June 17, 1930. R. ANDERSON 1,764,924

APPARATUS FOR PERFORATING JEWELRY ELEMENTS

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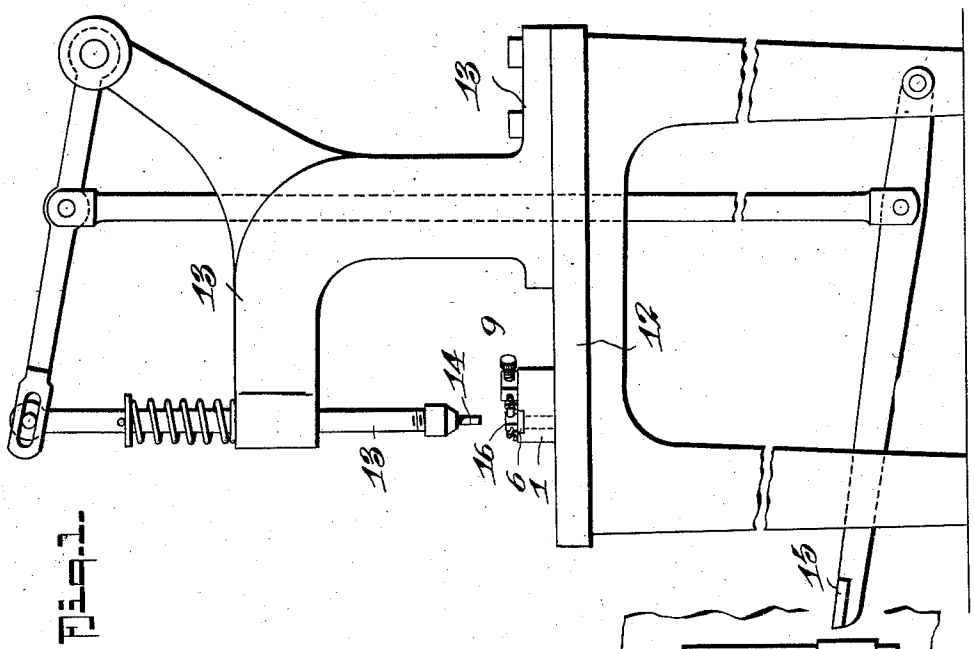


Fig. 1.

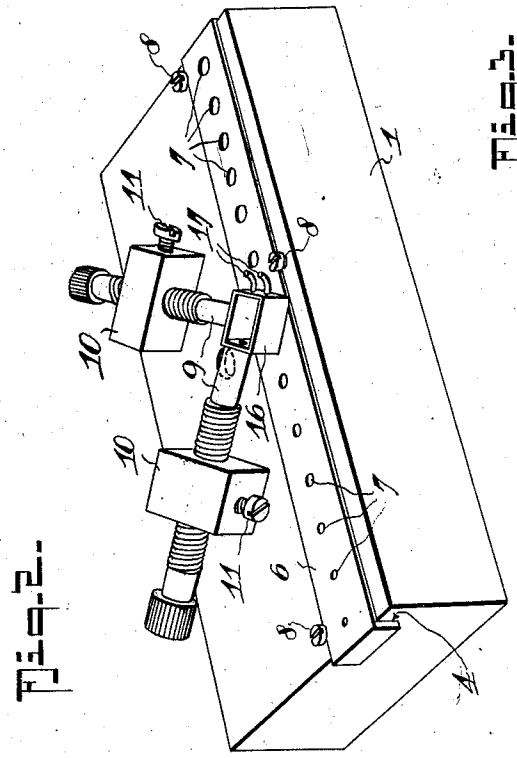


Fig. 2.

