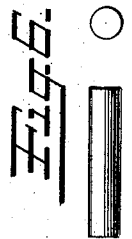
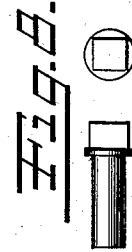
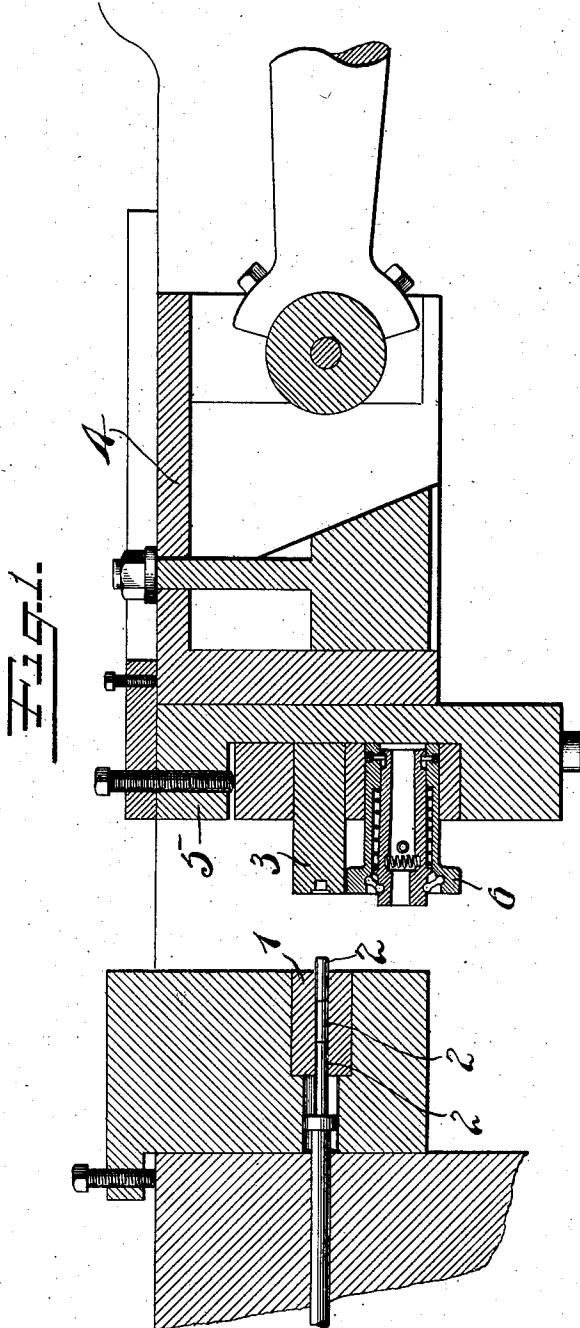


C. GLOVER & C. HOLT.  
HEAD SHAPING MACHINE.  
APPLICATION FILED FEB. 5, 1912.

1,027,383.

Patented May 21, 1912.

