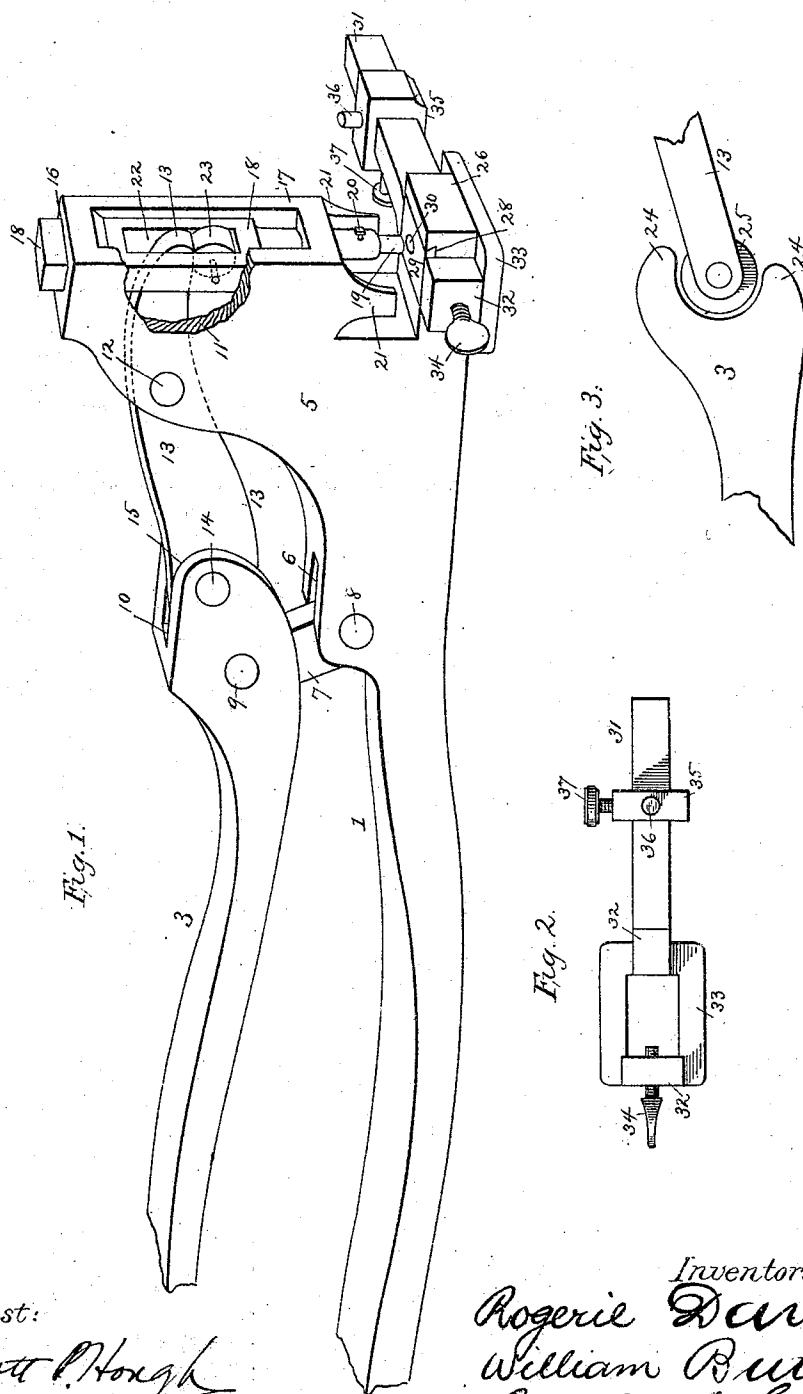


(No Model.)

R. DAVIS & W. BUTLER.
PORTABLE HAND PUNCH.

No. 503,109.

Patented Aug. 8, 1893.



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UNITED STATES PATENT OFFICE.

ROGERIE DAVIS AND WILLIAM BUTLER, OF WASHINGTON, DISTRICT OF COLUMBIA.

PORTABLE HAND-PUNCH.

SPECIFICATION forming part of Letters Patent No. 503,109, dated August 8, 1893.

Application filed December 13, 1892. Serial No. 454,984. (No model.)

To all whom it may concern:

Be it known that we, ROGERIE DAVIS, a citizen of the United States, and WILLIAM BUTLER, a subject of the Queen of Great Britain, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Portable Hand-Punches; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to metal punching devices and consists, as hereinafter described and claimed, in a portable tool adapted, when out of use, to be carried in a bag or in the pocket of the user and also adapted, when in use, to be grasped and operated by hand, in a similar manner to that in which shears are operated, to punch sheet metal.

In the accompanying drawings—Figure 1 represents a perspective view, partly broken away, of our improved portable hand-punch. Fig. 2 represents a detail view of the die-clamping and gage-carrying bar and gage. Fig. 3 represents a detail view of a portion of the portable punch showing a modification.

The object of our invention is to produce a handy and extremely portable tool for punching holes at regularly-gaged distances apart in sheet metal, said tool possessing the advantages of being formed in few parts, which may be cheaply constructed by casting in any suitable metal and of a size adapting it to be readily carried in the pocket of the operator, having handles and hand-grasps by which it may be gripped and operated by hand after the manner of an ordinary pair of hand shears and having a reciprocating punch and removable die for perforating the sheet metal and a die-clamping bar and adjustable gage supported upon said bar, said gage serving the double purpose of holding the sheet of metal while being punched and gaging the location of the perforations.

