No. 667,926. Patented Feb. 12, 1901.

A. P. TUCKER & G. F. PROSS.

PUNCHING APPARATUS.

(Application filed Sept. 13, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

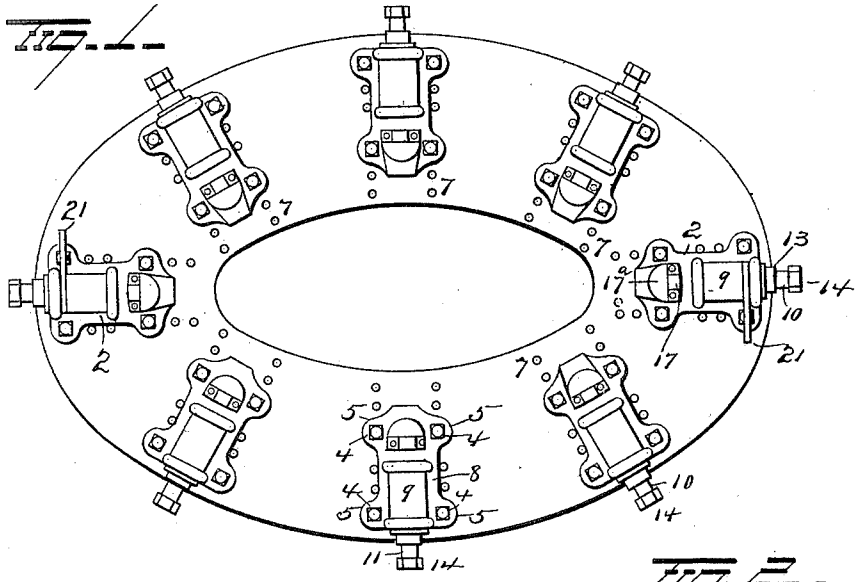


FIG. 2.

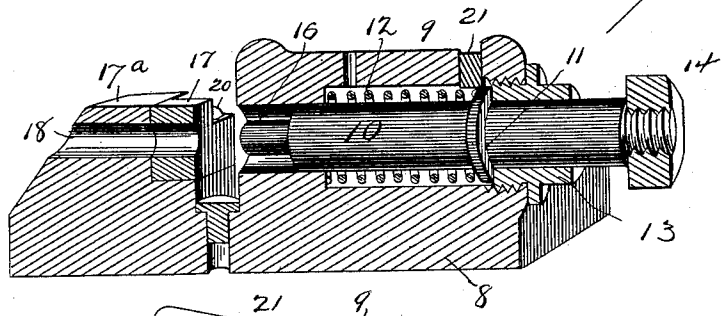
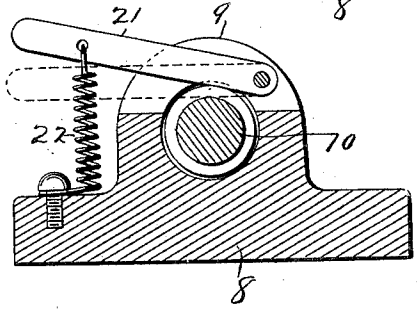


FIG. 3.



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Fig. 4.

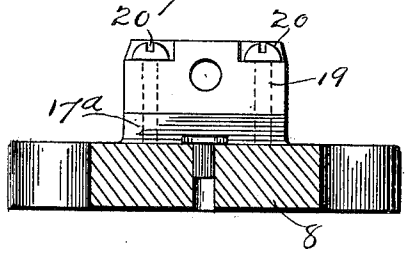


Fig. 5.

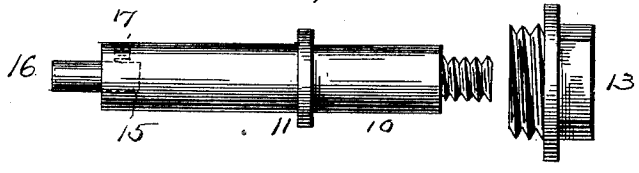
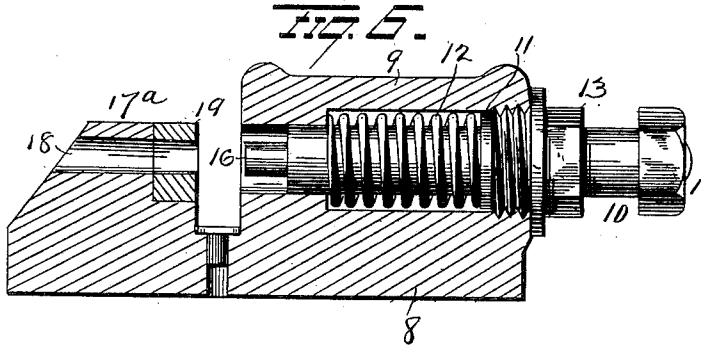


Fig. 6.



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UNITED STATES PATENT OFFICE.

