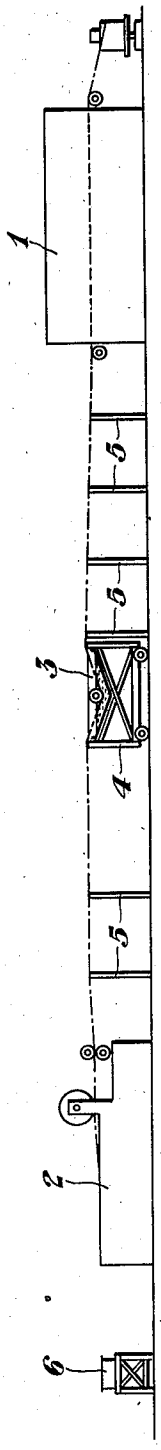
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METHOD FOR PRODUCING WIRE ARTICLES

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METHOD FOR PRODUCING WIRE ARTICLES

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2 Claims. (Cl. 91—70)

This invention is a method and apparatus for producing wire articles protected against corrosion by a baked coating, one of the objects being to produce such articles in a very cheap and effective manner. Other objects may be inferred.

The accompanying drawing schematically illustrates an example of the apparatus used in conjunction with the new method.

This apparatus includes the combination of a continuous wire annealing furnace 1, a machine 2 for continuously fabricating wire leaving the furnace 1 into the desired articles, this machine being arranged at such a distance from the furnace 1 that the wire is relatively cool when it reaches the same, and an immersion tank 3 containing a coating material requiring at least some baking and through which wire may be passed on its way from the furnace 1 to the machine 2.

The tank 3 is carried by a carriage 4 so that it is variably positionable between the furnace 1 and the machine 2 whereby it may be positioned at such a distance from the furnace 1 that wire leaving the same is just hot enough to impart the right baking to the particular coating material contained in the tank 3.

Wire guides 5 may be arranged between the various elements of the apparatus, and a tank 6 containing coating fluid may be arranged beyond the fabricating machine 2.

The new method for producing wire articles protected against corrosion by a baked coating may be performed with the aid of the above or other apparatus and includes continuously annealing wire from which the articles are to be fabricated, continuously applying a coating material requiring at least some baking to this wire while the latter still retains sufficient heat from the annealing to heat this material sufficiently to effect the baking required by the same, and subsequently fabricating the wire into the desired articles. Such fabrication naturally entails some localized working of the wire, and the method further includes applying a secondary coating of a material not requiring any baking to the portions of the wire which are worked during such fabrication.

The invention is particularly applicable to the production of bale ties. These are ordinarily made from annealed wire and are subject to the disadvantage that they rust very easily when stored. Sometimes they are oiled, but they then contaminate the material to which they are applied as a tie.

It is obvious that it would be ideal if bale ties could be protected against corrosion by a baked coating which would be hard and non-contaminating. However, the price of bale ties is more or less set, and it has been generally thought that a baked coating could not be applied without entailing a financial loss to the maker. The present invention permits the production of bale ties having the desired baked coating and which may be produced at practically the same cost as unprotected bale ties since the heat required to bake the coating is that usually lost during the cooling of the wire, which must always be annealed.

The applicability of the apparatus previously described in connection with the new method is obvious. As an example, the wire from which bale ties are to be fabricated is passed through the continuous furnace 1, through the variably positionable tank 3, and so to the bale tie fabricating machine 2. The tank 3 is moved back and forth respecting the furnace 1 until a position is attained where the wire retains just sufficient heat to heat the coating material to impart the right baking. Different coating materials supplied by different manufacturers require different amounts of baking, and the required flexibility to accommodate these different materials is provided by the apparatus.

The fabricating machine 2 functions to cut and twist the wire so as to form bale ties having formed ends. Since this may mar or weaken the baked coating, the formed ends of the bale ties are then dipped into the tank 6, the latter containing a material not requiring any baking. This secondary coating may not cling so tenaciously to the bale ties as does the baked coating, but since it is only covering very slight defects in the latter, this is relatively immaterial.

There are a number of suitable coating materials known to the art. These generally are synthetic resin enamels such as chlorinated rubber, glycerol-phthalate or phenolic condensation resinoids in a suitable solvent.

Furthermore, there are different methods by which the coating fluid may be applied otherwise than by dipping. Thus, spraying apparatus may be substituted for the tanks 3. Then, too, the inclination of the wire leaving the coating apparatus may be varied, for instance, by prolonging the inclined portion so that the coating fluid will tend to flow slightly whereby a smoother and more uniform coating results.

Although a specific embodiment of the invention is disclosed in accordance with the patent statutes, it is not intended to limit its scope ex-

actly thereto, except as defined by the following claims.

I claim:

1. A method of producing bale ties protected against corrosion by a baked coating, including passing the wire from which said ties are to be made through a continuous furnace and thus heating it to an annealing temperature, continuously applying a synthetic resin enamel or the like to said wire after it has left said furnace and when it reaches a temperature providing an amount of residual heat that properly bakes said enamel to hardness, and subsequently continuously cutting said wire to suitable lengths and then twisting the end portions of the latter to produce formed ends.

2. A method of producing bale ties protected against corrosion by a baked coating, including passing the wire from which said ties are to be made through a continuous furnace and thus heating it to an annealing temperature, continuously applying a synthetic resin enamel or the like to said wire after it has left said furnace and when it reaches a temperature providing an amount of residual heat that properly bakes said enamel to hardness, subsequently continuously cutting said wire to suitable lengths and then twisting the end portions of the latter to produce formed ends, and finally applying a secondary coating to said end portions so as to cover any portions bared by said twisting.

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