

(No Model.)

G. H. CLARK.

TOOL FOR CONNECTING AND DISCONNECTING THE ENDS OF BELTS.

No. 287,417.

Patented Oct. 30, 1883.

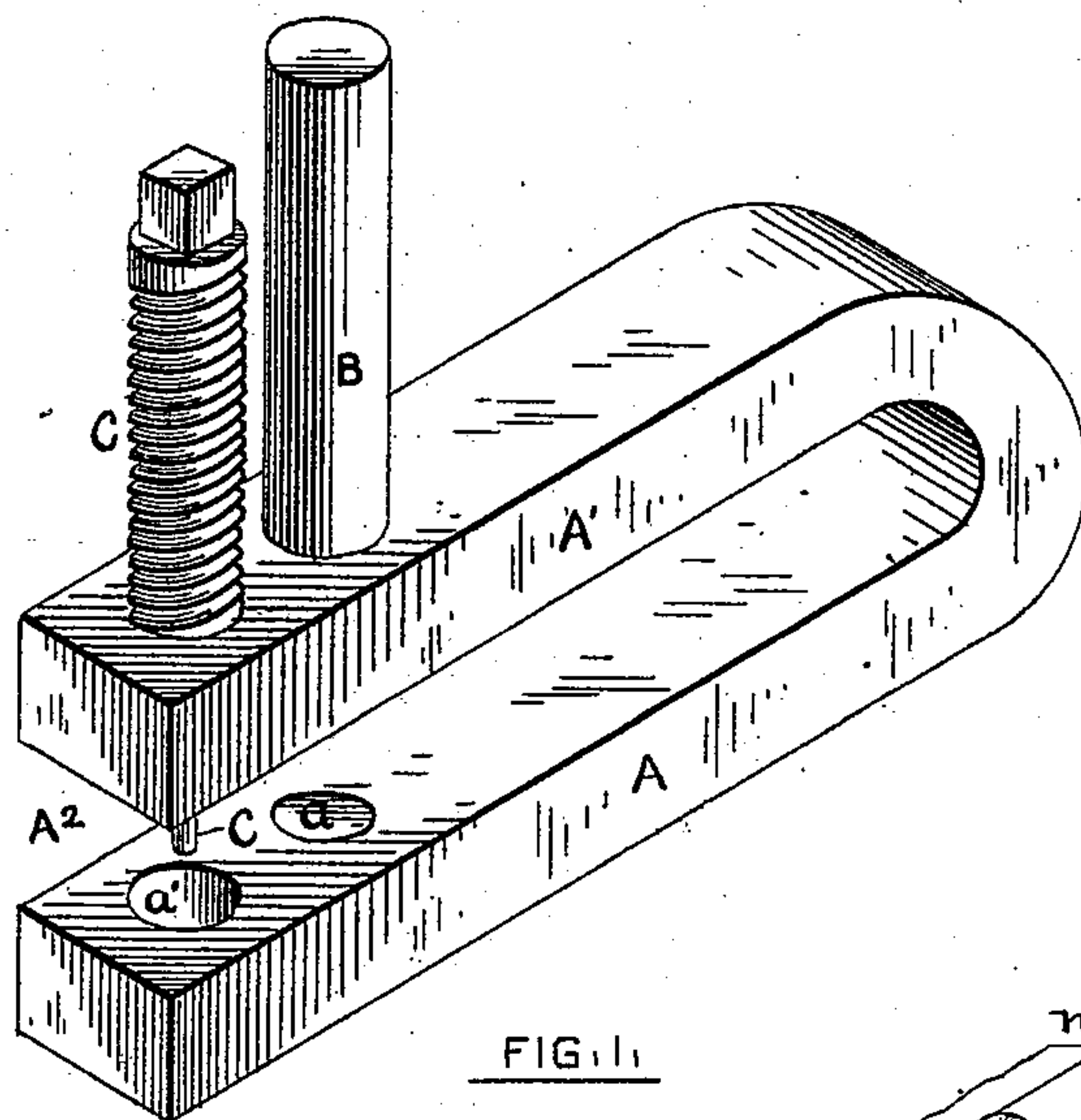


FIG. 1.

