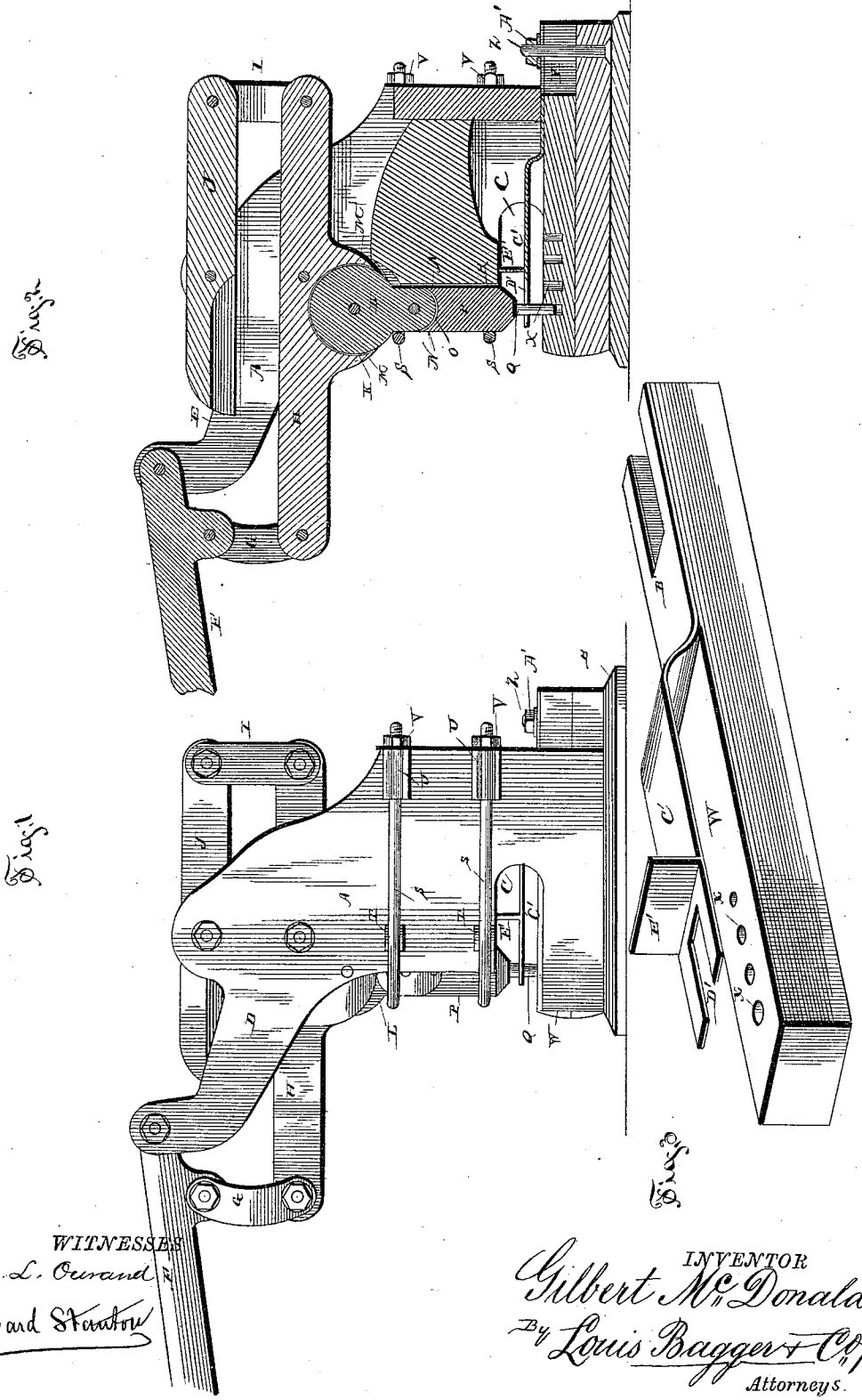
(No Model.)

G. McDONALD.

COMBINED PUNCHING AND SHEARING DEVICE.

No. 336,335. Patented Feb. 16, 1886.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GILBERT McDONALD, OF AUGUSTA, KANSAS.

COMBINED PUNCHING AND SHEARING DEVICE.

SPECIFICATION forming part of Letters Patent No. 336,335, dated February 16, 1886.

Application filed December 10, 1885. Serial No. 185,242. (No model.)

To all whom it may concern:

Be it known that I, GILBERT McDONALD, a citizen of the United States, and a resident of Augusta, in the county of Butler and State of Kansas, have invented certain new and useful Improvements in Metal-Workers' Punches and Shears; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of my improved metal-worker's punch and shears. Fig. 2 is a vertical sectional view of the same, and Fig. 3 is a perspective detail view of the stripper and the adjustable punch-block.

