

(No Model.)

2 Sheets—Sheet 1.

G. F. WAEDELDE & H. G. CERY.

MACHINE FOR PUNCTURING SHEET METAL.

No. 388,604.

Patented Aug. 28, 1888.

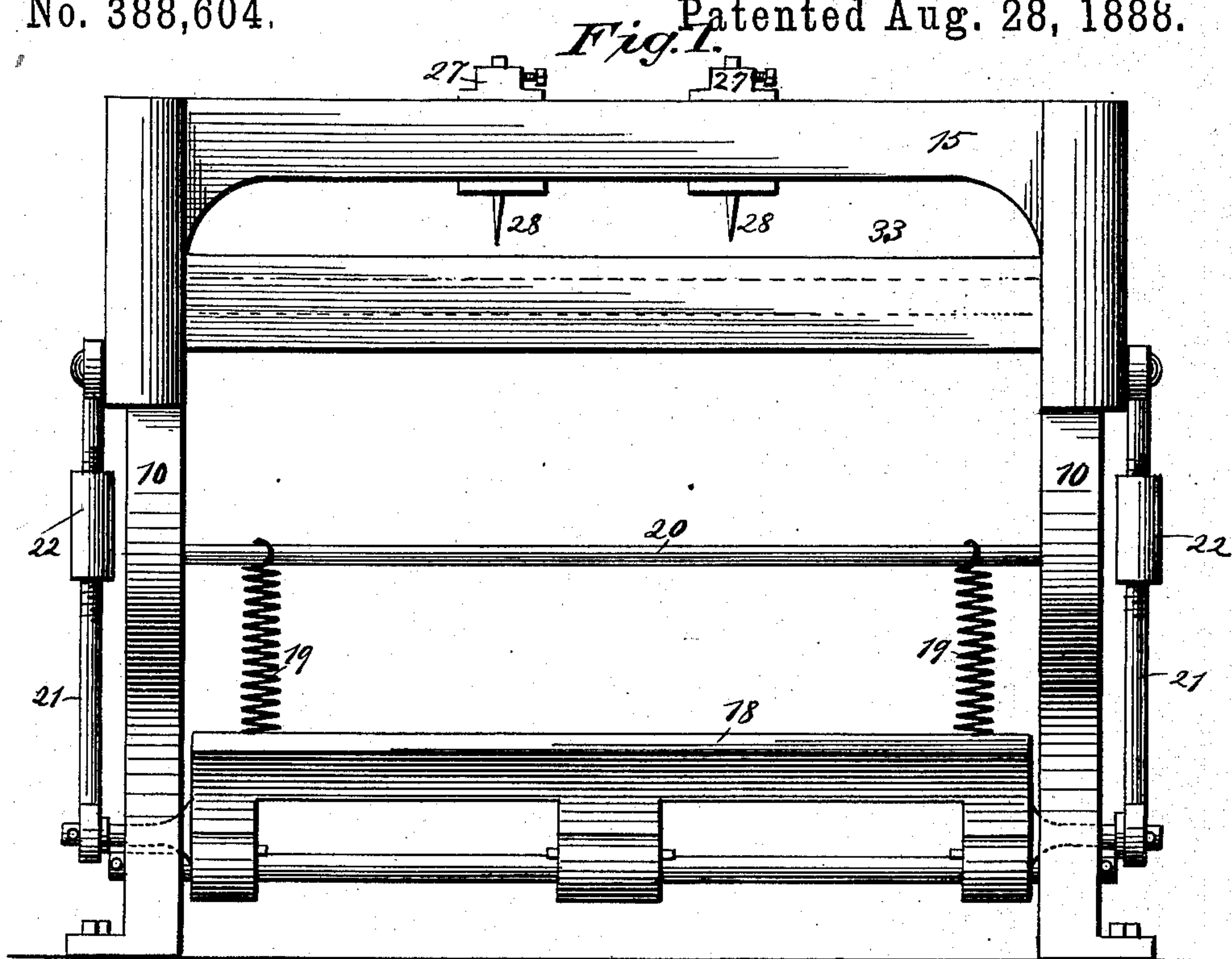
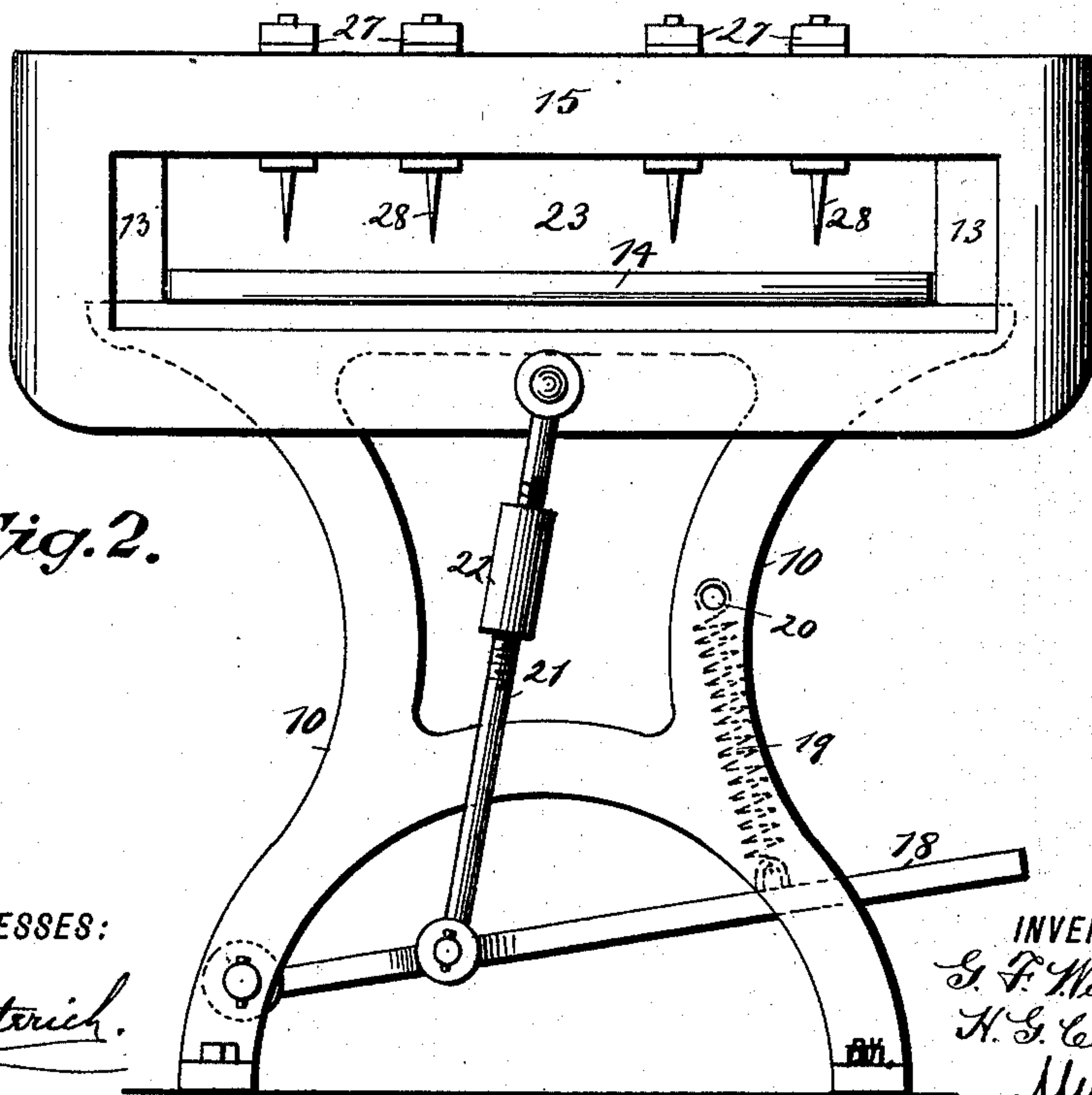


