(No Model.) 2 Sheets—Sheet 1.

N. THOMAS.

STAY BOLT CUTTER.

No. 253,788. Patented Feb. 14, 1882.

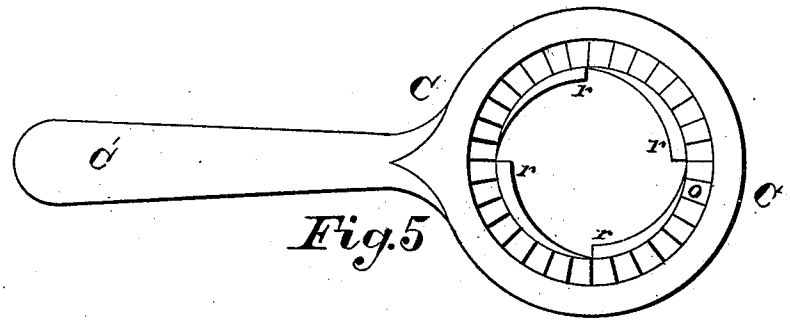


Fig. 5

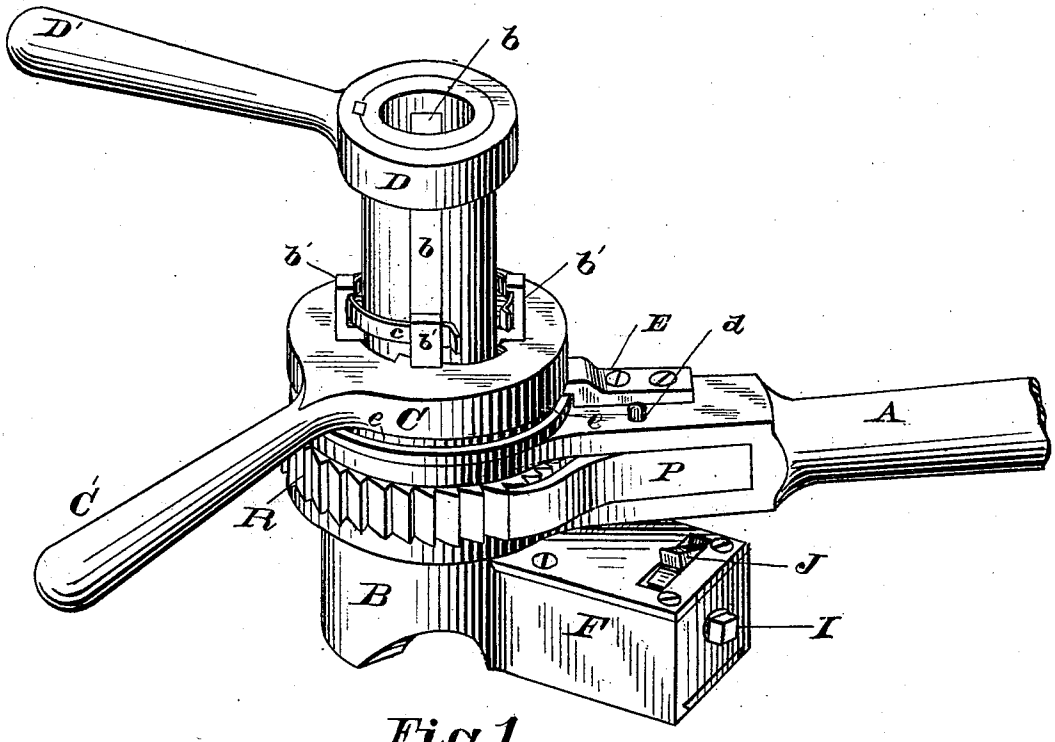


Fig. 1

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(No Model.) 2 Sheets—Sheet 2.

N. THOMAS.

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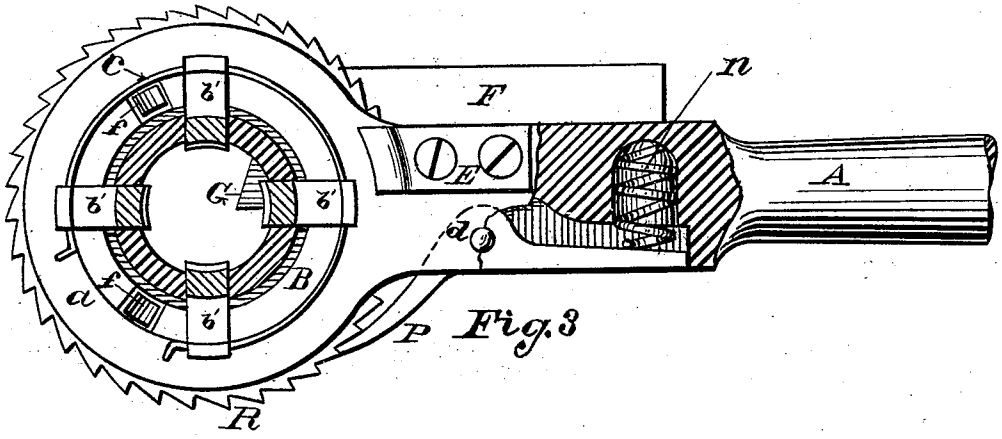


