

Nov. 14, 1950

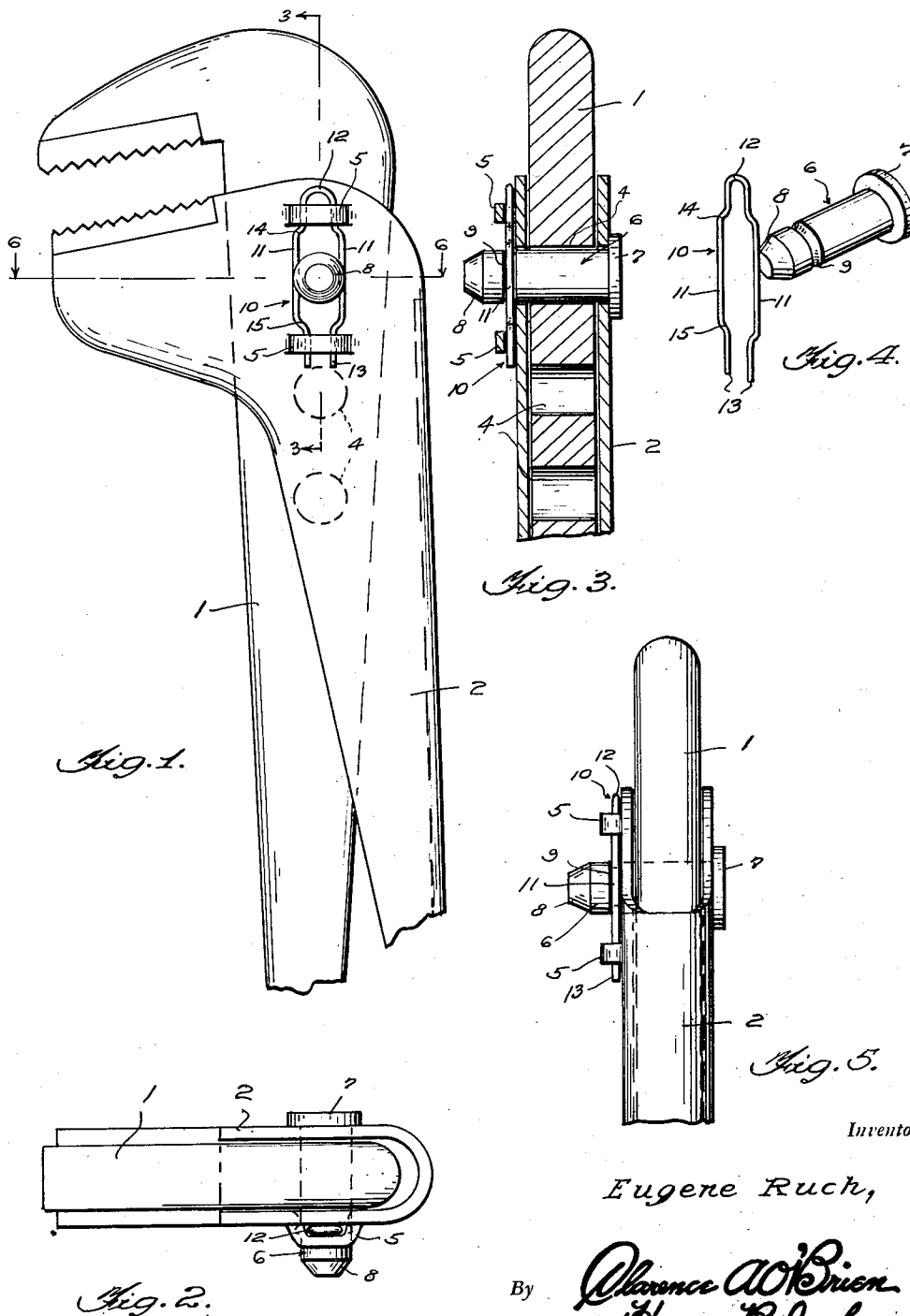
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2,530,083

LOCKING MEANS FOR PINS AND THE LIKE

Filed Nov. 8, 1946

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

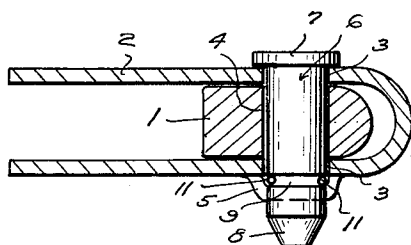


Fig. 6.

