

L. W. STOCKWELL.
BOLT-THREADING DIES.

No. 178,484.

Patented June 6, 1876.

Fig. 1.

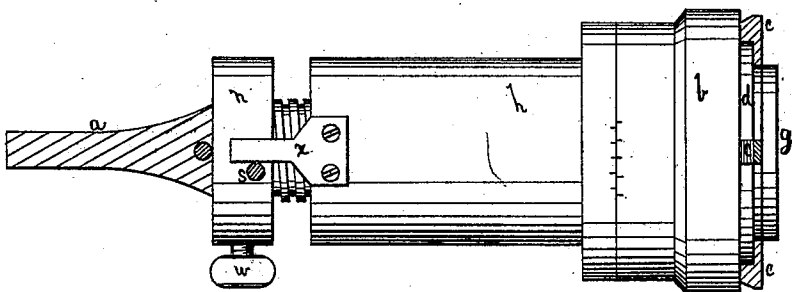
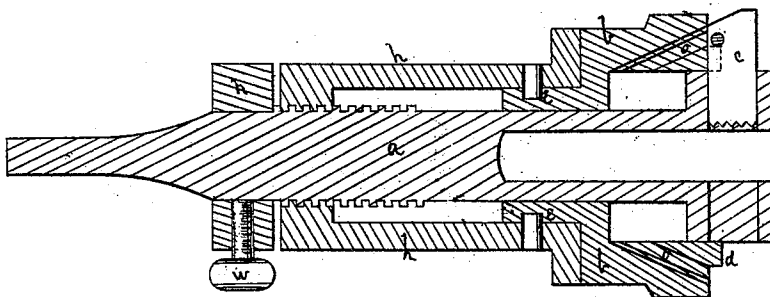


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

LEVI W. STOCKWELL, OF RAVENNA, OHIO, ASSIGNOR TO STOCKWELL,
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IMPROVEMENT IN BOLT-THREADING DIES.

Specification forming part of Letters Patent No. **178,484**, dated June 6, 1876; application filed
March 3, 1876.

To all whom it may concern:

Be it known that I, LEVI W. STOCKWELL, a resident of Ravenna, Portage county, Ohio, have invented a new and useful Improvement in Bolt-Threading Machines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of this invention is to thread bolts by dies held in a spindle, which may be attached to, or held by, an ordinary brace for holding a bit, the dies being opened and closed by a sliding cam-ring, operated by turning a collar on the threaded part of the spindle.

Figure 1 is a view of the machine. Fig. 2 is a longitudinal section of the machine, showing the relative positions of the spindle and cam-ring for the dies to be removed or replaced.

The head of the spindle *a* is hollow, to permit the bolt to enter it. The shank of the spindle is shaped to enter the socket of a brace, by which it may be operated. The dies *c c c c* are placed in slots in the spindle-head, to which the face-plate *g* is fastened. The dies are closed against the bolt to be threaded, and are withdrawn from it by the sliding cam-ring *b*, in which are slots converging from its face, for the outer ends of the dies to enter. The converging cams formed by these slots in the cam-ring force in the dies by pressing against their outer ends, which are shaped to fit the faces of the cams. There is a groove, *o*, in the cam-ring *b*, on one side of each slot, parallel with the cam, for a pin in the die *c* to enter, and by means of which the dies are withdrawn from the bolt when threaded.

When the cam-ring *b* is moved forward on the spindle *a*, the dies *c c c c* are forced in toward the axis of the spindle, and when the cam-ring is moved back, the lower side of the grooves *o o o o* press against the under side of the pins in the sides of the dies *c c c c*, and thus withdraw the dies from the bolt.

The cam-ring *b* is operated by the collar *h*, from which projecting pins enter the groove in the circumference of the cam-ring *b*. The collar *h* is turned in a screw-thread on the spindle *a*, and, by means of the pins which project from the collar into the groove *e*, a reciprocating

motion is thus given to the cam-ring *b*, for the purpose of opening and closing the threading-dies. On the face of the cam-ring *b* is an annular shoulder, *d*, whose circumference and the inner sides of the outer ends of the grooves *o o o o* are equally distant from the axis of the spindle. The slots in the cam-ring pass through the shoulder *d*. To place the dies in the spindle-head, the cam-ring *b* is drawn back by turning the collar *h* on the screw-thread of the spindle *a* until the cam-ring and spindle are in the relative positions shown in Fig. 2. The dies are then placed in the spindle through the slots in the shoulder *d*, with the die-pins resting on the circumference of the shoulder *d* at the open ends of the grooves *o o o o*, and then the dies are in position to enter the slots in the cam-ring *b*. The motion of the collar *h* on the screw-thread of the spindle is then reversed, sliding forward the cam-ring over the dies, and forcing them into the proper position for threading the bolt, which is indicated by an index-scale on the circumferences of the cam ring *b* and the collar *h* at their junction. The collar *n* on the spindle *a*, between its shank and the thread of the spindle, is provided with a stop-pin, *s*, which projects beyond the circumference of the collar *n*, and forms a stop for the finger *x*. The finger *x* is firmly attached to the circumference of the collar *h*, and projects across the circumference of the collar *n*. It may be made of a thin piece of metal. The collar *n* is also provided with a set-screw, *w*.

When the collar *h* has been turned till the dies are in position for threading the bolt, the collar *n* is turned until the pin *s* comes in contact with the finger *x*, and then the set-screw *w* is tightened to hold the collar *n* from turning, and to prevent the collar *h* from turning, so as to force in the dies farther than required for threading the bolt. The finger *x* and stop-pin *s* do not prevent the collar *h* from being turned in the opposite direction, which is done by the hand of the operator after the bolt is threaded, to open the dies and release the bolt. When another bolt is placed in position to be threaded, the collar *h* is turned till the finger *x* again comes in contact with the stop-

pin *s*, which forces the dies in till they are again in the same position as before for threading the bolt.

I claim as my invention—

1. The sliding cam-ring *b*, having the annular shoulder *d* for the pins or projections of the threading-dies to rest on at the outer ends of the grooves *o o o o*, substantially as and for the purpose herein set forth.

2. The collar *n*, having the set-screw *w* and the stop-pin *s*, in combination with the finger *x* on the collar *h*, substantially as and for the purpose herein set forth.

LEVI W. STOCKWELL.

Witnesses:

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