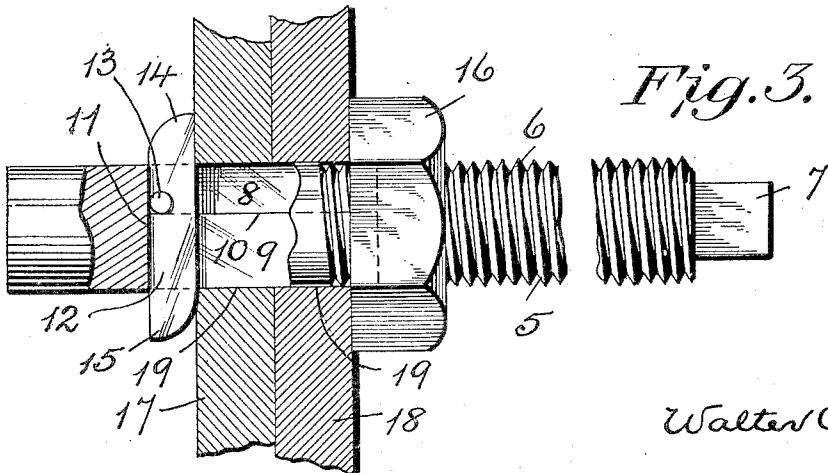
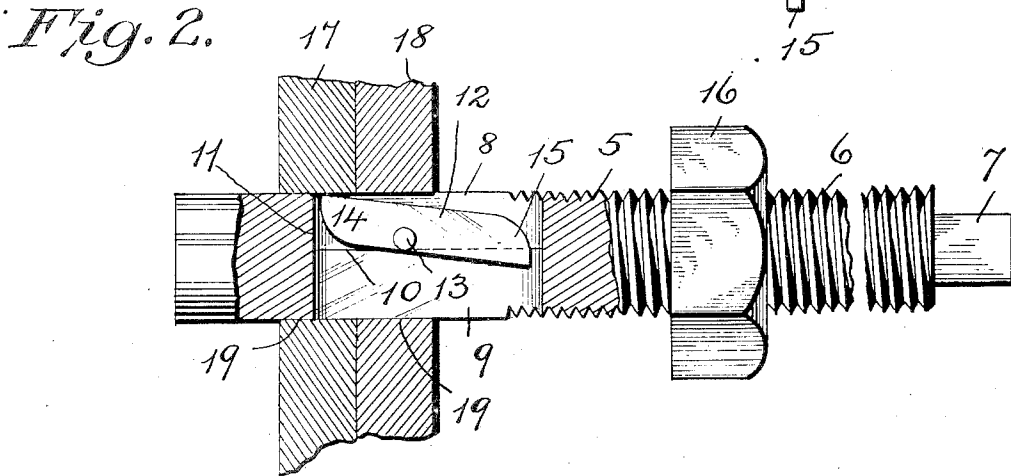
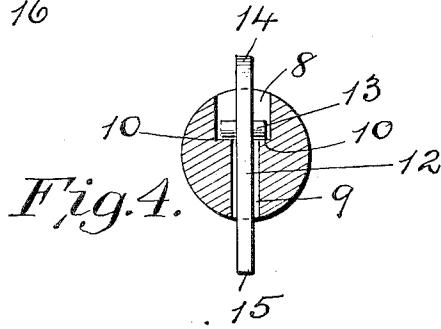
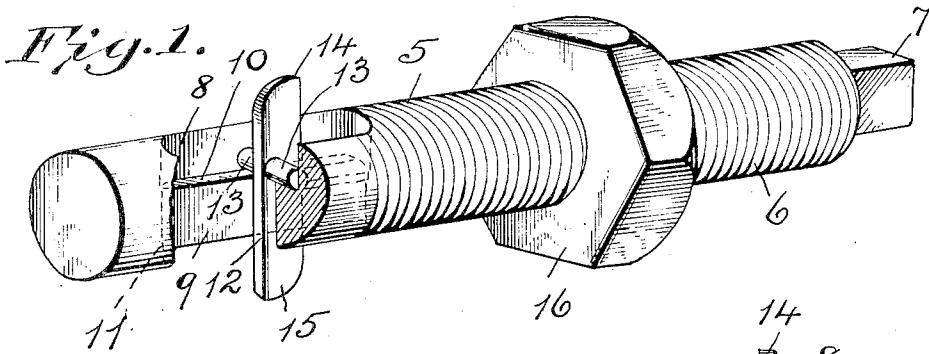


1,346,578.

Patented July 13, 1920.



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UNITED STATES PATENT OFFICE.

WALTER E. WINDSOR, OF BALTIMORE, MARYLAND.

BOLT-FASTENING.

1,346,578.

Specification of Letters Patent. Patented July 13, 1920.

Application filed February 28, 1920. Serial No. 362,082.

To all whom it may concern:

Be it known that I, WALTER E. WINDSOR, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Bolt-Fastenings, of which the following is a specification.

This invention relates to an improved bolt and has for its object to provide the bolt-body with an improved construction whereby the bolt may be inserted through the openings of the devices it is to secure from the side where the nut is to be seated, and after insertion, the inserted end be held against withdrawal by means that will be projected from the inserted end of the bolt-body.