2 SHEETS-SHEET 1.



Witnesses:  
*Charles Reed*  
*Ide McKunzie*

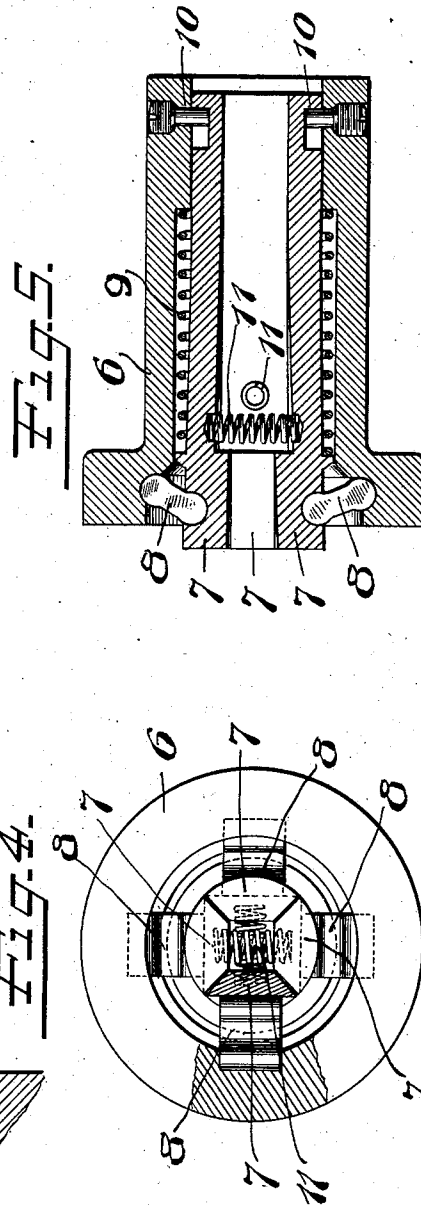
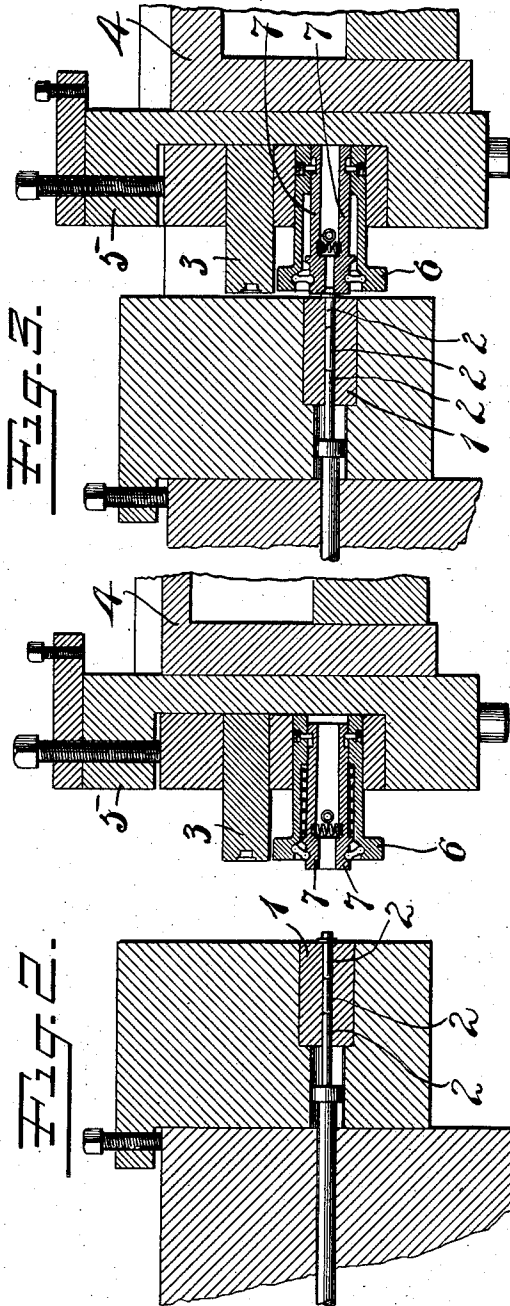
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

CHARLES GLOVER AND CHARLES HOLT, OF NEW BRITAIN, CONNECTICUT, ASSIGNORS,  
BY MESNE ASSIGNMENTS, TO THE AMERICAN HARDWARE CORPORATION, OF NEW  
BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

## HEAD-SHAPING MACHINE.

1,027,383.

Specification of Letters Patent.

Patented May 21, 1912.

Original application filed March 31, 1910, Serial No. 552,505. Divided and this application filed February 5, 1912. Serial No. 675,519.

*To all whom it may concern:*

Be it known that we, CHARLES GLOVER and CHARLES HOLT, citizens of the United States, residing at New Britain, county of  
5 Hartford, and State of Connecticut, have invented certain new and useful Improvements in Head-Shaping Machines, of which the following is a full, clear, and exact description.

10 Our invention relates to an improved means for forming heads on bolts and other generally similar metallic devices and this application is a division from our former application Serial No. 552,505 filed March  
15 31, 1910.

The present case relates particularly to certain structural details by which the proper cross-sectional shape to the head is given.

20 In the drawings: Figure 1 is a view of certain parts of our improved machine, such parts being shown in section; Fig. 2 is a similar view partly broken away, the parts being shown in a different position; Fig. 3  
25 is a similar view the parts being shown in still another position; Fig. 4 is a relatively enlarged end elevation partly in section of the shaping die; Fig. 5 is a central longitudinal section of the parts shown in Fig.  
30 4. Fig. 6 is a side and end elevation of a blank; Fig. 7 is a side and end elevation of a blank with an unfinished head; Fig. 8 is a side and end elevation of a blank having a finished head thereon of one of the  
35 shapes capable of being formed by the use of our improved shaper.

The main frame and associated parts of the machine proper are such as are embodied in the usual so-called "heading"  
40 machine and hence require no special showing or description.

