Dec. 21, 1937. M. T. TIPSORD 2,102,926

PIN AND BOLT HOLDER

Filed Sept. 16, 1935

Fig. 1

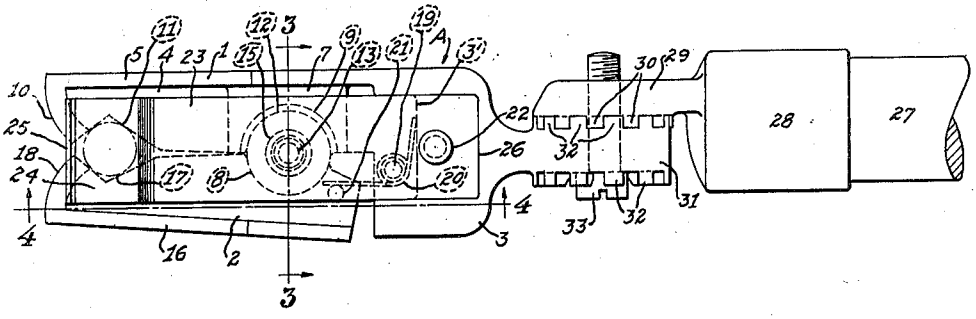


Fig. 2

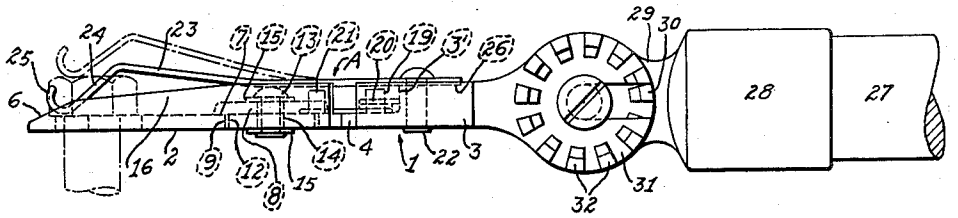


Fig. 3

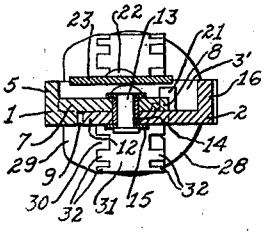
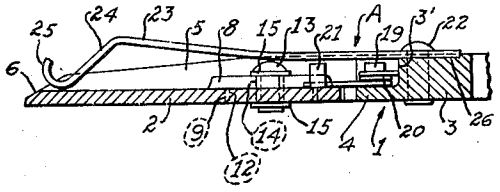


Fig. 4



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Patented Dec. 21, 1937

2,102,926

UNITED STATES PATENT OFFICE

2,102,926

PIN AND BOLT HOLDER

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Application September 16, 1935, Serial No. 40,730

2 Claims. (Cl. 81—13)

This invention relates to pin and bolt holders adapted for use particularly in assembling pins and bolts with clamps, insulators, and other articles of equipment associated with energized electrical lines, the predominant object of the invention being to provide an improved pin and bolt holder of this type which, because of its unique and improved construction and arrangement, is capable of performing its intended function in a highly efficient manner.

Fig. 1 is a plan view of the improved pin and bolt holder, a part of the handle thereof being broken away.

Fig. 2 is a side elevation of the structure illustrated in Fig. 1.

Fig. 3 is a cross-section on line 3—3 of Fig. 1.

Fig. 4 is a section on line 4—4 of Fig. 1.

In the drawing, wherein is shown for the purpose of illustration, merely, one embodiment of the invention, A designates the improved pin and bolt holder, which includes a fixed jaw 1 and a movable jaw 2. The fixed jaw 1 is of increased thickness adjacent to its inner end, as indicated at 3 in Figs. 2 and 4, and extended forwardly from said thicker portion is a portion 4 of reduced thickness. The portion 4 of the fixed jaw is of substantially less width than the thicker portion 3, and at the outer edge of said portion 4 an outstanding, longitudinally extended flange 5 is provided, said flange 5 and the forward edge portion of the fixed jaw preferably being of tapered formation. Intermediate its ends the portion 4 of the fixed jaw 1 includes a portion 7 of increased thickness which is provided with a laterally extended ear 8, said portion 7 being provided with a recess 9 beneath said ear which is of arcuate formation, as shown by dotted lines in Fig. 1. The outer end edge of the fixed jaw 1 is curved as indicated at 10 in Fig. 1, and at its inner edge said fixed jaw is provided with a tapered bolt or pin receiving seat 11.

The movable jaw 2 is provided with an ear 12 which is arranged in lapped relation with respect to the ear 8 of the fixed jaw 1, said ear 12 of the movable jaw being disposed in the recess 9 formed in the thicker portion 7 of the fixed jaw 1. The movable jaw 2 is pivotally attached to the fixed jaw 1 by means of a rivet or other suitable securing device 13, which is extended through apertures formed through the ears 8 and 12 of the fixed and movable jaws, a sleeve 14 and oppositely disposed washers 15 providing a bushing for the rivet 13. The movable jaw 2 at its outer edge is provided with an outstanding flange 16 which extends longitudinally of said outer edge, and at the inner edge of said movable jaw a tapered bolt or pin receiving seat 17 is provided which corresponds with and is related to the tapered seat 11 of the fixed jaw 1. As in the case of the fixed jaw 1, the movable jaw 2 is of curved formation at its forward end, as designated by the reference character 18 in Fig. 1.

