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S. PEACOCK

PROCESS OF STRAIGHTENING AND COATING WIRE

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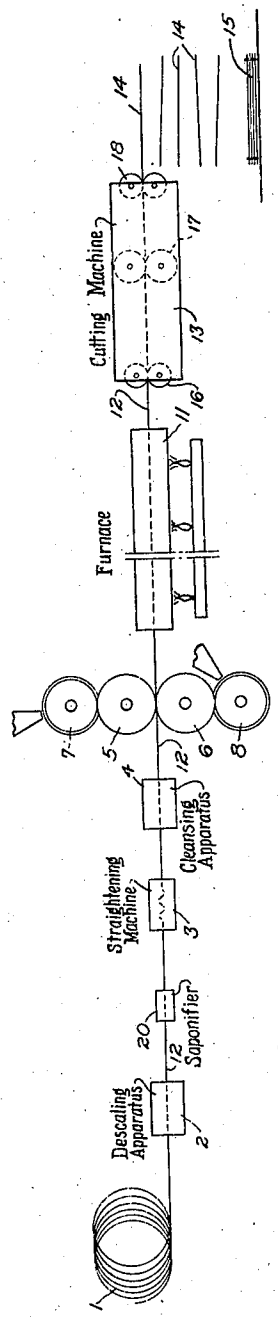


Fig. 1



Fig. 4

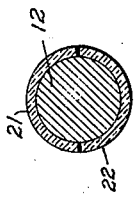


Fig. 3

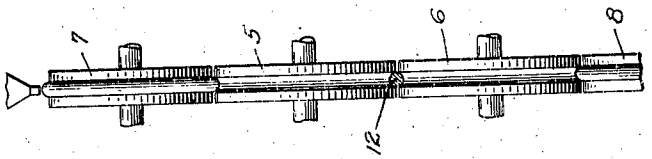


Fig. 2

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UNITED STATES PATENT OFFICE.

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PROCESS OF STRAIGHTENING AND COATING WIRE.

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To all whom it may concern:

Be it known that I, SAMUEL PEACOCK, a citizen of the United States, residing at Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in Processes of Straightening and Coating Wire; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to coated straight lengths of wire and process of producing the same, and has for its object to provide an article and procedure which will be an improvement over what has been heretofore proposed.

With these and other objects in view the invention consists in the novel article of manufacture constituting the wire and in the novel steps and combinations of steps constituting the process, all as will be more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals designate like parts in all the views:—

Figure 1 is a diagrammatic view of an apparatus suitable for carrying out this invention;

Figure 2 is a diagrammatic view partially in section of the lacquering portion of the apparatus shown in Figure 1;

Figure 3 is a sectional view of the coated wire; and

Figure 4 is a longitudinal view of the coated wire.

In order that the precise invention may be the more clearly understood it is said:—At present there is a large demand for straightening lengths of wire of say from 6 to 15 feet long for the purpose of banding boxes, and in order to preserve said lengths against oxidation it is customary to galvanize the wire before it is made into coils, to then straighten the coiled wire by passing the same through straightening machines and to then cut the straightened wire into desired lengths, whereupon the said wires are bundled and sold to the users of special machines for the purpose of banding boxes and other packages.

The purpose of this invention, more specifically stated, is to provide a less costly means of preserving the wires from oxidation while at the same time so marking the wires that they will be readily distinguishable on the market from other wires. In order to avoid the cost of galvanizing the wires I prefer to coat the wires with lacquer or with an ink or other coloring compound having lacquer or an equivalent substance intermixed therewith. But, as is well known, if a lacquered or ink coated wire is made up into coils as is the galvanized wire, and then passed through a straightening machine preparatory to cutting the wire into suitable lengths, the lacquer coating will be so broken or torn as to render the same useless.