1 represents a holder suitably constructed to hold a blank, or a series of blanks, as indicated at 2—2. This blank is usually  
45 formed of wire and it is upon the end of this wire that the head is to be formed and shaped.

3 represents a swaging die which is mounted upon a reciprocating carrier 4  
50 which is power driven toward and from the holder 1. The swaging die 3 has a cavity in its front face which is arranged to line

up with the exposed end of the blank 2 which is to be headed. The aforesaid cavity is of generally cylindrical form and is enlarged at its outer end so as to form a flange at the base of its head such as shown in  
55 Fig. 7. The swaging die 3 is mounted in a head 5 which is mounted at the front of the carrier 4 so that it may be shifted transversely, suitable means (not shown) being  
60 provided for shifting said head 5 so as to move the swaging die 3 into and out of line with the blank 2. The head 5 also carries a head shaping mechanism, or what we may  
65 term the shaping die, which gives to the head the desired cross-sectional outline. The preferred construction of said shaping die enlarged is shown in Figs. 4 and 5 and it will  
70 be seen to comprise an external sleeve 6 having slidably mounted therein a plurality of jaws 7—7. 8—8 are toggles arranged between the sleeve 6 and the outer ends of the jaws 7—7. These toggle connections are  
75 such that when the jaws 7 are projected as shown in Fig. 5 their outer ends will stand apart to the maximum degree. When however, these jaws are pushed back into the sleeve as shown in Fig. 3 the toggles will  
80 move said jaws toward each other so as to compress and shape anything that may be interposed between them. 9 is a spring representing one convenient means for projecting said jaws. 10—10 are stop pins to  
85 limit the forward movement of the jaws. 11—11 are springs which constitute one convenient means for moving the outer ends of the jaws 7 apart when said jaws are projected by spring 9. The movement of the  
90 carrier head 5 is such that the shaping die may be brought into position in front of the blank 2, this positioning of the shaping die being alternate with that of the swaging die 3.

In operation the blank 2 to be formed is  
95 moved to and held in the position shown in Fig. 1. The swaging die 3 is shown in that figure in line with said blank. The carrier 4 is now advanced so as to cause said swaging die 3 to swage the exposed end of the  
100 blank 2 and form thereon a head, for example such as shown in Fig. 7. The carrier 4 is then retracted and the head 5 is shifted transversely to the position shown in Fig. 2.

On the next forward excursion of the carrier 4 the shaping die is moved over the head which is formed upon the blank end as the die advances the jaws 7 will be checked 5 when they encounter the flange of the said head, whereupon the continued advance of the head 5 with the sleeve 6 will cause the jaws 7 to be moved toward each other and so as to contract upon sides of the head and 10 transform it to the shape for which the jaws are designed, for example the shape shown in Fig. 8 in which it will be seen there are a plurality of flat side walls meeting at sharp angles. Inasmuch as the jaws encounter the metal at the middle or center 15 line of each of the jaws, it is obvious that the metal of the head will be caused to flow in both directions from said jaw centers, or toward the corners so as to fill out properly 20 said corners and thereby make an angular head which will effectively receive a suitable tool such as a wrench. The final position of the shaping members and associated parts is shown in Fig. 3. When the head 25 is thus finished the carrier 4 is retracted and the finished article is discharged. Thereafter, the aforesaid cycle of operation is repeated. Since we have shown no cutter for clipping off the finished blanks as they 30 are successively headed and shaped, we have shown herein a series of blanks already cut to proper lengths, although obviously that length may be varied at will, and said blanks may be cut off either before or after

the heads are formed by the use of any suitable cutting off mechanism. 35

We have shown only one design for the finished head, but it should be understood that this design may be modified in a variety of ways. 40

What we claim is:—

1. In a machine for producing polygonal heads on rods, a shaping die comprising an external sleeve element and a plurality of internal shaping elements movable both 45 radially and longitudinally within the outer sleeve element, and each of said internal elements having at its outer end an inner single flat shaping face, all of said internal elements coacting to produce said polygonal 50 shape, and toggle connections between said inner elements and said outer sleeve element for producing the aforesaid radial movement.

2. In a machine for forming polygonal 55 heads, an axially movable shaping die comprising at least three shaping jaws arranged concentrically around the die axis, springs for opening the jaws, and toggles for moving said jaws toward the axis of said dies 60 whenever the axial movement of the die presses said jaws against a fixed object.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."