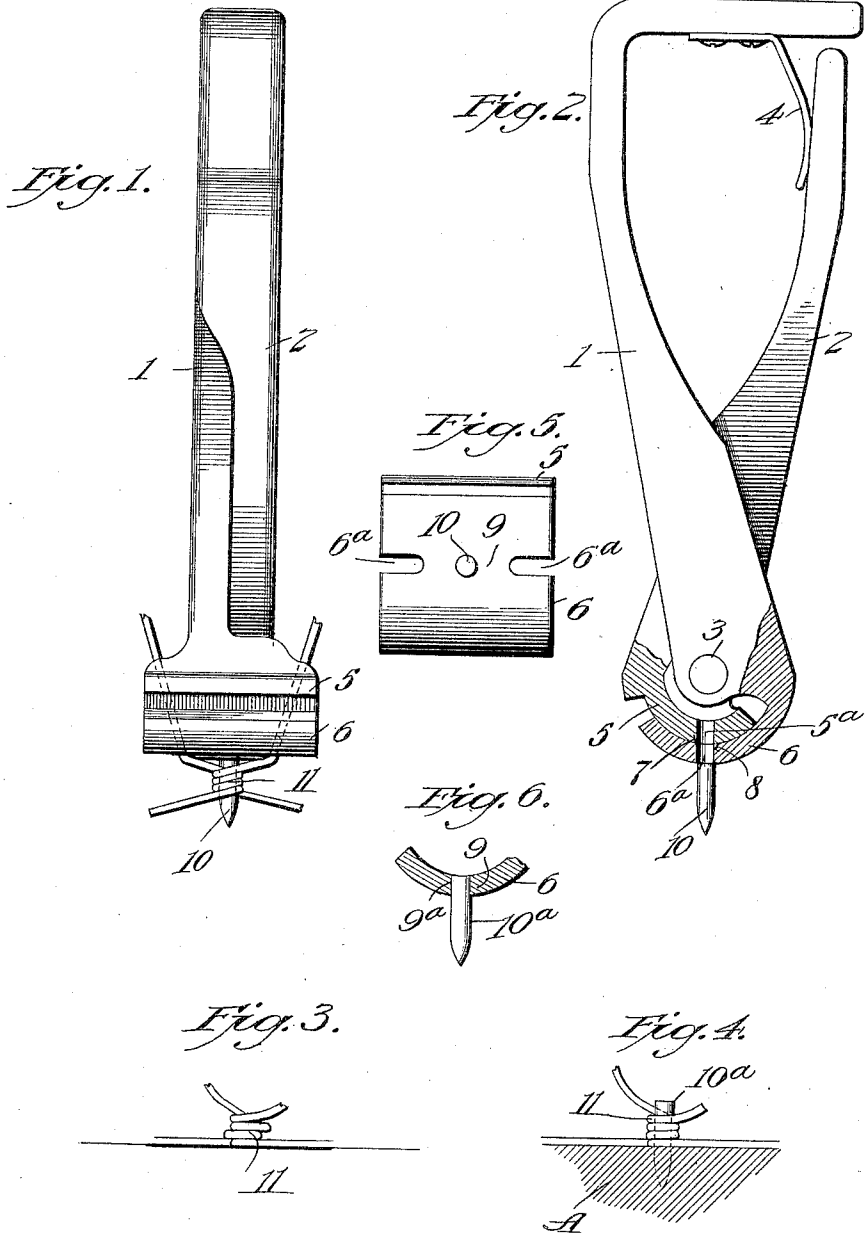


D. B. WILLIAMS.
HAND WIRE TYING TOOL.
APPLICATION FILED SEPT. 16, 1912.

1,067,790.

Patented July 15, 1913.



WITNESSES

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HAND WIRE-TYING TOOL.

1,067,790.

Specification of Letters Patent.

Patented July 15, 1913.

Application filed September 16, 1912. Serial No. 720,606.

To all whom it may concern:

Be it known that I, DICK B. WILLIAMS, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Hand Wire-Tying Tools, of which the following is a specification.

This invention relates to a hand tool for joining or tying wire, and more particularly to devices of this character known to the art as the plier type.

To this end the present invention contemplates a simple, durable, and reliable device, which can be easily manipulated, and especially adapted for tying lumber, staves, box shooks, boxes, etc., with wire from a continuous reel without the use of cleats. In bundling material of the character mentioned with wire, the present method often ruptures and strains the wire so that the bundle becomes broken by rough handling. The only practical method to-day for tying packages or bundles with wire is by stamped buckles or cleats in which the wire is inserted, wound around, twisted, and cut off by hand. This is a more expensive operation than the use of the wire alone, and it is very difficult to get a tight and satisfactory package by this method.

The object of this invention is, therefore, to obviate the difficulties incident to the present method of bundling and packaging by providing a device which can be used in connection with a continuous reel, preferably of the type disclosed in my Patent No. 1,031,155, dated July 2, 1912.

By my improved method the free end of the wire from the reel is first brought around the package or bundle and inserted in one side of the pliers. The body of the wire is then brought under and into the pliers and extends on up to the reel, and after the twist is made by the plier both ends of the wire are cut off by simple compression of the plier handles. In this connection it may be said that the twist in the wire is made around a pin carried by the tool and which prevents undue strain on the wire at the point of twisting. It will therefore be seen that the present invention provides means by which a wire can be drawn firmly around a package of square or irregular shape, and sufficiently tight to compress the package and make a twist joint in the

wire without weakening the tensile strength thereof.

