

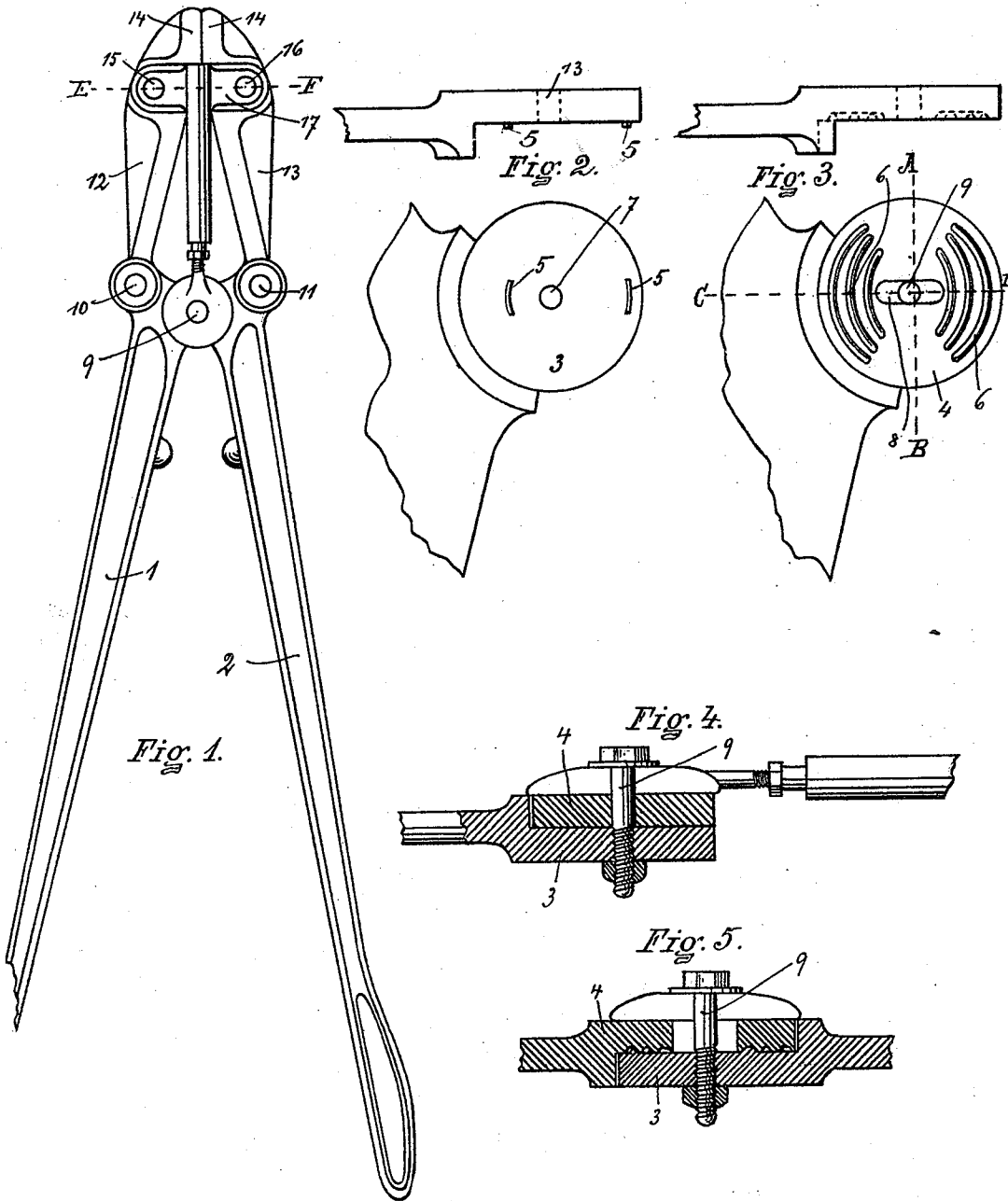
(No Model.)

2 Sheets—Sheet 1.

W. L. DUTCHER.
BOLT CUTTER.

No. 517,848.

Patented Apr. 10, 1894.



WITNESSES.

