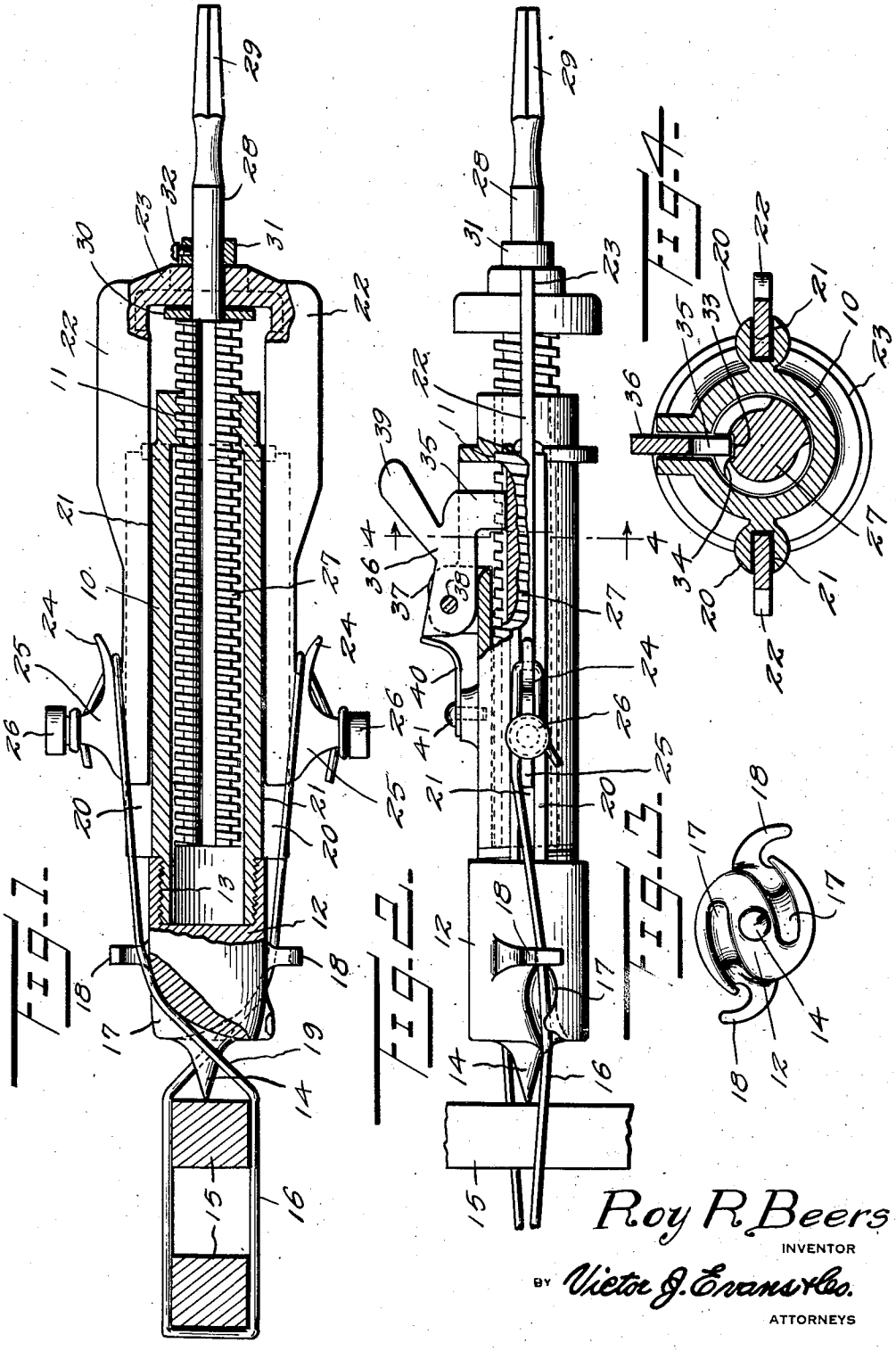
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WIRE TIGHTENER AND TWISTER

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WIRE TIGHTENER AND TWISTER

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2 Claims. (Cl. 140—120)

This invention relates to wire tighteners and twisters of that general type described in my allowed application of the same title filed June 14, 1937, Serial No. 148,208.

An object of the present invention is to provide a wire tightener and twister having guide bars reinforced against breakage, the guide bars being equipped with novel spurs and pins for effecting a quick attachment of the bale wires to the bars prior to stretching and twisting the wires.

A further object of the invention is to provide a novel ratchet latch which works in a longitudinal groove in a jack screw, the groove having one side beveled to permit ratchet action so that the jack screw may be rotated continuously to speed up the stretching and twisting operation.

A further object is to provide a device of this character which will be formed of a few strong, simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a longitudinal sectional view of a wire tightener and twister constructed in accordance with the invention.

Figure 2 is a side elevation of the wire tightener and twister with parts broken away.

Figure 3 is a front elevation of the tool.

