J. R. BROWN.

Improvement in Bolt-Cutters.

No. 131,423. Patented Sep. 17, 1872.

Fig 1

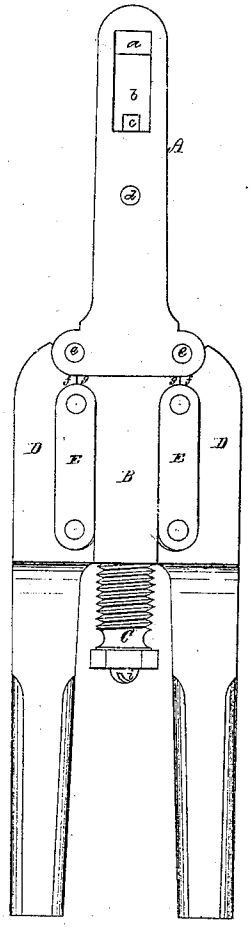
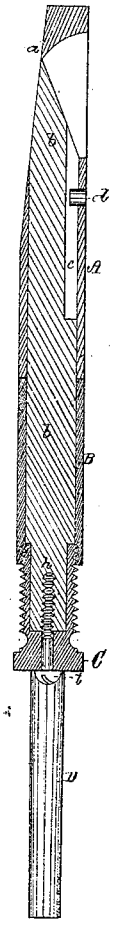



Fig. 2.




Witnesses.

S. N. Piper

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J. R. Brown.

by his attorney

N. N. Emery

# UNITED STATES PATENT OFFICE.

JAMES R. BROWN, OF CAMBRIDGEPORT, MASSACHUSETTS.

## IMPROVEMENT IN BOLT-CUTTERS.

Specification forming part of Letters Patent No. **131,423**, dated September 17, 1872; antedated September 13, 1872.

*To all whom it may concern:*

Be it known that I, JAMES R. BROWN, of Cambridgeport, of the county of Middlesex and State of Massachusetts, have made a new and useful invention having reference to what are termed Bolt-Cutters; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a front elevation, and Fig. 2 a longitudinal and vertical section, of my improved bolt-cutter, which, in the main, is analogous to that for which Letters Patent No. 107,438, dated September 20, 1870, were granted to me, and also to that described in an application for a patent filed by me in the Patent Office on October 12, 1870, and allowed on December 24, 1870.

Each of the said bolt-cutters last mentioned had its movable cutter-carrier constructed with two racks or series of teeth, disposed on opposite sides of it, and engaging with sectoral or arcal ranges of teeth projecting from two levers pivoted to the stationary cutter head or plates projecting therefrom. These teeth being liable to become broken by the great strain and wear to which they necessarily are subjected while the implement is in use, I have sought to dispense with them and to employ in their stead other devices, not only of a different character, but operating in a different manner, and with far greater effect, as well as with little or no liability of breakage, comparatively speaking.

In the drawing, A denotes the cutter-head or yoke, provided with the stationary cutter *a*, and a movable or sliding chisel, *b*, the latter being socketed into a carrier, B, so as to be capable of being moved endwise therein by means of an adjusting-screw, C, screwed into the carrier, all being arranged in manner as represented. The movable cutter is grooved in its side lengthwise, as seen at C, to receive a stud, *d*, projecting from the yoke, the groove and stud serving to prevent the cutter from revolving. To the yoke or cutter-head A two levers, D D, are pivoted, their fulcrums or joint-pins being shown at *e e*. The said levers D D are formed with shoulders or abutments *f f*, and the cutter-carrier B is also provided with shoulders or abutments *g g*, all being arranged as represented. Between the shoulders of the carrier B and those of the levers D D, and also between the carrier and the two levers, are two toggles, E E, each of which is hinged or pivoted at one end to the carrier and at the other to one of the levers. When the levers are about in parallelism the abutments *f f*, at their inner edges by contact with the cutter-carrier, serve as stops to arrest the further inward motion of the levers, and as a consequence the advance of the movable cutter toward the stationary cutter. On taking hold of the levers and moving them apart the cutter-carrier B will be retracted by the toggles. So, when the levers are moved toward each other, the toggles will advance the said carrier, the force of the propulsion constantly increasing as the advance is made.

From the above it will be seen that the toggles have one important advantage over toothed racks and sectoral gears, which, while in operation, advance the cutter-carrier equal distances, with equal arcs of movement of the levers and with a constant force; whereas with the toggles such is not the case, as with them during the movements of the levers toward each other the advance of the cutter-carrier constantly decreases, and the force of propulsion as constantly increases with no danger of breakage of any part, as the abutments or shoulders of the levers and the cutter-carrier receive the strain of the toggles and relieve their hinge-pins therefrom.

The adjusting-screw C is tubular, and turns on a journal, *h*, formed in the movable cutter shank, as shown. A screw, *i*, going through the head of the screw C, and being screwed into the journal *h*, serves to hold the screw in engagement with the journal. On revolving the cutter-adjusting screw far enough to unscrew it from the carrier the movable cutter may be drawn out of the carrier for being sharpened, or for any other purpose.

I herein make no claim, in a bolt-cutter, to the toothed stock of the movable cutter and toothed segment-levers arranged as shown in the United States Patent No. 65,391. Nor do I claim the combination of knives, levers, screw, frame, and top and bottom plates, constructed and arranged in manner and to operate as described in such patent or in the re-

issue thereof, dated March 14, 1871. I make no claim to anything shown or described in the United States Patent No. 105,629.

I claim—

1. My improved bolt-cutter, as having the toggles E E, the levers D D, the cutter-carrier B, cutter *b*, and the cutter-head A, constructed, arranged, and combined in manner as shown and described.

2. I claim the adjusting-screw C, and the movable cutter or chisel *b*, as made and applied together and to the cutter-carriers, as set forth, the chisel under such application of it being provided with the groove *c*, open at its front end to receive the stud *d* from the carrier, all being as specified.

JAMES R. BROWN.

Witnesses:

R. H. EDDY,

J. R. SNOW.