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MANUFACTURE OF WIRE

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5 Claims. (Cl. 205—21)

This invention relates to the drawing of wire, and has for an object the effective lubrication of the wire as it passes through a die.

In drawing wire it is very important to produce a lubricating coating on the surface of the wire to separate the wire from the surface of the die during the drawing operation, both to secure a good product and to protect the die against undue wear. One commonly used lubricant is powdered soap, usually placed in a box through which the wire is drawn just before it enters the die. If the surface of the wire is fairly rough, ample powdered lubricant is carried by the wire into the die. Sometimes the roughness is increased by slightly rusting the wire (so-called "sulling"), but with stainless steel wire (i. e. wire of an alloy containing a considerable amount of chromium) this is not feasible, and other lubricating methods have heretofore been resorted to.

The present invention aims to insure that the wire will pick up adequate lubricant, by providing a rough surface on the wire by other means than rusting, and preferably by precipitating crystals on the surface of the wire before it passes into the lubricating material on its way to the die. The crystals may be formed by passing the stainless steel, or other wire material being drawn after pickling and cleaning, through a hot saturated salt solution, for example of sodium chloride, soda, or a mixture of sodium chloride and soda, or of equivalent salts which are not expensive and which crystalize readily from saturated solutions, or one of the more easily crystallizable sugars (as for example ordinary cane or beet sugar).

After immersing the wire material in this solution it is withdrawn and dried by evaporating off the water or other solvent slowly enough to leave a rough surface covered with adherent crystals. It is then further passed in the usual way through a mass of powdered soap, or other lubricant, directly into the die. Preferably the lubricant is agitated, or the wire is moved through it in a non-uniform manner, to prevent caking of the lubricant.

While the invention is of especial value in drawing stainless steel wire, it is not my intention to limit the invention to the manufacture of wire of stainless steel only, or otherwise than by the terms of the appended claims.

I claim:

1. That method of making wire which comprises passing the wire to be drawn through a substantially saturated solution of a crystallizable material, evaporating off the solvent to leave crystals of said material on the surface of the wire, then passing the crystal-covered wire through a body of powdered lubricant such as soap and then drawing the wire through a die.

2. That method of drawing polished stainless steel wire which comprises passing the wire to be drawn through a substantially saturated solution of a salt, evaporating off the solvent to leave salt crystals on the surface of the wire, then passing the crystal-covered wire through a body of powdered lubricant such as soap, and then drawing the wire through a die.

3. That method of drawing polished stainless steel wire which comprises passing the wire to be drawn through a substantially saturated solution comprising soda and sodium chloride, evaporating off the solvent to leave soda and sodium chloride crystals on the surface of the wire, then passing the crystal-covered wire through a body of powdered lubricant such as soap, and then drawing the wire through a die.

4. That method of drawing polished stainless steel wire which comprises passing the wire to be drawn through a substantially saturated solution of sugar evaporating off the solvent to leave sugar crystals on the surface of the wire, then passing the crystal-covered wire through a body of powdered lubricant such as soap, and then drawing the wire through a die.

5. That method of making polished stainless steel wire which comprises passing the wire to be drawn through a substantially saturated solution of a crystallizable material, evaporating off the solvent to leave crystals of said material on the surface of the wire, then passing the crystal-covered wire through a body of powdered lubricant such as soap and then drawing the wire through a die.

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