(No Model.)

E. B. ROTH.

MEANS FOR MAKING WEDGES FOR SPLITTING STONE, &c.

No. 603,513. Patented May 3, 1898.

Fig. 1.

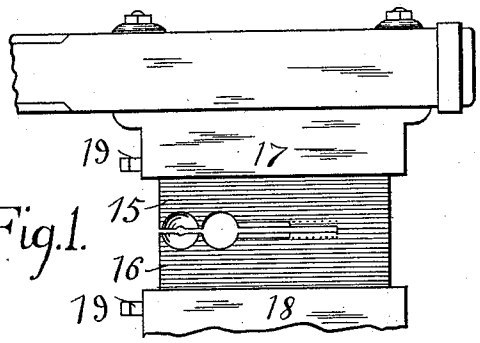


Fig. 2.

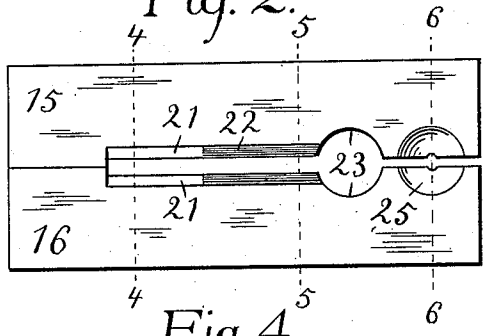


Fig. 3.

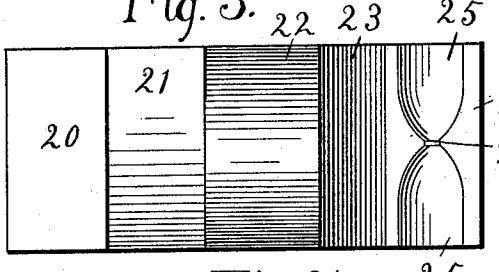


Fig. 4

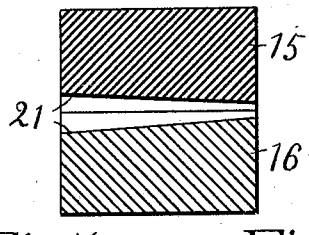


Fig. 5.

Fig 6.

Fig. 7.

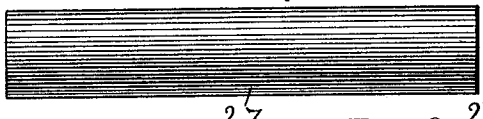
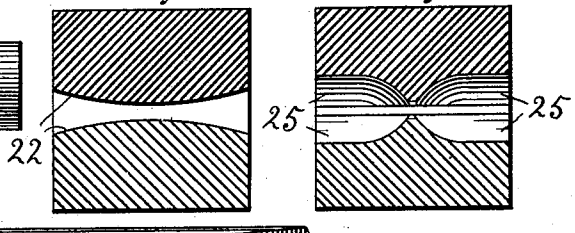


Fig. 8.



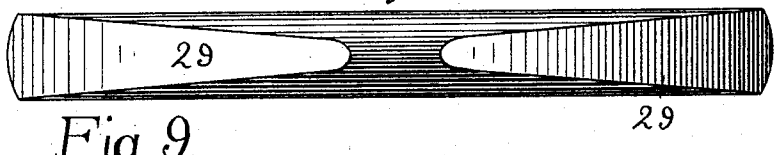
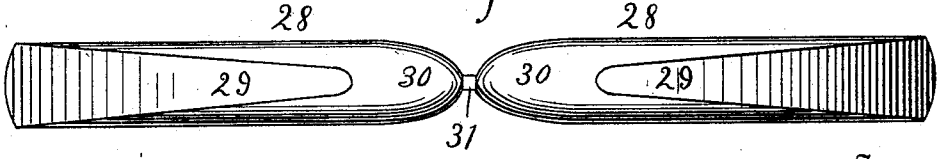


Fig. 9.

Fig. 10.



Witnesses
W. A. Alexander
H. G. Morse.

Inventor
Edward B. Roth
By Attorneys
Fowler & Fowler.

UNITED STATES PATENT OFFICE.

EDWARD B. ROTH, OF ST. LOUIS, MISSOURI.

MEANS FOR MAKING WEDGES FOR SPLITTING STONE, &c.

SPECIFICATION forming part of Letters Patent No. 603,513, dated May 3, 1898.