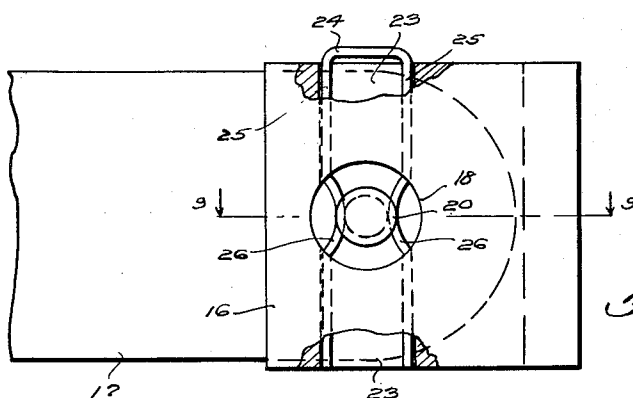


Fig. 7.

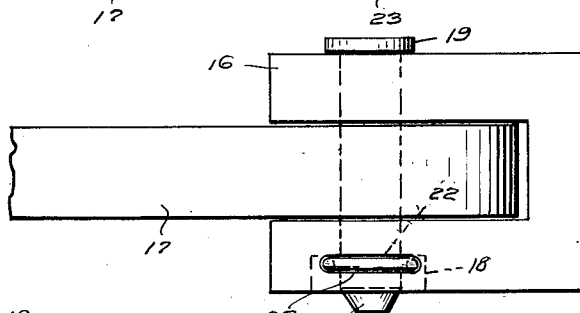


Fig. 8.

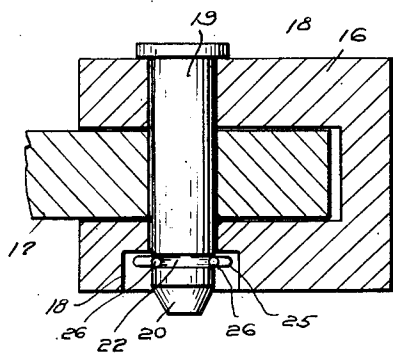


Fig. 9.

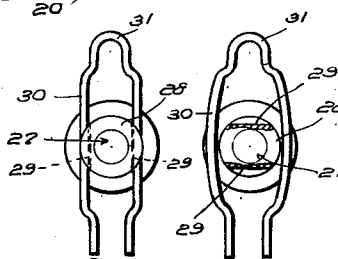


Fig. 10.

Fig. 11.

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UNITED STATES PATENT OFFICE

2,530,083

LOCKING MEANS FOR PINS AND THE LIKE

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Application November 8, 1946, Serial No. 708,770

2 Claims. (Cl. 85—8.5)

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My invention relates to improvements in locking means for pins, and the like, the primary object in view being to provide means of simple form and inexpensive construction for holding in place pins inserted in an implement, machine part, or piece of work, for quick, easy removal and replacement, and which obviates boring or threading the pins.

Other and subordinate objects also comprehended by my invention, together with the precise nature of my improvements, and the advantages thereof, will be readily understood when the succeeding description and claims are read with reference to the drawings accompanying and forming part of this specification.

In said drawings—

Figure 1 is a fragmentary view in side elevation illustrating my improved locking means, in a preferred embodiment thereof, applied to a wrench having a pivot pin connecting the handle members thereof.

Figure 2 is a view in front end elevation.

Figure 3 is a fragmentary view in longitudinal section taken on the line 3—3 of Figure 1.

Figure 4 is a view in perspective of the pivot pin and the clip, detached.

Figure 5 is a fragmentary view in rear edge elevation.

Figure 6 is a view in transverse section taken on the line 6—6 of Figure 1.

Figure 7 is a view in side elevation of a modified form of my improved locking means.

Figure 8 is a view in plan.

Figure 9 is a view in longitudinal section taken on the line 9—9 of Figure 7.

Figures 10 and 11 are views in end elevation illustrating another modified form of my improved locking means.

Referring to the drawings by numerals, and first to Figures 1 to 6 thereof, my improved locking means has been shown therein, by way of illustration of a preferred form thereof, as embodied in a wrench having the usual pair of jaw-carrying handle members 1, 2, the latter of channel form for straddling the handle member 1, and being adapted for pivotal connection to the handle member 1 at different points along the same by means of a pivot pin inserted through a pair of opposed side apertures in the handle member 2, and selective apertures 4 in the handle member 1.

