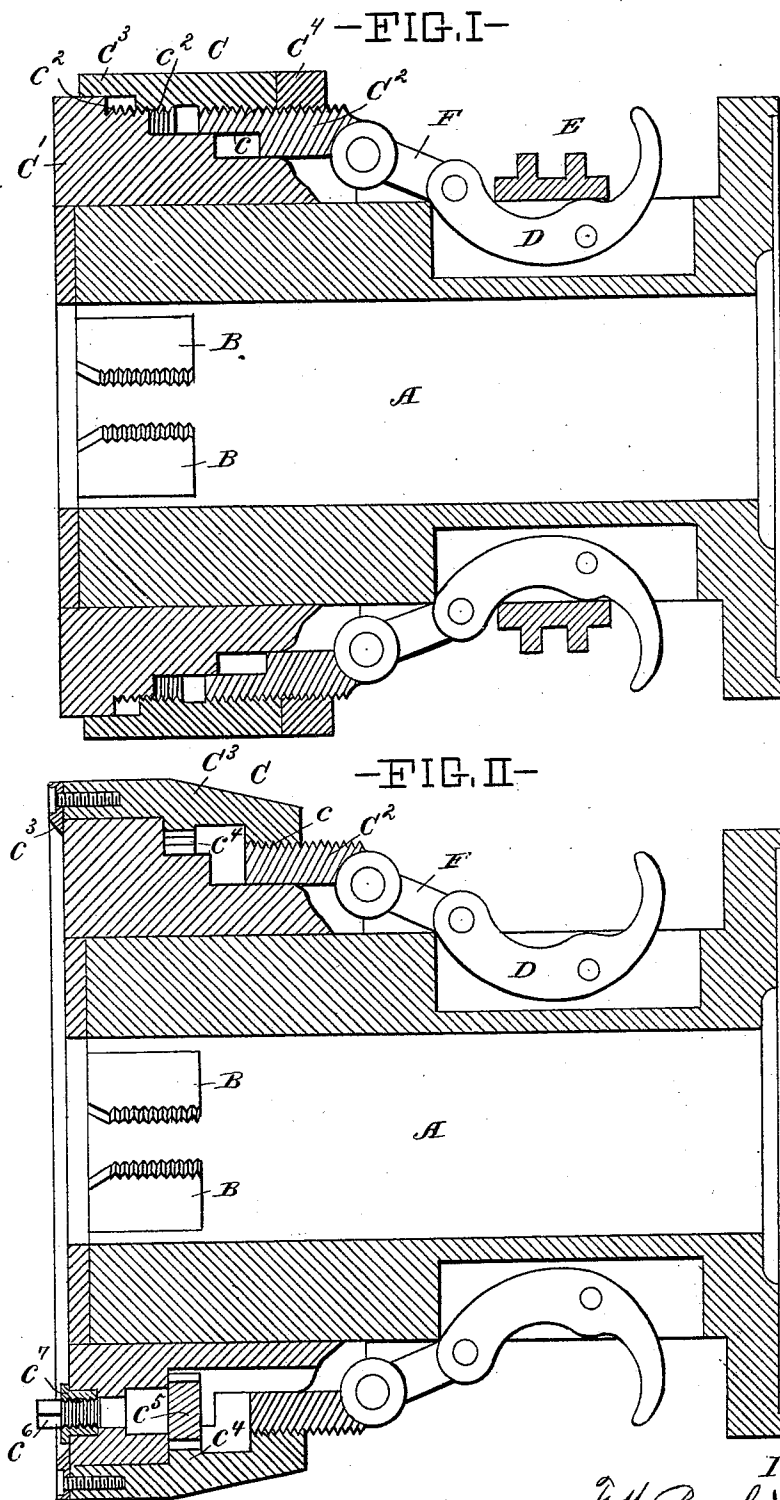


F. W. BRUCH & H. P. EILERS.
BOLT CUTTER HEAD.

No. 518,222.

Patented Apr. 17, 1894.



Witnesses
J. C. Turner
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Inventors
F. W. Bruch & H. P. Eilers
By Hall & Fay Att'y's

(No Model.)

2 Sheets—Sheet 2.

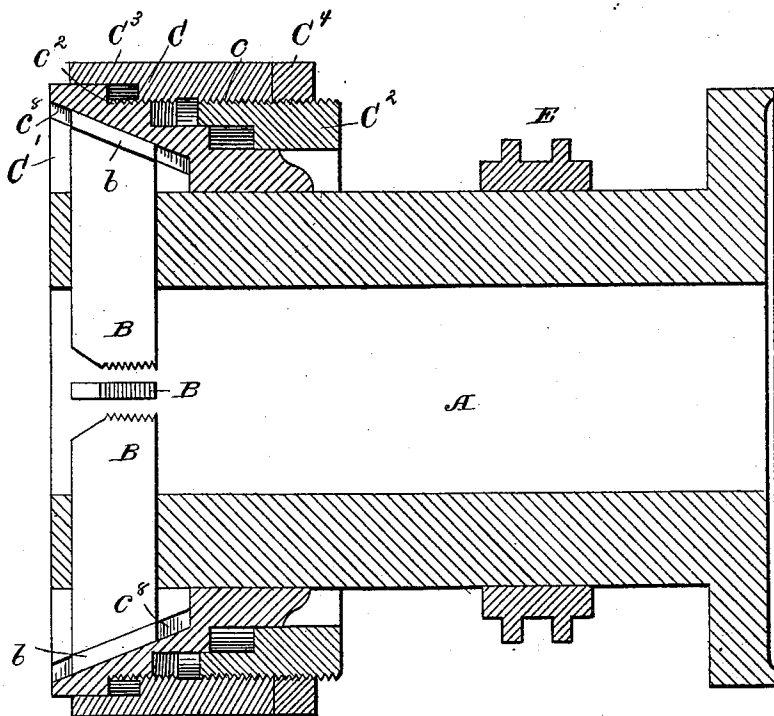
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- FIG. III -



Witnesses,

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UNITED STATES PATENT OFFICE.

