

UNITED STATES PATENT OFFICE

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WIRE ROPE

No Drawing

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This invention relates to improvements in steel or ferrous metal wire strands and cables, and has for its object the provision of articles of this class in which the surface of each of the individual wires of the article are lubricated by being impregnated with a dry lubricant such as graphite during their drawing operations, whereby the internal stresses and wear are greatly reduced in the manufactured strands and cables, and also whereby the wires, due to their lubricated surfaces, resist corrosion and rust to a greater degree than coppered wire ordinarily used for this purpose.

In carrying out the present invention the hot rolled ferrous metal rod or blank from which the wire is formed is first cleaned to remove the scale and other foreign matter, and the blank is then drawn through a plurality of drafts in which graphite is used as a lubricant. After the blank has been reduced by being drawn through a predetermined number of drafts, it is heat treated to soften the blank and remove the strains caused by the previous drawing operations, and then, again drawn through successive drafts, in which graphite is again used as a lubricant, to reduce the wire to a finished size.

The use of graphite as a lubricant causes the surface of the blank and finished wire to be impregnated with graphite and results in several advantages in the drawing operations as well as in the finished wire and articles made from the wire.

Wire drawn with graphite may be heat treated and again drawn to finished size without cleaning, which results in eliminating acid brittleness in the finished wire, and by eliminating this cleaning step the cause for pits in the finished wire, which result from over cleaning, is also eliminated.

Wire drawn with graphite as a lubricant holds its size better than wire drawn with "soap" or other lubricant, due to the graphite furnishing a better lubricant and preventing excessive wear of the dies.

Wire drawn with graphite as a lubricant, when reduced to a finished size, has its surface impregnated with graphite, so that its

entire surface is lubricated and, therefore, when the wire is laid up spirally to form a strand, rope, or cable, each of the wires will have a lubricated surface so that the wires may move on each other with a minimum of friction, thus reducing wear, and internal stresses in the article thus laid up to a minimum, and at the same time the graphite impregnated surfaces of the wires will resist corrosion and rust so that the life of the article will be materially lengthened.

While I have described a certain specific embodiment of my invention, it will be understood that I do not wish to be limited thereto, since various modifications may be made without departing from the scope of my invention as defined in the appended claims.

I claim—

1. As an article of manufacture, a strand, rope or cable composed of a plurality of ferrous metal wires laid up spirally, each of said wires having its surface impregnated with graphite forming a lubricated surface which results in reducing internal stresses in the article and also in providing a rust resisting surface for the wires.

2. As an article of manufacture, an article composed of a plurality of drawn steel wires having their surfaces impregnated with graphite, said wires being laid up spirally, and said graphite impregnated surface resulting in reducing internal stresses in the article and also in providing a rust resisting surface for the wires.

In witness whereof, I have hereunto signed my name.

WALTER F. MUNFORD.