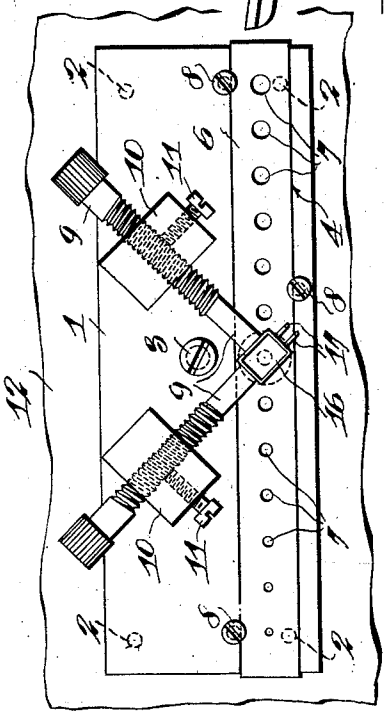


Fig. 3.

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Fig. 4.

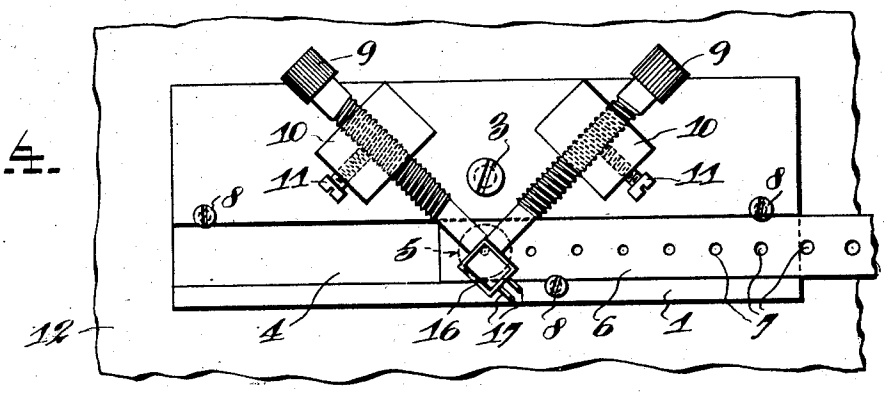


Fig. 5.

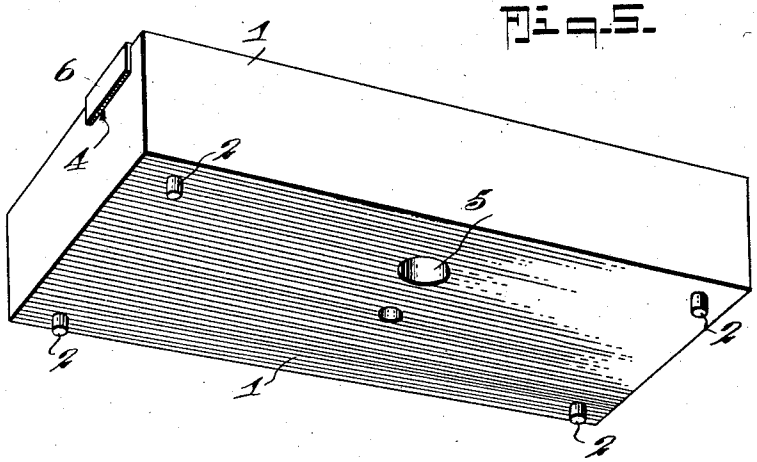


Fig. 6.

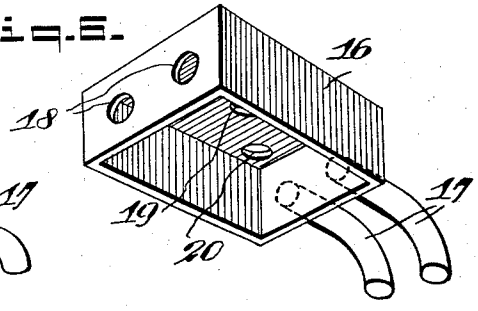
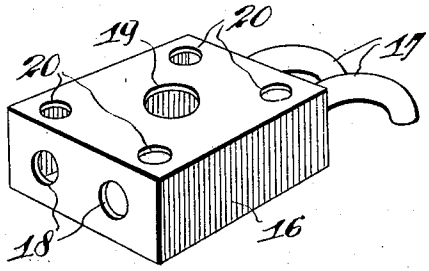


Fig. 7.



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UNITED STATES PATENT OFFICE

ROBERT ANDERSON, OF NEW YORK, N. Y.