ANDREW P. TUCKER AND GEORGE F. PROSS, OF CINCINNATI, OHIO, ASSIGNORS TO E. H. HUENEFELD, OF SAME PLACE.

PUNCHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 667,926, dated February 12, 1901.

Application filed September 13, 1900. Serial No. 29,958. (No model.)

To all whom it may concern:

Be it known that we, ANDREW P. TUCKER and GEORGE F. PROSS, residents of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Punching Apparatus; 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.

Our invention relates to an improvement in metal-punching apparatus, one object of the invention being to provide an improved punch and means for mounting a series of the same, so as to effectually punch bolt or rivet holes in an elliptical or other body.

A further object is to provide a punching apparatus which is especially designed for punching bolt-holes in the bottom flange and side wall of the stove shown in Patent No. 639,898, granted December 26, 1899, to E. H. Huenefeld; but the apparatus is adapted for other uses, as will be readily understood.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view illustrating our improvements. Figs. 2 and 3 are views in section of punch 2, taken at right angles to each other. Figs. 4 and 5 are views of detail parts of the same, and Fig. 6 is a view in longitudinal section of one of the punches 3.

1 represents an approximately elliptical base or platform provided with a number of screw-threaded holes 7 for the reception of screws 4, which are passed through holes in outwardly-projecting ears 5 on punches 2 and 3, which latter can, by simply passing the screws 4 into different holes 7, lock the punches in various formations to punch articles of different shapes and sizes.

The punches 2 are preferably disposed opposite each other on platform 1 and comprise a base portion 8, having a casing 9 thereon, which latter is made with a longitudinal bore for a plunger 10, and said plunger 10 is provided between its ends with a peripheral flange 11, and a coiled spring 12 is mounted on the plunger 10 and disposed in a counterbored seat in the casing and adapted to press against the flange 11 to hold the plunger in its outer position. A collar 13, having flattened sides to permit the use of a wrench, is screwed into the outer end of casing 9, and against which the flange 11 is held by spring 12, and the outer end of plunger 10 is screw-threaded for the reception of a nut 14, which is adapted to be struck by a hammer or like tool to drive the plunger forward. The inner end of plunger 10 is made with a notch 15, in which is secured a die 16 by means of set-screw 17, screwed into the side of the plunger, and said die is preferably made slightly concave on its outer end to more effectually punch the metal.

A block 17^a is provided on the inner end of base portion 8, preferably made integral therewith and having a hole 18 in alinement with the bore of casing 9 for the escape of the punched metal. Said block 17^a is cut away on its front end to form a seat for a die 19, which latter is made with an opening in alinement with the hole in block 17^a to receive the die 16 on the end of plunger 10 and is removably secured to the block 17^a by means of screws 20.

The casing 9 is slotted transversely on its top near its outer end, and a lever 21 is pivoted at one end in one end of said slot, and a coiled spring 22 is secured at one end between the ends of lever 21 and at its other end to the base 8 by means of screws, as shown, so as to normally press the lever down onto the coiled spring 12; but it will be seen that when the plunger 10 is forced inward by a blow from a hammer or mallet the lever 21 will be forced downward by spring 22 into the path of flange 11, and thus hold the plunger in its inner position until the lever is raised by the operator, hence securely holding the article being punched until all of the punches 3 have been operated. The punches 3 are constructed precisely like punches 2, except that the levers 21 are dispensed with, as the levers on two of the punches are all that is necessary for ordinary work.

Suitable mechanism might be provided for operating all of the punches simultaneously,

or means other than a hammer or mallet might be employed for operating them, and various other slight changes might be resorted to in the general form and arrangement of the several parts described without departing from the spirit and scope of our invention, and hence we would have it understood that we do not wish to limit ourselves to the precise details set forth, but consider ourselves at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of our invention.

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

1. In a punch, the combination of a casing and an outwardly-spring-pressed plunger therein, a peripheral flange on said plunger, and a transverse lever disposed in a slot in the casing, and a spring adapted to pull the lever down behind the peripheral flange when the plunger is forced forward to hold the latter in its forward position.

2. In a punching apparatus, the combination of a platform, an annular series of punches secured to said platform and means for adjusting said punches to adapt them for the reception of objects varying in annular contour.

3. In a punching apparatus, the combination of a platform having a number of holes therein, a series of punches and bolts or screws adapted to be secured in the holes in the platform and secure the punches in various formations.

4. In a punching apparatus, the combination of a platform, a series of punches secured on said platform in any desired formation and automatic means for preventing the withdrawal of one of said punches from the article punched.

5. In a punching apparatus, the combination with a platform, of a series of punches on said platform, means securing the punches on the platform but permitting their adjustment or change of position, and means on two of said punches for holding the punch in the article punched until the other punches have been operated.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

ANDREW P. TUCKER.
GEORGE F. PROSS.

Witnesses:
HENRY G. GUSTETTER,
JOHN R. CARTER.