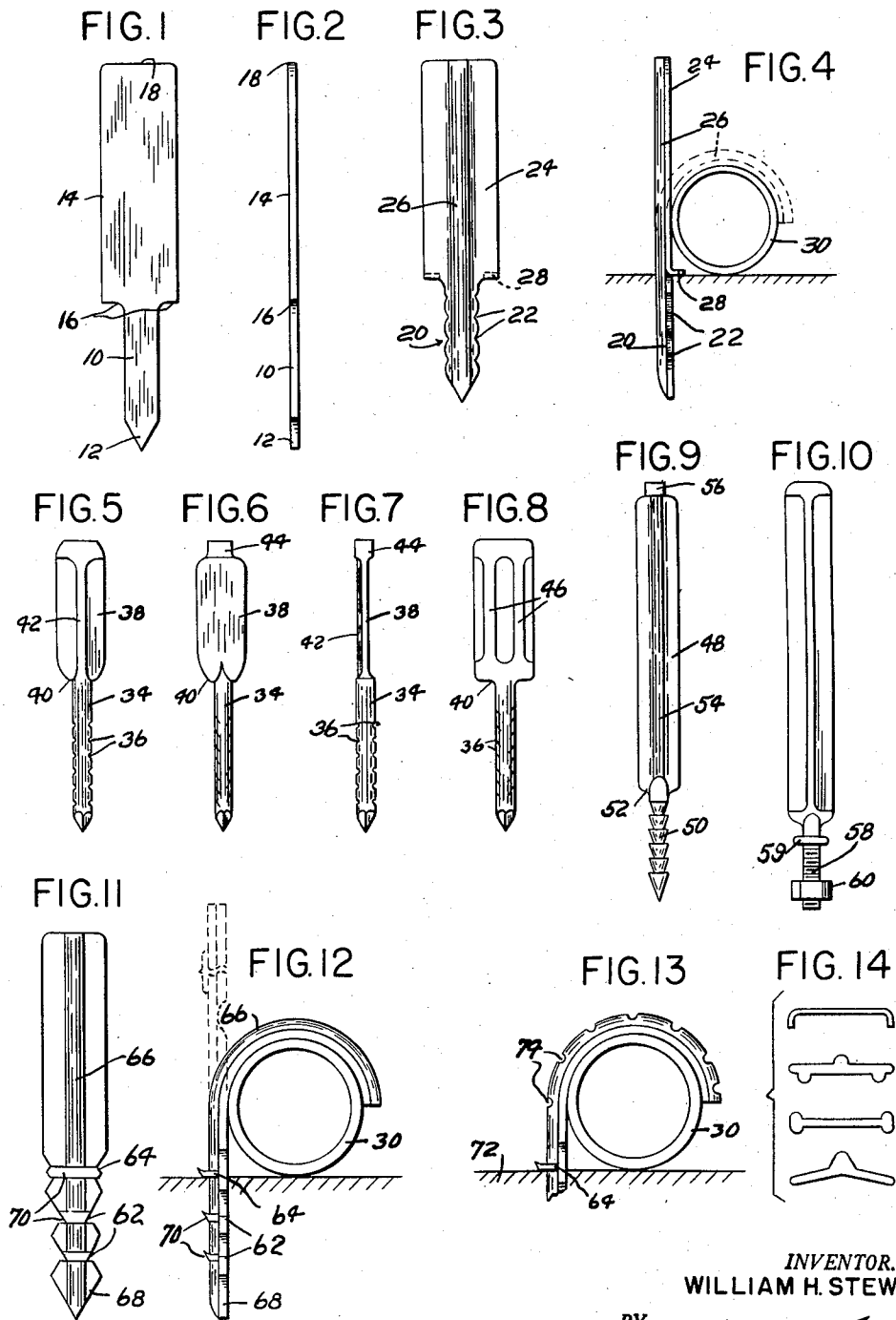


Nov. 17, 1959

W. H. STEWART
MALLEABLE NAIL-STRAP
Filed March 7, 1957

2,913,204



INVENTOR.
WILLIAM H. STEWART
BY *Charles R. Fox*
ATTORNEY

1

2,913,204

MALLEABLE NAIL-STRAP

William H. Stewart, Jaffrey, N.H.

