No. 806,165. PATENTED DEC. 5, 1905.

A. L. MOORE.

BOLT CLIPPER.

APPLICATION FILED APR. 24, 1905.

Fig. 1.

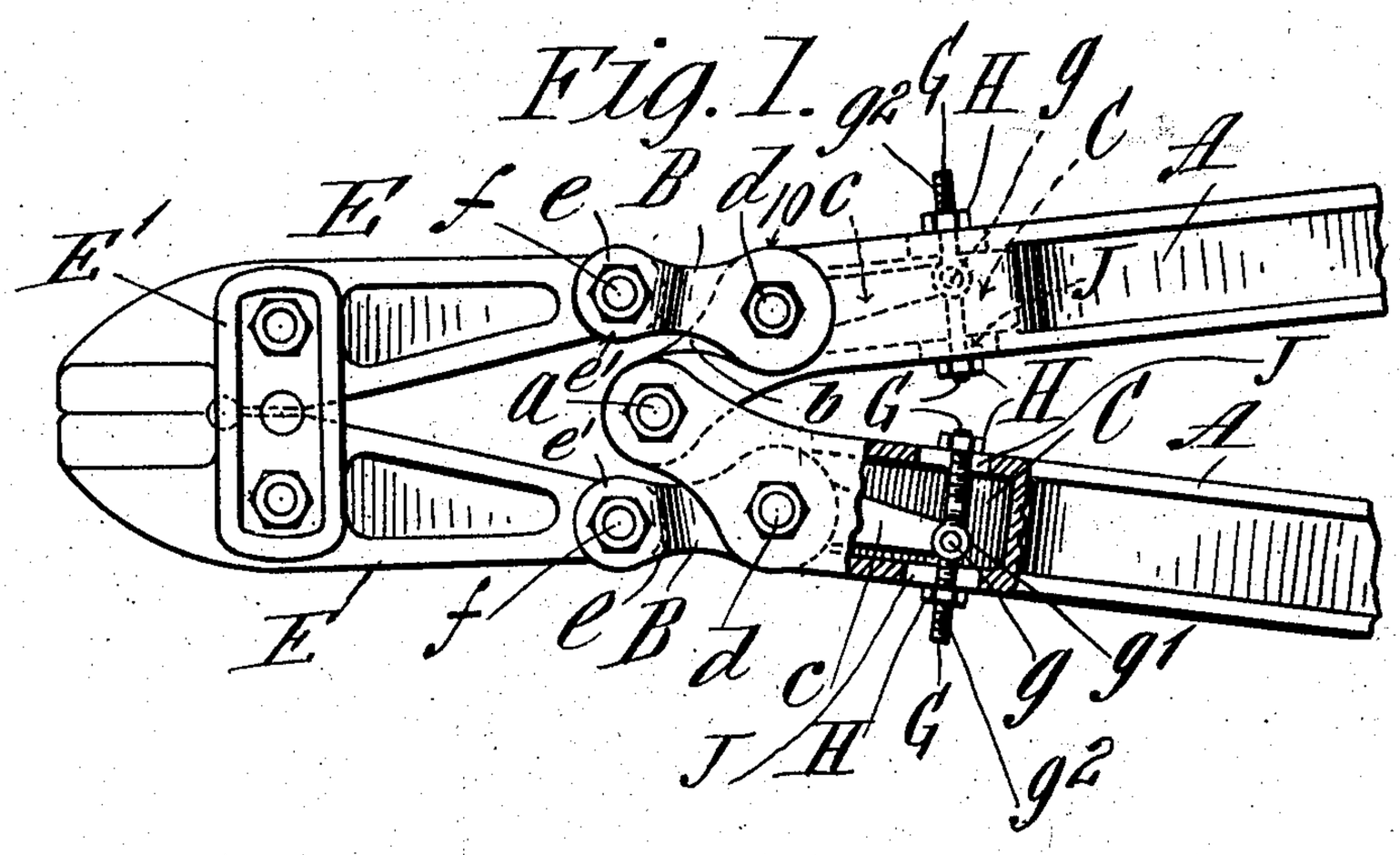


Fig. 2.

