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SCREW HOLDING ATTACHMENT FOR SCREW DRIVING TOOLS

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Fig. 1.

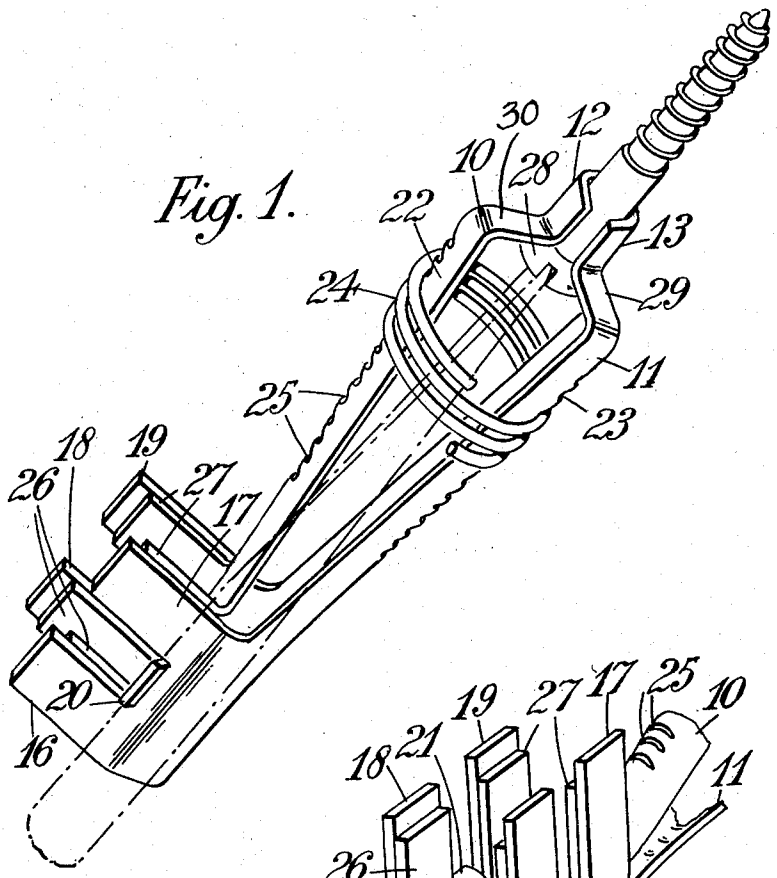
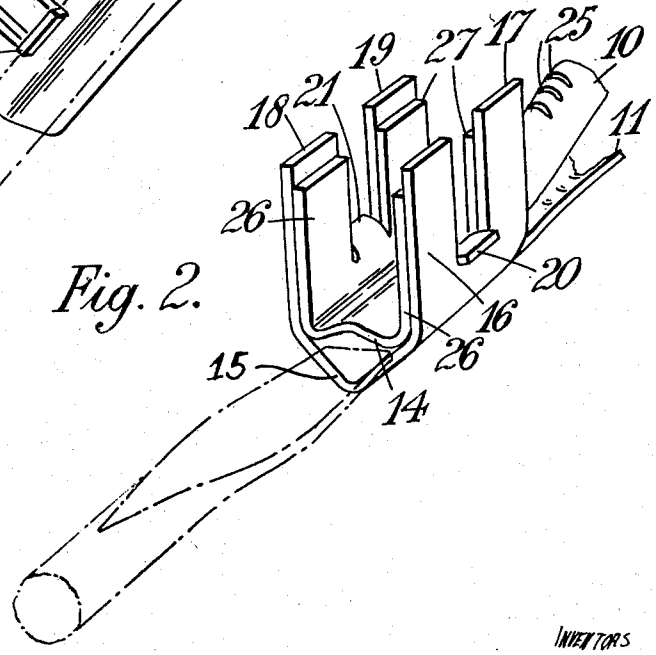


Fig. 2.



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SCREW HOLDING ATTACHMENT FOR SCREW DRIVING TOOLS

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1 Claim. (Cl. 145—52)

This invention relates to fittings or devices for attachment to a screw driver for holding a screw or the like in engagement with the screw driver so as to eliminate the necessity for holding the screw by hand when starting to drive it, and the object of this invention is to provide an improved construction of such devices, of the kind comprising two arms clamped together.

According to this invention the arms of such devices are constituted each by a plate bent about a longitudinal line to a V-shape, and the plates are interconnected at one end by laterally extending lugs one on each edge of the first arm engaging respectively notches formed one on each edge of the second arm, thereby permitting relative tilting and separating movement of the arms.

According to another feature of the invention the second arm is provided on each edge near to the end with two lugs spaced apart longitudinally of the arm and extending all in the same direction substantially perpendicularly to the general plane of the arm, and the first arm is provided on each edge with a lug extending substantially in the plane of the arm to enter the space between the co-operating lugs on the second arm.

According to yet another feature of the invention the first arm may be provided with additional lugs on each edge shaped to lie against the inner faces of the lugs on the second arm, to guide the separating movement of the arms.

According to yet another feature of the invention the arms aforesaid are shaped to provide relatively diverging portions between their ends, and a closely coiled conical spiral spring encircles said diverging portions and is movable therealong, by a sliding and/or rotational movement to close the arms together.