On the other hand, if one cuts the uncoated wire into suitable lengths before lacquering, or coating, the same, the cost of handling the individual cut pieces will be prohibitive. Therefore, according to this invention, I proceed as follows:—

The ordinary uncoated wire is coiled as usual to form the coils 1, the coiled wire is then pulled through a suitable apparatus 2 to deprive the wire of any mill scale that may coat the same, and to otherwise clean the wire. As indicated in the drawings, I prefer to employ a machine of the scratch brush type for this purpose. The wire 12 is next passed through any suitable oiling or soaping device 20 to coat the same with a lubricant and the lubricated wire is next passed through any suitable well known form of straightening machine 3 in order to permanently take the kinks or coil out of the said wire. After leaving the straightening machine 3, the wire is next preferably subjected to a cleansing apparatus 4 which may be in the form of a brush or wiper to remove the soap, oil or other lubricant with which the wire was coated, and thus provide a clean surface on the wire before applying the lacquer. The wire 12 is next passed between the rollers 5 and 6 to provide the necessary lacquer coating or ink coating, or a combination of the two. That is to say, said rollers 5 are conveniently grooved as illustrated in Figure 2, and are fed with lacquer or ink or a combination of lacquer and ink by means of any suitable rollers such as 7 while the rollers

6 are fed with similar material by means of the rollers 8 as will be understood.

In case the wire is to be of a uniform color and coating the ink or lacquer or other material fed to the rollers 5 and 6 by means of the rollers 7 and 8 respectively will be of the same materials. On the other hand, if the wire is to be distinctively colored in order to indicate to the purchaser its quality, the rollers 7 will feed to the roller 5 an ink of one color such for example as red, and the roller 8 will feed to the roller 6 an ink of another color such for example as white. The wire 12 will thus be coated on opposite sides with two different colors and is thereupon immediately passed through the furnace 11 maintained at a relatively high temperature sufficient to bake the coating applied to the wire while it is passing therethrough.

From the furnace 11 the baked wire 12 is passed on to the cutting machine 13 as indicated wherein the wire is cut into suitable lengths 14 as shown and bundled into the bundles 15 all as will be readily understood.

The foregoing mechanism is or may be of the usual type in each case, and therefore, it is not deemed necessary to more particularly describe the same. That is to say, scratch brushing machines suitable for this purpose, wire straightening machines, wire inking machines, baking ovens, as well as wire cutting machines are now so well known that no claim is made specifically to the apparatus in this case.

By, however, following the procedure above outlined, one is enabled to straighten and coat a continuously moving wire with a relatively brittle coating and cut the same into predetermined lengths without destroying said coating during the straightening operation. The now well known cutting machines 13 are provided with a pair of rolls 16 which pull on the wire, a pair of rolls 17 which cut the wire, and a pair of rolls 18 which push the cut lengths 14 out of the machine.

It will now be clear that by following the foregoing procedure I am enabled to continuously pull the continuous wire 12 from the coil 1 through the various machines by means of the rollers 16 to cut the baked and coated wire into predetermined lengths 14 and to bind the lengths into bundles 15. I am also enabled to make the coating of the wire two or more colors as indicated at 21 and 22 Figure 3, or in a single color as indicated at 24 in Figure 4.

What I claim is:—

1. The process of producing lengths of straightened and cut wires which consists in descaling the wire; straightening the descaled wire; coating the straightened wire; passing the coated wire through a furnace to harden the coating thereon; and cutting the coated wire into the desired length.

2. The process of producing lengths of straightened and cut wires which consists in descaling the wire; coating the descaled wire with a lubricant; straightening the lubricated and descaled wire; cleaning the surface of the straightened and lubricated wire; coating with a protective material the straightened wire; passing the coated wire through a furnace to harden the coating thereon; and cutting the coated wire into the desired lengths.

3. The process of producing lengths of straightened and cut wires which consists in coiling said wires; descaling the coiled wires; lubricating the surfaces of the descaled wires; straightening the lubricated wires; cleaning the surfaces of the straightened wires; covering the cleansed wires with a protective coating; heating the protective coating to harden the same; and cutting the coated wires into predetermined lengths.

4. The continuous process of producing lengths of straightened and cut wires which consists in causing said wires to travel continuously along a predetermined path; descaling the traveling wire; straightening the traveling descaled wire; coating the straightened wire; passing the coated wire through a furnace to harden the coating thereon; and cutting the coated wire into the desired lengths.

5. The continuous process of producing lengths of straightened and cut wires which consists in coiling said wires; causing said wires to travel continuously along a predetermined path; descaling the coiled wires; lubricating the surfaces of the traveling descaled wires; straightening the lubricated wires; cleaning the surfaces of the straightened wires; covering the cleansed wires with a protective coating; heating the protective coating to harden the same; and cutting the traveling coated wires into predetermined lengths.

In testimony whereof I affix my signature.

SAMUEL PEACOCK.