

(No Model.)

G. W. McGILL.

HAND PUNCH FOR PERFORATING PAPER.

No. 351,645.

Patented Oct. 26, 1886.

Fig. 1.

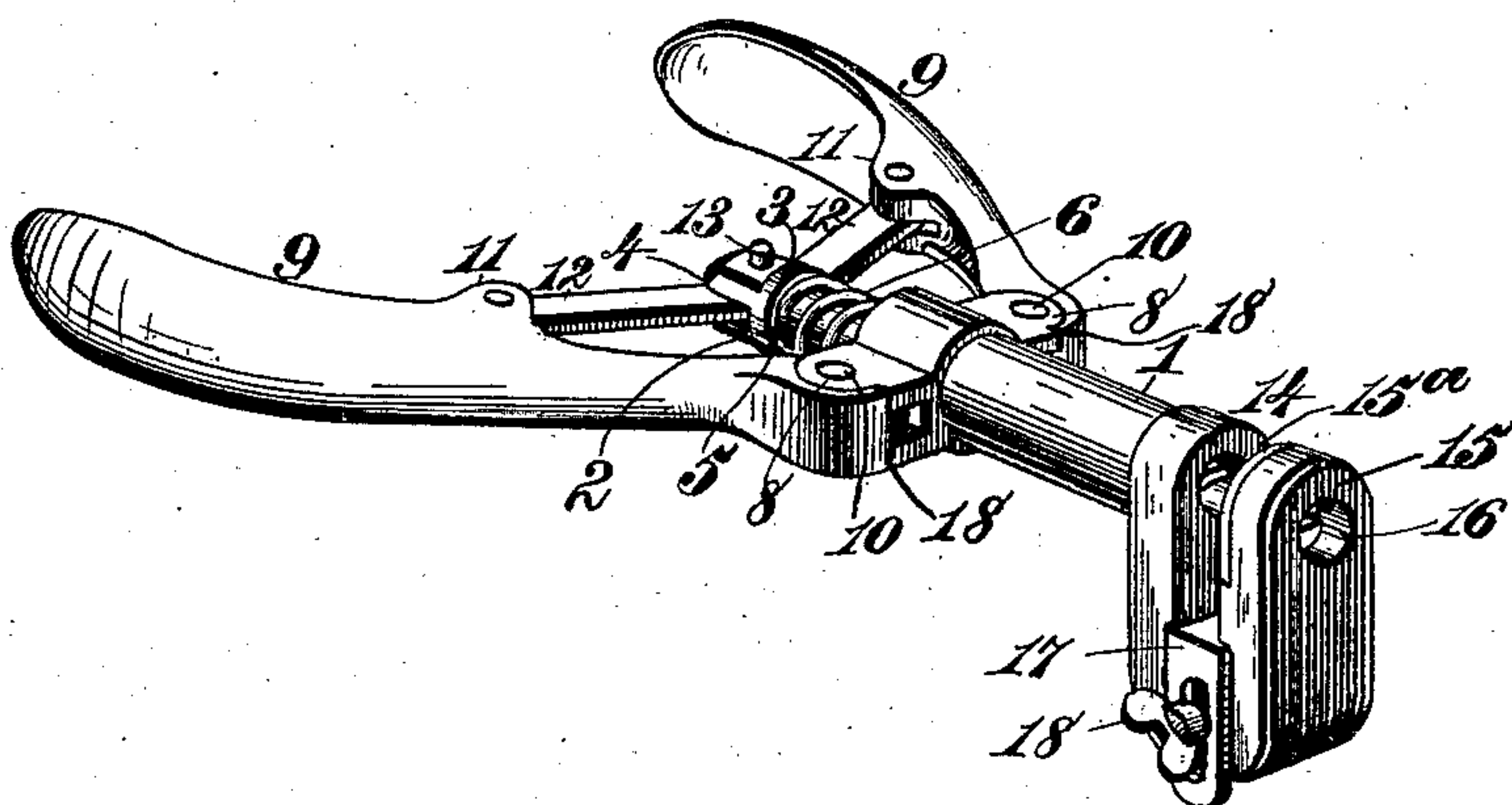
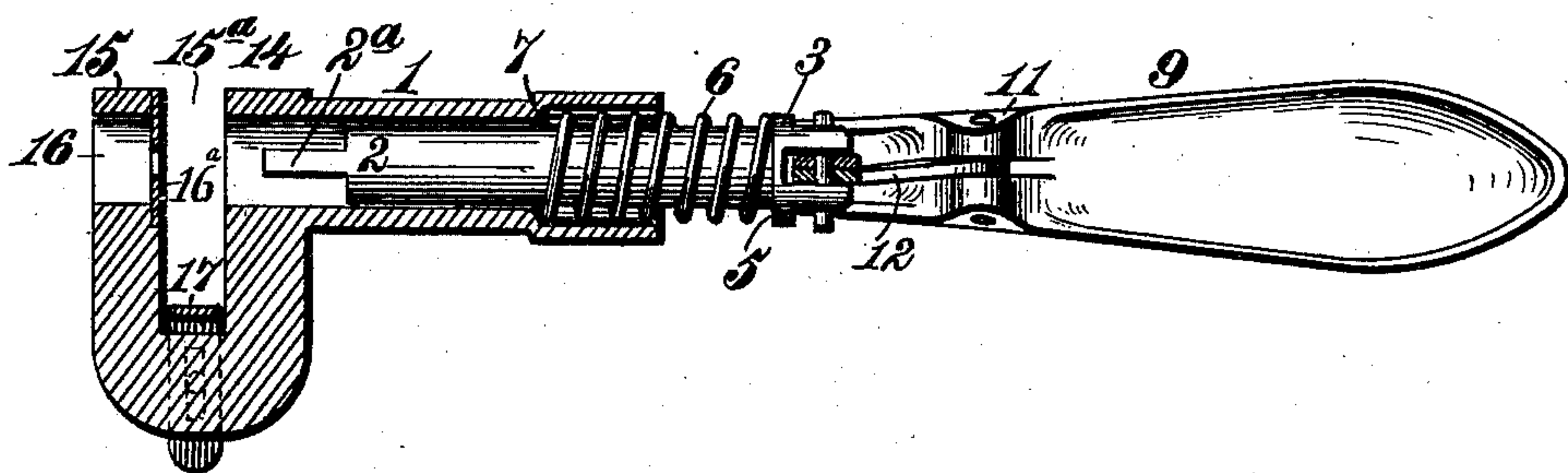


