shown in Patent No. 2,662,451. The screen 16 is suitably attached to the perforated cylinder by any suitable means, such as wires shown at 12. The securing means 12 is placed adjacent the end of the screen so as to leave a free end or tail 14. To the other end of the screen is secured members 18 which extend entirely across the screen, and to this member is attached suitable cable-like members 20 and to the cables there is attached a hook 22. The hook 22 is carried by any suitable device (not shown) for holding tension upon the screen while it is being wound upon the sur-

2

face of the cylinder; for example, a block and tackle may be used.

The roll is moved in the direction shown by the arrow in Figure 1 and the screen is laid under tension on the surface of the cylinder 10. While the tension is still upon the screen as shown in Figure 2, a screen tensioning device is laid upon the screen as shown in Figure 2, with the member 24 which extends entirely across the cylinder width with the member 34 attached thereto and extending beyond the edges of the cylinder. Member 30 is spaced apart from member 24 but extends substantially the full width of the cylinder. Members 24 and 30 are connected together by bars 28. The space between bars 24 and 30 leaves a space through which securing wires or other means may be inserted. These wires are then secured to nut-like members 32 which are in spaced relation on bar 30. To the opposite end of member 34 is secured rods 36 which are secured to a suitable member such as pipe 42 extending across the width of the cylinder. The pipe 42 usually is supported against a web or spoke 40 of the forming cylinder 10. On opposite ends of the rods 46 are nuts 38 and 46. After the tying wires 48 are inserted and tied as shown in Figure 3 and 4, the tension is tightened to any required degree by tightening the nuts 38 or 46. After the tension has been properly tightened the free end of the screen is released from the block and tackle or other tensioning device. The free end 50 is then cut so that in conjunction with the end 14 the cylinder surface will just be covered with the screen. The ends of the screen are then secured together as by welding or any other suitable means. After the welding is completed the tie wires 12 and those secured to the bolts 32 are removed. This permits the screen to assume a uniform tension around the entire surface of the cylinder. The tensioning device is then removed and the cylinder is ready for use or for other steps required to complete its construction.

It is to be understood that the screen must be laid upon the surface of the cylinder under tension and held under tension while the ends are being united. After the ends are secured together the securing means such as wire 12 must be removed so that uniform tension will be on the screen entirely around the cylinder it being understood that a minor portion of the screen on the cylinder surface is not under tension while the major portion of the screen laid upon the cylinder is greater than the ultimate tension required so that when the screen is secured in place there is a substantially uniform tension thereon entirely around the cylinder.

What is claimed is:

1. The method of covering a metal cylinder with wire screen comprises, securing the wire screen adjacent to but spaced apart from one end to the surface of the cylinder whereby a free end not under tension on the surface of the cylinder is provided, turning the cylinder to lay the screen on the surface thereof while maintaining the tension thereon, securing the screen to the surface of the cylinder at a second point whereby a second free end is provided upon the cylinder surface, securing the free ends on the cylinder surface together to form an endless band and then releasing the securing means from the screen whereby substantially uniform tension on the endless screen band is provided around the entire surface.

2. The method of covering a metallic roll with a metallic wire screen under tension comprising tying a screen to the surface of the roll at a point, spaced apart from the end of the screen to leave a free end upon the cylinder surface; turning the roll to lay the screen on the surface of the cylinder under tension for a major portion thereof; tying the screen at a second point to the cylinder surface to provide a second free end; welding the

3

free ends of the wire screen together to form the screen into an endless band and then removing the tying means whereby substantially uniform tension is provided on the endless band around the entire surface.

3. A method of applying a sheet of screen wire to a perforated cylinder surface to provide a fibrous composition perforated forming cylinder, wherein the sheet adjacent an end but spaced apart thereof is tied by spaced apart wires to the surface of the perforated cylinder whereby a free end is provided upon the surface of the cylinder; rotating the cylinder to wrap the sheet screen tightly upon perforated cylinder surface for a major portion thereof; tying the sheet screen by spaced apart wires to the cylinder surface at a second point to provide a second free end upon the cylinder surface; securing the free ends of the sheet screen together and then removing the tying wires whereby substantially uniform tension is provided on the sheet screen entirely around the perforated cylinder.

4. A method of covering a cylinder with flexible foraminous surface member comprising tying the flexible foraminous member to the cylinder surface adjacent but spaced apart from the end thereof, leaving a free end upon the cylinder surface; turning the cylinder to lay the

4

flexible foraminous surface member on the surface under tension; tying the flexible foraminous member to the cylinder surface at a second point to provide a second free end; securing the free ends of the sheet together and removing the tying means whereby substantially uniform tension is provided on the flexible foraminous member entirely around the cylinder surface.

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