

(No Model.)

F. H. RICHARDS.

TURRET LOCK.

No. 390,190.

Patented Sept. 25, 1888.

Fig. 1.

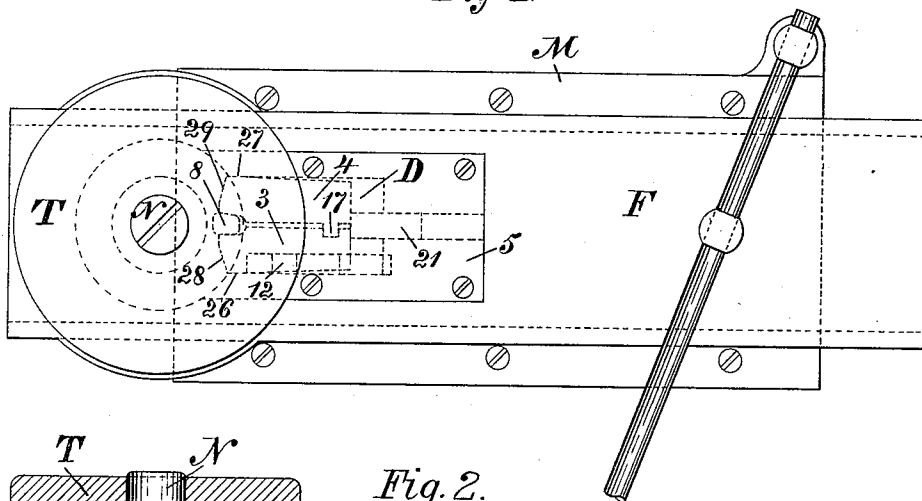


Fig. 2.

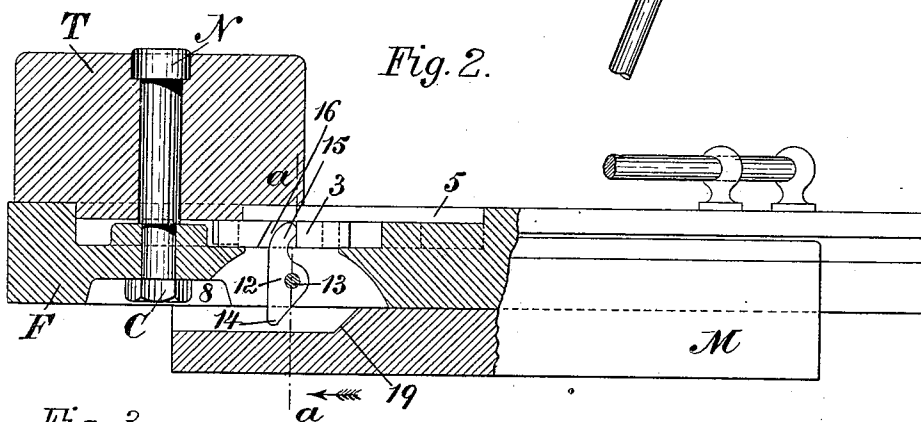


Fig. 3.

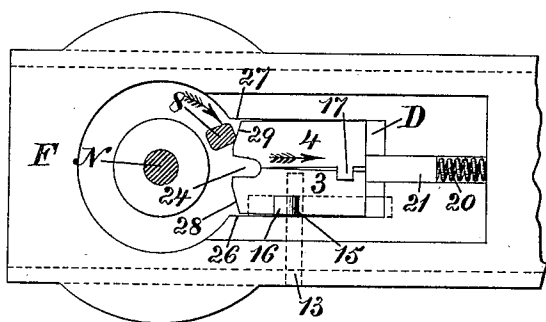
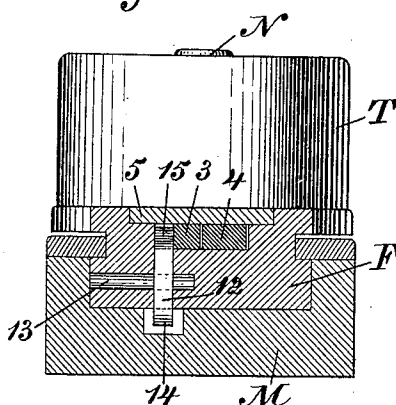


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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TURRET-LOCK.

SPECIFICATION forming part of Letters Patent No. 390,190, dated September 25, 1888.

Application filed June 20, 1888. Serial No. 277,650. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Turret-Locks, of which the following is a specification.