Fig. 2.



Witnesses.

Robert Corbett.

J. A. Rutherford.

Inventor.

George W. McGill.

By James L. Norng
Atty.

UNITED STATES PATENT OFFICE.

GEORGE W. MCGILL, OF NEW YORK, N. Y.

HAND-PUNCH FOR PERFORATING PAPER.

SPECIFICATION forming part of Letters Patent No. 351,645, dated October 26, 1886.

Application filed August 14, 1886. Serial No. 210,917. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MCGILL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Hand-Punches for Perforating Paper and other Material, of which the following is a specification.

This invention relates to hand-punches for producing holes in paper, leather, and other material, wherein a head-piece is provided with a slot for the reception of the material to be perforated, and the punch-bar is moved across the slot by handles pivoted to the head-piece and to the end of the punch-bar.

The objects of my invention are to improve the construction of such implements, to reduce their weight, to provide novel, simple, and efficient means for advancing and retracting the punch-bar, and to provide in connection therewith a holding-jaw and a stripping-jaw, into which latter the punch recedes after the punching operation, to strip the paper or other material from the punch. These objects I accomplish in the manner and by the novel construction and combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view of a hand-punch made in accordance with my invention, the parts being in the normal position of rest, and Fig. 2 is a central sectional view taken through the axial line of the punching bar or tool.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, where—

The numeral 1 indicates a tube of any desired shape exteriorly, but preferably in the form of a cylinder, with its interior of corresponding contour, to receive and guide a punching-bar, 2, of cylindrical or other form, the outer extremity of which is reduced into a rectilinear or any other shaped punch, 2^a, according to the form of perforation to be produced. The inner end of the bar is provided with a laterally-extended head, 3, centrally slotted, as at 4, and furnishing a surrounding shoulder, 5, on which bears one end of a coiled or other spring, 6, which enters an enlarged

part of the tube, and abuts at its other end against a shoulder, 7, provided within the tube. The inner end of the tube is formed or otherwise provided with two laterally-projecting lugs, 8, having slots in which are respectively pivoted the ends of the two handles 9, as at 10, said handles being each provided with a slotted ear, 11, in which are pivoted, respectively, the ends of toggle-levers 12, the other ends of the latter being pivoted within the slotted head of the punch-bar, as at 13. Each of the lugs 8 is provided with a shoulder or shoulders, 18, which engage with corresponding shoulders on the handles, as shown in Fig. 1, thereby limiting the outward movement of the handles, and as the toggle-levers 12 are pivoted to the punch-bar and the handles, the retraction of the punch-bar is limited and its accidental displacement prevented.