Fig. 3

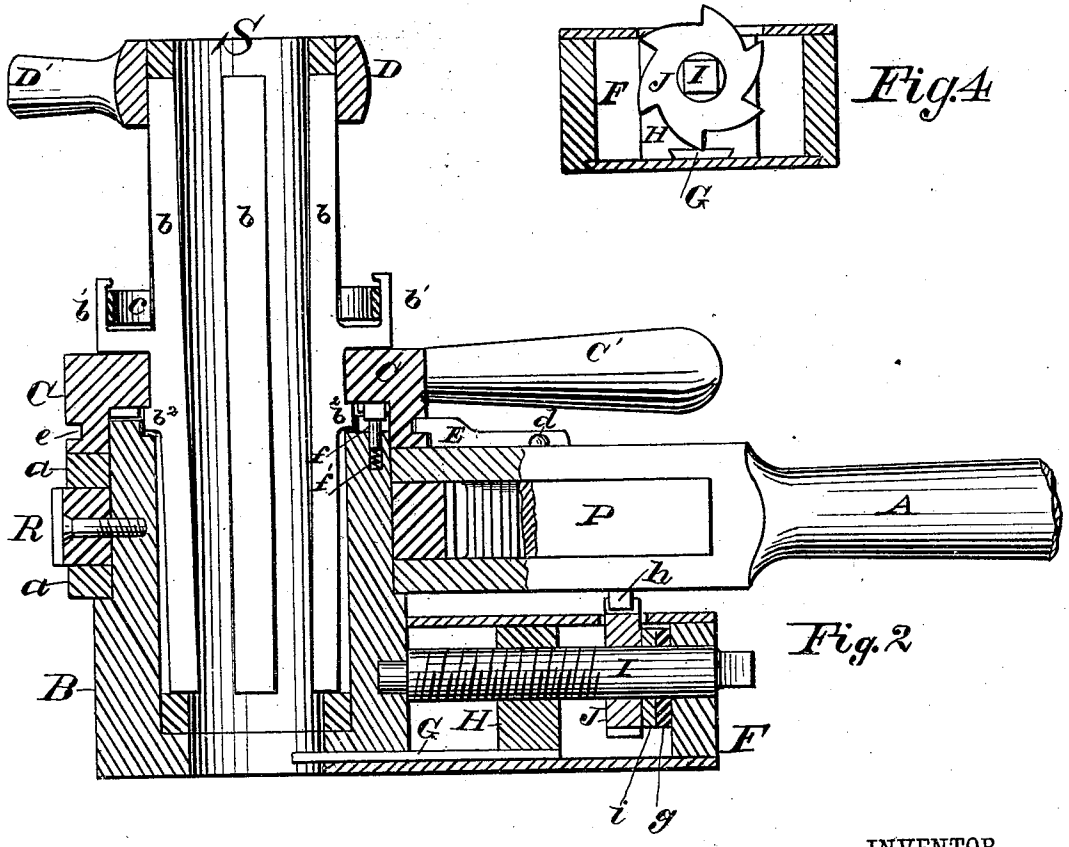


Fig. 2

Fig. 4

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UNITED STATES PATENT OFFICE.

NICHOLAS THOMAS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ALLEN BURTON, OF SAME PLACE.

STAY-BOLT CUTTER.

SPECIFICATION forming part of Letters Patent No. 253,788, dated February 14, 1882.

Application filed October 27, 1881. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS THOMAS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Stay-Bolt Cutter, of which the following is a specication.

My invention relates to a device for cutting off rods or bolts, particularly adapted to cutting off stay-bolts in boilers; and the object of my invention is to improve upon the method heretofore employed of cutting off stay-bolts after they are firmly screwed into a boiler—viz., by the use of a chisel and hammer, in which the hammering has a tendency to loosen said bolts in the boiler, which should be perfectly tight, and which leaves an irregular and ragged end for riveting, besides being a laborious operation; and to provide a device whereby a stay-bolt in a boiler may be quickly and easily cut off, making a clean cut and leaving the end squared off for riveting without detracting anything from the good qualities or the efficiency of said bolt.

The invention consists in the construction and arrangement of parts, as hereinafter more fully described and claimed.

Figure 1 is a perspective view of my device; Fig. 2, a vertical, and Fig. 3 a horizontal, sectional view of the same; and Figs. 4 and 5, detailed views of some of the parts referred to hereinafter.