This invention relates to improvements in mechanism for locking revolving turrets—as, for instance, those used in screw-machines—the object being to furnish an apparatus for that purpose which (unlike those now generally employed) shall not depend on fine workmanship for its efficiency, and which shall remain efficient even after it is considerably worn.

To this end the invention consists in the improvements hereinafter more fully set forth.

In the drawings accompanying and forming a part of this specification, Figure 1 is a top view of a turret and its locking mechanism embodying my invention. Fig. 2 is a side elevation of the same, showing some parts broken away the better to disclose the construction. Fig. 3 is a top view of a part of the turret-slide and of the turret-locking bolts. Fig. 4 is a vertical transverse section in line *a*, Fig. 2.

Similar characters designate like parts in all the figures.

My improvements are shown in the drawings applied to locking the revolving turret *T*, which turret is carried by and turns on the turret-slide *F*, that is constructed to slide in the frame *M* of a machine. Said turret is or may be carried by some suitable stem, as *N*, fixed in the slide, the lower end of said stem being provided with a nut, *C*, or device for holding it in place. In most machines having a turret of this class some appliances are provided especially for revolving it; but I have not deemed it necessary to show in the drawings any means therefor, suitable apparatus being well known and shown in prior Letters Patent.

The turret is furnished with one or more pins or lugs, as *8*, all similar to each other and corresponding in number and position to the several positions in which the turret is required to be locked after a well-known manner. As shown, the pin is slightly tapering radially of the turret; but this feature is not essential. It is only required that the pins

shall properly conform to the faces of the locking-bolts hereinafter described, and any conformation to these is adequate that furnishes a firm bearing-surface thereon.

Under the turret, at one side thereof, the slide *F* has formed therein an opening or chamber, *D*, wherein are contained two sliding bolts, *3* and *4*, under the cap *5*. These bolts are arranged in practice longitudinally of the slide, in order that the most simple form of lock-actuating devices may be employed. For this purpose I provide the bolt-retracting lever *12*, pivoted in the slide at *13*, and whose upper end, *15*, engages in the notch *16* of the bolt *3*. For imparting simultaneous motion to both of the bolts these are to be suitably connected together, and I do this by a notch in one and a lug on the other, as shown at *17*, Figs. 1 and 3. The lower end, *14*, of lever *12* is so arranged as to strike an abutment, *19*, on the return movement of the slide, (which is toward the right hand in Figs. 1, 2, and 3,) and thus throw the bolts *3* and *4* toward the right hand on the slide. Some suitable spring (as *20*, acting on the plunger *21*) is employed to drive the bolts forward toward the turret in the usual manner. Between the forward ends of the said bolts there is formed a space, *24*, (see Fig. 3,) which is slightly tapering to correspond with stud *8*. When the bolts are driven forward, as shown by dotted lines in Fig. 1, the said stud enters said space *24* and spreads apart the bolts and forces these firmly out against the slide at *26* and *27*, thus firmly locking the turret in place without any play or lost motion. Furthermore, owing to the considerable width of the bolts *3* and *4*, the said bearing-points *26* and *27* are substantially in a line with said stud *8*, such line being at right angles to the bolt. This construction secures the best results, and great rigidity of the locking is obtained with loosely-fitted parts.

The forward ends of the bolts have or may have inclines *28* *29*, respectively, whereby the stud may force back the bolt to enter space *24*, as illustrated by the arrows in Fig. 3. The operation of the invention will now be evident to those familiar with this class of machines without further description.

Having thus described my invention, I claim—

1. The combination, with a turret-supporting slide or part, of the turret mounted thereon and provided with a stud for engaging the locking-bolts, and the two locking-bolts constructed to engage between them the said stud, and the stud acting to force back and apart said bolts, all substantially as set forth.

2. The combination, with a turret-supporting slide or part, of the turret having the stud 8 and the bolts 3 and 4, having between them the space 24, said bolts being connected to one another, and a device for giving to them a simultaneous longitudinal motion, all substantially as set forth.

3. The combination of the slide and the tur-

ret mounted thereon, provided with the stud 8, the locking-bolts 3 and 4, and the lever 12, arranged to be actuated for retracting said bolts, all substantially as set forth.

4. The combination, with the slide and with the turret mounted thereon and provided with stud 8, of the connected bolts 3 and 4, having between them the space 24, of the lever 12, abutment 19, and spring 20, all substantially as set forth.

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Witnesses:

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