C. R. NELSON.

METHOD OF FORMING WIRE STAYS.

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1,246,145.

Patented Nov. 13, 1917.

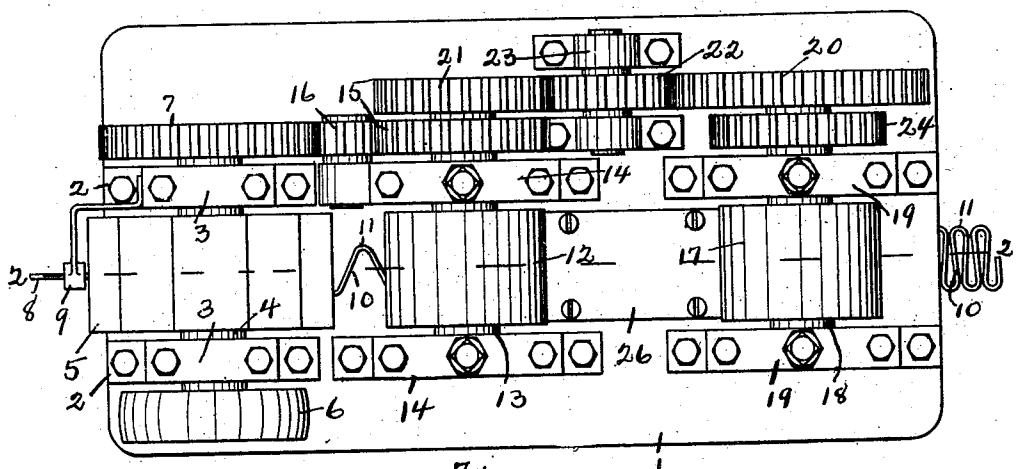


Fig. 1.

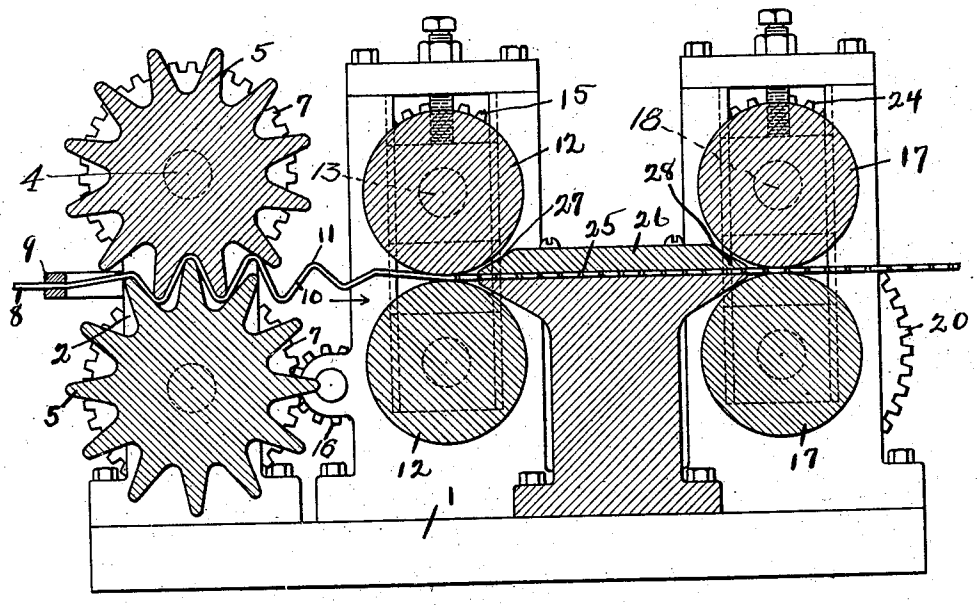


Fig. 2.

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UNITED STATES PATENT OFFICE.

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METHOD OF FORMING WIRE STAYS.

1,246,145. Specification of Letters Patent. Patented Nov. 13, 1917.

