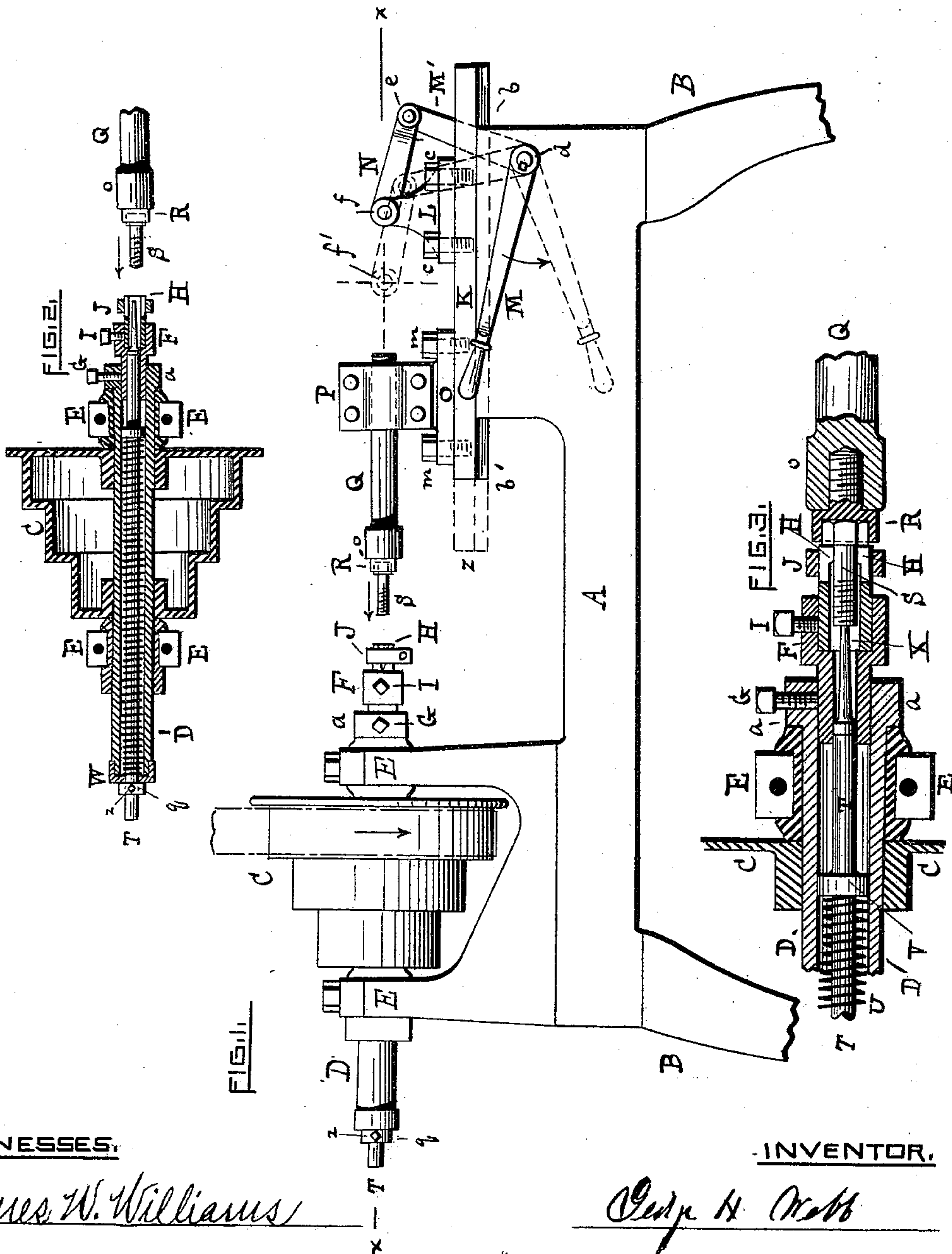


(No Model.)

G. H. WEBB.
MACHINE FOR MILLING BOLTS.

No. 451,145.

Patented Apr. 28, 1891.



WITNESSES.

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MACHINE FOR MILLING BOLTS.

SPECIFICATION forming part of Letters Patent No. 451,145, dated April 28, 1891.

Application filed September 26, 1890. Serial No. 366,245. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. WEBB, of the city of Pawtucket, in the county of Providence, in the State of Rhode Island, have invented a certain new and useful Improvement in Machines for Milling Bolts; and I do declare the following to be a specification thereof, reference being had to the accompanying drawings.

