

(No Model.)

E. ANDERSON.
BOLT.

No. 411,000.

Patented Sept. 17, 1889.

Fig. 1.

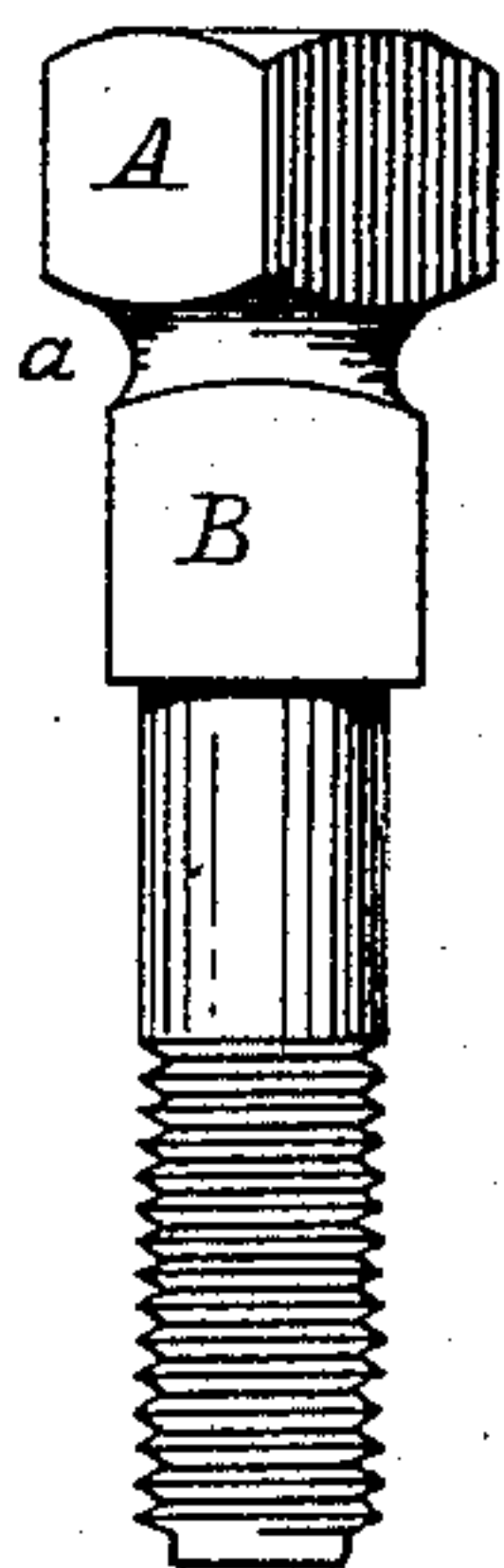


Fig. 3.