Application filed August 19, 1897. Serial No. 648,798. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. ROTH, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented a certain new and useful Means for Making Wedges for Splitting Stone and the Like, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Heretofore in manufacturing wedges for splitting stone and the like the metal has been subjected to a number of distinct steps or operations. This incurs a waste of time and also necessitates the employment of a number of workmen, as it is found desirable to have each distinct step formed by a separate workman. By this method it has also been found necessary to form the head of the tool by hand labor, which greatly increases the expense of making the tool. Another objection to the old method is that the uniformity of the size and shape of the tools depended principally upon the accuracy of the workman's eye.

The object of my invention is to provide a method and means by which a pair of tools can be made by one continuous process by one workman with but a single heating of the metal and without the use of hand labor, and also to insure uniformity in the size and shape of the tools.

While my device has been designed especially for forming wedges such as are used in splitting stone, with slight modifications it can be adapted to make any tool having the same general form.

My invention consists in various novel features, all of which are described in the following specification and pointed out in the claims affixed hereto.

In the accompanying drawings, which illustrate a pair of dies made in accordance with my invention and a pair of wedges formed thereby, Figure 1 is a side elevation, on a reduced scale, of the dies and a part of a power-hammer in which they are secured. Fig. 2 is a side elevation of the dies; Fig. 3 is a top plan view of one of the dies. Fig. 4 is a section on the line 4 4 of Fig. 2. Fig. 5 is a section on the line 5 5 of Fig. 2. Fig. 6 is a section on the line 6 6 of Fig. 2. Fig. 7 is a view of a bar of steel out of which the wedges are made. Fig. 8 is a view of a pair of wedges in a partly-finished condition. Fig. 9 is a view similar to Fig. 8 with the wedges rotated one-fourth of a revolution on their axis, and Fig. 10 is a view of a pair of completed wedges.

Like marks of reference refer to similar parts in the several views of the drawings.

15 and 16 are two dies, one of which is secured in the upper or movable part 17 and the other in the lower or stationary part 18 of a power-hammer. The dies 15 and 16 are secured in the parts 17 and 18 by means of wedges 19 or in any other suitable manner. On each of the dies 15 and 16 is formed a level face 20, the object of which is to strike against that of the opposing die, and thus prevent the faces used in forging the tools from coming too close together and reducing the tool to too great an extent. The working faces upon each of the dies are an inclined face 21, a convex face 22, a concave face 23, and a face 24, in which are formed two depressions 25, corresponding to the form of head desired on the wedge or other tool. Connecting the depression 25 is a small concave depression 26.

27 is a cylindrical bar of steel of a size sufficient to make two wedges. 28 is the completed wedge, having formed on it two slanting surfaces 29 and a rounded head 30. The pair of wedges formed together are connected when completed by a small cylindrical piece of metal 31.

The mode of forming the wedges with my die is as follows: A cylindrical bar of steel 27, containing enough metal to make two wedges, is first thoroughly heated. The hammer is then set in motion and one end of the bar drawn out between the convex surfaces 22 until it is approximately of the form shown in Figs. 8 and 9. It is now finished between the inclined faces 21. During the time that it is shaped between both the faces 21 and 22 it is frequently turned a quarter of a revolution on its axis and placed between the concave faces 23 to reduce any lateral expansion caused by the working between the other faces. The other end of the bar is then drawn out and finished in the same manner. The center of the bar is then placed between the

faces 24 and rotated while the hammer is in motion until the heads 30 are formed, thus finishing two complete wedges, as shown in Fig. 10.

The convex faces 22 might be omitted and the drawing out be all done between the faces 21; but I prefer to use the faces 22, as by their use the drawing out can be done in a much more rapid and satisfactory manner.

The entire operation of forming two wedges can be done at a single heating of the metal and by one workman. The projecting faces 20 prevent the work from being reduced more than is desired.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A pair of dies for forming wedges and the like, having a pair of opposing inclined faces, a pair of opposing concave faces, and a pair of opposing flat faces preventing the other faces from coming in contact.

2. A pair of dies for forming wedges and the like, having a pair of opposing inclined faces, a pair of opposing convex faces, a pair of opposing concave faces, and a pair of flat faces preventing the other faces from coming in contact.

3. A pair of dies for forming wedges and the like, having a pair of opposing inclined faces, a pair of opposing faces each having two depressions corresponding to the form of head desired on the tool, and a pair of flat faces preventing the other faces from coming in contact.

4. A pair of dies for forming wedges and the like, having a pair of opposing inclined faces, a pair of opposing convex faces, a pair of opposing concave faces, a pair of faces having formed thereon two depressions corresponding to the form of head desired on the tool, and a pair of flat faces preventing the other faces from coming in contact.

In testimony whereof I have hereunto set my hand in the presence of the two subscribing witnesses.

EDWARD B. ROTH.

Witnesses:
A. C. FOWLER,
JOHN F. GREEN.