

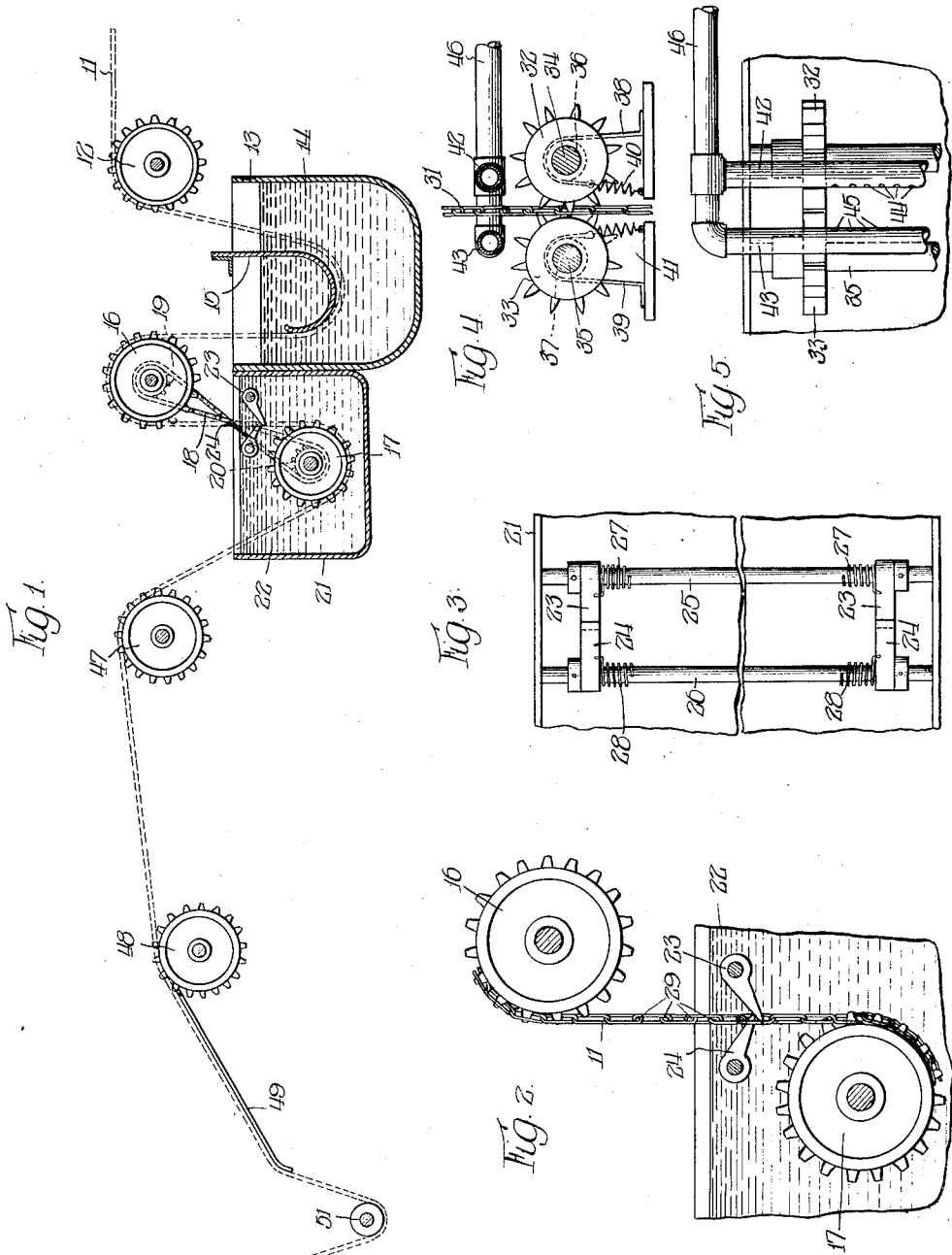
Oct. 30, 1928.

1,689,792

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METHOD FOR COATING WIRE FABRIC

Filed April 30, 1925



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METHOD FOR COATING WIRE FABRIC.

Application filed April 30, 1925. Serial No. 26,935.

This invention relates to a new and improved means and method of coating wire fabric and more particularly, to a means and method for insuring a complete coating of the normally contacting wires of the fabric.

Certain forms of wire fabric used for fencing and other purposes consist of a plurality of spirally interlaced strands and are commonly called link fabric. By shortening the normal length of the fabric the strands or links are separated at the points at which they are in contact when the fabric is under normal tension.

It is customary to coat fabric of this character after it is formed and when the fabric is passed through a coating solution under normal tension, and maintained under this tension until the coating has set, there is a tendency for the coating to secure the links or strands rigidly together at their points of contact. When the fabric is later flexed so as to break these points of connection, the coating commonly breaks away from at least one of the strands and leaves uncoated spots readily subject to corrosion. These points are located where the wires are in contact and where there is most opportunity for retaining rain water or the like, which will assist corrosion when the fabric is in use.

It is an object of the present invention to provide a new and improved means and method for coating wire fabric.

It is a further object to provide a means and method of this character adapted to prevent connection of the fabric strands by the coating material and to secure an unbroken coating.

Other and further objects will appear as the description proceeds.

I have illustrated in the accompanying drawings certain apparatus adapted for carrying out my invention.

In the drawings—

Figure 1 is a somewhat diagrammatic elevation of one form of apparatus;

Figure 2 is a view of a portion of Figure 1 on an enlarged scale;

Figure 3 is a fragmentary plan view showing the fabric engaging mechanism;

Figure 4 is a fragmentary view showing a modified form of fabric engaging mechanism, and

Figure 5 is a fragmentary plan view of the form of construction shown in Figure 4.