Application March 7, 1957, Serial No. 644,620

14 Claims. (Cl. 248—71)

This invention relates to a malleable straight nail-like fastener which may be referred to as a single wrap-around jacketed nail strap, and which is specifically adapted to be driven but a short distance into a supporting structure such as a wall, there being means limiting the amount of entrance thereof into the wall to correctly position the jacket beside the object to be held, the exposed single jacketed portion thereof then being easily bent about an object which is to be held to the wall, such objects being for instance conduits, electric cables, and similar articles.

Another object of the invention resides in the provision of a single straight, malleable nail-like strap which comprises a pointed shank at one end and a striking head atop the single jacket at the other end, there being drive stops provided on the strap having the purpose of limiting the degree of entrance thereof into a support to control the position of the exposed portion or single wrap-around jacket, which is straight but distortable so as to be quickly and easily bent about an object to be held to a support in close conformance thereto and substantially exactly positioning the same in desired relationship.

Other objects include the formation of different points and means thereon for resisting extraction; the provision of sheet metal screw threads or threads adapted for nuts, drive screw points for the shanks, etc., but in all cases the device essentially comprises the shank which may be driven into a support as far as the drive stops, together with a malleable distortable exposed single jacketed portion adapted to be bent around the object to be held.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which:

Fig. 1 is a view in elevation illustrating a form of the invention;

Fig. 2 is an edge view thereof;

Fig. 3 illustrates a different form of the invention;

Fig. 4 illustrates the device of Fig. 3 in use;

Figs. 5, 6, 7 and 8 are elevational views illustrating modifications;

Fig. 9 illustrates a still further modification, particularly with respect to the shank;

Fig. 10 illustrates a modification of the construction of Fig. 9;

Fig. 11 shows a still further modification;

Fig. 12 illustrates the same in use;

Fig. 13 illustrates the construction of Figs. 11 and 12 modified by the provision of notches therein; and

Fig. 14 illustrates a few sectional contours which may be used in the jacket.

In providing supporting means for conduits, electric cables, pipes, etc. for support on walls, beams and the like, it has been the custom in the past to utilize a rigid pre-formed hook-shaped device which is fastened with additional screws to the wall or beam in the expected position of the object to be supported, or the object may be

2

held by one hand while the pre-formed device is attempted to be driven into the support in the correct position with the other hand. This obviously may result in a very awkward operation and in inaccurate positioning of the object as well as in providing the hooked support or strap in a position which may be canted. In some cases, the pre-formed strap is spoiled and must be thrown away and another one substituted.

By use of the present invention, however, this single jacketed straight fastener or nail may be driven into a support where it is needed and then bent over into very close engagement with a pipe or cable or other object which is to be supported and the malleable characteristic of the new single jacket nail strap is such as to provide for very close and tight engagement therewith so that the object is held better than by the pre-formed devices of the prior art and the nail strap is applied much more quickly and easily without the use of additional fasteners.

The present invention may assume many different forms and one such form is illustrated in Figs. 1 and 2 wherein the nail strap may be made by punching from strips, and comprises a flat shank 10 having a spade point 12 and a single jacket or enlarged head or main portion 14 which is flat and in the same plane as the shank. The enlarged main portion or jacket, however, provides shoulders 16 and when the head end as at 18 is struck with a hammer, the shank is entered into a supporting structure but only so far as allowed by the shoulders 16, leaving the correct length of the jacket extended to be wrapped over the object to be held.

It will be at once seen that the nail strap as thus far described will be inserted in a structure in parallel with the pipe, cable, or other element to be held and that once so located, the main portion or single jacket 14 is then easily bent with the hammer or other tool about the object to be held as will be apparent to those skilled in the art in such a way that the object is tightly engaged and firmly held in the exact position desired. The spade point prevents the nail strap from twisting or turning and severs the fibers of wooden supports to prevent splitting.

