

April 5, 1927.

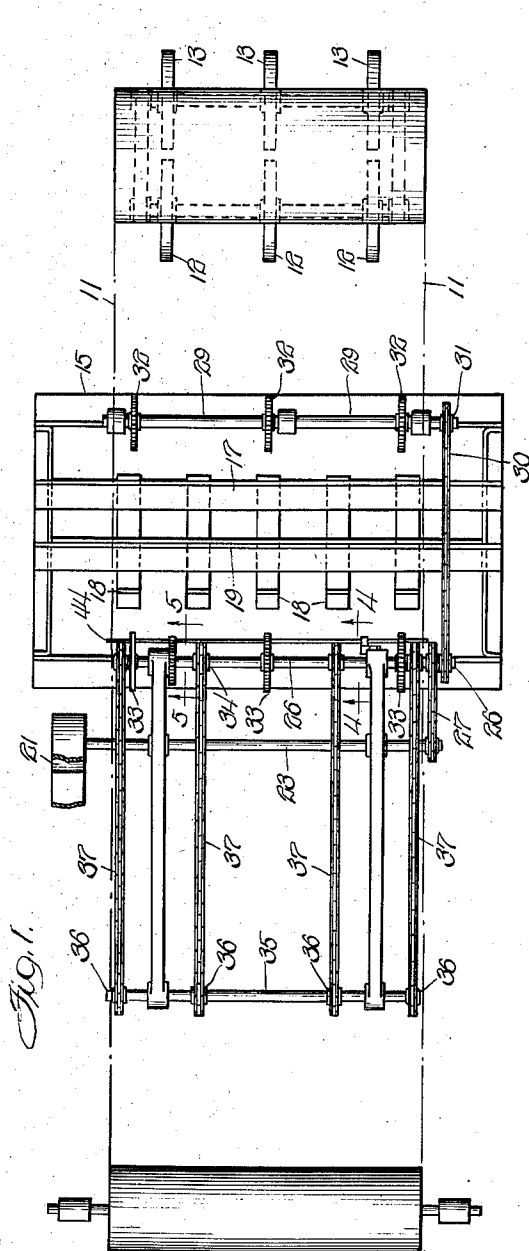
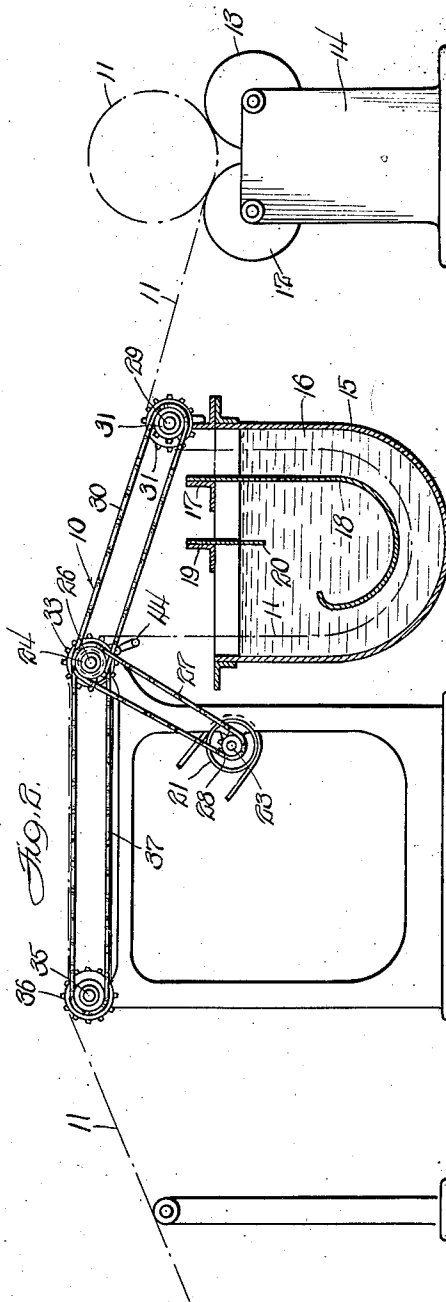
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1,623,593

METHOD OF AND MEANS FOR COATING WIRE FABRIC

Filed Sept. 29, 1923

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3.