According to yet another feature of the invention the outer surfaces of the assembled arms are formed with an interrupted or continuous spiral groove to receive the spiral spring; the clamping effect obtained by sliding the spring along the arms can thus be enhanced by a further screwing movement of the spring in the said groove.

In the accompanying drawings:

Figure 1 is a perspective view of the improved device showing a wood-screw held by it, and also indicating the position of the screw driver in the device,

Figure 2 is a perspective view of one end of the fitting showing how a screw driver is engaged with it.

Referring to these drawings, the improved device comprises two plates **10** and **11** each of which is bent about a longitudinal line to a V-shape so as to provide at each end a number of grips **12**, **13** and **14**, **15** respectively. The V-formation also increases rigidity of the arms throughout their length.

At the lefthand end in Figure 1, and also as shown in Figure 2, the lower arm **11** is provided on each edge with a pair of lugs **16**, **17** and **18**, **19** respectively, these lugs being bent upwards so as to be substantially perpendicular to the general plane of the arm and to provide a gap or notch between them. The upper arm **10** is provided at the same end with lugs **20**, **21**, one on each of its edges

and these lugs are bent outwards so as to lie more or less in the general plane of the arm **10** and they are both of a size to engage easily in the notches constituted by the upstanding lugs on the arm **11**. This engagement interengages the two arms and permits a separating movement between them and also a slight tilting of them relatively to one another about the lugs **20**, **21** as a pivot.

The separating movement of the two plates is controlled over a very wide range of sizes of screw-driver by the lugs **16** to **19** on one plate and the co-operating lugs **20**, **21**, **26** and **27** on the other plate. The lugs **16** and **17** define one wall of a channel-like structure of which the opposite wall is defined by the lugs **18**, **19** and the plate **11** forms the base of that channel.

Similarly lugs **26**, **27** define the walls of another channel-like formation on the plate **10**. This second channel fits between the walls of the first mentioned channel so that the plates can be moved apart only in one direction transversely of their length, and the lugs are shown of such a length as to accommodate any normal size of screw-driver shank. The relative separating movement of the plate is controlled by the two channels in that they prevent lateral movements of the two plates relative to each other, but it is furthermore necessary to prevent relative longitudinal movements between them, while permitting a slight angular adjustment between them and this is achieved by the lugs **20**, **21** on the plate **10** engaging respectively between the two pairs of lugs **16**, **17** and **18**, **19** on the plate **11**. The lugs **20** and **21** are an easy sliding fit in the gaps between their co-operating lugs so that a slight relative tilting movement of the plates is possible such as is required to accommodate different sizes of screws.

The arms are further so shaped as to provide between their ends portions **22**, **23** which diverge from the left-hand end towards the right-hand end in Figure 1, and these diverging portions are encircled by a closely coiled conical spiral spring **24**. It will be appreciated that if this spring **24** be moved towards the right in Figure 1, it will draw the two arms towards one another.

It is preferred to provide on the outer surface of the two arms a spiral groove as indicated at **25** to receive the convolutions of the spiral spring so that, after it has been slid along the arms as far as possible, it can be traversed further along the arms by a rotational movement like a nut. The groove **25** may be continuous, but when the plates are initially bent to a V-shape as shown, this groove will be discontinuous whilst still providing adequate engagement with the spring, and it preferably extends throughout the range of traversal movement of the spring.

The arm **10** may be provided with additional lugs on each edge situated beside the lugs **20**, **21** and these additional lugs as shown at **26**, **27** are bent upwards so as to lie against the inner faces of the lugs **16**, **17**, **18** and **19** and provide additional guides controlling the relative movement of the two arms **10**, **11**.

In using this device the spring **24** is pulled back along the arms towards the left in Figure 1, to allow a separating movement of the arms, and the screw-driver is inserted from the left-hand end as shown in Figure 2; the screw which it is required to drive is inserted between the grips **12**, **13** at the other end of the device, as shown in Figure 1, with the head **28** seated against the sloping parts **29**, **30** of the arms **10** and **11** so as to be located thereby. The blade of the screw-driver is engaged with the slot in the head of the screw as shown in Figure 1, and the spring **24** is then pushed forward towards the right so as to clamp the two arms together, while a final twist on the thread will clamp the arms still tighter with one end of the arms engaging the screw and the other end engaging the shank of the screw-driver. The movement of the spring as a nut providing a still firmer grip on both

the screw-driver and the screw, is meant to provide a rigid assemblage which enables the screw to be initially driven well into the wood without it being necessary to hold it in place by hand. It can be driven in so far that only a few more turns are needed to drive it in completely.

It will be appreciated that the use of the spiral spring for effecting the grip on the screw-driver and screw ensures a wide range of adaptability of the device for engaging any size of screw-driver and any size of screw.

We claim:

A screw-holding attachment for a screw-driver comprising in combination a first plate bent longitudinally to a V-section and having at one end of each of its edges a pair of lugs spaced apart longitudinally of the plate and all extending parallel with one another away from the apex of the V, a second plate also bent longitudinally

to a V-section disposed with the open side of its V-section facing the open side of said first plate, lugs on the edges of said second plate shaped to nest between the said lugs on the first plate, an additional lug on each edge of said second plate positioned thereon to engage respectively between a pair of lugs on an edge of said first plate, co-operating jaws on the ends of said plates remote from said lugs to grip a screw between them, a conical spiral spring encircling said plates intermediate their ends, and notches on said plates locating said spring.

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