July 13, 1926. 1,592,206

N. S. HARTER

METHOD OF COATING WIRE FABRIC

Filed Sept. 29, 1923 2 Sheets-Sheet 1

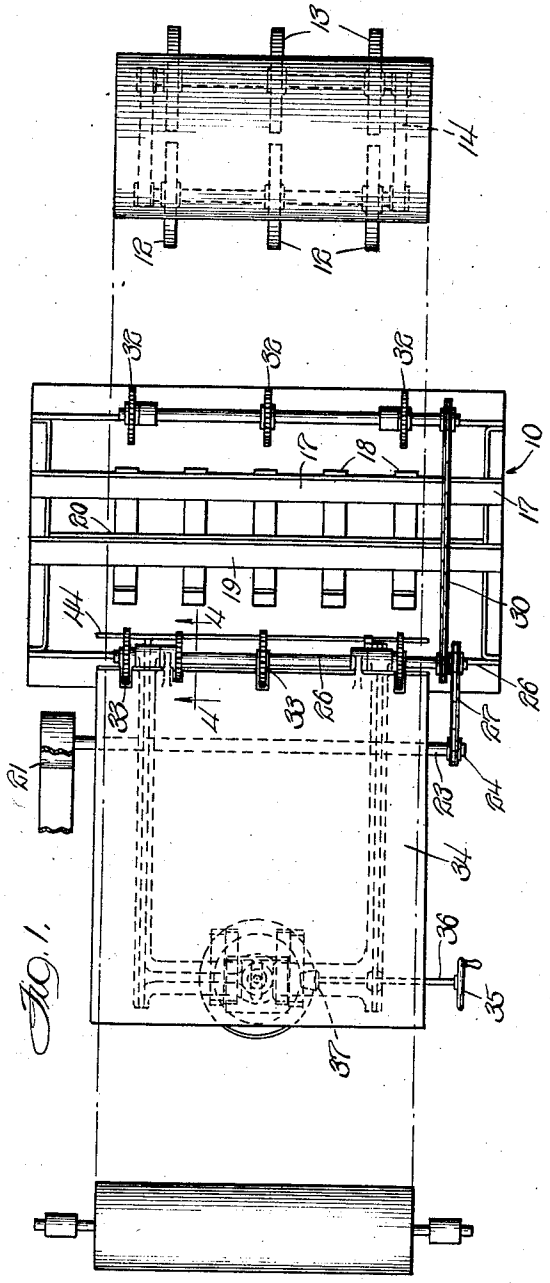


Fig. 1.

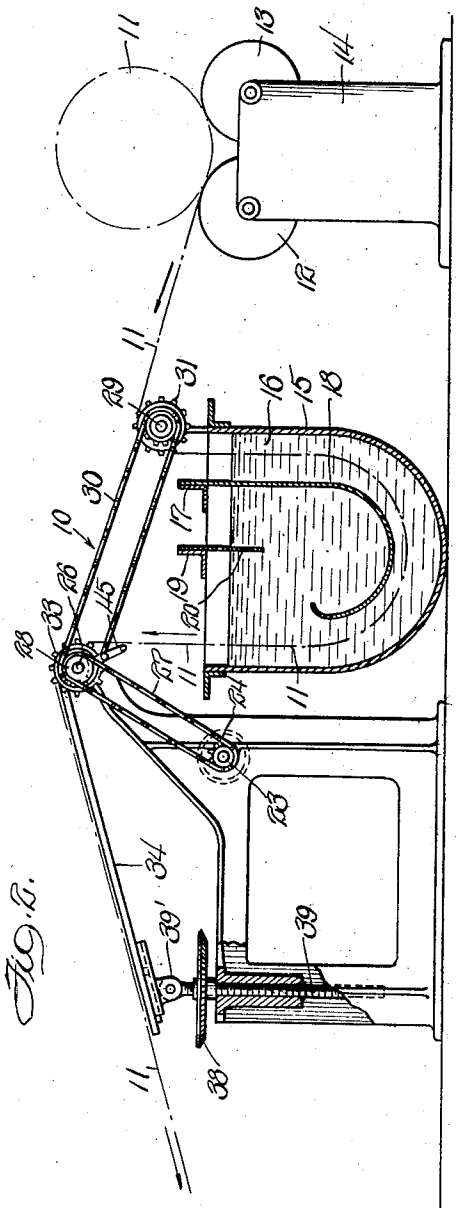


Fig. 2.

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Fig. 3.

