Jan. 29, 1929. 1,700,334

J. W. PUTERBAUGH

CLAMP

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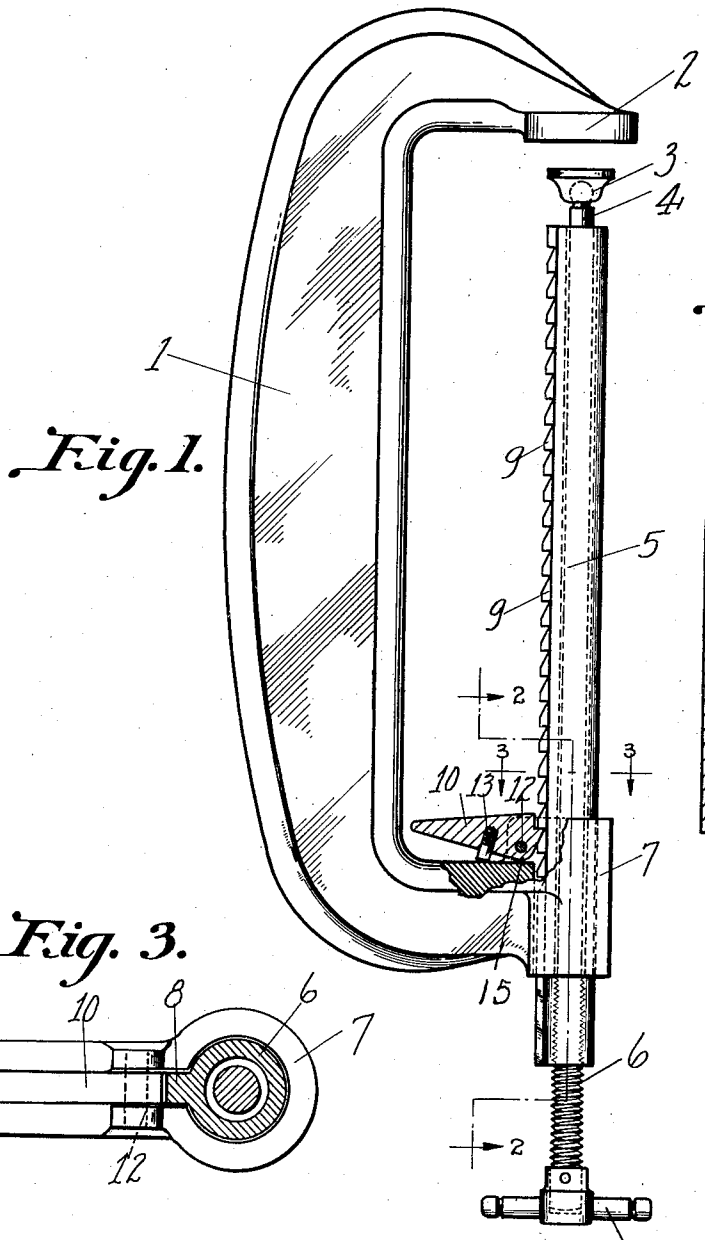


Fig. 1.

Fig. 2.

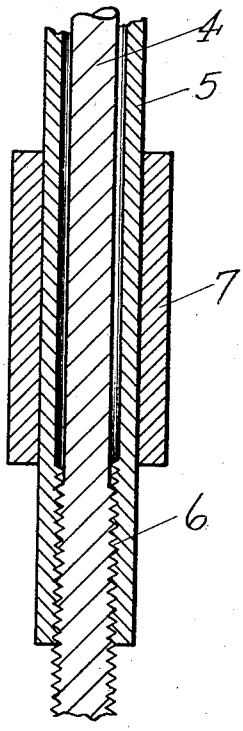


Fig. 3.

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UNITED STATES PATENT OFFICE.

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CLAMP.

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My invention relates more particularly to what is known as screw clamps, comprising an elongated C frame with the corresponding clamp member mounted in lower end of the C frame, and having a screw-threaded engagement therewith to be adjusted into clamping position by rotation of the screw.

As ordinarily constructed, it takes considerable time to bring the screw-threaded member into clamping position, and the same loss of time is experienced in opening up the clamp for subsequent adjustment. Then, due to the length of the screw, the ordinary construction is apt to be far from rigid.

It is to avoid this delay in adjustment and to give strength and rigidity to the device that my invention is directed, and it consists of that certain novel construction and arrangement of parts to be hereinafter particularly pointed out and claimed.

In the drawings:—

Figure 1 is a side elevation of my improved C clamp.

Figure 2 is an enlarged longitudinal section on the line 2, 2, of Figure 1.

Figure 3 is a similar cross section on the lines 3—3 of Figure 1.

The clamp comprises the usual C frame 1 provided with a flattened clamp member 2. The other clamp member embodies a head 3 which has swivelled engagement with the bar or rod 4 which is mounted in an elongated sleeve 5. The lower end of the rod 4 has screw-threaded engagement with the sleeve as shown at 6. The sleeve is mounted to slide vertically in the elongated boss 7 at the lower end of the C frame, and is provided with a longitudinal rib 8 formed with teeth or notches 9 which are engaged by a pawl 10 pivoted on pin 12 in a lug on the frame. The pawl is pressed into engagement with the notches 9 by spring pin 13. The inclination of the teeth or notches permits of raising the clamp member 3 to engagement with the work by pushing up on the handle 14 attached to the screw-threaded end of the bar 4.

The pawl will engage the proper notch, and a turn of the handle 14 will firmly clamp the work. To release the clamp, the screw is slightly reversed and the entire member is released by the operative press on the outer end of the holding pawl 10 which swings out of engagement with the notches.

Thus, in a moment's time, the clamp can be released and readjusted, and a single turn of the handle 14 is all that is necessary for tightening and readjustment. The pawl rests with its heel 15 on the frame, so that there is no strain on the pivot pin 12. The particular advantage of so arranging the pivoted pawl that its heel is in actual contact with the base of the slot in the lug in which it is pivoted, is that the stress exerted when the clamp is tightened is directed directly against the metal to metal contact, thus provided, so that all shearing strain on the pivot pin is avoided. As this type of clamp is often used for very heavy work more satisfactory work can be obtained and the danger to workmen of the clamp suddenly releasing the work is avoided.

The mounting of the sleeve in the elongated boss gives rigidity to the construction, and the engagement of the rib in the slot in the boss prevents the sleeve from rotating as the screw on the rod is turned by the handle.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

A clamp comprising in combination a C-shaped frame, a sliding sleeve having ratchet teeth thereon and having a clamping rod threaded within said sleeve, a pawl for engaging said ratchet teeth providing a quickly adjustable setting for the clamp, said pawl being pivoted in a channeled boss in said frame, and having a heel which, during engagement with the ratchet teeth, bears directly against the base of said channel, thereby relieving shearing strain on said pawl pivot and providing a direct metal to metal support substantially directly counter to the direction of clamping pressure of said ratchet.

JACK W. PUTERBAUGH.