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

My invention has relation to a punch and shears for metal-workers' use; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letters A A indicate the side pieces of the frame, which side pieces are secured at their lower ends to the base B, which may be attached to any suitable bench or block, and the said side pieces are formed with two horizontal slots, C, near their lower ends, extending from their forward edges, into which slots the work to be punched is inserted. The upper ends of the side pieces are formed with forwardly-projecting arms D, the upper edge, E, of one of which arms is formed into the rigid jaw of the shears. The hand-lever F is pivoted at its inner end between the outer ends of these arms, and has two arms, G, pivoted at their upper ends to it, near its fulcrum, the lower ends of these arms being pivoted to the outer end of the main lever H, which is fulcrumed at its middle between the side pieces. The lower ends of a pair of arms, I, are pivoted to the rear end of this main lever, and the upper ends of these arms are pivoted to the rear end of the movable jaw J of the shears, the said jaw being pivoted at its middle between the upper ends of the side pieces of the frame, having its cutting arm sliding against the side of the rigid jaw E of the shears, formed at the upper edge of the forwardly-projecting arms upon the side pieces. The main lever has a rounded transverse recess, K, immediately forward of its fulcrum, and the upper rounded end of an arm or link, L, is pivoted to rock in this recess, being pivoted between two lips, M, at the sides of the recess, and the lower end of this arm or link is similarly rounded and pivoted between two lips, N N, at the sides of a round recess, O, in the upper end of the sliding punch P. This punch is provided with a removable bit, Q, at its lower end, and slides with its inner side against a guide-block, R, secured vertically between the side pieces of the frame. The outer sides of the punch are guided by two bails, S S, fitting around the said sides with their doubled forward ends, while their rear ends pass at both sides of the side pieces, where they are retained between lips T near the forward edges of the side pieces, and by horizontal sleeves U at the rear edges of the side pieces, the ends of the bails being screw-threaded and provided with nuts V, which bear against the rear ends of the sleeves, drawing the bails against the punch. The punch-block W slides between the lower ends of the side pieces upon the base, and is provided at its forward end with a series of perforations, X, of different sizes, adapted to receive punches of different sizes, while its rear end its longitudinally slotted, as shown at Y, and slides upon an upright nutted bolt, Z, projecting from the base. The nut A′ of this bolt bears against the upper side of the rear slotted end, B′, of the stripper C′, which slides upon the bolt with its slot, similar to the punch-block, and is adjusted, together with the said block, upon the bolt, and the forward end of the stripper has a slot, D′, through which the punch passes, and an upwardly-projecting lip, E′, at the inner end of the slot, which lip bears against the lower end of the guide-block for the punch, serving to keep the stripper down against the work. It will now be seen that by depressing the free end of the hand-lever, the forward end of the main lever is depressed, and through it and the link the punch will be depressed, the power upon the hand-lever being increased by the double leverage attained through the arms at the inner

end of the hand-lever, the main lever, and the link pivoted near the fulcrum of the said lever. The movable jaw of the shears is also depressed at the same time the hand-lever is depressed, the rear end of its jaw being raised by the arms and main lever being raised at the rear end.

By removing the guide-bails the punch may be swung out and another bit or point inserted, and the punch-block may be slid and adjusted so as to bring the suitable perforation under the bit of the punch, the stripper being adjusted by the same bolt as the punch-block.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a metal-worker's punch and shears, the combination of the frame having forwardly-projecting arms at its upper end, and having the upper edge of one of the arms formed into the rigid blade of a pair of shears, a main lever pivoted at its middle in the frame, a hand-lever pivoted at its end between the ends of the arms, arms pivoted to the forward end of the main lever and to near the fulcrum of the hand-lever, a lever pivoted between the upper ends of the frame and formed at its forward end with a shear blade operating against the rigid shear-blade, and arms pivoted to the rear end of the said lever and to the rear end of the main lever, as and for the purpose shown and set forth.

2. In a metal-worker's punch and shears, the combination of a frame having horizontal lips near the forward edges of its side pieces, and having horizontal sleeves near the rear edges of the same, a vertically-sliding punch, means for operating the punch, and bails having their doubled ends bearing against the outer side of the punch, and their arms passing between the lips and through the sleeves, and having nuts at their rear ends, as and for the purpose shown and set forth.

3. In a metal-worker's punch and shears, the combination of a frame having arms projecting forward from the upper ends of its side pieces, a main lever pivoted between the side pieces and having a rounded recess immediately forward of its fulcrum, and formed with downwardly-projecting lips at the ends of the recess, a hand-lever pivoted between the forward ends of the arms of the frame, arms pivoted to the forward end of the main lever and to the hand-lever near its fulcrum, an arm having a rounded head pivoted between the lips in the recess of the main lever, and a punch having a rounded recess provided with lips for the pivotal connecting of the arm, as and for the purpose shown and set forth.

4. In a metal-worker's punch and shears, a punch-block sliding under the punch in the frame, and having a series of different-sized perforations and a longitudinal slot at its rear end, a stripper having a slot for the passage of the punch at its forward end and a longitudinal slot at its rear end, an upright bolt projecting into the slots of the punch-block and stripper, and a nut upon the bolt bearing against the stripper, combined to operate as shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in the presence of two witnesses.

GILBERT McDONALD.

Witnesses:
JOHN Y. ANDERSON,
GEO. W. DILLON.