

F. H. PIERPONT.
 BLANK HOLDER FOR PUNCH CUTTING AND LIKE MACHINES.
 APPLICATION FILED JUNE 16, 1908. RENEWED JUNE 10, 1909.

938,435.

Patented Oct. 26, 1909.
 2 SHEETS—SHEET 1.

Fig. 1.

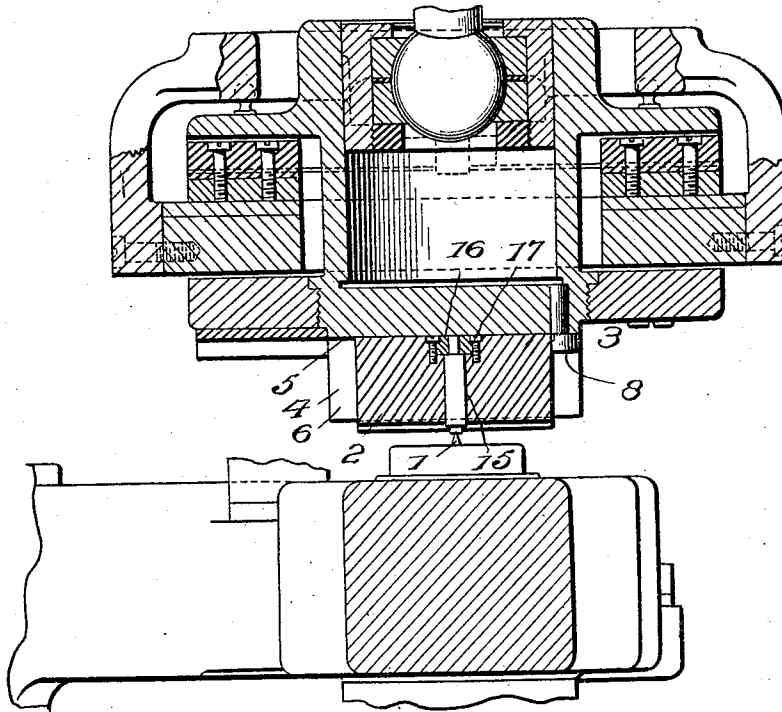
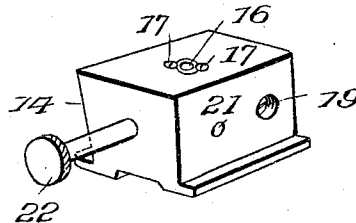


Fig. 4.



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Fig. 2

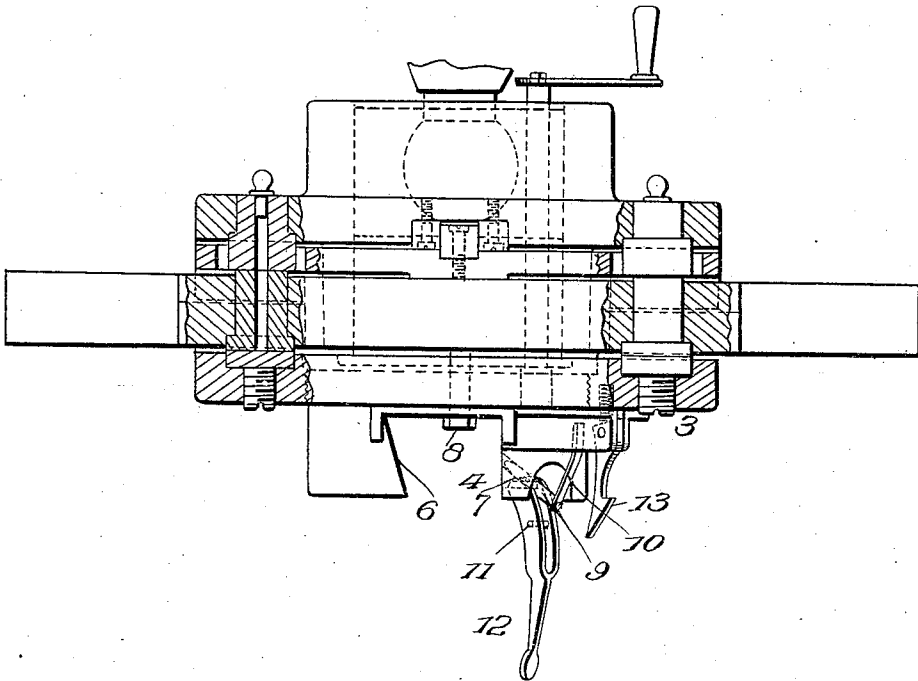
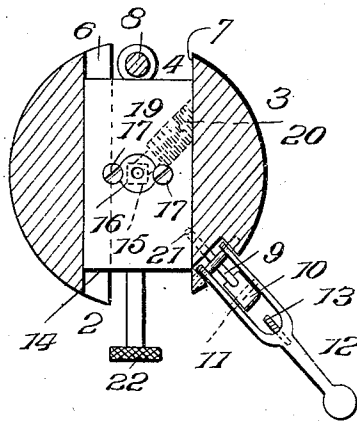


