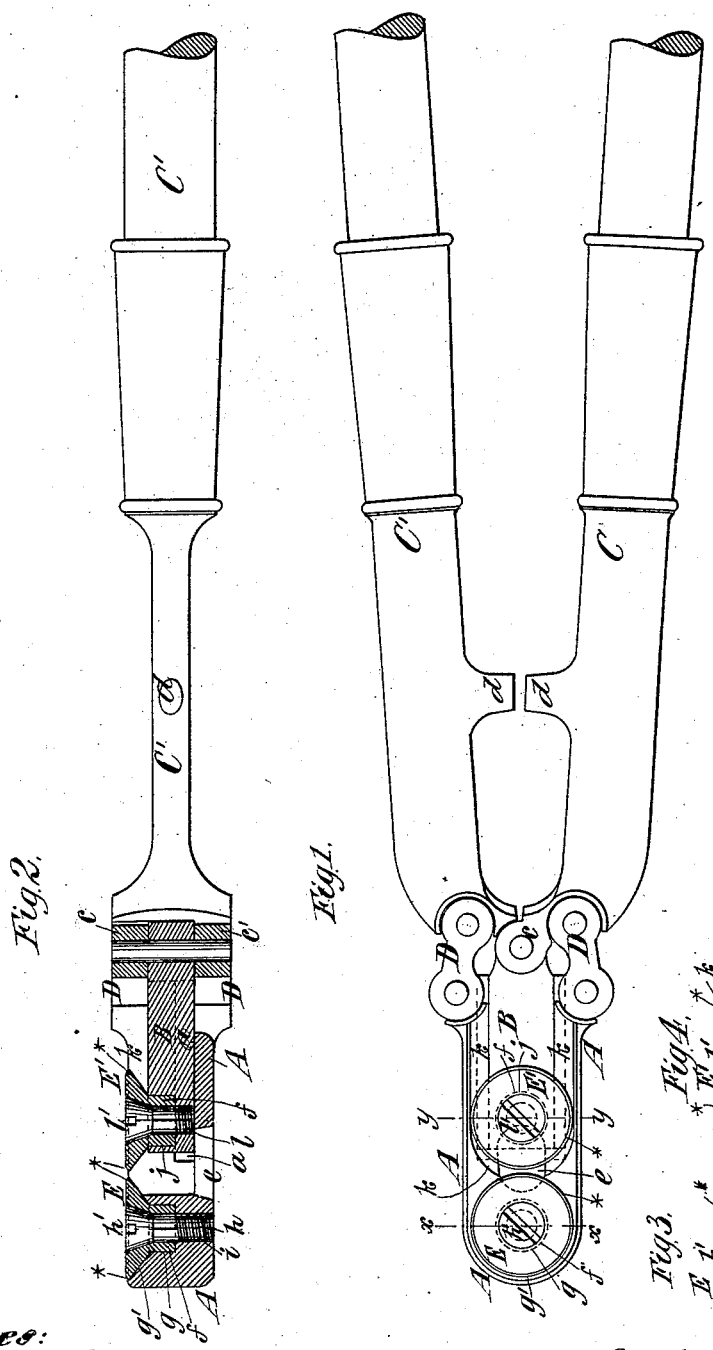
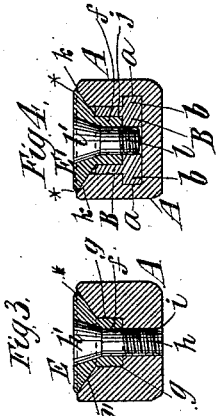
(No Model.)

J. R. ROWLANDS.

BOLT CUTTER.

No. 307,229. Patented Oct. 28, 1884.





Witnesses:
Matthew Pollock
C. Sundgren

Inventor:
John R. Rowlands
by his Attorneys
Brown & Hall

UNITED STATES PATENT OFFICE.

JOHN R. ROWLANDS, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE J. G. HOFFMAN MANUFACTURING COMPANY, OF SAME PLACE.

BOLT-CUTTER.

SPECIFICATION forming part of Letters Patent No. 307,229, dated October 28, 1884.

Application filed April 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. ROWLANDS, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Bolt-Cutters, of which the following is a specification.

My invention relates to bolt-cutters or bolt-trimmers which are more particularly intended for cutting off those portions of bolts which project beyond their nuts, but which may be used, when desired, for cutting off metal wire or rods. In a hand implement of this class there is usually a frame, at one end of which is rigidly secured a fixed cutter or knife, and in which is fitted a slide or plunger carrying a movable cutter or knife, the said slide or plunger being actuated by a pair of handles pivotally connected with the frame, preferably by means of links. In the cutters of the kind above described, which have been before used, the knives have commonly had at one side of the shank only a straight cutting-edge, and if such edge became broken by reason of great strain upon it, or by reason of being too hard, it has been rendered wholly useless unless the gap or flaw could be ground out by a considerable expenditure of labor.