Figure 4 is a cross sectional view taken on the line 4—4 of Figure 2 showing the longitudinal groove in the jack screw with one wall beveled.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a cylindrical body provided with internal screw threads 11 at its rear end. A cylindrical nose piece 12 is screw threadedly engaged on a reduced exteriorly threaded front end 13 of the body, and is provided with a substantially conical point 14 adapted to be placed against the concrete form 15, for example, which is to be tied by binder wires 16. The nose piece 12 is provided on the front end outside of the point with guide grooves 17, best shown in Figure 3, to receive the wires 16 and conduct the same to guide lugs 18.

The guide lugs 18 are disposed at diametrically opposite points on the wall of the nose piece and engage and hold a respective end portion of the binder wires so that when the body 10 is rotated axially, a twist 19 will be made in the wire after the wire is tensioned by operation of the tool, as will presently be described.

The body 10 is provided rearwardly of said lugs with longitudinally extending guide tubes 20 which are slotted longitudinally as shown at 21 in Figure 2. Flat bars 22 are slidably mounted in the guide tubes and project through the slots, as best shown in Figure 1. The bars are connected together at the rear end of the body by a bearing 23. The bars are provided at their front ends with oppositely disposed spurs 24 between which and the body the ends of the binder wire are reversely bent and then wrapped about pins 25 which are formed integral with the spurs and terminate in retaining knobs 26 which prevent escape of the wire.

The spurs 24 permit of the binder wire being quickly applied and a crimp formed therein so that accidental dislodgment of the wires is reduced to a minimum.

A jack screw 27 is mounted in the body and is provided with a cylindrical shank 28 which loosely fits in the bearing 23 and is provided terminally with wrench faces 29 which are adapted to receive a conventional brace. The jack screw engages the threads 11 at the rear end of the body 10 and is a left hand screw adapted to tighten the wire to proper tension around the form 15 before the twisting operation.

A collar 30 is mounted on the shank at the rear end of the jack screw and contacts with the front side of the bearing 23, and a collar 31 is secured to the shank by a set screw 32 and contacts with the rear side of the bearing to establish a swivel connection between the jack screw and the bearing. When the jack screw is rotated in a direction to be backed out of the tubular body the collar 30 carries the bearing 23 rearwardly. The bars 22 and spurs 24 move as a unit rearwardly with the bearing and tighten the wire, the guide bars sliding rearwardly in the guide tubes during this operation.

The jack screw is provided with a longitudinal groove 33 one wall of which is beveled as shown at 34 in Figure 4. The groove receives the lip 35 of a latch 36, which is pivoted between hinge ears 37 on the body 10, as shown at 38 in Figure 2. The latch is provided with a handle

39. A spring 40 is fixed at one end to the body by a screw 41 and bears with its free end against the latch to normally hold the lip 35 lodged in the groove of the jack screw. During tensioning of the wire as above described the lip 35 of the latch slips over the beveled wall 34 of the groove in the jack screw with a ratchet action so that the wire may be quickly stretched taut. When it is desired to form a twist in the wire the jack screw is rotated in the opposite direction, the lip in this instance bearing against the opposite wall of the groove and locks the body to rotate as a unit with the jack screw.

Since the operation of the device has been described as the description of the parts progressed it is thought that the invention will be fully understood without further explanation.

What is claimed is:

1. A wire tightener and twister comprising a tubular body provided internally with screw threads, a pointed nose piece on the front end of the body, oppositely disposed guide lugs on the nose piece, guide tubes extending longitudinally of the body and having longitudinal slots, guide bars slidably mounted in the guide tubes and projecting through the slots thereof, a bearing member connecting the rear ends of the guide tubes, rearwardly directed spurs on the front ends of the guide bars projecting through the slots of the guide bars and forming means for producing a crimp in binding wires to be twisted and stretched, pins integral with the spurs around which the ends of said wires may be disposed, a jack screw in the body engaging the threads of the body, a shank integral with the jack screw projecting through said bearing member, means on the jack screw for locking the jack screw against rotation with respect to said body for forming a twist in said binding wires when the jack screw is rotated, and means actuated by the jack screw and engaging said bearing member for feeding said bearing member in a retrograde direction when said locking means is released to stretch said binding wires preparatory to twisting.

2. A wire tightener and twister comprising a tubular body provided internally with screw threads, a pointed nose piece mounted on the front end of the body, guide lugs projecting laterally from the nose piece, guide bars slidably mounted on the body to move toward and away from the guide lugs, a bearing member connecting the rear ends of the guide bars, means for securing the ends of binding wires to said guide bars remote from said bearing member, a jack screw in the body engaging said internal threads of the body, a stem for the jack screw swivelly mounted in said bearing member, there being a longitudinal slot in said jack screw having one wall beveled, a pivoted latch on said body projecting through said body into said slot, a spring holding said latch normally engaged in said slot in the jack screw, rotation of said jack screw in one direction permitting the latch to slip over said beveled wall with a ratchet action, and means actuated by the jack screw for engaging said bearing member for feeding the bearing member and rod in a retrograde direction when said latch is acting as a ratchet to stretch said binding wire preparatory to twisting, said latch engaging the other wall of the slot in the jack screw when the direction of rotation of the jack screw is reversed and locking the jack screw and body to rotate as a unit to form a twist in said binding wires.

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