Referring first to the form of construction

in Figures 1 to 3, the wire fabric which is indicated at 11 is passed over the sprocket wheels 12 into the vat 13 which contains the liquid coating material 14. The wire fabric is guided down into the coating material by the member 15. The fabric passes from the bath 14 over the sprocket wheels 16 and down around the sprocket wheels 17. These wheels 16 and 17 are positively connected by the chain 18, which passes over sprocket wheels 19 and 20 secured to the same shafts as the wheels 16 and 17. The sprocket wheels 16 and 17 are thus caused to rotate in a fixed relation to each other. The sprocket wheel 17 is located in a vat 21 which contains a cooling liquid 22, which may be oil, water or any desired material.

Referring now to Figure 2, it will be apparent that the wire fabric 11 is positively driven by the sprockets on the wheels 16 and 17 which fit into the meshes of the fabric. As the fabric passes through the coating bath the wires of the fabric are held in contact with each other by gravity and by the tension caused by the drive sprockets. The sprocket wheels 16 and 17 are so related that when the fabric engages their sprockets a predetermined amount of slack will exist in the fabric between the two sprocket wheels.

The oppositely faced lugs 23 and 24 are rotatably secured to the shafts 25 and 26 which are fixed on opposite sides of the path of the fabric between the two sprocket wheels. The springs 27 and 28 encircle the shafts 25 and 26 and each spring has one end secured to the shaft and the other end secured to the adjacent dog 23 or 24. These springs tend to maintain the members 23 and 24 approximately horizontal and the springs are put under tension when the fabric is drawn through the members 23 and 24 as indicated in Figure 2. This engagement of the fabric holds it in close contact with the lower sprocket wheel 17 which draws it through the members 23 and 24 against the resistance of the springs 27 and 28. The slack in the fabric, therefore, is located above the members 23 and 24 at the points 29 as indicated in Figure 2. It will be noted that the wires forming the fabric are separated as they pass into the cooling bath 22.

A modified form of construction is shown in Figures 4 and 5. The fabric 31 passes down through between the idler sprockets 32 and 33 which are carried upon shafts 34 and

35. It will be understood that these idlers are substituted for the members 23 and 24 of the first form of construction, and that the shafts 34 and 35 will be located similarly to the shafts 25 and 26 of that form. The shafts 34 and 35 carry small brake drums 36 and 37 around which passes the brake bands 38 and 39. These bands 38 and 39 are drawn against the brake drums by the springs 40 and 41. Above the idler sprockets 32 and 33 are located the pipes 42 and 43, which are provided with perforations as shown at 44 and 45. These pipes are connected to a header 46 through which any desired cooling fluid may be supplied. It will be noted that the pipes 42 and 43 are so located that cooling fluid from the perforations in the pipes will be directed upon the fabric at the time that the wires of the fabric are separated by the action of the idler sprockets 32 and 33.

In carrying out my method, the fabric 11 may be treated in any usual cleaning and pickling vats before it is passed to the sprockets 12. It will be understood that the shafts carrying the various sprockets are driven by any suitable power means. The fabric passes through the bath 14 which may be any suitable material, such for example, as molten zinc. As the fabric is drawn out of the molten metal its temperature is such that the metal does not immediately become hard or freeze. It remains fluid, clinging to the wires of the fabric until after the fabric passes over the sprockets 16. The separation of the wires of the fabric by the means located between the sprockets 16 and 17 will break the connection between the fluid metal on previously contacting wires, so that each wire will be covered by a separate coat of liquid material. As the wires are separated and the coating is still liquid, the wires are passed into the cooling medium which may either be a liquid in a vat, as shown in Figure 1, or a liquid or gas directed on the fabric in the form of jets or spray by the means shown in Figures 4 and 5. Either cooling means causes the coating to freeze or harden instantly and each wire is thus given a perfect and unbroken coat.

In the form of construction shown in Figure 1, the wire is passed over sprockets 47 and 48 and over the apron 49 and is wound up on the reel 50. The weight 51 serves to properly position and tension the fabric on the reel.

While I have illustrated certain preferred forms of apparatus adapted for carrying out my method, it is to be understood that it may be carried out by other apparatus or in different manners, and I contemplate such changes and modifications as come within the spirit and scope of the accompanying claims.

I claim:

1. The method of coating wire fabric which consists in applying a liquid coating to the fabric, separating the wires while the coating is liquid, and positively applying means to the coating at a predetermined point to cause it to harden while said wires are separated.

2. The method of coating wire fabric which consists in applying a liquid coating to the fabric, positively driving the fabric, engaging the fabric adjacent the point of drive to cause slack in the fabric such as to separate wires of the fabric, and positively applying to the separated fabric means to harden the coating.

3. The method of coating wire fabric which consists in applying a liquid coating to the fabric, positively driving the fabric at two spaced points, the drive being so related as to permit slack in the fabric between the drive points, and yieldingly engaging the fabric between the drive points in such manner as to separate the wire at a predetermined point.

4. The method of coating wire fabric which consists in applying a liquid coating to the fabric, positively driving the fabric at two spaced points, the drive being so related as to permit slack in the fabric between the drive points, yieldingly engaging the fabric between the drive points in such manner as to separate the wire at a predetermined point, and applying to the wires at such point means for hardening the coating.

Signed at Chicago, Illinois, this 24th day of April, 1925.

JOHN W. MEAKER.