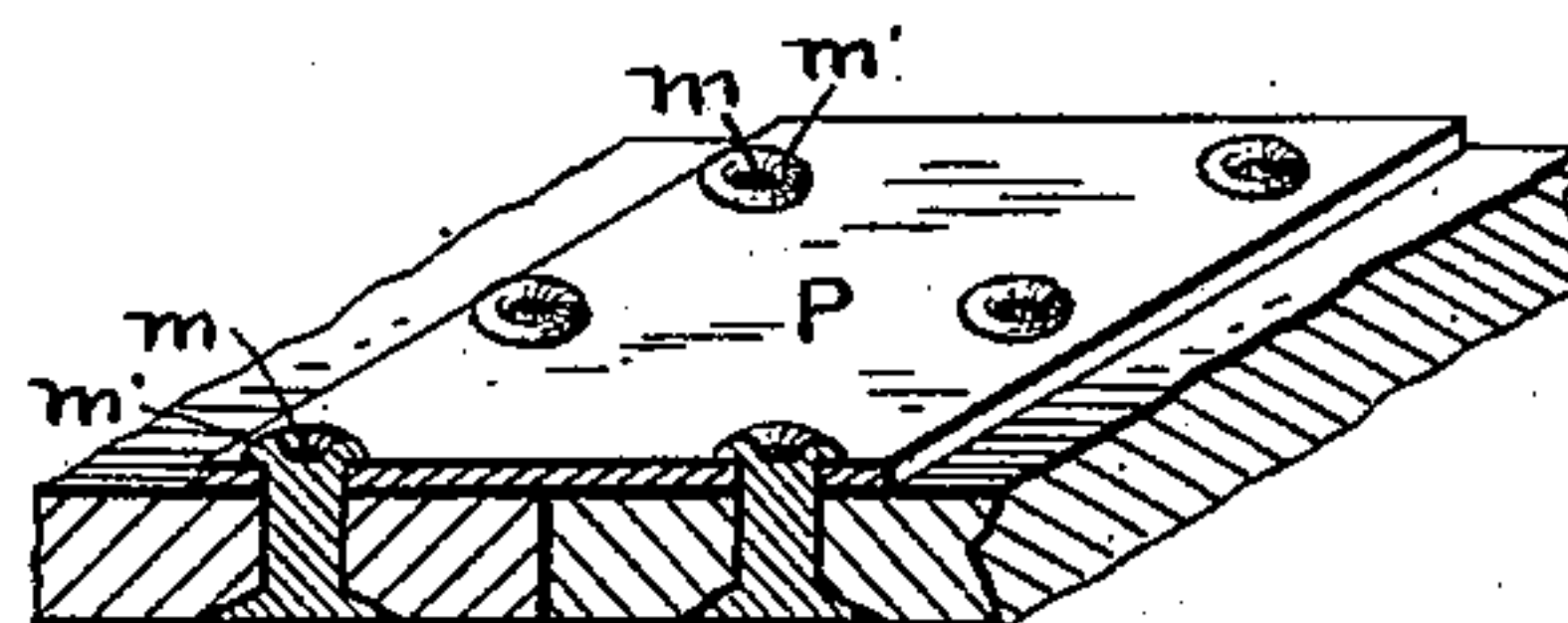


FIG. 3.