Fig. 3



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BLANK-HOLDER FOR PUNCH-CUTTING AND LIKE MACHINES.

938,435.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Original application filed July 17, 1906, Serial No. 326,571. Divided and this application filed June 16, 1908, Serial No. 438,833. Renewed June 10, 1909. Serial No. 501,435.

To all whom it may concern:

Be it known that I, FRANK HINMAN PIERPONT, a citizen of the United States, temporarily residing at Horley, county of Surrey, England, have invented certain new and useful Improvements in Blank-Holders for Punch-Cutting and Like Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures of reference marked thereon.

This invention relates to blank holding and gaging means for punch cutting and like machines such as that disclosed in application Serial No. 326,571, filed July 17, 1906, of which this application is a division.

As is well known the accurate reproduction of pattern forms is a most difficult and delicate operation more especially so in the manufacture of type punches where the pattern merely represents the face and it is required not only that the face shall be accurately reproduced and the sides of the character properly shaped, but, also, that the face shall occupy a predetermined position or be justified relative to the body. In practice it has heretofore been customary to justify the character after it is cut by dressing off the sides, an operation involving the use of special tools, the consumption of much time, and the exercise of a high degree of skill.

One object of the present invention is to enable the character to be properly located or justified while being formed, to which end it consists in the improved means hereinafter fully described for gaging the position of the blank in the punch cutting machine, and for facilitating the insertion and removal of the blanks for substitution, inspection, etc.

In the accompanying drawings, illustrating a preferred form of embodiment of the invention: Figure 1 is a vertical section of a portion of the movable head or support and the cutting tool of a punch cutting machine with the holder applied in position.

Fig. 2 is a side elevation, and Fig. 3 is a horizontal section of the holder and its support. Fig. 4 is a view in perspective of the holder detached.

The same numerals designate like parts in the several figures.

Although equally well adapted for use in connection with a fixed support, for example that carrying the rotary cutter 1, the holder 2 is shown applied to the movable head or plate 3, the latter connected to the pantograph cooperating with the pattern after the manner disclosed in the before mentioned application. The supporting head 3 is formed or provided with an undercut or dovetail slide way 4 the bottom 5 whereof preferably lies in a plane parallel with the motion of said support. One of the side walls 6 of said way is inclined inwardly at an acute angle to the bottom 5 while the opposite wall 7 is preferably perpendicular. At or near one end of the way 4 is located a stud or gage 8 and in the wall 7 is mounted a bolt 9 positioned obliquely toward the rear end of way 4 at an angle to its bottom 5, said bolt forming an easy working fit in a hole in side wall 7. The outer end of bolt 9 contacts with a flat spring 10 fixed to the support in position to be engaged by a cross pin or roller 11 carried by a lever 12, said cross pin or roller contacting with the spring at a point intermediate the latter's attachment to the support and the bolt 9. A pivoted retaining latch 13 is arranged to engage lever 12 when moved to advance bolt 9.

The holder 2 is equipped with a dovetail portion 14 adapted to fit and slide in way 4 and with a socket or recess 15, preferably rectangular in cross section, extending through the holder and closed or partially closed at one end by a steel block 16 held in place by screws 17, said block forming a seat or gage for the end of the blank. Two adjacent sides of the blank are shaped to correspond with one angle of the socket and it is firmly held in said angle by a pin 19 the latter engaged by a screw 20.

In one side of the dovetail portion 14 is formed a recess or seat 21 for the reception

of the point of bolt 9, and, preferably, the holder is equipped with a finger piece or handle 22 to aid in manipulating the same.