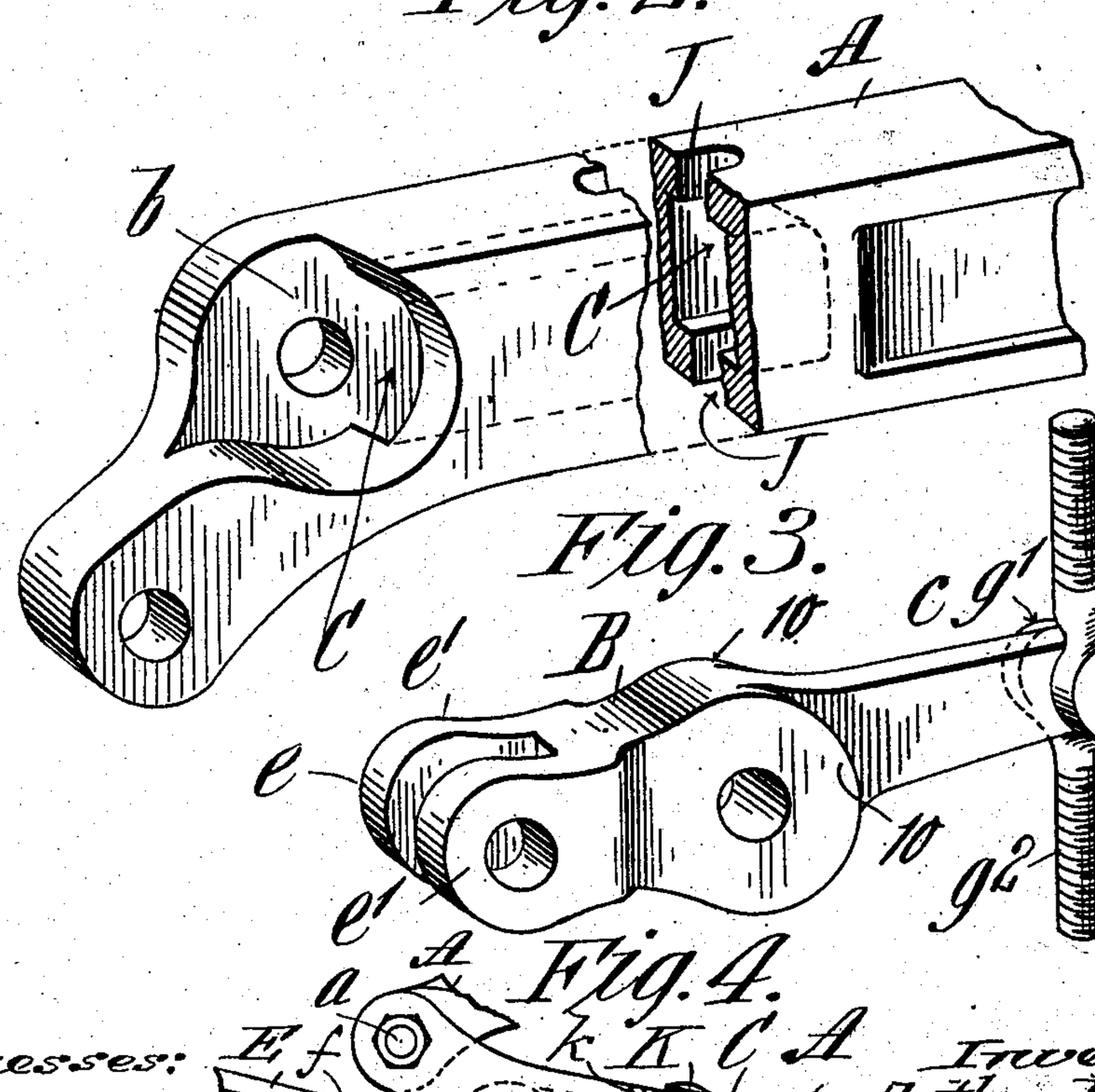
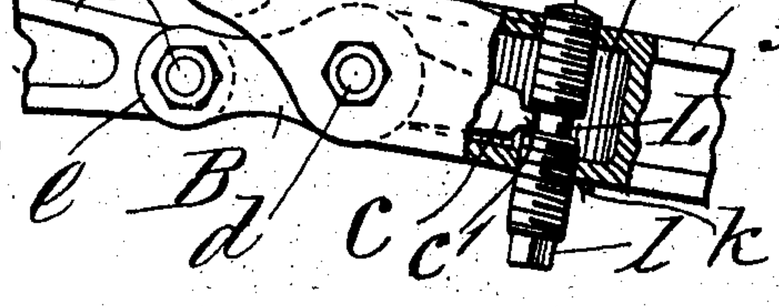


