

A. BAYTON.
METHOD OR PROCESS OF FORMING HEADED RODS.
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1,106,860.

Patented Aug. 11, 1914.

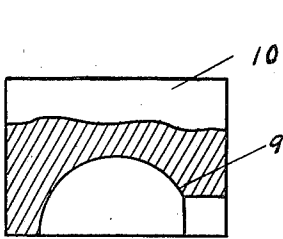
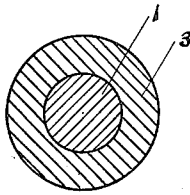


FIG. 1.

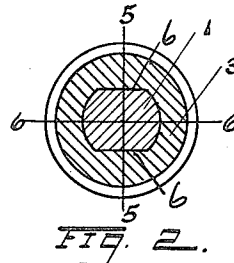


FIG. 2.

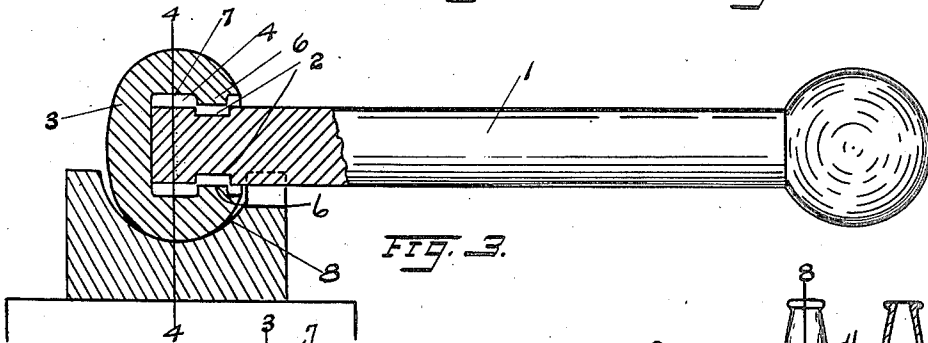


FIG. 3.

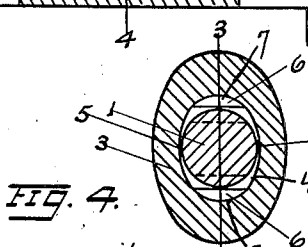


FIG. 4.

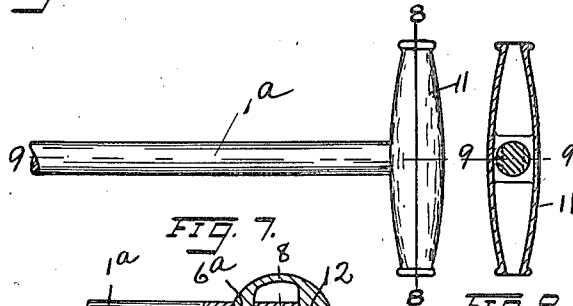


FIG. 7.

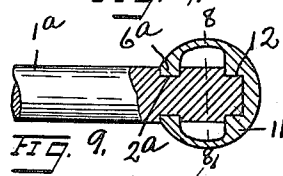


FIG. 9.

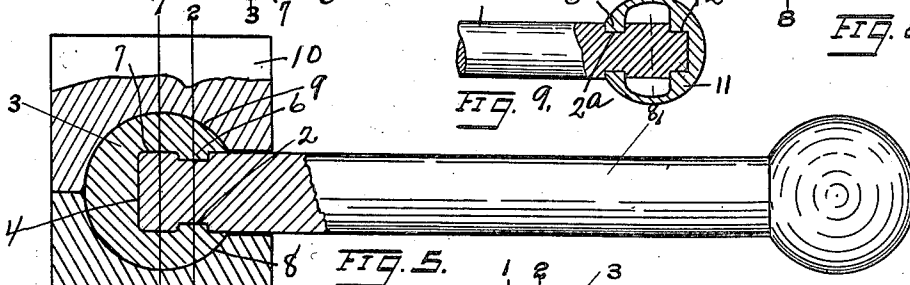


FIG. 5.

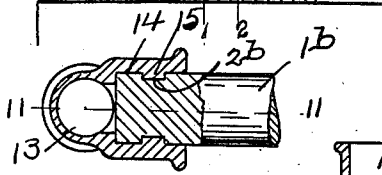


FIG. 10.

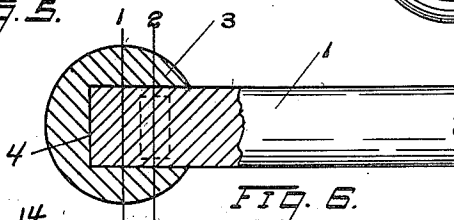


FIG. 6.

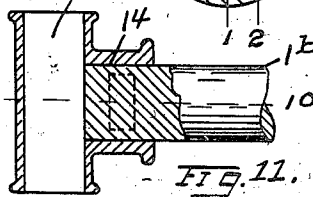


FIG. 11.

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UNITED STATES PATENT OFFICE.

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METHOD OR PROCESS OF FORMING HEADED RODS.

1,106,860.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT BAYTON, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in the Method or Process of Forming Headed Rods, of which the following is a specification.

This invention relates to processes for forming headed rods and consists in certain improvements therein as will be hereinafter fully described and pointed out in the claims.

The object of the invention is to secure heads on rods as for instance the heads to a vise handle or cutting tool. In devices of the character described, these heads are subjected to rather severe use and on the other hand, they are so used by the operator that it is desirable to have them smooth for convenient handling. Furthermore, in forming such rods as for vise handles it is desirable to place at least one head on the rod after the rod is in place in the vise screw head.