FREDERICK W. BRUCH AND HIO P. EILERS, OF CLEVELAND, OHIO, ASSIGN-
ORS TO THE ACME MACHINERY COMPANY, OF SAME PLACE.

BOLT-CUTTER HEAD.

SPECIFICATION forming part of Letters Patent No. 518,222, dated April 17, 1894.

Application filed November 13, 1893. Serial No. 490,736. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK W. BRUCH and HIO P. EILERS, citizens of the United States, and residents of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Bolt-Cutter Heads, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail, one mechanical form embodying the invention; such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings—Figure I represents an axial section of a bolt cutter head provided with our improved adjusting device; Fig. II, an axial section of a bolt cutter head provided with another form of said device, and Fig. III, an axial section of the form illustrated in Fig. I, taken at an angle of forty five degrees to the plane of the section illustrated in Fig. I.

The bolt cutter head is of a usual or of any desired form,—being illustrated in the drawings as consisting of a barrel, A, in which dies, B, slide radially. Said dies are moved in and out by means of a die ring, C, which slides upon the exterior of the barrel, and is formed with oblique T-shaped grooves, c^8 , into which the T-shaped ends b , of the dies fit, so that the dies may be moved in or out by sliding the ring forward or back. The die ring is slid forward and back by means of rocking levers, D, pivoted in the head, pivotally connected to the die ring, and rocked by means of a sliding clutch ring, E.

The die ring consists of a forward portion, C' , which bears against the heads of the dies; an externally screwthreaded sleeve, C^2 , which slides upon the reduced rear end of the forward portion C' , and an adjusting sleeve, C^3 , which has its rear internal screwthread, c , fitted upon said external screwthreaded sleeve. The forward internal screwthread c' , of the adjusting sleeve, fits upon a screw-

thread, c^2 , upon the forward portion of the die ring. The internal screwthreads of the adjusting sleeve are right and left handed, and the external screwthreads of the forward portion of the die ring and of the rear portion or movable sleeve C^2 are correspondingly right and left hand, so that the two movable parts of the die ring may be drawn together or forced apart by turning the adjusting sleeve. The adjusting sleeve is preferably provided with notches or other provisions for the application of a wrench or spanner, and the adjusting sleeve is held in its adjusted position by means of a similarly provided jam nut, C^4 . The movable and externally screwthreaded rear portion C^2 of the die ring, has ears between which links, F, are pivoted at their other ends to the rocking levers D. The die ring may be slid forward and back upon the head by tilting the rocking levers by means of the clutch ring, and the dies may be slid in or out by such forward or back motion of the die ring. The extent of throw of the die ring may be adjusted by moving the forward and rear portion of the die ring closer together or farther apart by means of the adjusting sleeve, and the degree of approach and separation of the dies may thus be adjusted. This parallel adjustment of the two parts of the die ring, throughout their entire circumference, will insure a perfectly even connection with the rocking levers, such as cannot be attained in cutter heads having individual adjustment for the respective connections with the levers. In the form illustrated in Fig. 2, the adjusting sleeve has one internal screwthread only, which fits upon the rear portion of the die ring, and the forward portion of the adjusting sleeve fits and may rotate upon a smooth portion of the die ring, having a lip, c^5 , bearing against the forward end of the forward portion of the die ring. The adjusting sleeve is provided with an internal cogged rim, c^4 , which is engaged by a pinion, c^5 , the shaft of which is journaled in the forward portion of the die ring, and projects through the forward face of the same. Said shaft is provided with a polygonal end, c^6 , for the application of a key or wrench. The forward portion of the shaft of the pin-

ion may bescrewthreaded for the application of the jam nut, c^7 , which will secure the pinion and adjusting sleeve against rotation, after the two parts of the die ring have been
5 relatively adjusted. With the exception of the fact that, in this latter form, the rear portion of the die ring only, is drawn toward or separated from the forward portion, instead of both portions being simultaneously drawn
10 together or separated, the operation in this form is the same as the operation of the first described form.

Other modes of applying the principle of our invention may be employed for the mode
15 herein explained. Change may therefore be made as regards the mechanism thus disclosed, provided the principles of construction set forth respectively in the following claims are employed.

20 We therefore particularly point out and distinctly claim as our invention—

1. In a bolt cutter head, the combination with a portion of the die ring having means for operating the dies and another portion of
25 the die ring having means for longitudinally

sliding it upon the head,—one of said portions formed with an external screwthread, of an adjusting sleeve having an internal screwthread fitting upon the screwthreaded portion and turning upon the other portion, 30 substantially as set forth.

2. In a bolt cutter head, the combination of a forward portion of the die ring formed with an external screwthread, a rear portion of the die ring sliding upon the rear end of said forward portion and formed with a screwthread wound in the opposite direction to the thread upon the forward portion, and an adjusting sleeve having an internal right and left hand screwthread fitting upon the right and left
35 hand screwthreads of the two portions of the die ring, substantially as set forth.

In testimony that we claim the foregoing to be our invention we have hereunto set our hands this 3d day of November, A. D. 1893.

F. W. BRUCH.

H. P. EILERS.

Witnesses:

WM. SECHER,

DAVID T. DAVIES.