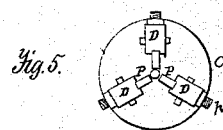
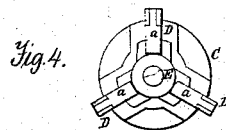
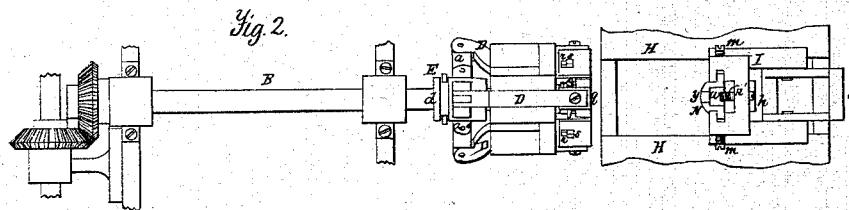
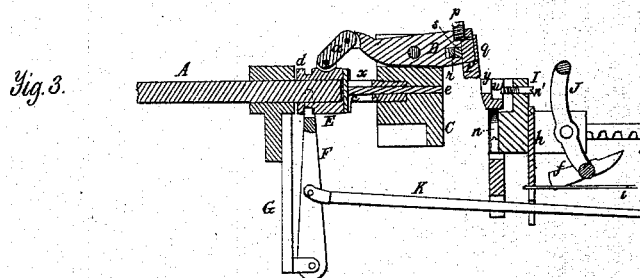
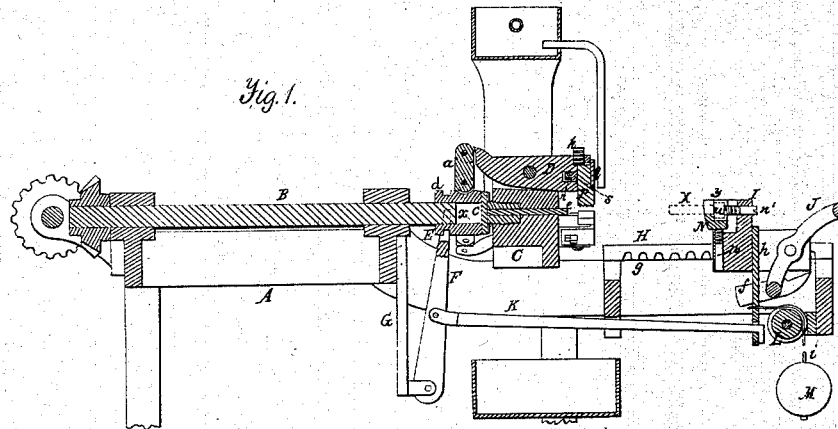


*W. W. Hubbard.*

*Cutting Screws.*

*N<sup>o</sup> 49,524.*

*Patented Aug 22, 1865.*



*Witnesses.*

*Wm. Albert Steel.  
Charles Howson*

*Inventor.*

*W. W. Hubbard  
By his Att.  
Henry Howson*

# UNITED STATES PATENT OFFICE.

W. W. HUBBARD, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN MACHINES FOR CUTTING THREADS ON BOLTS.

Specification forming part of Letters Patent No. 49,524, dated August 22, 1865.

*To all whom it may concern:*

Be it known that I, W. W. HUBBARD, of Philadelphia, Pennsylvania, have invented certain Improvements in Bolt-Cutting Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of certain novel mechanism, fully described hereinafter, for cutting the screw-threads of bolts with rapidity.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a sectional elevation of my improved bolt-cutting machine; Fig. 2, a plan view, and Figs. 3, 4, and 5 detached views.

Similar letters refer to similar parts throughout the several views.

A represents part of the frame of the machine, in which turn any number of horizontal spindles B. At the outer end of each spindle is a cylindrical block or head, C, in which, at equal distances from each other, are hung three levers, D D D, each of the latter being connected by a link, *a*, to a sleeve, E, arranged to slide on the shaft B. A pin, *c*, passes through the sleeve E and through a slot, *x*, in the shaft, so that the sleeve shall turn with the shaft. Against the pin *c* bears the inner end of a rod, *e*, which slides freely in an opening in the center of the head C. In the said sleeve is an annular groove, *d*, into which project the branches of a forked lever, F, hinged to a bracket, G.

Between guides H H, in front of each head C, slides a carriage, I, to a hand-lever, J, at the rear of which are hung two pawls, *f*, each of the latter being adapted to the teeth of a rack, *g*, at the under side of one of the guides H. From the carriage I a plate, *h*, projects downward, in which plate is an opening for the admission of a rod, K, the latter being jointed at its inner end to the lever F and bent at its outer end, as shown in Fig. 3. To the plate *h* is secured one end of a cord, *i*, which passes over a pulley, L, and is secured to a weight, M.

In the carriage I is an opening in which a holder, N, is confined by adjusting-screws *m* and *n*, and in the side of this holder oppo-

site the head *c* is a slot, *y*, and into a square recess, *w*, in the holder projects the end of a set-screw, *n'*.

In the outer end of each lever D is a recess arranged for the reception of a screw-cutting die, P, against the upper end of which bears a set-screw, *p*, the cutter being retained within the recess by a clasp or strap, *q*, which is caused to bear firmly against the cutter by a gib, *r*, and key *s*.

The blank bolt X is placed in the holder N so that its shank shall project through the slot *y* and its head rest in the square recess *w*. The holder N is then adjusted so that the shank of the bolt shall be directly on a line with the rod *e* in the head C. The different parts of the machine are now brought to the position shown in Fig. 1, a rotary motion is imparted to the shafts B by any suitable system of gearing, and the carriage I is moved toward the head C, by operating the levers J and pawls *f*, until the end of each bolt is introduced between the cutters P. As the cutters are carried round with the head they gradually cut a thread in the end of the bolt and draw the latter back until its end is brought against the end of the rod *e*. As this rod is forced back by the bolt the sleeve E and lever F are moved away from the head C, and the levers D are thus elevated to the position shown in Fig. 3, the cutters being lifted from contact with the bolt and the carriage being thus at liberty to be drawn quickly forward by the weight M. As the carriage approaches the limit of its forward motion the plate *h* is brought against the bent end of the rod K, the lever F and the sleeve K are thus drawn forward, and the levers D are moved to their original position, preparatory to the introduction of another bolt into the holder and a repetition of above-described operation.

It is desirable that a number of spindles, holders, and carriages should be arranged on one frame, as one attendant can attend to the cutting of threads of several bolts at one time.

I claim as my invention and desire to secure by Letters Patent—

1. The weight M or its equivalent, combined with the carriage I, and head C, with its levers and cutters, so that the carriage shall be moved away from the head as soon as the cutters are raised from the bolt, substantially as described.

2. The screw-cutting dies P, connected to the levers D and rendered adjustable thereon by the key *s*, gib *r*, and set-screw *h*, as set forth.

3. The adjustable holder N, its recesses *w*, and set-screws *m* and *n'*, the whole being constructed and arranged as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

W. W. HUBBARD.

Witnesses:

CHARLES E. FOSTER,  
JOHN WHITE.