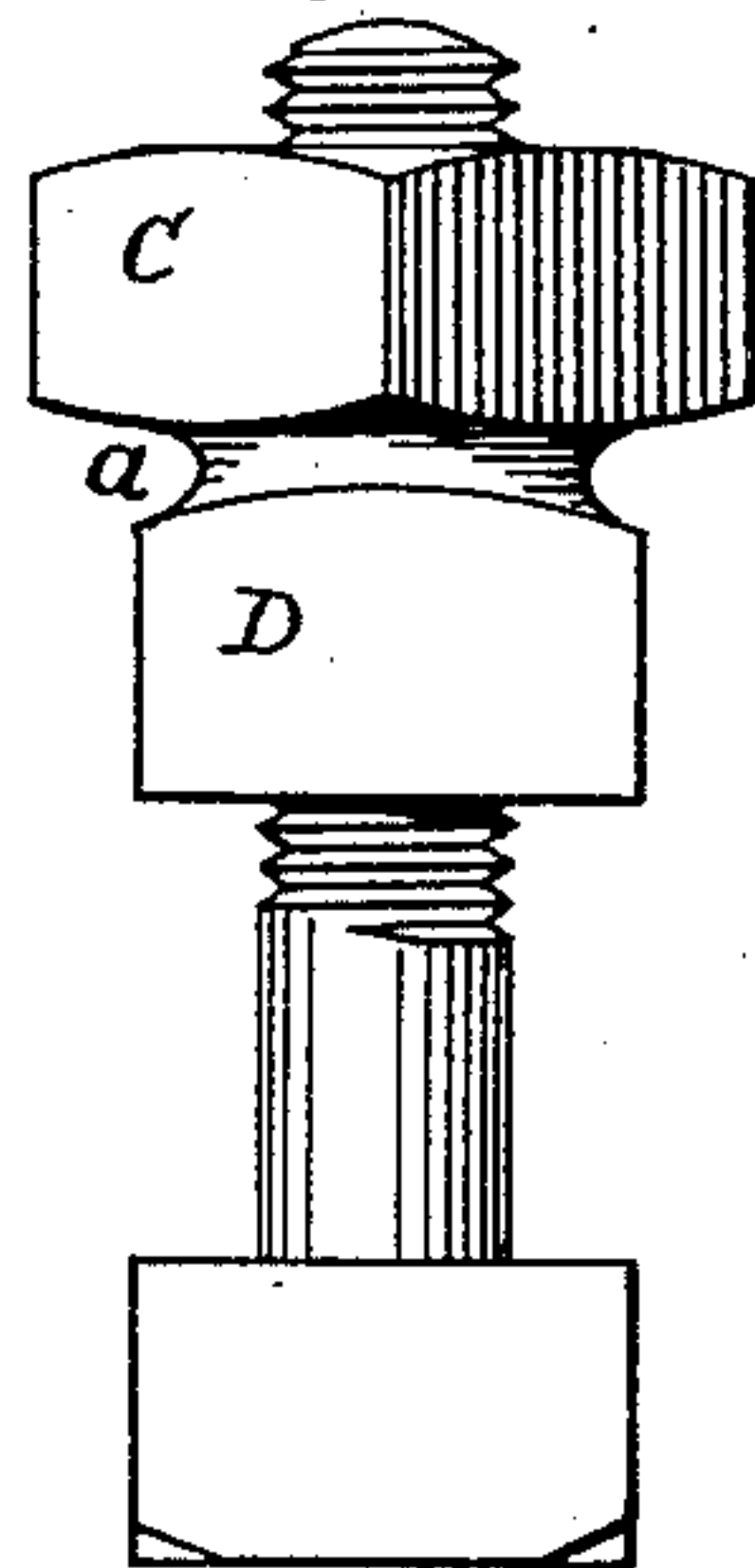


Fig. 5.

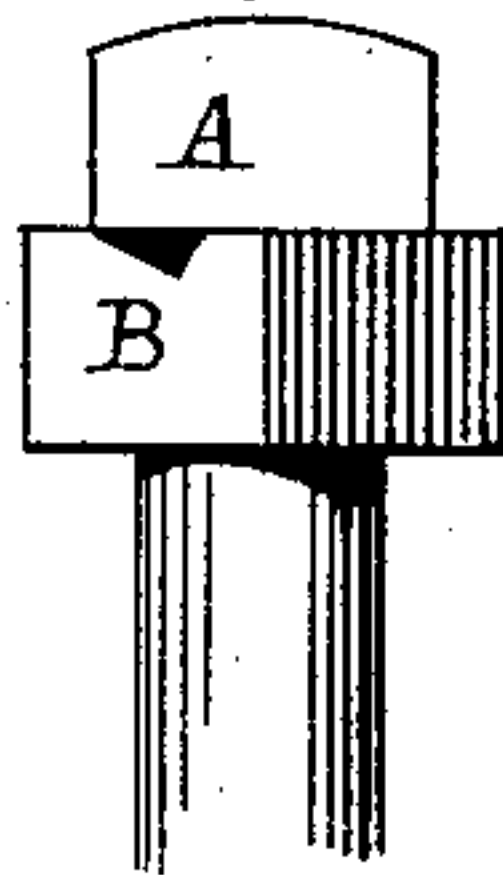


Fig. 4.