APPARATUS FOR PERFORATING JEWELRY ELEMENTS

Application filed October 6, 1928. Serial No. 310,744.

My invention relates to apparatus used in perforating the box-like links of jewelry chains to make them ready for the reception of precious stones, and the same has for its object more particularly to provide a simple, efficient and reliable die device to be used in connection with a punch press for the purposes aforesaid.

Further, said invention has for its object to provide a die block with an adjustable die plate (the latter having a series of apertures of various diameters) and with stop and positioning elements for the purpose of locating the jewelry element with respect to the punch and die axis in order that a hole may be punched at the place desired.

Further, said invention has for its object to provide means whereby the stop and positioning elements may be readily adjusted and locked in the positions to which they have been adjusted, for such a period of time as may be desired.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, my invention consists in the novel details of construction and in the combination, connection and arrangement of parts, hereinafter more fully described and then pointed out in the claims.

In the accompanying drawings, showing illustrative embodiments of the invention.

Fig. 1 is an end elevation of a table with a punch press and my invention located thereon.

Fig. 2 is a perspective view of my invention.

Fig. 3 is a plan of my invention with a jewelry element in position to have a center hole punched.

Fig. 4 is a plan of my invention with a jewelry element in position to have one of the marginal or corner holes punched.

Fig. 5 is an inverted perspective view of my invention.

Fig. 6 is an enlarged perspective view of one of the jewelry elements before being punched.

Fig. 7 is a perspective view of the jewelry element after it has been punched.

In the drawings in which like numerals of reference indicate like parts in all of the figures, 1 represents a die block which may be provided with suitable positioning lugs 2 on its under side and with a bolt or screw receiving hole 3. By passing a bolt or screw through the hole 3 to connect with the table the die block may be mounted fixedly on the table 12. The table also carries the punch press 13.

The die block 1 is provided, on its upper face, with a groove 4 for the reception of a die plate 6. The die plate 6 comprises an elongated strip having a series of apertures 7, varying size from a minimum diameter to a maximum diameter.

In order to hold the die plate in position with any of the apertures desired in an alignment with the axis of the punch proper 14, I provide one or more screws 8 as shown.

For the purpose of positioning the jewelry element 16 with respect to the die aperture that is to be used, and for the purpose of acting as a back-stop against which the attendant may hold the said jewelry element while operating the punch, two adjustable stops and positioning screws 9 are provided, the same being mounted in lugs 10 which project upwardly from the die block 1. Set screws 11 are provided by means of which the screws 9 may be held securely in whatever position they may have been placed.

The punch press may be operated by a foot lever or treadle 15 or in any other approved way, but under control of the attendant.

The jewelry elements 16 that are to be punched are usually composed of box-like bodies open at the back and having fingers 17 projecting from one end wall. These fingers 17 are adapted to be passed through finger holes 18 in the opposite end wall of the next jewelry element of the chain and serve to connect the adjacent elements flexibly together.

The number of holes to be punched in the face of an element 16 and the position and size of such holes will, of course, depend upon the number, size and position of the jewels to be mounted therein. In other

words the same will depend upon the size of the jewels and the relative arrangement thereof, or design to be produced. Frequently there will be a central hole 19 for a large jewel and marginal holes 20 for smaller jewels. Sometimes, however, there will be but a single large hole used.

In employing my invention the die block 1 is mounted on the table 12 in a position to locate the die plate passage 5 directly beneath the punch. The proper aperture 7 is brought into position to register with the die proper and the plate is secured by the screw 8. A punch 14 of proper size to cooperate with the aperture 7 is fastened in the chuck of the press.

One of the jewelry elements 16 is then placed on the die plate in such position as to enable the hole to be punched properly and the screws 9 are adjusted to the position of the jewelry element, after which they are secured by the set screws and constitute stop and positioning means for succeeding jewelry elements.

The jewelry elements to be punched, with the hole of such size and position as has been determined and to which the parts have been thus adjusted, are successively placed in position on the die block, punched and removed therefrom by the operator.