Rich. A. George.
E. G. Munson

INVENTOR.

WILLIAM L. DUTCHER.

By *Rusley Robinson*

ATTORNEY'S.

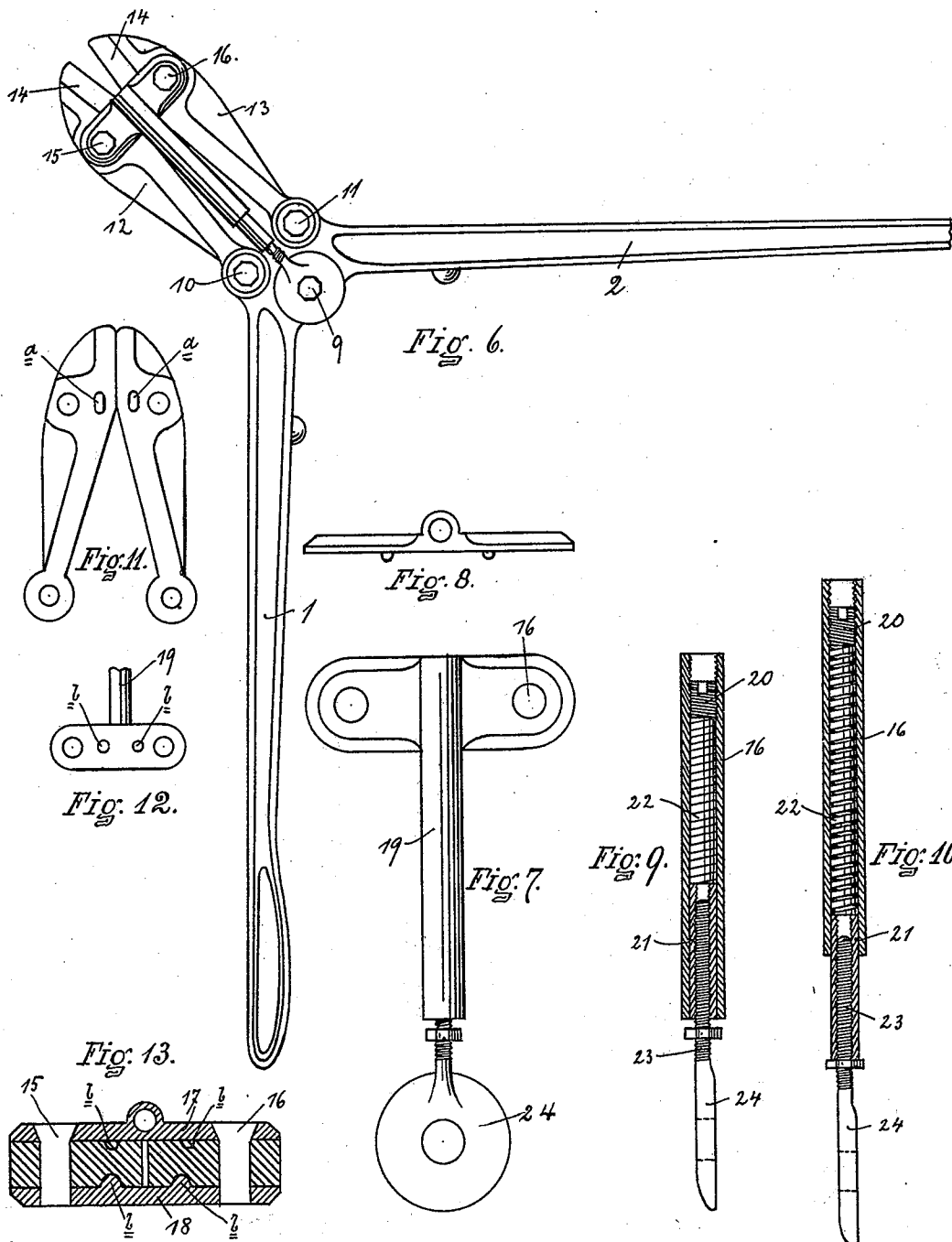
(No Model.)