A modification of this device is shown in Figs. 3 and 4 wherein the shank 20 is provided with locking indentations in side fins as at 22 so that the shank is more resistant to being withdrawn, while the fins guide the shank and provide against twisting or tipping in soft materials when the jacket is bent over. Character 24 indicates the single jacket, and if desired, a longitudinal rib 26 may be formed within the head or jacket and throughout the length of the shank to carry the hammer blow from the head to the point, and when bent over as in Fig. 4, the rib forms the back-bone or bridge which takes the strain of the object being held.

In this case if desired, a bent-up drive stop foot which is indicated at 28 may be utilized in carrying out the invention, as well as or in place of shoulders such as at 16. In any event, it is a very simple matter to bend the body portion 24 of the straight, single-jacketed nail strap over upon the object 30 as clearly illustrated in Fig. 4 after the single jacketed straight nail has been first driven into a support.

Figs. 5, 6 and 7 illustrate a modification of the device wherein the shank is indicated at 34 and may be dented as at 36 in any way desired. The one-piece head or jacket is indicated at 38 and this is enlarged as before to form drive stop shoulders 40. The rib 42 may be utilized if desired in order to stiffen the head or jacket 38 as it is being struck by a hammer at 44 to drive the same into a wall or other support, and to give the single wrap-around jacket rigidity and conformity of shape when it is hammered over the object to be held.

Fig. 8 illustrates a form of the invention similar to that in Fig. 5, but in this case the same may be provided with a pair of spaced parallel ribs or beads 46.

In this respect, it is to be understood that the locking means such as notches 22, 36, etc. may assume any form desired such as annular rings, slots, prongs, inclined slits, burs, notches, etc.

In Fig. 9 there is shown an elongated nail strap 48 having a drive-screw point or shank 50 and shoulders 52 comparable to those at 40 and 16. This nail strap may also be provided with a longitudinal rib 54 and a striking head 56 if desired.

Fig. 10 shows a modification of the device shown in Fig. 9 which is generally similar but in this case is provided with a threaded shank 58 having a nut 60 thereon for application to threaded holes or to steel girders or the like. In this respect, it is to be understood that other kinds of screw points such as those made for sheet metal or wood screws may also be used without departing from the scope of the invention. A stop 59 may appear on the shank 58 for positioning the malleable jacket beside the object to be held.

Fig. 11 shows a further form of the device wherein the shank is provided by cold forming and has depressions as at 62 forming taper wedge-like locks, or spurs, and an enlarged member 64 forms a stop shoulder at the side of the strap opposite the object 30 to be held, as indicated in Fig. 12. In this case, there may be also used a rib 66 and the shank is provided with a point 68. It is to be noted that enlarged portions 70 may be reversely directed in order to better resist extraction from the surface 72 to which the object 30 is to be attached.

In Fig. 13, the construction of the nail strap is the same as before except that it may be provided with a series of notches either in the rib or in the head or in the jacket, these notches being indicated at 74 and determining the degree of resistance to distortion or bending of the nail or strap as it is being bent around the object to be held.

It is to be understood that the ribs or beads may assume different forms or sections and may be at one side or both sides of the headed enlarged portions of the single jacketed nail straps, see Fig. 14. It is also to be noted that in some cases these ribs will be omitted completely and the nail straps such as shown in Fig. 1 will be utilized. The stops may be located at either side of the shank or all about the same; and the jacketed portion of the straps may be transversely curved if desired.

It is believed that it will be seen that this invention provides a new and improved nail strap which is very easy to use and by which objects may be held better and more firmly than by devices of the prior art. The use of the novel nail straps with the single wrap-around jacket will result in holding the objects to the supports more positively and in more accurate position, and the action of the main body or jacket is to be in the nature of wrapping about the object to be held, as distinct from prior art devices for holding similar objects.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A one-piece unitary driven fastener and holding device comprising a generally straight co-planar malleable metal member having two main portions including a sharpened shank which is relatively narrow and adapted to be driven into a support, the other part being relatively elongated and generally wider although co-planar with the shank and forming a pair of shoulders, one at each side of the shank to limit the extent to which the fastener may be entered into the support to a predetermined degree, the wider portion of the fastener being malleable and adapted to be shaped about an object to be held in the support once the shank is in position in the support.