The means for carrying out the process are illustrated in the accompanying drawings as follows:—

Figure 1 shows a section on the line 1—1 in Figs. 5 and 6. Fig. 2 shows a section on the line 2—2 in Figs. 5 and 6. Fig. 3 shows a head in the process of forming, the rod and head being a section on the line 3—3 in Fig. 4. Fig. 4 shows a section on the line 4—4 in Fig. 3. Fig. 5 shows a section similar to the section shown in Fig. 3 on the line 5—5 in Fig. 2 with the head in a later stage of construction. Fig. 6 is a section on the line 6—6 in Fig. 2. Fig. 7 is an elevation of a rod with a different style of handle. Fig. 8 is a section on the lines 8—8 in Figs. 7 and 9. Fig. 9 is a section on the lines 9—9 in Figs. 7 and 8. Fig. 10 is a section on the line 10—10 in Fig. 11 showing the process adapted to a vise screw head. Fig. 11 is a section on the line 11—11 in Fig. 10.

1 marks the rod. The rod is put under a press or hammer and has a slot 2 cut in each side of it, these slots being straight and preferably with parallel sides, the bottoms forming square corners with the sides of the grooves and the sides forming engaging surfaces at right angles to the axis of the rod. The head 3 is ordinarily cast of malleable iron and has the opening 4 formed

in it of a size sufficient to permit the entry of the rod 1. The cross dimension of the opening between the sides 5 is approximately the diameter of the rod 1. The opening as will be observed is oval. The ribs 6 extend across the ends of the oval opening so that when the rod is in place in the opening, these ribs 6 will register with the grooves 2. The ribs are of a depth corresponding to the depth of the grooves and also correspond approximately in size to the grooves, the size of the ribs being such as to make a tight fit in the grooves. The cross dimension of the opening between the ends 7 of the opening is greater than the diameter of the rod 1 in order to permit of the depth of the ribs 6 approximating the depth of the groove 2. It will be understood that the ribs 6 are a sufficient distance apart to permit the entry of the rod 1 between the ribs as shown in Fig. 3. The rod is placed in the opening as shown in Fig. 3 and the head placed in a die 8, a similar die 9 being carried on the plunger 10 of the hammer. The hammer is of sufficient force to press the head 3 into spherical shape, the original shape of the head being just sufficiently oval so that when the rib 6 is forced into the groove 2 and the end 7 into contact with the rod, the head as a whole assumes spherical shape, the malleable metal having sufficient ductility to take on the new shape and form a continuous contact with the rod. To accomplish this continuous contact and consequent better union, it is desirable to form the opening 4 of such shape as to provide just sufficient metal to accomplish this purpose when the head has been brought to its final or desired shape. This forms a perfect head with a continuous and unobstructed outer surface and at the same time the union between the head and the rod is secure for all purposes. The hammering necessary to shift the shape burnishes the head to a certain extent and this is also desirable. I have described the process as applied to spherical heads but it is adapted to other heads as shown in Figs. 7, 8 and 9 wherein an elongated handle of an ordinary cutting tool is shown and in Figs. 10 and 11 wherein a vise screw head is shown.

The structure shown in Figs. 7, 8 and 9 comprises the head 11, the handle being hollow to save weight. In this structure there

is a socket 12 in the outer wall into which the end of the rod 1^a extends, the sides of the end of the rod being flattened at the same time as the slotting is done. In this way the
 5 end of the rod assists in preventing the turning of the handle on the rod. The rod is also provided with the slot 2^a corresponding to the slot 2 and the ribs 6^a come flush with the surface of the handle. In other ways
 10 the process as heretofore described is used in assembling the handle on the rod.

In Figs. 10 and 11 a vise screw head is shown, the head having the transverse opening 13 to receive a vise handle similar to the
 15 handle shown in Fig. 5. The rod 1^b has the slot 2^b similar to the slot 2 and the head has the opening 14 similar to the opening 4 and the rib 15 similar to the rib 6. The process of assembling is similar to that heretofore
 20 described, that is, the rod 1^b is slotted and the head is cast with an opening out of round and of sufficient size to receive the rod. After the rod is in place, the shank of the head is compressed carrying the rib 15
 25 into the slot 2^b closing the shank around the rod.

What I claim as new is:—

1. The method of forming headed rods which consists in taking a rod provided with
 30 a reduced part near one end, taking a malleable head provided with an opening of a size to receive the rod end, there being a variation in the wall of the head increasing the thickness of the same, placing the

rod end in the opening with the reduced portion opposite the part of the wall having the variation of increased thickness, and compressing and shaping the outer surface of the head by pressure exerted simultaneously over the greater part of the surface
 40 of the head and forcing the walls of the head about the rod, the metal of the wall having the variation of increased thickness being forced into the reduced portion of the rod and thus securing the head in intimate and fixed relation with the rod.
 45

2. The method of forming headed rods which consists in taking a rod and slotting the same forming a reduced part near one end, taking a malleable head with a greater
 50 than normal dimension in one direction and an oblong opening of a size to receive the rod end there being an inwardly projecting rib in the head corresponding to the slot in the rod, placing the rod end in the opening,
 55 compressing and shaping the head to normal form, and compressing the walls thereof about the rod thus forcing the inwardly projecting rib into the slot so as to secure the head in intimate and fixed relation with the
 60 rod.

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

ALBERT BAYTON.

Witnesses:

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 P. W. SMITH.