2 Sheets—Sheet 2.

W. L. DUTCHER.
BOLT CUTTER.

No. 517,848.

Patented Apr. 10, 1894.



WITNESSES.
Rich. A. George.
E. J. Munson

INVENTOR.
WILLIAM L. DUTCHER.
By *Risley Robinson*
ATTORNEY'S.

UNITED STATES PATENT OFFICE.

WILLIAM L. DUTCHER, OF ROME, ASSIGNOR TO P. D. RANDALL & SON,
OF TROY, NEW YORK.

BOLT-CUTTER.

SPECIFICATION forming part of Letters Patent No. 517,848, dated April 10, 1894.

Application filed August 3, 1893. Serial No. 482,223. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. DUTCHER, of Rome, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Bolt-Cutters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My present invention relates to an improvement in bolt cutters.

In the drawings, Figure 1 shows the bolt cutter in closed position. Fig. 2 shows an edge and plan view of one part of the joint between the handle levers. Fig. 3 shows in like manner the other part. Fig. 4 shows a section of the device taken on a line coinciding with A—B of Fig. 3 and shows parts adjacent to the section. Fig. 5 shows in a similar manner a section on line C—D of Fig. 3. Fig. 6 shows the cutter in open position. Fig. 7 shows in detail a spring barrel and plunger. Fig. 8 shows an upper end view of the part shown in Fig. 7. Fig. 9 shows a longitudinal section of the parts shown in Fig. 7 showing the parts and spring in the position which they assume when the cutters are closed. Fig. 10 shows the same as Fig. 9 with the parts and spring in the position which they assume when the cutters are in open position. Fig. 11 shows a bottom view of the cutters or cutting levers. Fig. 12 shows the bottom or inner face view of the part shown in Fig. 8. Fig. 13 shows a section on line E—F of Fig. 1.

The lever handles 1 and 2 are provided with circular ears 3 and 4 respectively which form the hinge joint between the two lever handles. The circular ear 3 is provided with projections 5 adapted to enter a series of grooves as 6 on the ear 4. The ear 3 is provided with a bolt hole 7 and the ear 4 with a slot 8 for receiving the bolt 9, which forms the hinging pivot and which holds the two lever handles together. The object of the grooves 6 and the projections 5 together with the slotted opening 8 is to provide a ready means of adjustment in the joint to compensate for the wear of the cutting

edges. The projections 5 are moved over from one groove into the next adjacent groove, while the bolt 9 is moved along the slot 8. To the short arms of the lever handles 1 and 2 are pivoted at 10 and 11 the cutting levers 12 and 13. The cutting levers are provided with cutting edges 14 and are pivoted on pivots 15 and 16 in a pair of straps 17 and 18 placed upon either side of the cutting levers. The cutting levers are provided in each of their sides adjacent to the contiguous edges with slot-like indentations as *a* adapted to receive circular or semi-spherical projections as *b* provided on the inner faces of the straps 17 and 18. The object of the slotted indentations *a* and projections *b* are to limit the lateral movement of the cutting levers with reference to each other. It is evident that in lieu of the indentations *a* and projections *b* a slotted opening entirely through or in the edge of the body of each of the cutting levers may be provided and a pin secured in the straps passing through each slot, or the slots and projections may be interchanged with the slots in the straps and the projections on the cutting levers. On the strap 17 I provide a spring barrel 19 provided with a screw-threaded plug 20 in one end and adapted to receive the adjustable plunger head 21 in the other end and confining the spring 22. The plunger head 21 is adjustable by rotating on the screw-threaded stem 23 of the plunger. The stem 23 is formed integral with the washer 24 which engages with the hinge joint between the lever handles and protects the same and is secured at the joint on the hinge bolt 9. The arrangement of the spring barrel, spring and plunger, is such that when the bolt cutter is closed and the jaws come together the spring will be compressed so that the several convolutions will engage each other and thus the compression of the spring will be limited and the handles will be cushioned as the cutting edges of the cutting levers sever the piece being cut and the blow or jar to the handles which takes place at the time that the cutting is accomplished will be relieved and cushioned by the action of the spring and the several convolutions coming in contact as before described.