One important object of my invention is to provide a bolt cutter or trimmer in which the knives or cutters are so formed that in case that portion of the edge which is at any time operative breaks down the knife can be readily adjusted to bring a sharp and unused portion of the edge to a position for use; and a further object of the invention is to afford more adequate support to the knives or cutters and prevent them from tilting up or canting while in operation to an extent which will render them liable to break.

In the accompanying drawings, Figure 1 is a plan of a bolt cutter or trimmer embodying my invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a transverse section on the dotted line *x x*, Fig. 1; and Fig. 4 is a similar section on the dotted line *y y*, Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

A designates the frame of the tool, which may be of cast metal, and which is of approximately V-shaped form, but closed at the back. In this frame is fitted a slide or sliding plunger, B, which has ribs *b*, fitting grooves or ways *a* on the inner sides of the frame A, whereby said slide or sliding plunger is properly guided and prevented from canting during its movements.

C C′ designate the operating-handles, which are connected by pairs of links D D with the ends of the frame A, and which have inwardly-projecting lugs or ears *c c′*—one formed upon each—between which is fitted and to which is pivotally connected the slide or plunger B.

From the above description it will be apparent that when the handles are separated the slide or plunger B will be drawn back or partly out of the frame A, while the bringing of the handles together will move or force the slide or plunger inward in the frame.

On the handles C C′ are projections *d*, which form stops to limit the inward movement of the slide B.

In the back of the frame A is a slot or slightly-elongated opening, *e*, which receives the bolt or piece of metal to be cut off by the knives or cutters, one of which is stationary or adjustably fixed in the frame, and the other of which is similarly fixed in the slide or plunger B. These knives or cutters I will now describe.

E designates the fixed or stationary knife, and E′ designates the knife which is carried by the movable slide or plunger B. Each knife has a shank, *f*, which is preferably cylindric and of comparatively small diameter, and above the shank flares outward to form a cutting-edge, *, of approximately circular form and comparatively large diameter.

In the end portion of the frame A is a socket, *g*, into which the knife-shank *f* is fitted, and above the said socket is a downwardly-tapering or upwardly and outwardly flaring seat, *g′*, in which is supported the tapering or conical portion below the cutting-edge *. The knife E is secured by a screw, *h*, which has a taper head, *h′*, and which is screwed into a threaded hole, *i*, at the bottom of the shank-socket *g*, and, if desired, the screw might project beyond the back of the frame and have applied to it a lock-nut for holding the screw against becoming loose.

In lieu of the screw *h*, tapped into the frame

A, I may employ a bolt passing through the frame and secured by a nut at the back. The shank *f* of the knife E′ is fitted in a socket, *j*, in the inner end portion of the slide or plunger B, and the portions of the frame A adjacent to the slideway for the slide or plunger are beveled or flared outward at *k*, so as to support the conical or tapering portion of the knife E′, which is below its cutting-edge *. The knife E′ is secured by a screw, *l*, which has a conical or taper head, *l′*, and which passes snugly through the knife and is screwed into a tapped hole in the slide.

The knives, when shaped and supported as above described, have little tendency to cant, and hence their cutting-edges * * are always kept in the same plane; but their great advantage lies in the fact that their cutting-edges are continuous, and if the edge of either knife breaks down or is flawy at any point its securing-screw may be loosened, and by slightly turning the knife a new edge portion brought into position for use, after which the screw is tightened to hold the knife rigid. The knives are so large in diameter that the curvature of the cutting edge does not prevent them from operating properly; but in case it is desired, the edge, instead of being truly circular, may be polygonal or many-sided—that is at eight or ten points in its perimeter its edge may have for a short distance a straight profile.

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

1. In a bolt-cutter, the combination, with a frame, a slide fitted thereto, and handles for operating the said slide, of a knife carried by the said slide, and a knife having an approximately circular cutting-edge adjustably secured in said frame, and capable of being turned to present different portions of its edge for use, substantially as herein described.

2. The combination, with a frame, a slide fitted thereto, and handles for operating the slide, of a knife fixed in the frame, and a knife having an approximately circular cutting-edge adjustably secured in said slide, and capable of being turned to present different portions of its edge for use, substantially as herein described.

3. In a bolt-cutter, the combination, with a frame and a slide fitted thereto, of knives having approximately circular cutting-edges adjustably secured in said frame and slide, and capable of being turned to present different portions of their edges for use, substantially as herein described.

4. The combination, with the frame A, having the socket *g* and the flaring seat *g′*, of the knife E, having the shank *f*, fitting said socket, and the conical portion below its cutting-edge fitted to said seat, the securing-screw *h*, and the slide B, fitted to said frame and carrying a knife for operating in conjunction with the knife E, substantially as herein described.

5. The combination, with the frame A, provided at the inner end with a knife, and having the beveled or flaring surfaces *k*, of the slide B, fitted to said frame and having in it the socket *j*, and the knife E′, provided with the shank *f*, fitted to said socket, and the tapering or conical portion below the cutting-edge bearing on the frame-surfaces *k*, and the securing-screw *l*, all substantially as herein described.

JOHN R. ROWLANDS.

Witnesses:
FREDK. HAYNES,
MATTHEW POLLOCK.