Operation: The holder 2 being withdrawn from its support the blank is inserted and screw 20 turned to clamp the blank. The position of the blank with relation to the holder is thus gaged and fixed by its contact with adjacent sides of socket 15 and end gage 16. Lever 12 being swung down and bolt 9 retracted the holder is inserted in way 4 and advanced until it contacts with gaging stud 8, whereupon lever 12 is elevated to engage spring 10 and through the latter advance bolt 9 into seat 21. Owing to the diagonal arrangement of bolt 9 it operates to press the holder simultaneously against the three fixed gaging surfaces formed by the bottom 5, inclined side wall 6 and stud 8, said inclined wall aiding in this movement by directing the holder against the bottom of the way. By employing a spring (10) to actuate the clamping bolt 9 a practically uniform degree of pressure is obtained and not alone is the mutilation of the gaging and holding surfaces prevented but also distortions incident to excessive pressure. When it is desired to remove the holder either for the insertion of a new blank or for inspecting the work, the operator merely lifts the retaining latch with one finger and slides the holder out, both of which operations can be performed by one hand.

Having thus described my invention, what I claim as new, and desire to secure by Letters-Patent, is:

1. A device for positioning and holding blanks including in combination, a holder and support provided with three sets of gaging surfaces in triangular relation, and a spring actuated clamping member operating in diagonal relation to said gaging surfaces to simultaneously thrust the holder against the several gaging surfaces carried by the support.

2. A work holder for punch cutting and like machines including the following elements, in combination, to wit: a support provided with three fixed gaging surfaces; a holder provided with gaging surfaces complementary to those of the support and a spring actuated bolt mounted upon the support in diagonal relation to said gaging surfaces and operating to simultaneously thrust and retain the holder in contact with said fixed gaging surfaces.

3. In a work holder for punch cutting and like machines and in combination with a support provided with three gaging surfaces in triangular relation, a blank holder adapted to engage and be positioned by said gaging surfaces, and a pressure device operating upon said holder in a direction diagonal to said several gaging surfaces.

4. In a work holder for punch cutting and like machines the combination of a blank holder provided with a socket for the reception of the blank and with three gaging surfaces in triangular relation, one of said gaging surfaces being perpendicular to the axis of the socket, a support provided with complementary gaging surfaces, a clamping bolt in diagonal relation to said gaging surfaces and engaging the holder, a spring coupled with said clamping bolt to advance the latter and means for putting said spring under tension to advance the bolt.

5. A blank holder for punch cutting and like machines comprising the following elements, in combination, to wit; a support provided with a slideway for the reception of a removable holder, one wall of said slideway inclined inward from the bottom; a gage located at or near one end of said slideway; a blank holder provided with gaging surfaces complementary to the bottom, side wall and gage of said slideway and a clamping bolt mounted upon the support and engaging a seat in the work holder.

6. A blank holder for punch cutting and like machines including the following elements, in combination, to wit; a support provided with a slideway one of whose side walls is inclined at an acute angle to the bottom; a blank holder fitted to and movable longitudinally of said slideway; a gage on the support for limiting the advance of the holder in the slideway; a clamping bolt mounted upon the support and adapted to engage a seat on the holder, said bolt being movable in a path diagonal to the bottom and inclined side wall of said way, to simultaneously force the holder into contact with said bottom side wall and gaging member; a spring coupled with said bolt; and an actuating lever engaging said spring to advance the bolt.

7. A blank holder for punch cutting and like machines including the following elements in combination, to wit; a support provided with a slideway one of whose side walls is inclined to an acute angle at the bottom; a blank holder fitted to and movable longitudinally of said slideway; a gage on the support for limiting the advance of the holder; a clamping bolt mounted on the support and adapted to enter a seat on the holder, said bolt being movable longitudinally in a path diagonal to the bottom and side wall of said slideway and inclined to the direction of motion of the holder therein; a spring coupled with said bolt; a lever engaging the spring; and a retaining catch for the lever.

8. A blank holder for punch cutting and like machines including the following elements, in combination, to wit; a support

provided with a slideway one wall whereof is inclined at an acute angle to the bottom; a blank holder fitted to and movable in said slide way and provided with a blank
5 receiving socket, the latter provided with an end gage, a gaging angle and a clamping device; a gaging member on the support for limiting the advance of the holder in the slideway; and a yielding clamp engaging the holder and operating to simultaneously press the latter into contact with the gaging member and the bottom and inclined wall of the slideway. 10

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