10 Like letters indicate like parts.

Figure 1 is a side elevation of my improved bolt-milling machine. Fig. 2 is a top plan of my said invention as seen on line *xx* of Fig. 1, the bolt-holding device and the spring-actuated rod being shown in top plan and the other parts in horizontal section on said line *xx*. Fig. 3 is an enlarged view of a portion of Fig. 2, except that the bolt is shown in the operation of being milled.

20 My invention relates to machines for milling bolt-shanks and bolt-heads. In finishing bolts it is desirable that that portion of the shank which is between the head and the screw-thread should be cut into a smooth cylindrical form, and also that the under surface of the bolt-head should be trimmed off smooth and square. This operation is called "milling."

30 My improved device has the same working parts as have been commonly used in such machines; but my invention consists of a hollow or tubular spindle and a spring-actuated rod movable longitudinally in said tubular spindle and adapted automatically to deliver the bolt from the machine when it has been properly milled.

In the drawings, A represents the bed of the machine, and B the legs. A cone-pulley C drives the milling mechanism.

40 D is the spindle mounted in the journals E and rotated by the pulley C. At its forward end it is circumferentially enlarged, as seen at *a*, to receive a collet F, which is held in its bore by the set-screw G.

45 The milling-tool H is held in the collet F by the set-screw I, and the outer end of the milling-tool is clamped by the clamping-collar J.

50 On the opposite end of the bed A a slide K is longitudinally movable, being confined to one line of movement by the dovetail *b*. It

has a block L secured to it by the screws *c*, and it is moved back and forth by means of the bent lever M M', pivoted to the bed of the machine at *d*, and the link N; pivoted to the end of the bent arm M' of the lever at *e*, and also to the block L at *f*. This lever is shown in the drawings as a hand-lever; but it may be operated by power, if preferred. When the handle of this lever is depressed to the position indicated by dotted lines, the point *f* is advanced to the position *f'*, and the slide is carried toward the milling mechanism to the position shown at *z* in Fig. 1. The slide K also has the block O secured to it by the screws *m*, and a holder P is fastened upon said block O. From the holder P a shaft Q extends, which has an enlarged end *o*, and a bolt-holder R is screwed into said end *o*, as seen at *p*. The bolt-holder R has a socket adapted to receive the head of the bolt S.

70 As thus far described the machine is like those in common use for the milling of bolts.

The novel features which constitute my invention I will now describe.

75 The spindle D is hollow or tubular throughout, and in it is placed a rod T, surrounded by a spiral spring U. This spring has its forward bearing on a collar V, integral with the rod T, and its rear bearing against the inner surface of a perforated cap W, which screws over the rear end of the tubular spindle D. The rod T projects out beyond the cap W and has a collar *q*, by which its forward throw is limited, said collar *q* being adjustably secured to the rod T by a set-screw *z*. If desired, the surface of said rod T may be formed to have a series of depressions to receive the end of the set-screw, so as to more firmly secure the collar to the rod. At its forward end the rod T terminates in the push-pin X. The collet F has a central bore to allow the push-pin to pass through it.

85 The operation of my device is as follows: When the bolt S is advanced to the milling-tool in the direction indicated in Fig. 2 by the arrow, the push-pin X projects into the aperture of the milling-tool, as seen in Fig. 2. The end of the bolt S in entering pushes back the pin X, and the spring U yields to the pressure. The milling-tool cuts the shank and

head of the bolt in the usual manner, and continues so to do as long as the bolt is kept in forcible contact therewith by the operative, who presses down on the lever-handle M for
5 that purpose. When the milling has been satisfactorily done, the lever M is raised, thus withdrawing the bolt-holding mechanism, and the bolt S is pushed out of the milling-tool by the action of the spring U, which is now
10 free to act automatically, and the bolt drops to the floor.

Before my improvement was made it was necessary to release the bolt from the machine by hand. By my device the release and de-
15 livery of the bolt from the milling mechanism are accomplished automatically.

In the drawings I have shown the bolt S as having a square end. In case a bolt is to be

milled which has a rounded or tapering point the end of the pin X may be centrally cupped 20 or depressed to receive the end of such bolt, thus centering it more accurately.

I claim as a novel and useful invention and desire to secure by Letters Patent—

In a bolt-milling machine having means for 25 holding and feeding the bolt, a rotatable tubular spindle having a milling-tool connected therewith, in combination with a spring-actuated rod contained in said tubular spindle and adapted automatically to deliver the 30 bolt from the machine after the operation of milling, substantially as specified.

GEORGE H. WEBB.

Witnesses:

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