

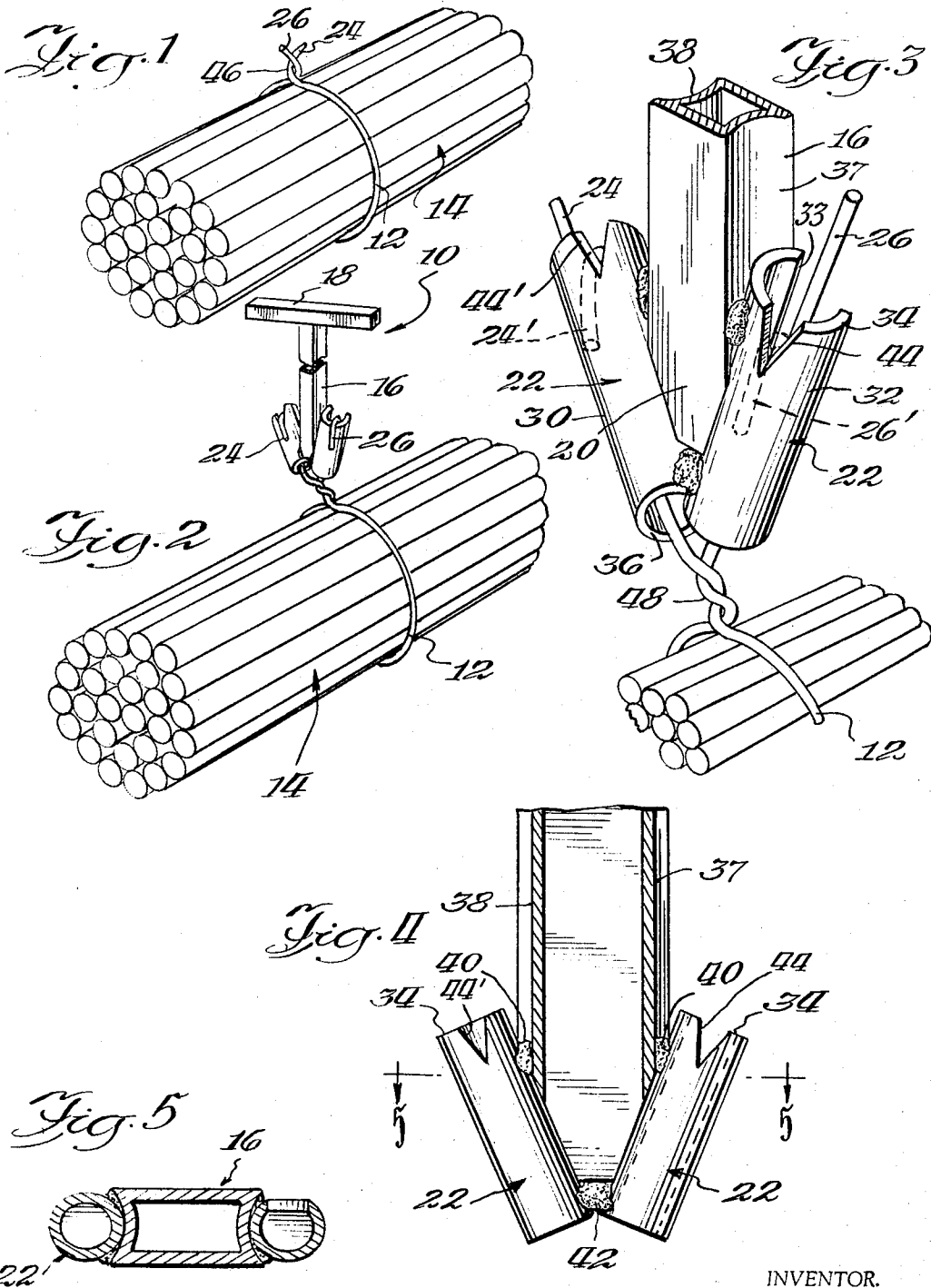
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WIRE TWISTING TOOL

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WIRE TWISTING TOOL

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ABSTRACT OF THE DISCLOSURE

A tool for facilitating the twisting of the free ends of a binding wire. A pair of wire engaging sleeves positioned at an acute angle with respect to each other on the end of an elongate shank portion of the tool, such that their respective axes diverge toward the opposite end of the elongate shank portion; V-shaped notches cut in each sleeve to facilitate gripping of the wire ends upon use of the tool.

This invention relates to an improved wire twisting tool for twisting the ends of a binding wire engaged around a bundle of rods, bars, strip stock or the like.

An important object of the invention is to provide a wire twisting tool of the character described having novel wire gripping means at one end thereof for engaging the ends of the wire to be twisted including means for locking said wire ends in said wire gripping means to prevent said ends from slipping inadvertently from such engagement during rotation of the tool.

Another important object of the invention is to provide a wire twisting tool of the character described in which said locking means comprise wedge-shaped axially extending notches in the lateral walls of said wire gripping means.

Other objects of the invention reside in providing a wire twisting tool of the character described which is very simple to manufacture and use, including easy release of the wire ends after twisting of the binding wire around the bundle of stock very tightly.

The foregoing and other objects of the invention will become apparent from the ensuing disclosure in which a preferred embodiment of the invention has been described in detail and illustrated in the accompanying drawing. It is contemplated that minor variations in the construction of the wire twisting tool embodying the invention may occur to the skilled artisan without departing from the scope or sacrificing any of the advantages thereof.

In the drawing:

FIG. 1 is a diagrammatic view showing the initial step in binding a bundle of metal rods, for instance, by means of a binding wire to be engaged by the wire twisting tool embodying the invention.