Extended upwardly from the fixed jaw 1 is a pin 19 about which the coils of a torsional coil spring 20 are arranged, one end of said torsional coil spring being arranged in contact with the forward face 3' of the thicker portion 3 of the fixed jaw 1 and the other end of said torsional coil spring being in contact with a pin 21 extended from the movable jaw 2. The force exerted by the torsional coil spring 20 against the pin 21 tends to move the movable jaw 2 about the pivot provided by the rivet 13, the rearmost end portion of said movable jaw being moved by the torsional coil spring in an outward direction away from the fixed jaw, and the forward portion of said movable jaw being moved inwardly or toward the forward portion of the fixed jaw.

Secured by means of a suitable fastening device 22 to the thicker portion 3 of the fixed jaw is a leaf spring 23 which extends forwardly to the forward ends of the fixed and movable jaws. The leaf spring 23 in its inactive position curves upwardly slightly and at its forward end said leaf spring is bent forwardly and downwardly as indicated at the point designated by the reference character 24. At its extreme outer end the leaf spring is provided with an upwardly curved portion 25, as shown most clearly in Figs. 2 and 4. The inner end portion of the leaf spring 23 is seated in a recess 26 formed in the top face of the thicker portion 3 of the fixed jaw 1, the edge portion of said leaf spring contacting with the walls of the recess.

The improved bolt and pin holder may be provided with any suitable type of insulating handle, but for the purpose of this application a handle structure is illustrated which provides for adjustment of the bolt or pin holder with respect to the handle. In accordance with this construction the handle 27, which is formed of wood or any other suitable insulating material, is provided with a head 28 having an extension 29 on which radial teeth 30 are formed. The bolt or pin holder is provided with an extension 31 on the opposite faces of which similar radial teeth 32 are formed. The teeth 32 at one side of the extension 31 of the bolt or pin holder are arranged in engaging relation with respect to the teeth 30 on the extension 29 of the head 28 of the handle, and a bolt

33 is extended through openings formed through said extensions 29 and 31, the opening formed through the extension 29 being screw-threaded to receive the screw-threads of the bolt. Because of this arrangement the handle structure may be securely fixed to the bolt or pin holder in various positions, the handle being movable about the bolt 33 to attain the desired positions, after which the bolt is tightened to securely fix the handle in place.

In the use of the improved bolt or pin holder, a bolt or pin is passed between the forward end portions of the jaws 1 and 2, the movement of the shank of said bolt or pin against the curved forward edges 10 and 18 of said jaws serving to cam the forward position of the movable jaw away from the forward portion of the fixed jaw against the action of the torsional coil spring 20 and permitting said shank of said bolt or pin to enter between the opposed seats 11 and 17 of the fixed and movable jaws. At the time the shank portion of the bolt or pin is being forced between the forward portions of the jaws 1 and 2 as described, the head of the bolt or pin is moving against the upwardly curved end portion 25 of the leaf spring 23 in a manner to move the forward end portion of said leaf spring upwardly, and when the shank portion of the bolt or pin is located between the seats 11 and 17 the outer end portion of the leaf spring is in engagement with the top face of the head of the bolt or pin gripped by the bolt or pin holder. Thus the shank portion of a bolt or pin is tightly gripped between the jaws 1 and 2 because of the pressure exerted against the movable jaw by the torsional coil spring 20, and at the same time the leaf spring is in engagement with the head of the bolt or pin, forcing said head into close gripping contact with the jaws 1 and 2.

With a bolt or pin gripped by the bolt or pin holder in the manner described, said bolt or pin may be elevated to the article of equipment with which it is to be assembled and introduced into place, the bolt or pin then being fastened in place with the aid of other tools intended for that purpose.

I claim:

1. A bolt or pin holder comprising a pair of jaws having opposed seats between which a bolt or pin may be gripped, one of said jaws being fixed and being reduced forwardly of its rear end to a width corresponding substantially to the width of the other jaw, the other jaw being located in the same plane as the fixed jaw and being pivoted intermediate its ends to said fixed jaw, a single handle for the device which is secured to the fixed jaw, spring means that tends to move a portion of said movable jaw toward said fixed jaw, and yieldable means comprising a leaf spring for engaging a portion of a bolt or pin gripped between said jaws, said jaws being provided with curved forward edge portions so as to facilitate passage of a bolt or pin between said jaws.

2. A bolt or pin holder comprising a pair of jaws having opposed seats between which a bolt or pin may be gripped, one of said jaws being fixed and being reduced forwardly of its rear end to a width corresponding substantially to the width of the other jaw, the other jaw being located in the same plane as the fixed jaw and being pivoted intermediate its ends to said fixed jaw, a single handle for the device which is secured to the fixed jaw, torsional spring means that tends to move a portion of said movable jaw toward said fixed jaw, and yieldable means comprising a leaf spring fixed rigidly at one of its ends to said fixed jaw for engaging a portion of a bolt or pin gripped between said jaws, said jaws and said yieldable means being provided with curved forward edge portions so as to facilitate passage of a bolt or pin between said jaws and beneath said yieldable means.

MELVIN T. TIPSORD.