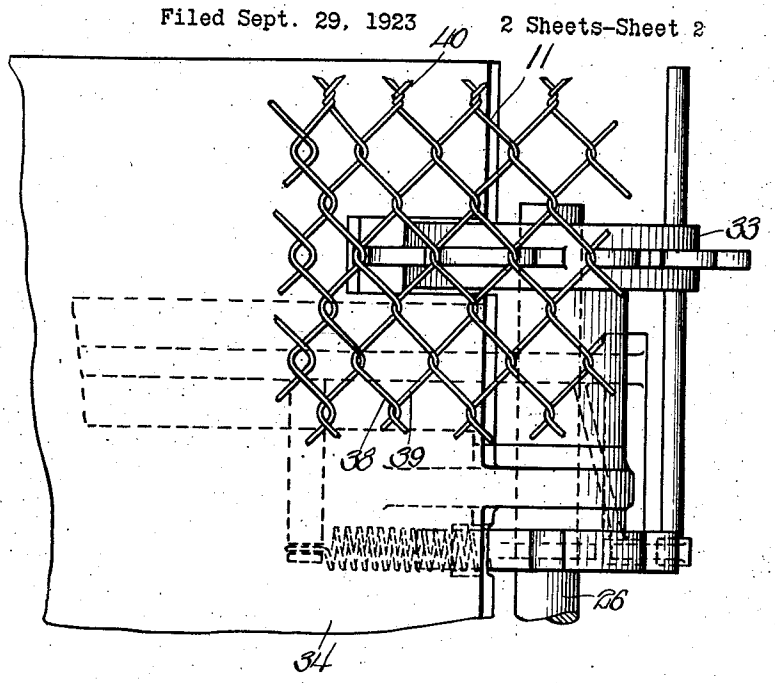
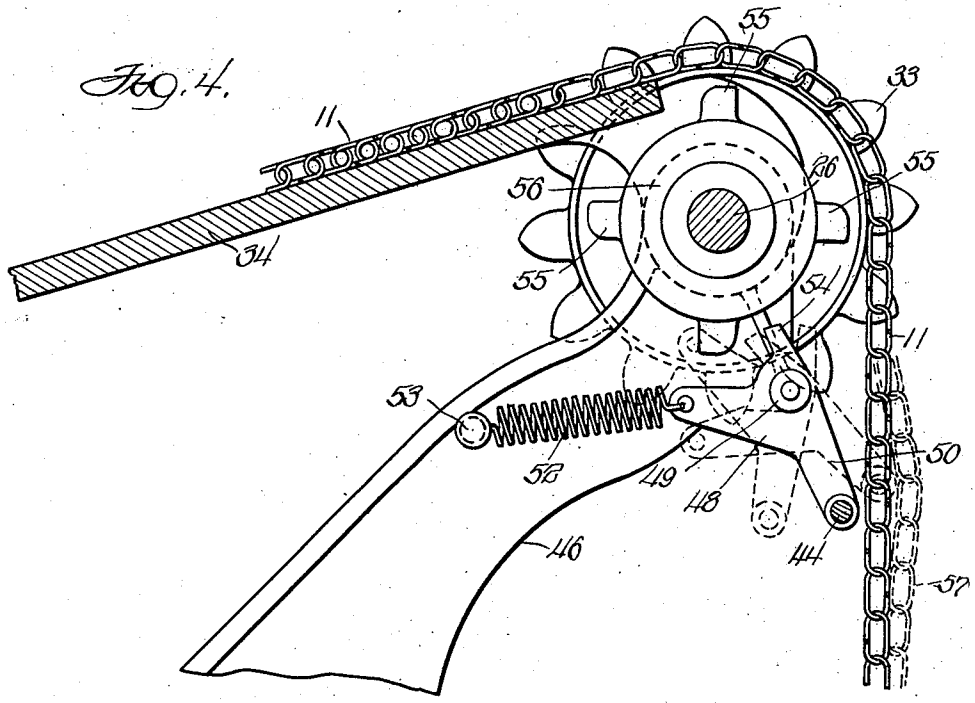


Fig. 4.



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UNITED STATES PATENT OFFICE.

NOAH S. HARTER, OF WAUKEGAN, ILLINOIS, ASSIGNOR TO CYCLONE FENCE COMPANY, OF WAUKEGAN, ILLINOIS, A CORPORATION OF ILLINOIS.

METHOD OF COATING WIRE FABRIC.

Application filed September 29, 1923. Serial No. 665,606.

This invention relates to a method of coating wire fabric.

One of the objects of the invention is to improve means and mode of procedure to uniformly and to smoothly coat wire fence fabric in which transversely extending members or pickets thereof are loosely joined together and which may be moved out of actual contact with each other without disconnecting them.

Another object is to provide means for removing excessive coating material from the fabric as it leaves the bath and casting said excess material back into the bath.

Another object is to provide a new mode of procedure for separating the links of the adjacent pickets, by changing their relative speed of movement, after they leave the bath, to separate the contacting parts of the pickets.

Another object is to provide means for moving the fabric at a uniformly lower speed after it leaves the bath sufficient to separate the parts and not sufficient to bring them again into contact before the covering or coating is set by drying or cooling.

Other objects and advantages will hereinafter appear from a consideration of the following description, when taken in conjunction with the drawings, wherein:—

Fig. 1 is a schematic plan view of a machine.

Fig. 2 is a side elevation thereof.

Fig. 3 is an enlarged plan view of a fragment of a fabric as it appears immediately after receiving the coating.

Fig. 4 is an enlarged section taken on line 4—4 of Fig. 1.

In all of the views the same reference characters are employed to indicate corresponding parts.

The invention will be explained with respect to its use for coating fencing of the type known as chain fabric in which a series of transversely extending picket members are loosely joined together by interconnection of their mesh wires.

