(No Model.)

P. YORKE.

METHOD OF MAKING CLAMPS FOR WIRE ROPE.

No. 448,904. Patented Mar. 24, 1891.

Fig 1.

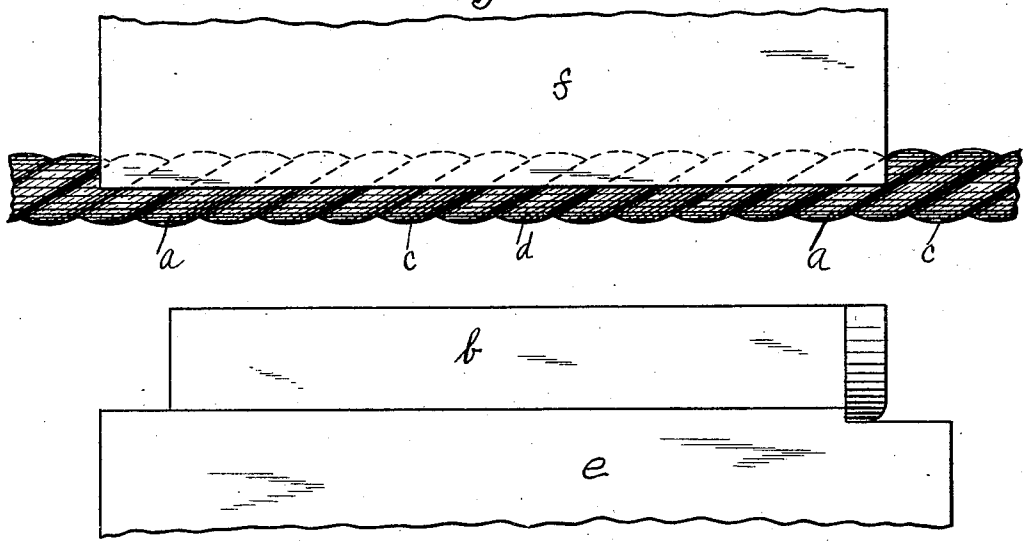


Fig. 2.

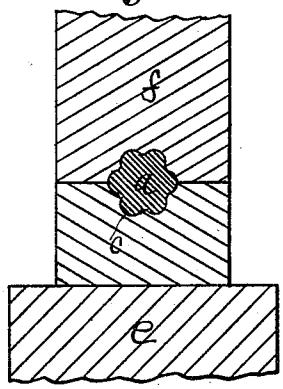


Fig. 3

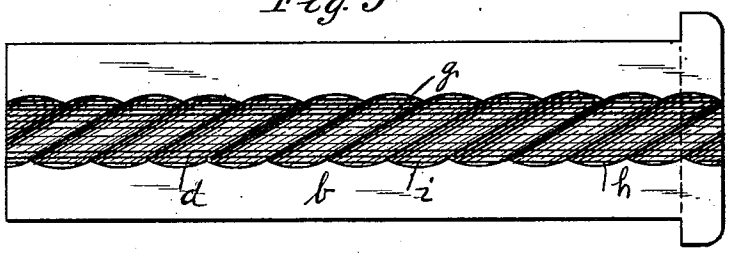
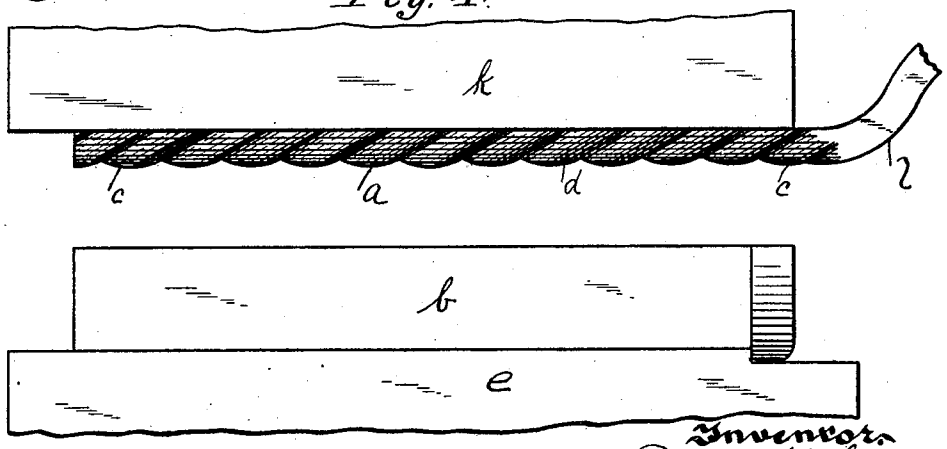


Fig. 4.



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UNITED STATES PATENT OFFICE.

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METHOD OF MAKING CLAMPS FOR WIRE ROPE.

SPECIFICATION forming part of Letters Patent No. 448,904, dated March 24, 1891.

Application filed August 11, 1890. Serial No. 361,729. (No model.)