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

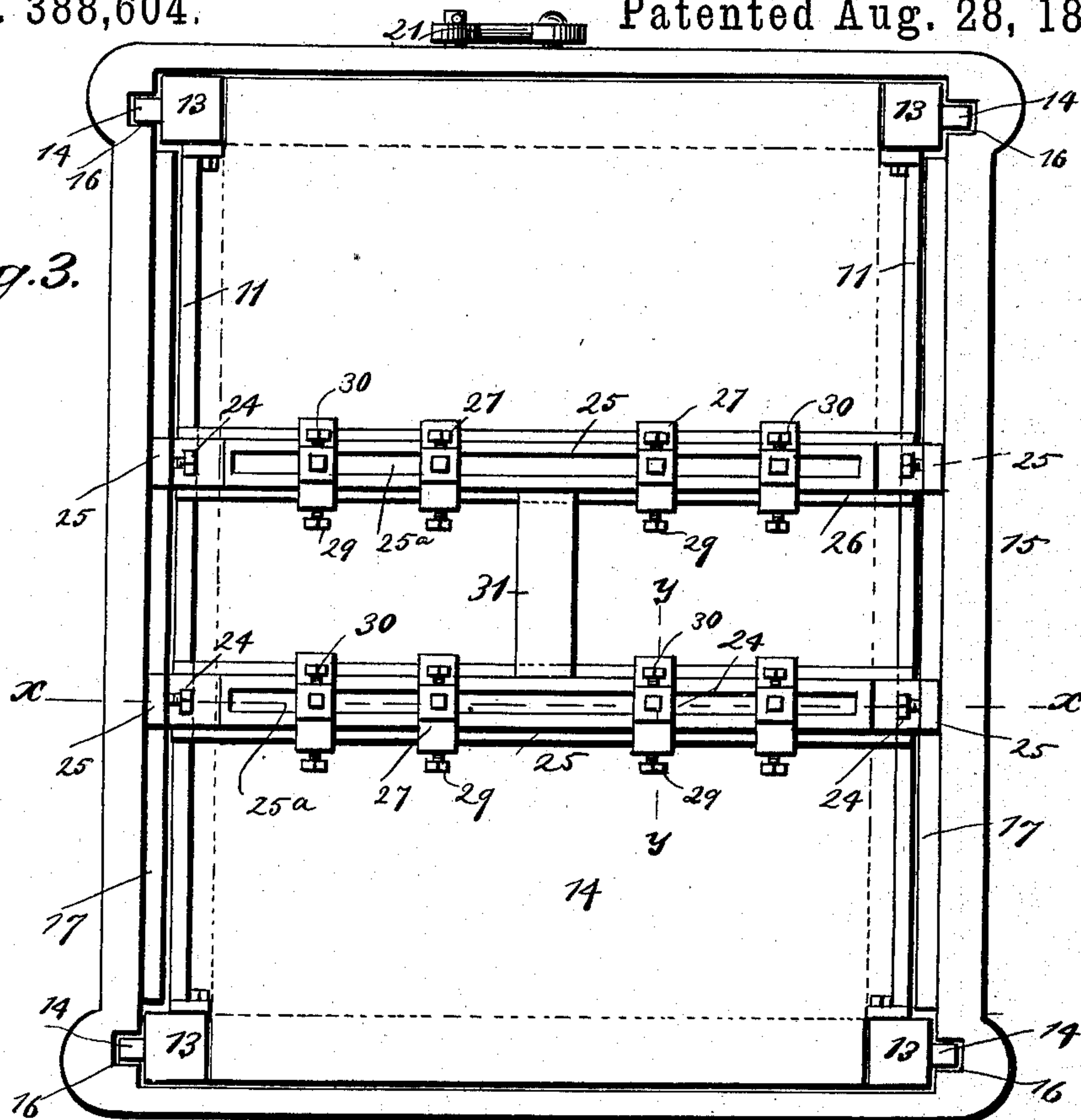


Fig. 4.