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

ARTHUR L. MOORE, OF SPRINGFIELD, MASSACHUSETTS.

BOLT-CLIPPER.

No. 806,165. Specification of Letters Patent. Patented Dec. 5, 1905.

Application filed April 24, 1905. Serial No. 257,232.

To all whom it may concern:

Be it known that I, ARTHUR L. MOORE, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Bolt-Clippers, of which the following is a full, clear, and exact description.

This invention relates to bolt-clippers of the class in which great cutting power is attained by compound levers comprised in the "handles" and cutting-jaws.

A principal object of the invention is to provide improved means for adjusting the relations of the handles and the cutter-levers to correspond to wear following use and the grinding away of the cutting edges of the cutting-jaws or die members of said levers.

Another object of the invention is to secure a simple and inexpensive construction of the various parts and to assure ease of assemblage, adjustment, and securing in place of the parts, as well as the capability for quick replacement of any of the parts in the event of occasion requiring such substitution.

The invention consists in a bolt-clipper having combined in the handles and adjusting-levers pivoted thereon specific means for adjusting the positions of the parts relatively to each other and for maintaining the parts as adjusted in relation to each other, all substantially as hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a side view of a bolt-clipper, the long handles of which are shown as broken away and a portion of one of said handles being shown in section. Fig. 2 is a perspective view of the hinge end portion of one of the handles, the same being shown as partially broken away and in section. Fig. 3 is a perspective view of one of the adjusting-levers and screw members pertaining thereto. Fig. 4 is a side elevation, partly in section, of a portion of a bolt-clipper, showing a modification.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A A represent the handle-levers, (or "handles," as they are commonly termed,) and *a* represents the connecting pivot or hinge therefor. A semicircular-shaped recess or depression *b*, formed on the handles A adjacent the pivot *a* thereof, receives and partially supports therein by the edge walls thereof the curved and shouldered central portions 10 of an adjusting-lever B. A pocket or cavity C, extending from the curved recess *b* into the handle A toward its free end a considerable distance, receives the arm *c* of adjusting-lever B. A pivot-bolt *d* secures the said adjusting-lever C in place on the handle A and constitutes a fulcrum, it being about midway between the extremity of arm *c* and the extremity of the jaw-connecting arm *e*. This arm *e* of lever B has formed thereon the ear-lugs *e' e'*, between which an end portion, reduced in thickness, of one of the cutting-levers E is supported and secured thereto by the pivot-bolt *f*.

The two coacting cutting-jaws of the bolt-clipper, as a reference to Fig. 1 will show, are of the form and proportion common to tools of this class and are held in operative relation to each other by the pivoted side links E' in the usual way, to the end that the movements of the handles A are communicated to the cutting-jaws E through the compound levers of the parts described, the resultant movement of the cutting-jaws being slight, but of great power.

Various mechanical expedients for effecting the adjustment of the cutting-jaws by moving the pivot-point *f* relative to the handles A have been suggested, but have usually been accomplished by inconvenient adjusting means or by means that have proved inadequate and unsatisfactory in practice.