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To all whom it may concern:

Be it known that I, CHARLES R. NELSON, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in the Methods of Forming Wire Stays, of which the following is a specification.

This invention relates to the method of forming wire stays and consists in certain improvements therein as will be hereinafter fully described and pointed out in the claim.

In forming wire stays it has been common to corrugate the wire giving to the wire transverse portions with connecting end portions or eyes. The common method of forming these stays has been to form the eyes over pins; and difficulty has been experienced in giving to the eyes as sharp a bend as desired, in that such a sharp bend would necessitate reducing the size of the pins over which the wire is bent beyond their capacity to stand the strain. The present invention obviates this difficulty and also materially increases the speed at which such stays may be formed.

In carrying out the invention I utilize the mechanism shown in the drawing wherein—

Figure 1 shows a plan view of the machine.

Fig. 2 a sectional view on the line 2—2 in Fig. 1.

1 marks the base of the machine. Extending upwardly from one end of the base are posts 2, provided with the bearings 3 in which the shafts 4 are journaled. Corrugating wheels 5 are mounted on the shafts 4. These corrugating wheels have a series of teeth which intermesh and the edges of these teeth may be made as sharp as desired and the corresponding grooves in the companion wheel made as sharp as desired so as to give to the wire fed through the wheels a sharp bend. One of the shafts 4 is driven by a pulley 6 and gears 7 communicate the movement from one shaft to the other.

The wire 8 is fed through a guide 9 and into these corrugating wheels. It comes from them with open corrugations with sharp bends having the transverse portions 10 and the ends or loops 11. The wire then passes to the compressing rolls 12 being turned a quarter turn in passing from the wheels 5 to the rolls 12, this turning being simply for convenience in the operation of the machine. In starting the machine the quarter turn of the material in passing from the wheels 5 to the roll 12 is made by hand but after the wire enters between the rolls 12 this turn is done by the machine itself. The rolls 12 are mounted on the shafts 13 and these are carried in the bearings 14. Gears 15 are fixed on the shafts 13 and receive motion from one of the gears 7 through an intermediate gear 16. Resisting rolls 17 are mounted on the shafts 18, which are mounted in the bearings 19. A gear 20 on one of the shafts 18 is driven from the gear 21 on one of the shafts 13 through an intermediate gear 22, the intermediate gear being carried by the bearings 23. The rolls 17 are driven one from the other through the gears 24.

It will be noted that the gear 20 is larger than the gear 21 so that the roll 17 rotates slower than the roll 12 and consequently resists the forward movement of the corrugated wire, and consequently effects the compression of the wire lengthwise in its passage from the rolls 12 to the rolls 17.

In order to prevent the buckling of the wire in this passage I provide the guide 25. This is formed in a plate 26 carried by the base. It has the reduced end 27 extending close to the bite of the rolls 12 and the reduced end 28 extending into close proximity with the bite of the rolls 17.

The result of this construction is that as sharp a bend as may be desired may be given to the eyes or loops 11, the wheels having sufficient metal to readily sustain the strain; and the stay can then be compressed so as to give any desired number of crossings in a given length, preferably bringing the sides of the loops into contact or close to contact as shown at the right of Fig. 1 where the completed fabric is shown. It will be noted that this corrugating and compressing movement is accomplished in a continuous operation thus facilitating the handling and assuring a more uniform product. It will also be noted that the operation of the rolls upon the faces of the eyes or loops assures the forming of the loops along the same plane so that the stay as finished forms a substantially flat stay, the faces of the loops being in the same plane.

What I claim as new is:—

The method of forming wire stays which consists in corrugating the wire with sharp bends, and then compressing the corrugations or eyes so formed lengthwise of the stay by continuously and positively advancing the stay by engagement with the sides of the corrugations or eyes at two points, the rate of advance at the two points having a fixed ratio and the rate of advance at the rear point being greater than that of the forward point.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES R. NELSON.

Witnesses:
FRED S. GARY,
WILLIAM J. REARDON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."