If it is desired to punch the smaller or marginal holes the die plate is again adjusted to bring the desired smaller apertures in position, a corresponding die is placed in the punch chuck and the screws 9 are again adjusted to the element which has been placed in position. After adjusting the screws 9 they are secured by the set screws and then become positioning back stops as before.

By locating the axes of the screws 9 at right angles to one another and at angles of forty-five degrees to the die plate, a convenient back stop is provided against which the attendant may, with ease, hold the jewelry element while it is being punched, thereby preventing it from slipping out of position during the punching operation.

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

1. In apparatus of the class described, the combination with a punch press having a punch, of a die block, means rigidly to locate said block with respect to said press, a die plate having a plurality of apertures adjustably mounted on said block whereby any aperture may be located beneath the punch of said press, means to secure said plate in position on said block, and a pair of positioning members mounted on said block in cooperative relation to said die plate for the purposes specified and means for independently adjusting said positioning members with respect to one another and to said die plate.

2. In apparatus of the class described, the combination with a punch press having a punch, of a die block, means rigidly to locate said block with respect to said press, a die plate having a plurality of apertures adjustably mounted on said block whereby any aperture may be located beneath the punch of said press, means to secure said plate in position on said block, a pair of lugs projecting upwardly from the face of said die block, a positioning member mounted in each lug, and means to secure said positioning members in any position to which they may have been adjusted substantially as specified.

3. In apparatus of the class described, the combination with a punch press having a punch, of a die block, means rigidly to locate said block with respect to said press, a die plate having a plurality of apertures adjustably mounted on said block whereby any aperture may be located beneath the punch of said press, means to secure said plate in position on said block, a pair of lugs projecting upwardly from the face of said die block, a positioning member mounted in each lug, and means to secure said positioning members in any position to which they may have been adjusted, said positioning members converging toward each other and toward the axis of the die plate aperture being used.

4. In apparatus of the class described, a die block, a die plate having apertures of various sizes, said die block having a groove to receive said die plate, means to hold said die plate adjustably in said groove, whereby any of its apertures may be brought to a defined position with respect to said block, a pair of lugs projecting upwardly from the face of said block, a positioning screw mounted in each lug, a set screw on each lug to hold the positioning screws in their adjusted positions, said positioning screws converging toward each other and toward said defined position substantially as shown and for the purposes described.

5. In apparatus of the class described the combination of a punch press having a punch with a die block, means for rigidly securing said die block in position, a die plate having a series of apertures therein adjustably mounted on said block whereby to permit of any of said apertures to be located in position to register with said punch, means for securing said plate in position upon said block, supporting means on said block and a plurality of separate positioning members adjustably mounted in said supporting means and adapted to engage with two adjacent sides of a work piece.

6. In apparatus of the class described, the

combination of a punch press having a punch with a die block, means for rigidly securing said die block in position, a die plate having a series of apertures therein adjustably mounted on said block whereby to permit of any of said apertures to be located in position to register with said punch, means for securing said plate in position upon said block, and a plurality of separate individually adjustable positioning members mounted on said block and adapted to engage a work piece in position at right angles to each other.

7. In apparatus of the class described, the combination of a punch press having a punch with a die block, means for rigidly securing said die block in position, a die plate having a series of apertures therein adjustably mounted on said block whereby to permit of any of said apertures to be located in position to register with said punch, means for securing said plate in position upon said block, and a plurality of separate positioning members adjustably mounted at right angles to each other and adapted to engage with two closely contiguous side portions of a work piece.

8. In apparatus of the class described, the combination of a punch press having a punch with a die block, means for rigidly securing said die block in position, a die plate having a series of apertures therein adjustably mounted on said block whereby to permit of any of said apertures to be located in position to register with said punch, means for securing said plate in position upon said block, a plurality of positioning members angularly arranged with respect to each other and adapted to engage with two contiguous angular sides of a work piece, and means separately to adjust said positioning members toward and from each other and the die plate.

Signed at the city of New York, borough of Manhattan, in the county and State of New York, this 10th day of September, one thousand nine hundred and twenty-eight.

ROBERT ANDERSON.