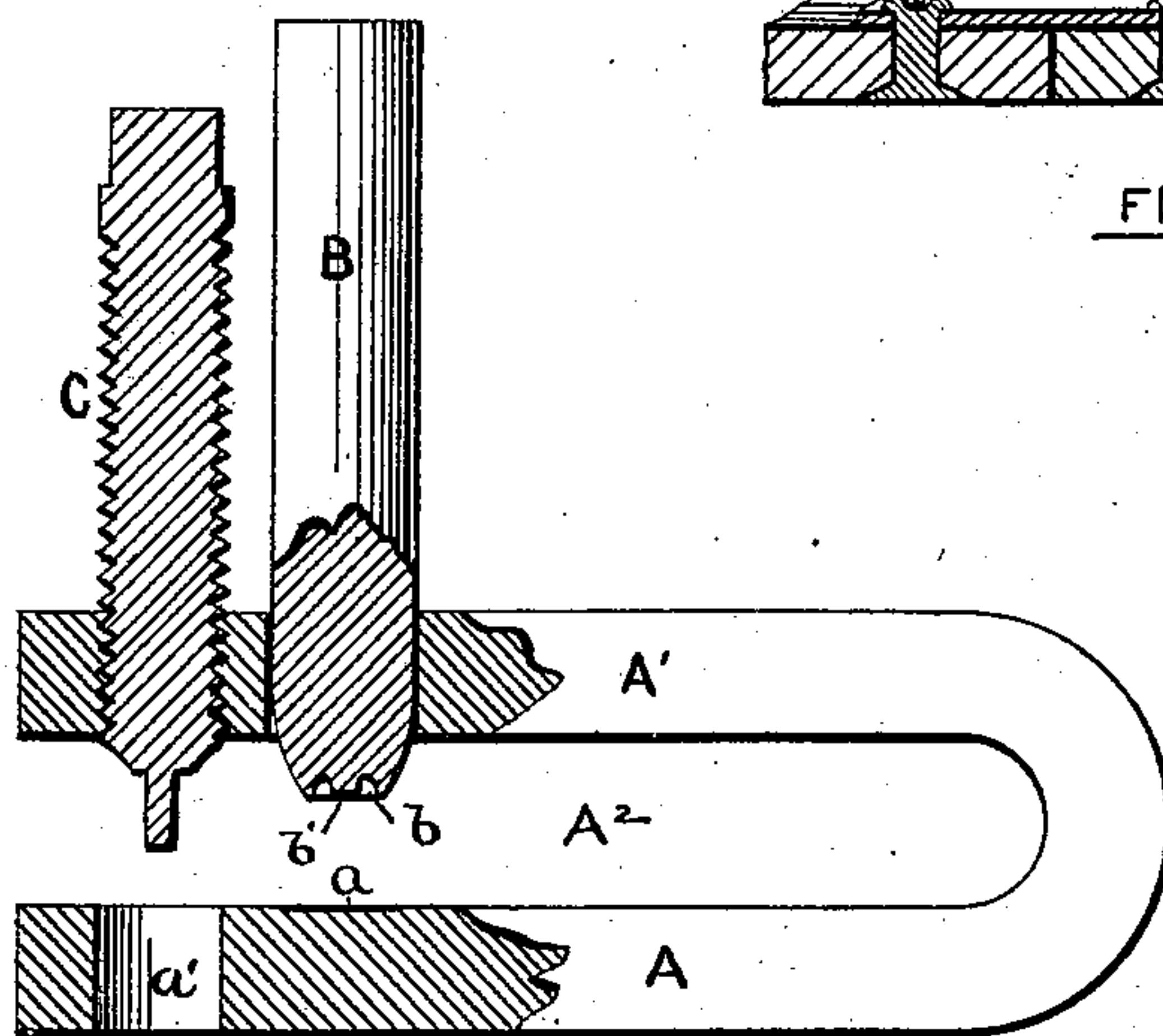


FIG. 2.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

GEORGE H. CLARK, OF MANVILLE, RHODE ISLAND.

TOOL FOR CONNECTING AND DISCONNECTING THE ENDS OF BELTS.

SPECIFICATION forming part of Letters Patent No. 287,417, dated October 30, 1882.

Application filed November 15, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. CLARK, of Manville, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Tools for Connecting and Disconnecting the Ends of Belts, of which the following is a specification.

The object of my invention is to provide a tool by which the ends of belts may with facility be riveted together or unriveted, as required, either at a work-bench or while belts are on pulleys; and the improvement consists in certain novel combinations of parts composing a combined riveting and unriveting tool, which will be hereinafter particularly described with reference to the accompanying drawings.

Referring to the drawings, Figures 1 and 2 represent in perspective and longitudinal section, respectively, the riveting and unriveting tools combined. Fig. 3 shows in perspective and partial section the ends of a belt connected in my improved manner.