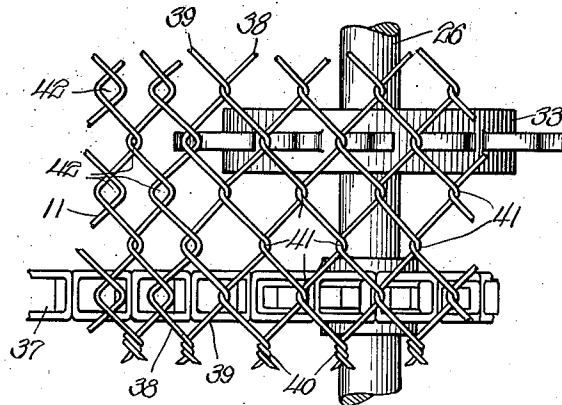


Fig. 4.

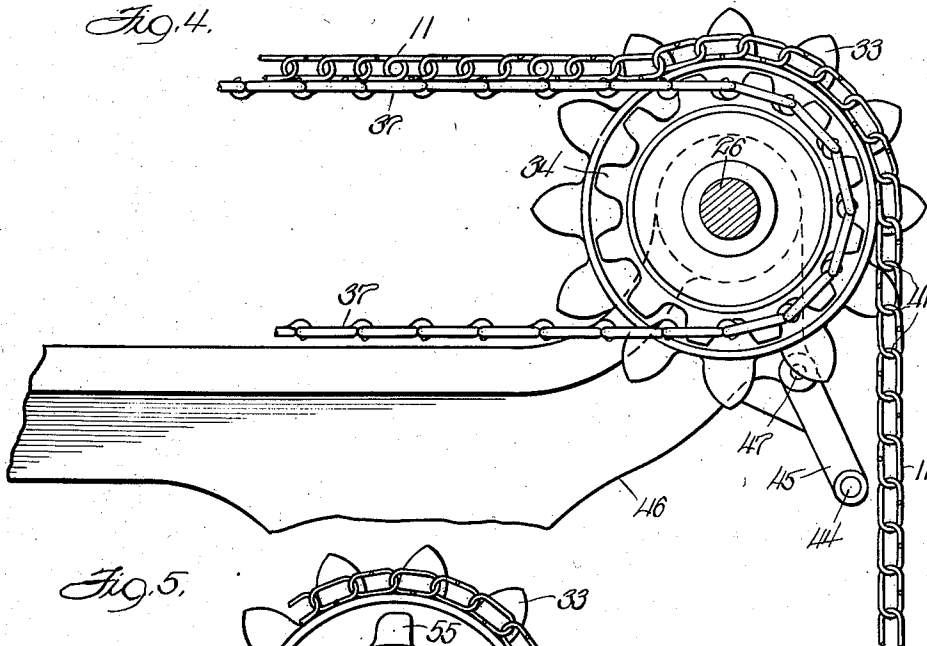
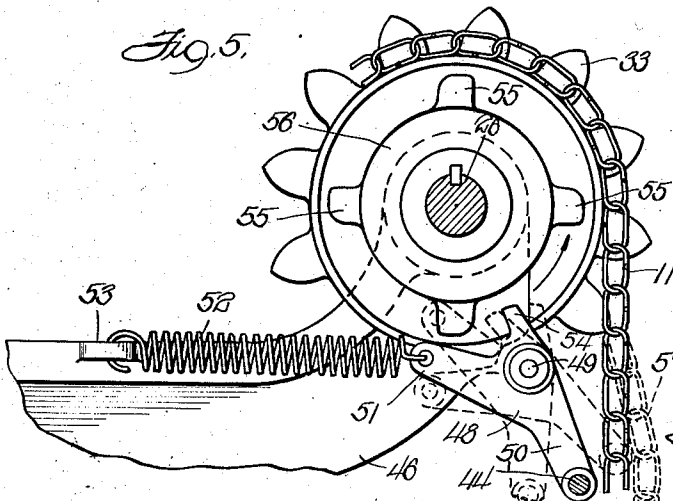


Fig. 5.