FIG. 2 is a view similar to FIG. 1 but showing the wire twisting tool embodying the invention in position for twisting the binding wire.

FIG. 3 is an enlarged fragmentary perspective view showing the wire gripping means of the binding tool embodying the invention in the same position as shown in FIG. 2.

FIG. 4 is a fragmentary side elevational view of said tool showing the wire twisting means thereof, portions of the tool being shown in section to illustrate details thereof.

FIG. 5 is a sectional view taken along the line 5—5 of FIG. 4 and in the general direction indicated.

Referring now to the drawing, the reference character 10 designates generally the wire twisting tool embodying the invention. The tool is seen in its entirety in FIG. 2 engaged with a binding wire 12 looped about a bundle 14 of rods which may be of metal, wood, or plastic.

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The tool 10 is comprised of an elongate metal shank 16 to one end of which is attached a cross-member 18 providing the handle for the tool. The shank 16 and handle 18 preferably are formed from hollow metal tubing of rectangular cross-section as best seen in FIG. 3. To the opposite end 20 of the shank 16 is secured the means 22 for engaging and twisting the ends 24 and 26 respectively of the binding wire 12. The means 22 include elongate metal sleeve 30 and a split metal sleeve 32. The sleeve 32 is split along the entire length thereof to provide entrance passageway 33 into the sleeve through the circumferential wall thereof. Each sleeve has an end 34 in closer proximity to the handle 18 than its opposite end 36, the opposite end 36 being the lower or bottom end of the sleeve in the vertical orientation of the tool 10.

The sleeves 30 and 32 are secured to diametrically opposite lateral walls 37 and 38 of the shank 16. The sleeves 32 and 30 are canted one relative to the other so as to converge toward the bottom end 20 of the shank 20. For his purpose, each of the lateral walls 37 and 38 is inwardly curved to accommodate the curved circumferential walls of tubes or sleeves 30 and 32, respectively in the formation shown. The sleeves are welded to the lateral walls 37 and 38 as indicated at 40 and to each other below the bottom end 20 as indicated by the weld 42.

Formed in the sleeve 32 is a V-shaped notch 44 having its wider dimension end opening to the upper end 34 of the sleeve. The V-shaped notch 44 is located opposite the split 33 in said sleeve 32. The sleeve 30 also has a V-shaped notch 44' opening in the same direction as the notch 44, both relative to the upper end 34 thereof and the same side as notch 44 of said sleeve 32. Said notches 44 and 44' comprise the locking means of said tool.

To bind a bundle of rods as shown in FIG. 1, the wire 12 is engaged around the bundle and a single twist 46 is taken of the wire ends 24 and 26. The tool 10 is then brought up in position to permit end 24 to be passed or threaded through the sleeve 30 from lower end 36 thereof and the end 26 will be passed through the split 33 of sleeve 32. As seen in FIG. 3 in solid outline, the ends 24 and 26 protrude outwardly of the upper ends of 34 of said sleeve. Prior to commencing the twisting action, the end 26 is bent over and into engagement with the crotch of the V-shaped notch 44 to the dotted outline position designated 26' in FIG. 3. Likewise, the end 24 is engaged in the notch 44' as shown by the broken outline 24' in FIG. 3. With the ends 24 and 26 locked respectively in the notches 44 and 44', the tool is twisted or rotated by the handle 18 thereof to tightly form the binding wire 12 in a loop around the bundle 14. The additional twisting is indicated at 48 in FIG. 3, the ends 24 and 26 being prevented from slipping relative to the sleeves 30 and 32 of tool 10 by reason of their being locked in the grooves 44 and 44' respectively. Thus, the slack in the loop at wire 12 is taken up preferentially by formation of the twists indicated at 48 in FIG. 3.

The cant of the sleeves 30 and 32 is advantageous in that it enables the user to bring the tool very close to the crossover of wire 12 as shown at 48. This insures that twisting of the wire thereat will occur as close to the bars 14 as possible.

When the bundle is tightly bound, the ends 24 and 26 again can be bent out of engagement with the locking grooves 44 and 44' to the upright position thereof shown in FIG. 3 to permit their being slid out of the sleeves 30 and 32.

It should be noted that since the sleeve 32 is split at 33 along the entire length thereof, after the end 24 is engaged in the sleeve 30, the wire end 26 is more readily passed into the sleeve 32 through said split 33 for engagement in the locking groove 44. This is much more con-

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venient than attempting to thread the wire end 26 through a cylindrical tube such as shown by reference character 30. The wire 26 would have to be twisted and bent to permit such threading through a complete cylindrical sleeve after end 24 was engaged with sleeve 30.

It is believed that the invention has been described in sufficient detail to enable the skilled artisan to practice the invention. The invention is distinctly pointed out in the claims hereto appended in language intended to be broadly construed commensurate with the progress in the arts and sciences contributed thereby.

What it is desired to secure by Letters Patent of the United States is:

1. A wire twisting tool for twisting the ends of a binding wire engaged around a bundle of elongated members, said tool comprising, an elongate shank, a handle at one end of the shank, a pair of elongate wire engaging sleeve members secured to the end of the said shank opposite

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said handle such that their respective axes are disposed at an acute angle with respect to each other and diverge in a direction toward said handle, one of said sleeves being of hollow tubular construction while the other being split along its entire length to facilitate the reception of the wire ends therein, and means for locking the wire ends in the sleeves during use of the tool.

2. A tool as defined in claim 1 wherein said means includes a notches formed in the circumferential wall of each sleeve and opening to the diverging end thereof.

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