The tool is composed of two connected arms A A', which are separated laterally to produce a slot, A<sup>2</sup>, into which the belt can be inserted. The arm A has an anvil-face, *a*, to support the rivet during the upsetting operation, which face may be very slightly countersunk, if desired, to receive the head of a rivet and center the same in line with the upsetting-punch B. This punch passes through and is guided by the arm A', and has its lower end provided with an annular groove, *b*, which is formed therein, so as to leave a central spur, *b'*, as shown in Fig. 2.

The ends of the belt having been butted or thinned and lapped and provided with the desired number of holes of the proper diameter to fit the rivets, the rivets are inserted into the holes, and a perforated plate, P, (which may be flat or curved according to the diameter of the pulley upon which the belt is to be used,) is placed over the ends of the rivets. The belt thus prepared is inserted into the slot A<sup>2</sup> in the tool, and a rivet is centered under the punch B. The punch is now brought into engagement with the end of the rivet, and is struck with a hammer to cause the spur *b'* to countersink a cavity, *m*, in the end of the rivet

and spread said end radially upon the plate P to form a rim, *m'*, around said cavity, and thereby clinch the rivet on the plate. The remaining rivets having been subjected to the same operation, the ends of the belt will be securely connected, and in such a manner that the belt will run very smoothly when in use and will not pull apart.

It will be observed that by upsetting the ends of the rivets, as described, the metal in said ends is not only spread to clinch the rivets, but cavities are left in the ends, which allow the rivets readily to be removed by a punch, without danger of bending the rivets or damaging the plate P, when the belt is to be shortened or lengthened.

For the purpose of removing the rivets when occasion requires, the tool is provided with a punch, C, having its lower end reduced in diameter to fit the cavity in the end of a rivet. This punch preferably is in the form of a screw, having its upper end shaped to be engaged by a wrench or other turning-tool. As shown in the drawings, the punch C passes through the arm A', and the arm A is provided with a hole, *a'*, through which the rivet can be discharged, that portion of the arm A immediately surrounding said hole furnishing an anvil-face to support the belt during the unriveting operation. By bringing the reduced end of the punch C into engagement with the central cavity, *m*, in the end of a rivet and operating the punch, the rivet can be easily and quickly removed without damage to the plate P by spreading the perforation therein, and without danger of thinning the plate, as would be the case if the end of the rivet were filed off.

It will be seen that the edge of the plate surrounding the rivet-hole serves as a shear to force off the rim or head of the rivet, and thus protect the belt from being torn, as it would be were the rivets used without the plate and removed by being forced through the belt ends.

The tool is portable, can be conveniently held in the hand, and therefore can be used to perform the operations described upon a belt which is on a shaft or shafts and cannot be taken to a work-bench.



Although I have shown the punch B in a form to be operated by a hammer-blow, and the punch C in the form of a screw, both may be adapted to be operated by a hammer or be  
5 in the form of screws. If preferred, the punch C may pass through the arm A and the arm A' be provided with the hole  $a'$ .

Instead of a single plate, P, provided with two rows of perforations, several plates in the  
10 form of strips having a perforation near each end may be employed to receive the rivets.

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

1. The combined riveting and unriveting  
15 tool herein described, consisting of the connected arms A A', the former of which is provided with an anvil-face,  $a$ , and a through-opening,  $a'$ , and the latter being provided with an opening in which is arranged a punch, B,  
20 having its inner end provided with an annular groove,  $b$ , around a central spur,  $b'$ , and an adjacent opening in which is arranged a dis-

charging-punch having a point arranged to pass into the opening  $a'$ , substantially as described. 25

2. A combined riveting and unriveting tool in which two arms are arranged opposite each other, one of said arms being provided with an anvil-face on its inner side, and the other having a through-opening in which a riveting-  
30 punch is adapted to play, said punch being arranged to act upon a rivet placed on said anvil-face, and having its inner end provided with an annular groove around a central spur, and one of said arms being provided with a  
35 through-opening in which a discharging-punch provided with a point is adapted to play, and is arranged to enter a through-opening with which the opposite arm is provided, substantially as described.

GEO. H. CLARK.

Witnesses:

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GIDEON M. HORTON.