The outer end of the tube is of U shape, to constitute two jaws, 14 and 15, which are separated by an intervening space, 15^a, to receive the material to be punched. The outer jaw, 15, is provided with a clearing-orifice, 16, and a plate, 16^a, having an orifice corresponding in shape to that of the punch 2^a on the punch-bar 2. The inner adjacent faces of the two jaws are parallel and in proximity, and the punch on the punch-bar, when the latter is retracted, moves into the tubular orifice in such manner that the jaw 14 serves the purpose of a stripping-jaw to strip the punched material from the punch as the punch-bar is retracted by the spring 6, which is very important in this character of instruments. In the operation of punching, the outer jaw, 15, acts as a holding-jaw for the material to be punched. A guide, 17, is located in the space 15, and is adjustable by a set-screw, 18, to regulate the distance that the material to be punched is introduced into the jaw.

In practice, the layer or layers of paper, leather, or other material to be punched or perforated are introduced into the slotted jaw and the handles are grasped and pressed toward each other, thereby bringing the toggle-levers together and causing the punch-bar to advance and produce the desired perforation. The action is such that equal pressure is brought to bear on the opposite sides of the punch-bar head, thus advancing the punch in a right line without lateral movement, which would

cause the punch-bar to bear against one or the other side of the tube were the handles brought toward each other with uneven pressure.

The construction described and shown provides means whereby the punch-bar is operated with considerable force by the handles, and, besides, the punch-bar is centered in its guide-tube by the toggle-levers.

The spring in its described relation restores all the parts to their normal position of rest for a repetition of the described operation.

Having thus described my invention, what I claim is—

1. A hand-punch for punching holes in paper and other material, consisting of the body 1, having at its outer end the holding and stripping jaws 14 and 15, the latter having a clearing-orifice, 16, the punch-bar 2, having a punch, 2^a, adapted to be retracted within the stripping-jaw to strip the punched material therefrom, the handles 9, pivoted to the inner end of the body, and the toggle-levers 12, pivoted, respectively, at one end to the handles and at the other end to the inner end of the punch-bar, substantially as described.

2. A hand-punch for punching holes in paper and other material, consisting of a body having at its outer end the holding and stripping jaws, the former having a clearing-orifice, the punch-bar having a punch at its outer end adapted to be retracted into the stripping-jaw to strip the punched material therefrom, the two handles pivoted to the inner end of the body, the toggle-levers pivoted, respectively, at one end to the handles and at the other end to the inner end of the punch-bar, and a spring on this punch-bar bearing against a shoulder

thereupon and a shoulder on the body, for retracting the punch into the stripping-bar, substantially as described.

3. The combination, with the tube 1, its slotted jaw, and the punch-bar, of the pivoted handles, the toggle-levers pivoted, respectively, at one end to the handles and at the other end to the inner end of the punch-bar, and a spring encircling the inner end of the punch-bar and bearing against a shoulder thereupon and a shoulder on the tube, substantially as described.

4. The combination, with the tube 1, having at one end the holding and stripping jaws 14 and 15, of the punch-bar having a shouldered head at its inner end and a punch, 2^a, at its outer end, adapted to be retracted, the spring encircling the bar and entering the tube, the toggle-levers pivoted to the handles and to the shouldered head of the punch-bar, substantially as described.

5. The combination, with the tubular body having lugs 8, which are provided with shoulders 18, of the punch-bar, and the handles pivotally connected with the lugs and having shoulders which engage those upon the lugs 8, to limit the outward movement of the handles, and the toggle-levers being pivoted to the handles and to the punch-bar, preventing retraction of the punch-bar, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEORGE W. MCGILL.

Witnesses:

GEORGE W. REA,
J. A. RUTHERFORD.