To all whom it may concern:

Be it known that I, PATRICK YORKE, a resident of Washington, in the county of Washington and State of Pennsylvania, have invented a new and useful Improvement in the Method of Making Rope-Clamps; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the making of rope-clamps, its object being to form a rope-clamp suitable for holding wire rope, such as for drilling purposes, cable cars, or like uses. When such ropes are employed for drilling, it is evident that they must sustain a very heavy weight of metal, not only the weight of the tools, but the weight of the rope itself, amounting in all to several tons. The wire rope is, however, compressible as Manila rope, and it is therefore harder to hold the same, and for this purpose it is found necessary to provide a rope-clamp which shall take into the spaces or depressions between the strands and hold between the wires forming the strands. There is, however, difficulty in holding the rope with such a clamp where the faces thereof are made of soft metal, as usually employed for clamping purposes, and it is found necessary to employ a metal of great strength and toughness for the purpose. In order to form such clamp of steel or like metal it has been considered necessary, however, to cut out the form of the rope in the clamp, which is a very expensive operation, and the object of my invention is to provide a method of forming such rope-clamps rapidly and at low cost.

To these ends my invention consists in forming such rope-clamps by raising a metal blank, (iron or steel,) of proper dimensions, to a high heat, and then forcing a section of the wire rope into the heated blank and so forming the impression of the rope therein.

It also consists in forming from the blank so obtained, having the impression of the rope therein, a mandrel corresponding to the rope by heating a suitable bar and forcing it into the blank so obtained, and then forging the rope-clamps by such mandrel.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a side view showing the heated blank, the rope secured to the hammer above. Fig. 2 is a cross-section showing the blank formed by the forcing of the rope into the heated blank. Fig. 3 is a face view of the blank so obtained. Fig. 4 is a view showing the forging of the mandrel and also illustrating the forging of the blanks by the mandrel.

Like letters of reference indicate like parts in each.

In practicing my invention I take a short section of wire rope corresponding to the rope which it is intended to hold by the mandrel and take an iron or steel blank of the proper length and cross-section, the rope being shown at *a*, the blank at *b*. It will be seen from examination of the rope that it is formed of strands *c*, and these strands contain a number of wires, as at *d*. The blank *b*, which is preferably made of a good quality of steel, which can be hardened, if necessary, is placed within a suitable furnace and raised to a high heat. It is then placed upon the anvil *e*, the wire rope *a* is placed above it, extending longitudinally over it, as shown, and while the blank is at a high heat by one or more blows of the hammer *f* a wire rope is forced down into the highly-heated blank. By such operation a seat *g* the exact counterpart of the wire rope is obtained, the rope acting as a form to forge the metal and forming in the blank *b*, as shown in Fig. 3, the spiral depressions *h*, corresponding to the strands of the wire rope, and the longitudinal or like running depressions *i*, corresponding to the wires of the strand. The blanks so formed can be properly finished and employed as the clamps themselves, the outer portion of the blanks being turned or finished as found necessary and the inner portions thereof tempered or hardened. I prefer, however, to form from the blank *b* so obtained a mandrel by which other clamps can be formed. This I accomplish by taking a bar of steel, either cylindrical or semi-cylindrical and corresponding substantially in diameter to the seat *g*, formed in the blank by the wire rope, this bar being raised to a high heat and then placed within the seat *g* of the blank *b* and forced by the hammer into said seat, so that an exact counterpart of the seat in the blank is formed on the mandrel *k* thus obtained, which therefore corresponds to one-

half of the rope. This mandrel may be provided with a suitable handle, as at *l*, and it may be properly hardened, and may then be employed regularly for the forging of the clamps holding the rope, and, as it exactly corresponds to the rope itself, it will form in such clamps a seat the exact counterpart of the rope and exactly the same as the blank *b*, formed from the rope, such a blank being also illustrated by Fig. 3 of the drawings and having formed therein the spiral depression *h*, corresponding to the strands of the rope, and the depressions *i*, corresponding to the wires thereof.

The clamps so obtained are adapted to fit around the wire rope and to hold onto the same, not only between the strands, but between the wires composing the strands, so that a sure and firm hold is obtained upon the rope. At the same time the clamps are formed of a tough strong metal, which is not liable to be quickly cut out by the wire of the rope, and these clamps, while well suited for the purpose, can be rapidly and cheaply formed without any hand work upon the seats or holding-faces of the clamp.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The herein-described method of forming rope-clamps, consisting in heating a blank and then forcing a wire rope into the heated blank and so forming therein a seat which is a counterpart of the rope, substantially as and for the purposes set forth.

2. The herein-described method of forming rope-clamps, consisting in heating a blank and then forcing a wire rope into the heated blank and so forming therein a seat which is the counterpart of the rope, then heating a bar and forcing such heated bar into the impression in the blank, formed by the wire rope, so forming a mandrel corresponding to the rope, and then forging like seats or impressions in rope-clamps with such mandrel, substantially as and for the purposes set forth.

In testimony whereof I, the said PATRICK YORKE, have hereunto set my hand.

PATRICK YORKE.

Witnesses:
H. L. GOEHRING,
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