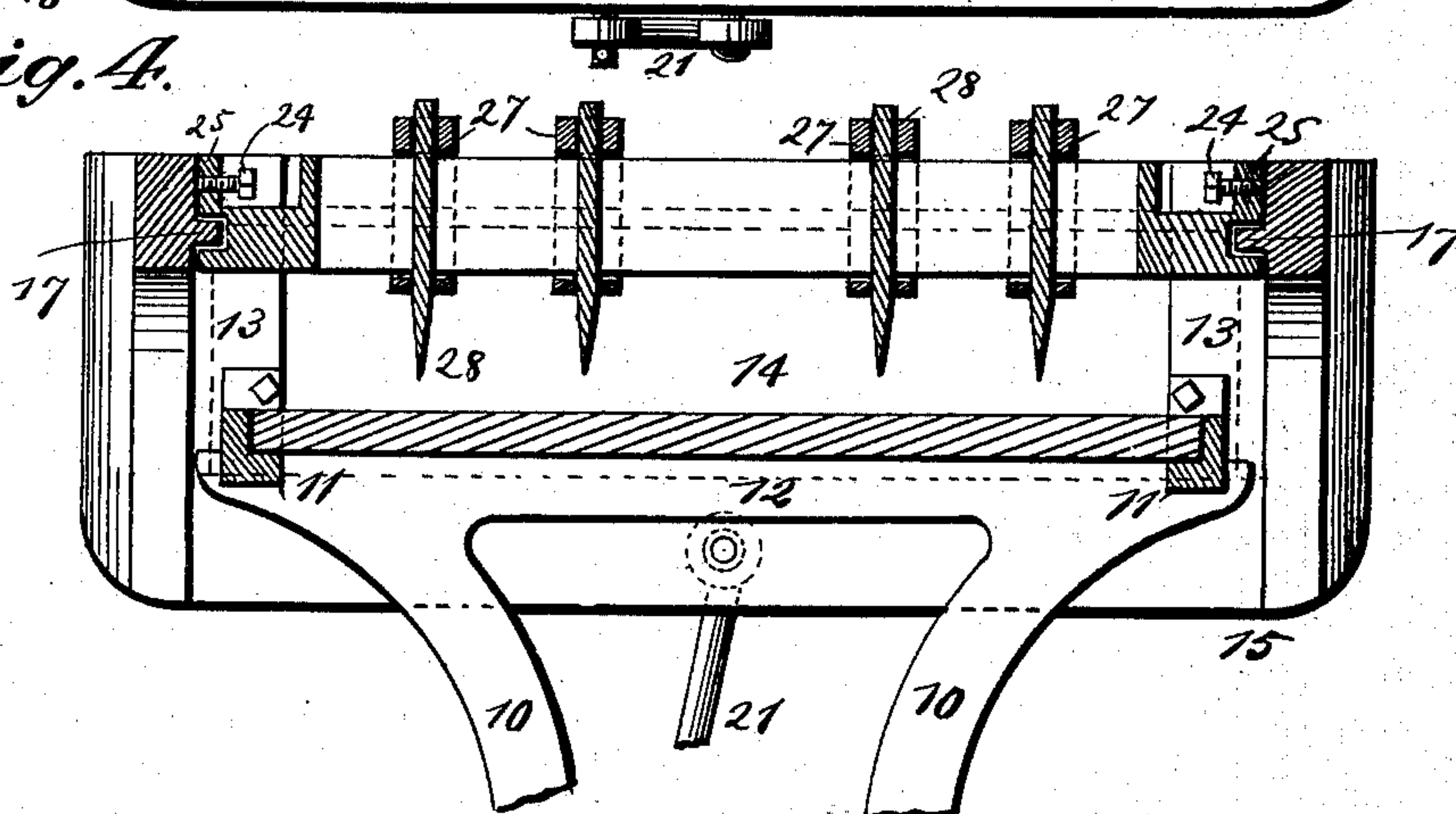
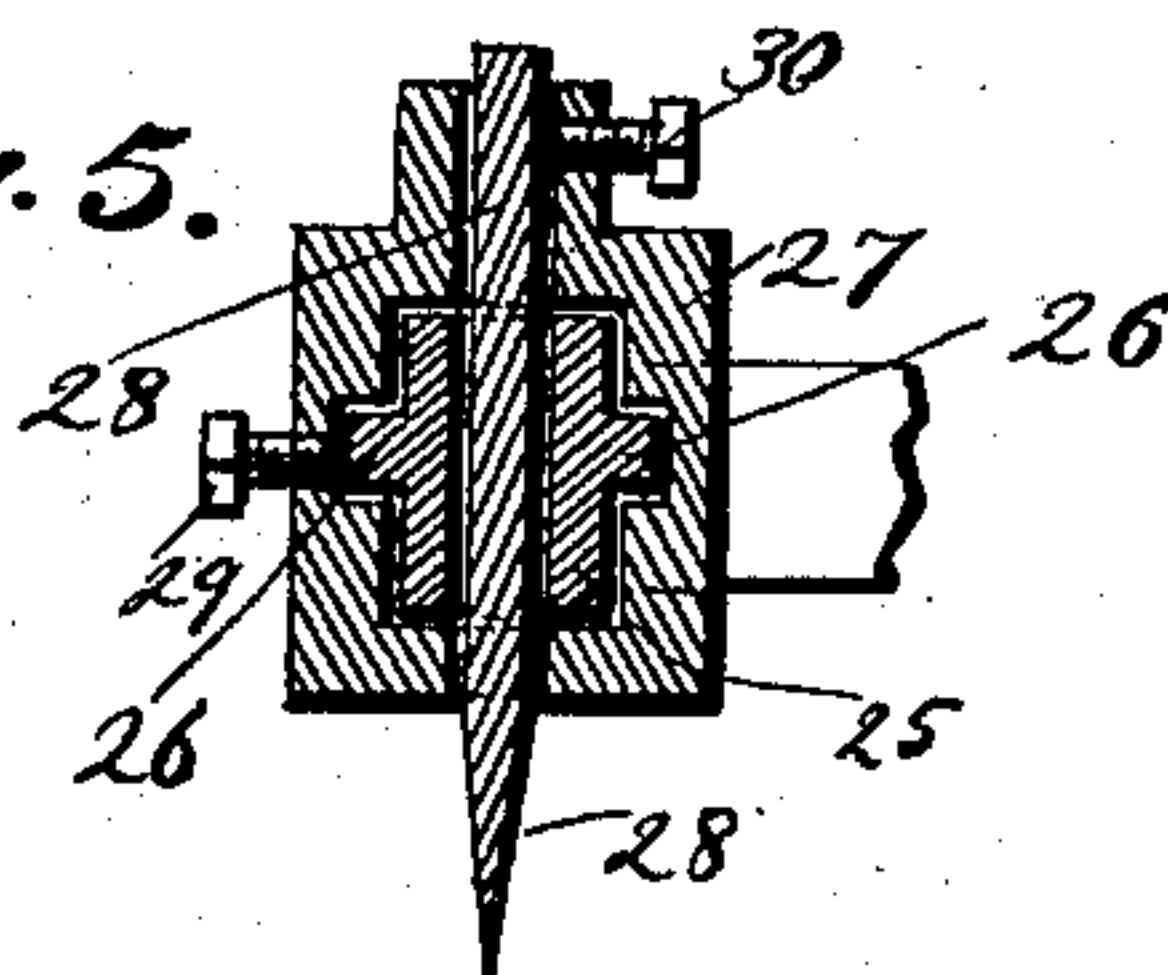