According to my invention, in the preferred form thereof, the handle member 2 is provided on one side thereof with a pair of punched out loop-like, lateral keepers 5 arranged upon op-

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posite sides of one aperture 3 of the pair equidistantly therefrom.

The pivot pin 6 is provided with a head 7 on one end thereof, a tapered opposite end 8, and a circumferential groove 9 therein contiguous the tapered end 8 in substantially a common plane with the keepers 5.

A staple-like clip 10 is provided for coaction with the groove 9, and the keepers 5, to secure the pivot pin 6 against longitudinal displacement. The clip 10 is formed of resilient wire, with legs 11 adapted to straddle the pin 6 and fit in the groove 9, and a U-shaped end 12 adapted to fit in one keeper 5. The free ends 13 of the clip 10 are adapted to extend through the other keeper 5. The legs 11 are bent to provide pairs of opposed shoulders 14, 15 on said legs adapted to fit facing sides of the keepers 5 respectively to prevent endwise play of the clip 10 in said keepers 5 and yieldingly retaining said clip in said keepers.

As will now be seen, the clip 10 is first inserted through one keeper 5 and then into the other keeper until the pairs of shoulders 14, 15 engage the facing sides of said keepers, which occurs with a snap action. The clip 10 is thus secured in the keepers 5 but may be withdrawn therefrom when desired. The pivot pin 6 may next be inserted through the apertures 3, and a selected aperture 4, and so that the tapered end 8 thereof will flex the legs 11 apart to snap into the groove 9 when the pivot pin is pushed home. To remove the pivot pin 6, it is merely necessary to pull the same outwardly sufficiently for the groove 9 to cam the legs 11 apart so that said legs are flexed out of the groove 9.

In the modified form of my invention shown in Figures 7, 8 and 9, a member 16 straddling another member 17 is provided with a side recess 18 therein larger than the diameter of the pivot pin 19 and surrounding the tapered end 20 of said pin to house the groove 22 in said recess. A pair of slots 23 are provided in the member 16 extending from the opposite edges of the same to the recess 18 in a plane at a right angle to the axis of the pivot pin 19. The clip 24 is slidably extended into the slots 23 and through the recess 18 in straddling relation to the tapered end 20 of the pivot pin 19. The legs 25 of the clip 24 are bent to provide a pair of opposed bends 26 bowed toward each other and which interlock with the groove 22 of the pivot pin 19 at opposite sides of said pin, as best shown in Figure 7. Obviously, the bends 26 interlock with the groove 22 with a snap action when the pivot pin 19 is inserted. As will

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be seen, in this form of the invention, the clip 24 is substantially concealed in the member 16.

In the modified form of my invention shown in Figs. 10, 11, the pivot pin 27 is provided adjacent the tapered end 28 thereof with a pair of coplanar, circumferential grooves 29 in opposite sides thereof and into which the legs 30 of the clip 31 enter with a snap action when the pivot pin 27 is inserted between the legs 30 with said grooves 29 opposite said legs. By rotating the pivot pin 27, the grooves 29 may be revolved away from and free of the legs 30, as shown in Figure 11, and said legs flexed apart by the portions of said pin intermediate said grooves 29, so that said pin may be removed from between said legs.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention, without further explanation.

Manifestly, the invention, as described, is susceptible of modification, without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claims.

What I claim is:

1. Means for locking a transverse pin in a member through which the pin extends comprising a resilient U-shaped clip having a pair of coplanar legs straddling said pin at one end thereof and flexible to separate the same, said end of said pin being circumferentially grooved to fit said legs for interlocking with said legs, said member being provided with a pair of loop-like keepers through which the ends of said clip

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are inserted crosswise of said pin to hold said clip stationary at opposite ends thereof, said legs having bent portions between said keepers for coaction therewith to prevent withdrawal of said clip out of said keepers.

2. Means for locking a transverse pin in a member through which the pin extends comprising a resilient U-shaped clip having a pair of coplanar legs straddling said pin at one end thereof and flexible to separate the same, said end of said pin being circumferentially grooved to fit said legs for interlocking with said legs, said member being provided with devices through which said clip is inserted crosswise of said pin to hold said clip stationary at opposite ends thereof, said devices comprising a pair of loop-like keepers on said member accommodating therein the ends of said clip, and shoulders on said legs intermediate said keepers for engaging said keepers to prevent withdrawal of said clip out of said keepers.

EUGENE RUCH.

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