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UNITED STATES PATENT OFFICE.

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METHOD OF AND MEANS FOR COATING WIRE FABRIC.

Application filed September 29, 1923. Serial No. 665,607.

This invention relates to a method of and means for 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 herein-after 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.

Fig. 5 is an enlarged section taken on line 5—5 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 23.

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.

Sprocket wheels 34, smaller in diameter than the sprocket wheels 33, are mounted on shaft 26 and wheels 36 of the same diameter are mounted on shaft 35. The sprocket wheels 34 and 36 are connected by fabric carrying chains 37. The chains 37 are moving at less speed than the fabric is being moved by the sprocket wheels 33, because of the difference in diameter of the wheels 33 and 34.

The fabric 11 rests on the carrier chains 37 after it leaves the sprocket wheels 33. In the chain fabric 11 each picket consists of two wires 38 and 39 twisted together at intervals, to form meshes, and at both terminal ends, as at 40, so that each picket is a distinct unit loosely connected to an adjacent unit. When the chain of pickets, constituting the fabric 11, is being lifted from the kettle as shown in Figs. 3 and 5, inclusive, the wires of the pickets are more or less in contact with each other, as at 41, but when they are being transferred from the relatively fast moving sprockets 33 to the relatively slow moving conveying chains 37 they are separated, as at 42, because the picket following the one which is resting on chains 37 is moving faster and therefore there is produced a predetermined relative movement of the pickets at this point. After the pickets have once been separated in the manner described they will remain separated because when they find lodgment on the chains 37 they all move at the same speed.

The separation of the pickets in the manner described prevents them from adhering together and leaves a smooth even finish.

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, yieldingly holds the bracket in posi-

tion 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 fabric is moved at two different speeds. At one speed while moving thru the coating bath and at another speed after it leaves the first moving means, so that the pickets will not adhere together because of their separation due to this effect.

The sprocket wheels 33 serve to move the fabric through the coating bath while the smaller sprocket wheels 34 serve to move the conveying chains 37, which serve to carry the fabric after it leaves the sprockets 33. Although the sprockets 33 and 34 are on the same shaft and will rotate at the same speed, since they differ in diameter they will move the fabric at different speeds. This difference will cause the fabric links to be separated as they pass from the sprockets 33 to the conveying chains 37.

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

1. A machine, for coating metal fabric having loosely connected, transversely extending, longitudinally movable members, having a set of sprocket wheels to move the fabric thru a coating bath at a given speed and a set of fabric conveying belts to receive the fabric and to move it at a slower substantially constant speed.

2. A machine for coating metal fabric, having means to move the fabric through a coating bath; a rod extending across the fabric, normally out of contact therewith; a spring to hold the rod in normal position; a bracket movable by the spring and having an arm connected to the rod; another arm on the bracket; a wheel having spaced projections thereon to engage the latter arm and stress the spring whereby to strike the fabric with the rod when the arm is released.

3. A machine of the character described comprising a rotatable shaft; a series of sprocket wheels thereon to engage and move a wire fabric having loosely connected members; another rotatable shaft, parallel with the first mentioned shaft; a series of like wheels on each shaft smaller in diameter than the fabric-moving wheels and carrier belts connecting the like wheels on both shafts

to move the fabric at a slower speed than when moved by said sprocket wheels.

4. A machine of the character described, for moving a fabric having loosely connected, transversely extending, longitudinally movable members, comprising a shaft having sprocket wheels thereon to move the fabric at a given speed; a series of other

wheels thereon, of a smaller diameter and belts about the latter wheels to receive and 10 move the fabric at a lower speed, to separate the members from mutual contact.

In testimony whereof I hereunto subscribe my name.

NOAH S. HARTER.