The principal accomplishment of the present invention is to obtain, in connection with the adjusting-lever B just described, a practical and effective means for moving for purposes of adjustment the cavity-inclosed arm *c* of each adjusting-lever, thus imparting a rocking movement thereto on its fulcrum-pivot *d* and thus shifting the position of the cutting-jaw pivot-bolt *f*, and also for locking said arm in such adjusted position, and to this end I provide the free extremity of each lever-arm *c* with the two oppositely-extending eyebolts G, which are riveted or pinned thereto at *g*. Both of these eyebolts have their eyes *g'* offset to a degree that brings their threaded straight portions g^2 in vertical alinement with each other and transversely of the width of the handle-lever. (See Fig. 3.) These threaded bolt ends g^2 are passed through elongated slots J in the upper and lower walls of the handle, which form boundaries of the cavity S and are there provided with the adjusting and locking nuts H. The act of assembling or passing these bolt ends g^2 through their respective slots, though apparently difficult, is,

on the contrary, easy of accomplishment if care is taken that the engagement of the rivet *g* with the bolt-eyes *g'* be somewhat loose therein.

The operation of moving or rocking lever C for the purposes of adjustment consists in loosening the nut H on one eyebolt and the taking up of the "slack" thus produced by its opposite bolt-nut, and on the completion of the adjustment desired a tightening of the first-mentioned nut H brings a sufficient resistance or thread-jamming action on the nuts of both of the eyebolts to constitute a very secure and adequate lock therefor.

A modification of the above-described manner of engaging and moving the lever-arm *c* of the adjusting-lever B is illustrated in Fig. 4, in which an equivalent of the eyebolts G is shown in the double-screw-membered integrally-formed bolt K, which engages screw-threaded holes *k k* in the top and bottom walls of cavity C and is provided on one end with a squared head *l*, to which a wrench may be applied for the adjusting of the parts, as above described. About midway of the length of this bolt K at a point within the cavity C an annular groove L is formed thereon, which receives a reduced end portion *c'* of the arm *c* and through the engagement therewith moves or rocks the entire adjusting-lever B for any desired adjustment of parts in substantially the manner heretofore described.

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

1. In a bolt-clipper of the class described, in combination, the hinge-connected handles having semicircular depressions therein adjacent the hinge-pivot thereof and having cavities formed in, and extending lengthwise from said depressions, into the handles toward their free ends, cutter-jaw-adjusting levers having centrally-located shouldered or hub portions fitting into and supported by the partially-circular walls of the handle depressions, and also supported by their pivotal attachment therein; and each having by one arm, pivotal connection with one of the cutting-jaw levers, and each having its other arm extending into said cavity, double-screw members each engaging one of the cavity-inclosed arms and having their extremities outwardly protruding through the upper and lower edge portions of the handle, and means for operating said screw members for moving the adjusting-levers.

2. In a bolt-clipper, in combination, the hinge-connected handle-levers having the semicircular sidewise-opening depressions *b* therein, and having cavities C extending lengthwise therein, and opening to said depressions, and also having the apertures J J in their upper and lower edges, the cutter-jaws, and adjusting-levers, therefor, and connected therewith, having the intermediate sidewise-extending hub or shoulder portions 10, fitting in said depressions,—and the confining-bolts *d*, therefor,—and each lever having its arm *c* extending into the handle-cavity and having pivotally connected thereto the alined oppositely and transverely extending bolts, G, extending through said apertures J, and the nuts, H H, threading on said bolts G and engaging against the upper and lower edges of the handle-lever, substantially as described and shown.

3. In a bolt-clipper, the combination with the handle-levers pivotally connected together at their forward ends, a pair of adjusting-levers intermediately pivotally mounted on the forward extremities of the handle-levers, and having the arms thereof forwardly and rearwardly extended, from the pivot-points, relatively to the length of the handle-levers, the cutter-lever members having the rearward arms thereof jointed to the forward end portions of the adjusting-levers, and an adjusting device for each adjusting-lever which, as an entirety, is located adjacent, and coöperates with, the free, rearward arm of the adjusting-lever.

Signed by me, at Springfield, Massachusetts, in presence of two subscribing witnesses.

ARTHUR L. MOORE.

Witnesses:
WM. S. BELLOWS,
G. R. DRISCOLL.