Another object of the invention is to provide an improved construction of bolt-holding means whereby the bolt may be released, through proper manipulation of the bolt-body and the bolt withdrawn.

The invention is illustrated in the accompanying drawing, wherein—

Figure 1 shows the complete bolt in perspective.

Fig. 2 illustrates the same in connection with two plates that are to be secured together, the plates and a portion of the bolt being vertically sectioned to show the position of the holding means during the operation of inserting the bolt.

Fig. 3 shows a similar view, but with the parts locked together, and

Fig. 4 illustrates a vertical or cross-sectional detail through the bolt to show how the holding device is sustained at the inner end of the bolt.

Referring to the drawing the numeral 5 designates a bolt-body having circumferential screw-threads 6, and provided at, what I term the outer end with a squared projection 7, for a purpose presently to be explained.

The inner end of the bolt-body is provided with a diametrically-extending slot 8, extending therein from one side thereof and at the diametrically opposite side said bolt-body has another slot 9, that extends inwardly and communicates with the slot 8.

By reference to Fig. 4 of the drawing it will be noted that the slot 8, is wider than the slot 9 so that side ledges 10, are formed at opposite sides of the point where the two slots communicate.

It will further be noted that the side ledges 10, in the slot 8, are nearer the entrance to slot 8 than they are to the entrance to slot 9, or in other words slot 8 is of less depth than slot 9.

It will be seen by reference to Fig. 2, of the drawing that the ledges 10, are entirely on the interior of the slot 8, and extend the full length of the latter and that the two slots have at least one end terminating in a single line 11 extending diametrically through the bolt-body.

In connection with the bolt I utilize what may be termed a gravity pawl 12. This pawl is of a thickness that will permit it to freely swing in the narrow slot 9 and is provided with side trunnions 13, the overall width of which is less than the width of the wider slot 8, whereby the pawl and its two side trunnions will freely enter the wider slot 8, until the trunnions 13, rest upon the side ledges 10, whereupon the pawl will be pivotally sustained on the ledges and entirely within the slots 8 and 9.

By reference to the drawing it will be noted that the trunnions 13, are located nearer one end 14, of the pawl than the other end 15 thereof, so that said latter end will overbalance the end 14, and cause the pawl to turn on the trunnions and thus project the longer end 15, through the narrower slot 9 and the shorter end 14 through the wider slot 8, as shown in Figs. 1—3 and 4 of the drawing.

The trunnions 13 are entirely free on the ledges 10, so that the entire pawl may be readily moved in a direction longitudinally of the slot when the pawl is in the vertical or pendant position.

A nut 16, is provided on the threaded end of the bolt-body so as to effect a clamping of the bolt to the work or support as will now be explained.

While the bolt may be utilized for various purposes I have shown one example of its use in the accompanying drawing.

In Figs. 2 and 3 the numerals 17 and 18, designate two plates each having a perforation 19, and the two perforations being in register for the reception of the bolt.

The inner end of the bolt is inserted in the perforations 19, and the pawl 12, held by the fingers of the operator in a substantially horizontal position until the bolt is pushed in far enough to allow the short end

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14 of the pawl to engage the wall of the perforation, as shown in Fig. 2 of the drawing. The bolt may then be pushed entirely through the plates until the entire length of the lower slot 9 is exposed on the inner side of the plates whereupon the pawl 12 will drop into a vertical position with the heavier and longer end 15 down. By then drawing the bolt out the pawl will be seated with one edge against the inside of the plate 17, and its other edge against the end 11, of the two slots 8 and 9 whereupon further outward movement of the bolt will be prevented.

15 The nut 16, may then be turned on the bolt while the latter is held at the square end 7 against rotation, until the nut seats tight against the outer plate 18 and securely locks the plates together and holds the bolt in place.

When it is desired to withdraw the bolt the nut 16 will be loosened: the bolt pushed in slightly to free the pawl from clamping contact between the wall 11 and the plate 17. The bolt may then be rotated to turn the larger slot 8, down so that the pawl will drop out by gravity, and the bolt may then be withdrawn.

Having described my invention, I claim—
30 1. The combination with a bolt having a threaded circumferential portion at one end and provided with a slot in the other end

that extends diametrically therethrough said bolt having a supporting ledge in said slot, of a pawl in said slot said pawl having means of less width than the slot to seat in the ledge therein and pivotally sustain it and a nut on the bolt. 35

2. The combination with a bolt having a screw-threaded portion and provided with two slots of different widths extending therein from diametrically opposite sides which two slots communicate and the difference in the slot-widths forming side ledges in the slot that extend longitudinally of the bolt of a pawl having a trunnion at each side to rest upon said side ledges in the slot and pivotally sustain the pawl in said two slots, said pawl and its trunnions being free to move longitudinally between said ledges, and a nut on the bolt. 40 45 50

3. The combination with a bolt having a threaded circumferential portion at one end and provided with a slot in the other end that extends diametrically therethrough said bolt having a supporting ledge in said slot, of a pawl having trunnions to loosely rest on said slot-ledges, said pawl and its trunnions being free in the slot so that by turning the bolt to present the ledges downwardly the pawl may drop out and a nut on the bolt. 55 60

In testimony whereof I affix my signature.
WALTER E. WINDSOR.