With these and many other objects in view which will more readily appear as the description of the case proceeds, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawing, in which:

Figure 1 is a side elevation of my improved tier. Fig. 2 is a front elevation, partly in section of the same. Fig. 3 is an elevation of the twist joint formed by the plier. Fig. 4 is a detail view, showing a modified form of twist joint retaining the pin. Fig. 5 is a plan view of the outer jaw of the plier. Fig. 6 is a detail sectional view of the outer jaw adapted to separably receive the twisting pin.

Like references designate corresponding parts in the several figures of the drawing.

Referring specifically to the several figures of the drawings, the numerals 1 and 2 designate the handle members of the plier, which as usual, are crossed and pivoted at 3. The handle members 1 and 2 are held in their normal position by means of a spring 4, and are respectively provided at their working ends with the curved registering clamping and cutting jaws 5 and 6. The inner jaw 5 is provided in its opposite end portions with the oppositely located and alined slots 5^a, and the outer jaw 6 is likewise provided in its opposite end portions with the oppositely located and alined slots 6^a which are adapted to register with the slots 5^a in the inner jaw, as shown in Fig. 2 of the drawings.

It will be observed that the jaws 5 and 6 have a flush and sliding contact with each other, so that when the wire is within the registering slots 5^a and 6^a, and the handle members 1 and 2 are compressed, the edges 7 of the slots 5^a, and the edges 8 of the slots 6^a will form first, a clamping means for firmly holding the wire for the twisting operation, and also upon a stronger compression they constitute a cutting means for cutting the wire from the main or body part which is preferably fed from a reel.

By reference to Fig. 5 of the drawings it will be seen that the slots 6^a do not extend

across the face of the jaw 6, but leave a central web portion 9, which is also true of the slots 5^a in the jaw 5. In this central web portion 9 there is located a twisting pin 10 which projects outwardly therefrom and which is preferably pointed at its outer end.

Fig. 6 shows a modification, wherein the web portion 9 of the outer jaw 6 is provided with a socket 9^a which is adapted to detachably or separably receive a pointed twisting pin 10^a, which is similar in every respect to the pin 10 except that the same may be detached from the tool and left in the package to reinforce the twisted joint formed by the tying operation.

As has previously been stated this invention can be used in connection with a continuous roll of wire fed from a reel, and in this case the free end of the wire is brought around the package or article to be tied, and the free end inserted in slots 5^a and 6^a on one side of the tool. The body of the wire having been brought around the package or article to be tied is inserted in the registering slots 5^a and 6^a on the opposite side of the tool from which the free end of the wire was first inserted, and of course, a portion of the body wire will cross a portion of the free end of the wire that is held within the other slots. Then the tool is revolved to twist the wire, using the pin 10 as a center for the twisting operation. A slight compression being exerted on the handle members 1 and 2 causes the jaws to clamp between them portions of the wire so that upon twisting the tool the wire is caused to twist about the pin 10 which acts as a core about which the wire is coiled and forms the joint 11. The circle made by the wire about the pin is of such size and form as not to strain the fibers of the wire, since it exerts practically a straight pull on the wire and does not weaken the same. When the device has been turned sufficiently to tighten the wire about the package usually one and one-half revolutions, further compression of the handle shears the wire off just above the joint, after which the pin is lifted out of the joint and the circular twists of wire previously formed about the pin or core spring into interlocking engagement, as shown in Fig. 3, making a very strong and satisfactory joint.

It is a well known fact that when wire is twisted around a bundle or package that the same becomes very much weakened where the two wires cross each other to form the joint, especially if the joint is twisted very tight. However, the present device, because

of the presence of the pin forming a center for the wire to be twisted about, prevents this weakening of the wire at the most vital point, and will permit of considerable tightening up.

The operation of the device according to Fig. 6 is in no way altered except that the detachable pin 10^a is left within the coil formed by the twisting of the tool. The said pin is then driven down into the package or bundle A and serves the function of a seal. This type of joint is especially desirable for heavy packages or for packages requiring a joint in the nature of a seal.

From the foregoing description it is thought that the many features and advantages of the invention will be readily apparent to those skilled in the art.

Therefore, what I desire to claim by Letters Patent is:

1. A plier-type of wire tying tool comprising a handle portion and a head portion, the head portion of the tool being provided with a centrally-located outwardly-projecting twisting pin about which the wire may be coiled, and including jaws having openings disposed at opposite sides of said pin to loosely receive the opposite portions of the wire.

2. A plier-type of wire tying tool comprising a handle portion and a head portion, the head portion of the tool carrying an exterior outwardly-projecting twisting pin about which the wire may be coiled, and oppositely-located open-ended wire receiving and holding slots.

3. A plier-type of wire tying tool comprising a handle portion and a head portion, the head portion of the tool carrying an exterior outwardly-projecting twisting pin about which the wire may be coiled and including clamping and cutting jaws formed with open-ended slots to receive the opposite portions of the wire.

4. A hand tying tool comprising compressible handle members, inner and outer clamping and cutting jaws associated therewith, said clamping and cutting jaws having in their opposite end portions oppositely-located aligned registering open-ended slots to receive the wire, and a pin projecting from said outer clamping jaw adapted to have wire coiled thereabout.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

DICK B. WILLIAMS.

Witnesses:

JAMES JEMISON,
WM. H. HEYL.