Similar parts are referred to by similar letters of reference throughout the several views.

In the drawings, S represents a sleeve, to the top of which is secured a collar, D, having a handle, D′. In this sleeve are four longitudinal openings or slots which extend to within a short distance from the ends of said sleeve, and in which are fitted jaws *b*. The number of these jaws is not important, as a less or greater number than four may be used, if desired, with the same result.

On each jaw *b* is an L-shaped projection, *b*′, and a short distance below, a shoulder, b^2. Fitting between this projection *b*′ and shoulder b^2 and around the sleeve S is a cam-piece, C, provided with a handle, C′, and having on its inner circumference a number of cam-projections, *r*, corresponding with the number of jaws in the sleeve S. A circular spring, *c*, extending around on the inside of the projection *b*′ on jaws *b*, forces said jaws outward against the collar D, and the cam-projections *r* on cam-piece C, and by this means holds them firmly in their places in the sleeve S. The cam-piece C, fitting between the projection *b*′ and shoulder b^2 on jaws *b*, prevents any end movement of said jaws *b* and sleeve S through the cam-piece C.

B is a cylinder, on one side of which, near the bottom, is cast a box, F, in which the cutting mechanism is placed, hereinafter more fully described. On the cylinder B is journaled a bifurcated handle, A, having a bearing, *a*, at each end of a ratchet-wheel, R, which is secured onto the cylinder B. With this ratchet-wheel R a pawl, P, pivoted in the handle A at *d*, is made to engage by a spring, *n*. The cylinder B is bored out the greater portion of its length and slipped onto the sleeve S, on which it is held by means of a piece, E, secured to the handle A on the cylinder B, working in a groove, *e*, in cam-piece C on sleeve S.

In the top of the cylinder B are three small pawls, *f*, (see Figs. 2 and 3,) under each of which is a spring, *f*′, which forces it upward against the bottom of the cam-piece C, on which is a ratchet, O. (Shown in Fig. 5.) These pawls *f* engage with the ratchet O and prevent the cylinder B from turning backward, but are depressed and slide over said ratchet when the cylinder is turned forward.

The cutting-tool G is located in the box F, and is secured at its rear end to a nut, H, in such a manner that it may be readily removed for sharpening, or for other reasons, when desired, by opening the bottom of the box F, which is made to slide for this purpose. The nut H works on a screw, I, journaled at each end of the box F, and on which is secured a ratchet-wheel, J, which projects through an opening in the top of the box F.

Between the ratchet-wheel J and the end of the box F on the screw I are two washers, *i* and *g*, the one *g*, of which is made of rubber or some other yielding material, which allows the tool G to yield slightly and prevents breakage from taking too deep a cut. The end of the screw I projects through the end of the

box F, and is made square to receive a key or wrench, whereby the tool may be moved in or out at pleasure. At every revolution of the cylinder B the ratchet-wheel J engages with a projection, *h*, on the handle A, which turns it one notch and advances the tool G correspondingly.

The operation is as follows: The device is slipped over the bolt to be cut off, said bolt entering at the bottom of the cylinder B and extending into the sleeve S. The device being in the proper position, is held by the handle D′ on the sleeve S, while the cam-piece C is turned around on the sleeve S by the handle C′, closing the jaws *b* and clamping said sleeve S securely to the bolt. The cutting-tool G being advanced against the bolt, by turning the screw I, as above described, a vibratory movement is given to the handle A, and the pawl P engages with the ratchet-wheel R and rotates the cylinder B on the sleeve S, carrying the cutting-tool G around the bolt and cutting a groove therein. At each revolution of the cylinder B the tool is advanced slightly, as before described, until the bolt is cut off. It will be seen that by this method a bolt is easily cut off, leaving the end squared and without injuring the threads with which it may be provided.

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

1. The cylinder B, having cutting-tool G, ratchet-wheel R, and pawls *f*, and handle A, having pawl P and piece E, in combination with a sleeve, S, having jaws *b* and spring *c*, and a cam-piece, C, having a ratchet, O, substantially as described and shown.

2. The combination, with the rotating cylinder B, having box F and handle A, provided with projection *h*, of the feed-screw I, nut H, carrying cutter G, ratchet J, and washers *i g*, substantially as and for the purpose described.

3. In a stay-bolt cutter, a sleeve provided with jaws operated by a cam, whereby said sleeve may be secured directly to the bolt to be cut off, in combination with a device for carrying the cutting-tool which rotates upon said sleeve, substantially as described.

4. A sleeve, S, having collar D and handle D′, and provided with jaws *b b*, and a cam-piece, C, having a handle, C′, in combination with a cutter, G, substantially as and for the purpose described.

NICHOLAS THOMAS.

Witnesses:
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PAUL A. STALEY.