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE F. WAEDELDE AND HERMAN G. CERY, OF BROOKLYN, NEW YORK.

MACHINE FOR PUNCTURING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 388,604, dated August 28, 1888.

Application filed June 6, 1888. Serial No. 276,213. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. WAEDELDE and HERMAN G. CERY, both of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Machine for Puncturing Sheet Metal, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in machines for puncturing sheet metal, and has for its object to provide a simple, durable, and readily-manipulated apparatus especially adapted for puncturing the members of moldings in sheets of iron or other metals.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of the improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a plan view. Fig. 4 is a transverse section taken on the line $x\ x$ of Fig. 3, and Fig. 5 is a section on line $y\ y$ of Fig. 3.

In carrying out the invention the frame of the machine consists of two end standards, 10, which standards preferably partake more or less of the contour of the letter X. The said standards 10, which constitute the opposing sides of the frame, are connected by angle-bars 11, which bars are bolted to the standards in such a manner that the upper face of the horizontal member of the said angle-bars will be in the same plane with the upper edge of the standards. The arms of the standards are connected at the top through the medium of a preferably integral bar, 12, as best shown in Fig. 4. Upon the standards 10, at each end, vertical posts 13 are secured, which posts are provided upon one outer face with a perpendicular rib, 14. The angle-bars 11, instead of being secured to the cross-bars of the standards, may be attached to the said posts 13 and rest against the standards. The frame of the machine is completed by a table, 14, preferably of wood, which table is supported at the sides by the angle-bars 11 and at the ends by the upper cross-bar of the standards, as best illustrated in Fig. 4.

The contour of the frame is preferably rectangular, and upon the frame, constructed as above described, a second outer rectangular frame, 15, is adapted to slide vertically, the said outer frame, 15, having produced upon the inner face at each corner a perpendicular recess, 16, which recesses are adapted to receive the several ribs 14, forming an integral portion of the posts 13, the connection thus effected serving as a guide for the outer frame in its vertical movement.

The frame is also provided upon the inner face at each side with a longitudinal rib or projection, 17, for a purpose hereinafter set forth. In one of the arms forming the standards 10, at the base, a pedal, 18, is pivoted, controlled by springs 19, having one end secured to the pedal near the outer end, and the other end attached to a cross-bar, 20, connecting the forward members of the standards 10, as best shown in Figs. 1 and 2.