It will be sufficient to note that the spring

22 besides cushioning the blow also operates in a measure to open the lever handles and cutting jaws, and that the device can be more nicely adjusted by means of the screw-plug 20 and the adjustable plunger 21, so as to bring the parts to rest exactly at the time that the cutting jaws come together. Any great amount of wear on the cutting jaws is compensated for in the joint between the lever handles by means of the projections and grooves, before described, provided in the joint. The arrangement of the projections *b* and slotted indentations *a* with the spring barrel 19 fixed on the strap 17 and the plunger operating from the hinged joint between the handles is such that the cutting levers are held always substantially on the axial line of the device whether in open or closed or intermediate position. It should be noted that the length of the slotted indentations *a* are such that the swinging movement of the jaw is permitted without any or hardly any excess in length of the slot.

It is evident that numerous other changes and modifications in and from the construction described, other than those herein noted, may be made without departing from the equivalents of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a bolt cutter, a pair of lever handles hinged together, a pair of cutting levers hinged in a strap, the ends of the cutting levers being pivoted to the ends of the lever handles, a spring and guide barrel fixed on the strap holding the cutting levers and projecting toward the hinging joint between the lever handles, and a plunger connecting with the joint between the lever handles and extending into the barrel, all combined, substantially as set forth.

2. The combination of a pair of lever handles hinged together, a pair of cutting levers hinged in straps, each mounted on an independent pivot in the strap, a fixed projection on the strap and a slotted opening in the cutting levers substantially in line between the pivotal point of the cutting levers, substantially as set forth.

3. The combination of a pair of cutting levers hinged on independent pivots in straps, a projection from the straps into slotted indentations in the cutting levers, and a pair of lever handles hinged together and connecting with the cutting levers, substantially as set forth.

4. The combination of a pair of lever handles, an adjustable hinged joint between the lever handles having projections arranged at the sides of the pivotal center of the joint on one of the parts and a series of grooves substantially concentric with the pivotal center of the joint in the other part adapted to receive the projections as one part is adjusted

sidewise upon the other part, a slotted opening in one of the parts for permitting the adjustment, a bolt or pivotal pin extending through the pivotal center of the hinged joint and holding the same together, and a pair of cutting jaws hinged to the short arms of the lever handles, substantially as set forth.

5. The combination of a pair of lever handles, an adjustable hinged joint between the lever handles having a projection on one of the parts of the joint, and a series of substantially concentric grooves on the other part adapted to receive the projection as the parts are adjusted sidewise upon each other, an opening in each of the parts for the reception of a pivotal pin or bolt, and a bolt or pivotal pin, substantially as set forth.

6. In a bolt cutter, a pair of lever handles hinged together, a pair of cutting levers each connected with the short arm of the lever handles and pivoted on independent pivots in a strap, a connection between the strap and the hinge joint between the lever handles, and a cushioning spring introduced in the connection, combined substantially as set forth.

7. In a bolt cutter, a pair of lever handles hinged together, a pair of independent cutting levers hinged to the short arms of the lever handles, a strap engaging the cutting levers, a pivot for each cutting lever in the strap, an independently operating means for limiting the swinging movement of each of the levers on its pivot, combined substantially as set forth.

8. In a bolt cutter, a pair of lever handles hinged together, a pair of cutting levers hinged in a strap, the ends of the cutting levers being pivoted to the ends of the lever handles, a spring and guide barrel fixed to the strap and extending toward the hinged joint of the lever handles, a plunger connected with the hinged joint and extending into the barrel, a spring in the barrel, and means for adjusting the length of the barrel, combined substantially as set forth.

9. In a bolt cutter, a pair of lever handles hinged together, a pair of connecting levers hinged on independent pivots in a strap, the ends of the cutting levers being connected to the ends of the lever handles, a spring and guide barrel fixed on the strap, and extending toward the joint between the lever handles, a spring in the barrel, a plunger working in the barrel and connected with the hinged joint between the lever handles, and means for adjusting the length of the plunger, all combined substantially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

WILLIAM L. DUTCHER.

Witnesses:

IRA TEETER,

GEORGE C. CARTER.