These picket members are loosely connected and independently movable, to a limited extent, but not disconnected. When coating with paint, japan or a galvanizing coating it is desirable to maintain them out of contact to insure a smooth and uniform coating.

In my copending application Ser. No. 647,096, filed June 22, 1923, now Patent Number 1,489,076, I have disclosed a means whereby the pickets of the fabric are positively held out of contact with each other until the coating sets or dries. In the present application the pickets are separated by change of speed of movement at the time when the change takes place.

In any event the sheet or strip of reticulate fabric is submerged in a suitable bath of coating material, such as heated spelter, for galvanizing, or a japanning solution for a paint-like coating, or a suitable varnish or paint while continuously moving and after being submerged it is suitably vibrated to shake off the excess of coating into the bath and allowed to cool and harden before being rewound into a roll for storage or shipment.

In the drawings I have illustrated schematically a machine by means of which my invention may be carried into effect.

The machine is generally indicated by 10 in which a roll 11 of uncoated fabric, to be coated, is mounted on a series of rollers 12 and 13 supported on a suitable pedestal 14.

A tub or kettle 15 contains the coating material, which may be molten spelter when the fabric is to be galvanized. The spelter 16 or other coating material may be heated in the kettle by any suitable means.

Located in the kettle and secured to an angle bar 17 are a series of J-shape fabric guide bars 18 and secured to an angle bar 19 is a dividing plate 20.

The fabric 11 is located in the kettle between the sides and bottom thereof and the guide bars 18. The guide bars prevent the fabric from rising in the bath out of contact with the coating material.

Any suitable means may be employed for driving the machine. The power may be applied to the driving pulley 21 which is secured to shaft 23. A sprocket wheel 24 on shaft 23 drives shaft 26 thru the sprocket chain 27 and the sprocket wheel 28 on shaft 26.

A shaft 29 mounted above the outer edge of the kettle is driven at the same speed as shaft 26 from a sprocket wheel on shaft 26 by chain 30, which passes about sprocket wheel 31 on shaft 29.

A series of fabric-moving sprocket wheels

32 are mounted on shaft 29. These sprocket wheels have sprockets properly spaced to engage mesh openings of the fabric to move it into the tub.

Similar sprocket wheels 33 are mounted on shaft 26 to pull the fabric out of the bath at the same speed at which it was moved into the bath by sprocket wheels 32.

The fabric after leaving sprocket wheels 33 is received on a smooth inclined table 34, the inclination of which may be adjusted by hand wheel 35 which is mounted on shaft 36 and which carries a miter gear pinion 37 that is in mesh with the miter gear 38. The gear 38 has a central threaded bore to raise and lower the screw threaded shaft 39, pivotally connected to the table 34 and 39'. By this means the inclination of the table 34 may conveniently be adjusted.

When the fabric is being raised from the bath, an excessive amount of the coating liquid is liable to adhere to it and form stalactites or "whiskers" which is objectionable. To avoid this effect I provide means for automatically striking the fabric a smart blow at regular intervals.

To this end I provide a rod 44 extending across the fabric and supported on swinging arms 45, pivoted to the frame 46 at 47. A three-arm bracket 48 is pivoted to the frame 46 at 49. Arm 50 is connected to the rod 44. Arm 51 is connected to a coil spring 52 which is secured to the frame 46, at 53, and yieldingly holds the bracket in position shown in full lines in Fig. 5. Arm 54 is normally in the path of the projections 55 carried by the wheel 56 and which is fixed on the shaft 26.

When a lug 55 strikes the arm 49 it moves the bracket 50 into dotted line position against the stress of the spring 52 with the rod 44 retracted. When the lug 55 releases the arm 54 the spring causes the rod 44 to move forward at high speed and strike the fabric 11 a sharp blow, moving the fabric temporarily as shown by dotted lines at 57. The impact of the rod with the fabric causes the excess of coating material to become dislodged from the fabric and fall back into the kettle.

The means for jarring the fabric to remove the excessive coating material is carried by the same support which carries the front end of the table and its sudden movement also jars the table 34 and causes the fabric to move slowly down the table at a slower speed than that at which it was being moved in the passage thru the coating bath. The result is that the pickets 40 become separated to an irregular degree, as shown in Fig. 1.

The inclination of the table 34 may be adjusted in the manner disclosed to any suitable degree to vary the effect of gravity upon the fabric in its movement down the table.

Any suitable artificial means may be employed for drying the fabric, as it slides down the table, or after it leaves the coating bath.

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

1. The method of coating metal fabric having loosely connected independently movable members which includes moving the fabric through a coating bath; delivering the fabric on an inclined support, the inclination of the support being such as to cause the fabric to move therefrom by effect of gravity at a speed to separate said members.

2. The method of coating metal fabric having loosely connected independently movable members which includes moving the fabric through a coating bath; delivering the fabric on an inclined support; jarring the fabric and support and adjusting the inclination of the support to cause the fabric to move therefrom at a speed to separate said members.

In testimony whereof I hereunto subscribed my name.

NOAH S. HARTER.