A connecting-rod, 21, is pivoted, respectively, to each outer edge of the pedal 18, and also to the sides of the outer frame, 15, as best illustrated in Fig. 1. The connecting-rod 21 is preferably made adjustable, consisting of two sections threaded at their opposing ends and united by a suitable coupling, 22. Through the medium of the pedal 18, the spring 19, and the connecting-rods 21 the outer frame is reciprocated. The outer frame, 15, is provided at each side, and also at the ends, with a horizontal opening, 23, whereby the surface of the table 14 is fully exposed, permitting the free and convenient introduction of the metal sheets thereon. The rib or projection 17 is preferably located above the aforesaid side openings 23. One or a series of transverse bars, 25, slotted at their ends to receive the rib 17 of the reciprocating outer frame, is secured in any desired position intermediate of the ends of the frame by means of set screws 24, which set-screws pass through the ends of the said transverse bars and bear against the inner sides of the reciprocating outer frame, as illustrated in Fig. 4. The transverse bars, which, for convenience, we denominate "tool-carrying" bars, are provided with a central longitudinal slot, 25^a, extending, essentially, from end to end, and longitudinal side ribs, 26. One or more clamps, 27, are held to slide upon

the two carrying-bars, which clamps surround the said bars, being provided with an opening at the top and bottom, aligning the slots 25^a, for the reception of the puncturing-tool 28, as best shown in Fig. 5.

The clamps 27 are recessed upon their inner faces to receive the ribs 26 of the tool-carrying bars, and are held at any desired point upon the said tool-carrying bar by a set-screw, 29, passing through the clamp to an engagement with one of the ribs 26. The tool 28 is held in a perpendicular position in the clamps and the tool-carrying bar through the medium of a second set-screw, 30, passing through a projection formed at the top of the clamp to a bearing against the tool, as best shown in Fig. 3.

We desire it distinctly understood that we do not confine ourselves to the exact means shown for retaining the tool carrying bar in position, the clamps upon said bar, or the tool within said bar and clamp, as other equivalent means may be employed without departing from the spirit of the invention.

When miters are to be punctured, the several tool-carrying bars may be united by a connecting-bar, 31, as best illustrated in Fig. 3, upon which connecting-bar the tool-clamps 27 may be adjusted.

In operation it will be readily observed that the frame 15 is reciprocated by working the pedal 18, and that as an opening, 23, is produced above the sides and the ends of the reciprocating frame 15 the sheets may be expeditiously fed in upon the table without the said reciprocating motion interfering with the same.

It will be further observed, by reason of the location of the said slots, that two men may work upon the same machine, producing different characters of work, without interfering one with the other. When the members of a miter are only, for instance, one-fourth of an inch apart, a bent tool may be used.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In a machine for puncturing sheet metal, the combination, with standards, a bed supported by said standards, and corner-posts attached to the same, of an outer frame reciprocating upon said posts, tool-carrying bars adjustably mounted in said reciprocating frame,

clamps adjustably secured upon the said tool-carrying bar, and means, substantially as shown and described, for reciprocating the outer frame, as and for the purpose specified.

2. In a machine for puncturing sheet metal, the combination, with standards, a bed supported upon said standards, and posts perpendicularly projected from the same, of an outer frame reciprocating upon said posts, provided with a longitudinal opening in the sides and ends, a tool-carrying bar adjustably supported in said reciprocating frame, clamps adjustably secured to said tool-carrying bar, and means, substantially as shown and described, for reciprocating the outer frame, as and for the purpose specified.

3. In a machine for puncturing sheet metal, the combination, with standards, a table supported upon said standards, one corner-posts perpendicularly projected from said standards, provided with perpendicular ribs, of a reciprocating outer frame having perpendicular grooves produced therein to receive the ribs of the posts, horizontal openings in the sides and ends exposing the table, longitudinal slotted tool-carrying bars adjustably secured in the outer reciprocating frame, clamps surrounding said reciprocating bar, provided with an opening aligning the slot in the said bar for the reception of the tool, and means, substantially as shown and described, for securing the clamp to the bar and the tool in the clamps, as and for the purpose specified.

4. The combination, with a table and a reciprocating frame surrounding said table, of a series of longitudinal slotted tool-carrying bars adjustably secured in said frame, clamps surrounding said bar and sliding thereon, provided with an aperture aligning the slot in the tool-carrying bar and a projection on the upper end, a set-screw passing through the clamp to an engagement with the tool-carrying bar, and a second set-screw passing through the projection of the clamp, adapted to bind the upper end of the tool, substantially as and for the purpose specified.

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