2. A driven fastener and holding device comprising a generally flat shank to be driven into a support, a point at one end of the shank, the other end thereof being adapted to be struck to drive the point into the support, a shoulder intermediate the ends of the fastener limiting the extent to which the shank may be entered into the support and causing a portion of the fastener adjacent the said other end to be exposed, said exposed portion being generally flat and malleable to be bent about an object to be held to the support, the bend being transverse to the plane of the fastener, and a rib on the device from end-to-end thereof, said rib forming the point on the shank at one end and a striking head on the other end.

3. A one-piece, unitary driven fastener and holding device comprising a generally flat shank to be driven into a support, a point at one end of the shank, the other end thereof being adapted to be struck to drive the point into the support, a shoulder intermediate the ends of the fastener limiting the extent to which the shank may be entered into the support and causing a portion of the fastener adjacent the said other end to be exposed, said exposed portion being generally flat and malleable to be bent about an object to be held to the support, the bend being transverse to the plane of the fastener, the exposed portion being wider than the shank, and a foot on the shoulder, the foot being at the side of the device facing the object.

4. The fastener of claim 3 wherein the wider exposed portion of the fastener extends laterally past the shank at both edges thereof.

5. A driven fastener and holding device comprising a shank to be driven into a support, a point at one end of the shank, the other end thereof being adapted to be struck to drive the point into the support, means limiting the extent to which the shank may be entered into the support and causing a portion adjacent the said other end to be exposed, said exposed portion being malleable to be formed about an object to be held to the support after being positioned in the support, and a longitudinal rib the length of the exposed portion of the fastener, said rib controlling and maintaining the form of the fastener closely to the shape of the object.

6. A one-piece, unitary nail-strap for securing an object to a support comprising a pointed shank, an enlarged headed portion thereon, the head and point being at opposite ends of the strap, the enlarged portion being malleable to be bent about the object with the shank embedded in the support, the enlarged headed portion forming a stop for limiting the extent of the nail-strap to be driven into the support, said enlarged portion being provided with a longitudinal rib adapted to aid in maintaining the headed portion in bent position about the object.

7. The nail-strap of claim 6 including a longitudinal series of spaced notches in the rib.

8. A nail-strap for securing an object to a support comprising a pointed shank, an enlarged headed portion thereon, the head and point being at opposite ends of the strap, the enlarged portion being malleable to be bent about the object with the shank embedded in the support, the enlarged headed portion forming a stop for limiting the extent of the nail-strap to be driven into the support, a rib extending from end-to-end of the nail-strap, and a series of alternate narrow and wider sections on the shank.

9. A one-piece, unitary nail-strap for securing an object to a support comprising a pointed shank, an enlarged headed portion thereon, the head and point being at opposite ends of the strap, the enlarged portion being malleable to be bent about the object with the shank embedded in the support, the enlarged headed portion forming a stop for limiting the extent of the nail-strap to be driven into the support, said nail-strap being provided with a longitudinal rib from end-to-end thereof.

10. The unitary nail strap of claim 9 including means to facilitate bending of the strap.

11. The unitary nail strap of claim 9 including means to facilitate bending of the strap, said means comprising a notch in the rib.

12. A single straight nail-like fastener and holding device comprising a shank for attachment to a support and a single flat headed portion forming a bendable jacket on the shank, the single flat headed portion being adapted to be bent around and jacket objects to be fastened to the support, and a controlling longitudinal rib extending substantially the length of the single flat bendable portion forming means controlling the distortable characteristics of the bendable wrap-around portion.

13. The single straight nail-like fastener and holding device of claim 12 wherein the shank is pointed and adapted to be driven into the support by blows on the headed portion.

14. A single straight nail-like fastener and holding device comprising a single wrap-around malleable headed jacket and a shank on the headed jacket designed to be attached to a support, stop means on the fastener to correctly position the bendable malleable headed jacket beside the object to be held before bending, said exposed malleable jacket being relatively straight, but distortable to be bent around the object to be held to the support after the shank has been driven into the support.

References Cited in the file of this patent

UNITED STATES PATENTS

Re. 22,992	Rachlin	Mar. 30, 1948
573,101	O'Neill	Dec. 15, 1896
1,632,327	Berger	June 14, 1927
2,309,261	Tallman	Jan. 26, 1943
2,681,196	Lind	June 15, 1954