1 represents the lower handle which at its rear end is provided with a hand-grasp 2, and 3 represents the upper handle having a similar hand-grasp 4. Cast integrally with the lower handle 1 adjacent to its forward

end is an upwardly and forwardly-extending offset 5 which at its lower rear end has a slot or recess 6 within which the lower end of a link 7 connecting the handles 1 and 3 is rockingly journaled by a pivot-pin 8, the upper end of said link 7 being similarly pivoted, as at 9, within a slot or recess 10 in the under edge of the upper handle 3. By thus pivotally connecting the top and bottom handles a free and easy movement in use is permitted the operative handle without interfering with or lessening its force of operation, at the same time preventing undue friction or strain, and preventing injury to the pivotal connection between said handles which would be apt to ensue in use in this class of tool were the connection between said handles in the nature of a single pivot.

11 represents a slot or recess in the rear of the upper portion of said offset 5 within which is pivoted, by a pin 12, the plunger-operating lever 13; said lever 13 being at its rear end similarly pivoted by a pivot-pin 14 within the bifurcated or slotted front end 15 of the upper handle 3.

16 represents a vertical slot formed in the head 17 of the offset, 5, within which reciprocates the plunger 18 within a slot in the lower end of which the punch 19 is removably held by a thumb screw 20 or similar device.

21 represents brace and stop blocks in the head 17 which serve to strengthen said head and afford guides in and through which the plunger reciprocates. The plunger 18 is, at its upper portion, slotted, as at 22, to receive the front end of the operating lever 13 and a friction roller 23 having pivotal bearing in the side walls of said plunger; the object of this roller 23 being to afford a bearing for the front end of the operating lever which as the upper handle 3 is forced down, bears upon said roller and insures the downward projection of the plunger and the punch connected therewith; this roller not only serves as an operative connection between the lever and plunger but also prevents undue friction between said parts in use.

In lieu of the pivotal connection between the upper handle and the lever heretofore described the forward end of said handle may,

as shown in the modification, have curved lips 24 and the adjacent end of the lever may be provided with a wheel or roller 25 which will be seated within said curved lips 24 which latter, in this form, will operate to bear against said wheel or roller and, during the reciprocal movements of said handle, thereby either raise or lower said plunger-operating lever. The lower handle 1 extends forwardly at its front end in the form of a lip 26 through which extends a vertical hole 27 through which the punchings drop; the top face of said lip having a transverse bevel-walled recess 28 within which a bevel-walled die 29 is slidden, said die having a vertical hole 30 therein registering with the hole 27 in the lip 26.

31 represents a gage-carrying rod which at one end has upward extensions or lugs 32 which rest against and grip the respective ends of the die and prevent the shifting thereof, a slotted offset 33 at the bottom serving to brace the front end of the lower handle or arm 1 against the blows of the punch.

34 represents a thumb screw which extends through the outer of said lugs 32 and serves to grip said gage-carrying rod 31 in position. Upon the opposite end of the rod 31 is mounted a slide 35 having an upwardly-extending gage-pin or projection 36; said slide being adjustable longitudinally of said rod and being held in adjusted position thereon by a thumb screw 37.

The operation of our improved portable hand punch is as follows: The several parts being in position as indicated and the gage-slide 35 adjusted to a position relatively to that of the punch corresponding with the distance desired between the perforations in the sheet metal, the metal strip is with one hand of the operator placed under the punch; with his other hand he then grasps the hand grasps and bringing them together forces the handles into juxtaposition; this act forces down the forward end of the operating lever into contact with the roller in the plunger head and forces the plunger and punch down to punch the metal. The sheet or strip of metal is then moved along the gage-carrying rod until the punched-out portion registers with the gage pin over which the perforated or punched out

portion is then passed; in this position not only is there insured the punching of the holes a regular distance apart, but said gage pin also serves to hold the metal while being punched.

The extreme portability of this tool will be apparent as will, also, its facility for use in many positions where fixed punches could not be employed; its ease and readiness of use and cheapness of construction are also advantages possessed by it.

What we claim is—

1. A portable hand tool for punching metal consisting of a pair of handles rockingly pivoted together by link connection, a plunger head, plunger and punch carried by the lower of said handles, a die having removable seat-bearing in said lower handle, a gage-carrying bar adapted to be clamped to said lower handle, a pin gage having adjustable bearing upon said bar and a pivoted lever connecting the upper handle and the plunger, substantially as and for the purpose set forth.

2. A portable hand punch for punching metals, consisting of a pair of handles having hand-grasps and link-pivot connection, the lower of said handles having an upwardly and forwardly-extending slotted offset, a plunger having guide-bearings within said offset, a punch removably secured to said plunger, a roller journaled within said plunger, a lever connecting with the upper of said handles and having pivotal bearing within said offset and loose bearing upon said roller, a slotted die having removable seating within a recess in the front end of the lower handle, a gage-carrying bar adapted to clamp said die in position and a gage slide having an upwardly extending gage-pin and adapted to be adjustably held in position upon said gage-carrying bar, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ROGERIE DAVIS.
WILLIAM BUTLER.

Witnesses:

CHAS. J. GOOCH,
FRANK DAVIS.