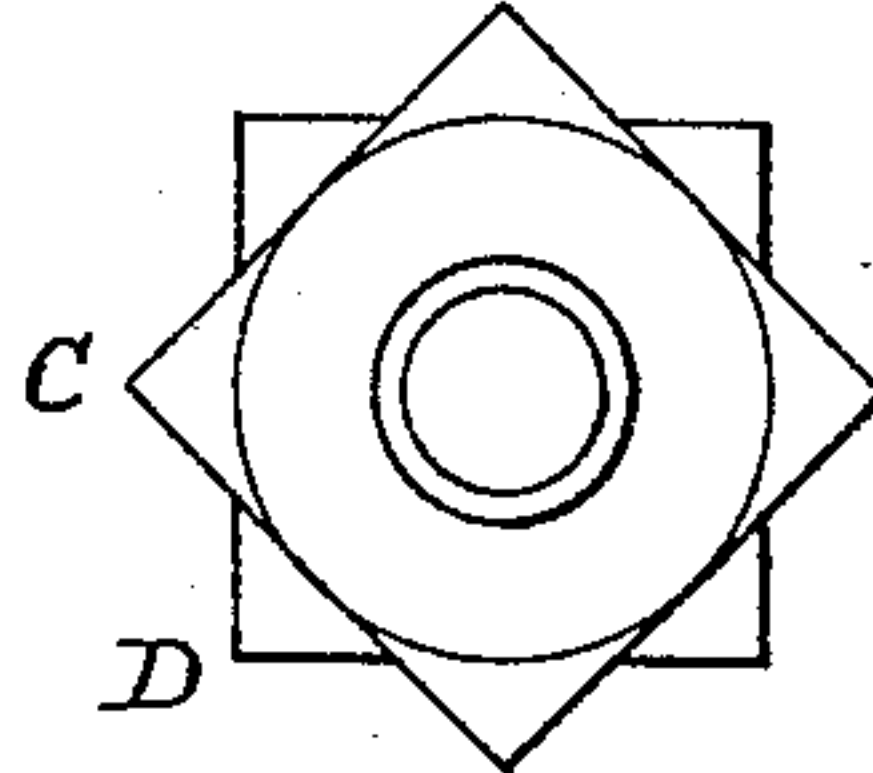


Fig. 2.

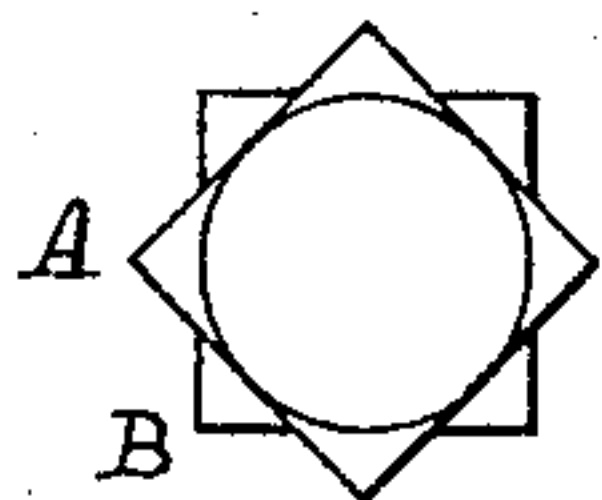
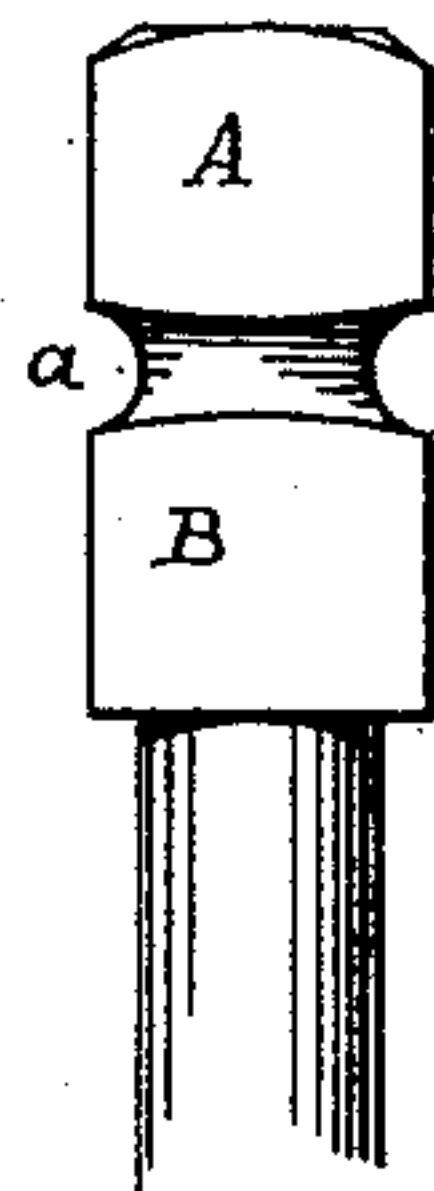


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

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Application filed July 12, 1889. Serial No. 317,270. (No model.)

To all whom it may concern:

Be it known that I, EUCLID ANDERSON, a citizen of the United States, residing in Peekskill, county of Westchester, and State of New York, have made a new and useful invention in Bolt-Heads, of which the following is a specification.

My invention relates particularly to the form of bolt-heads or nuts as concerns their adaptability to the use or application of a wrench.

The most obvious and usual method of forming a bolt-head, to be turned by the use of a wrench, is to make it four-sided or square. This form offers the greatest possible mechanical advantage, but in many cases cannot be used because of the room required for the swing of the wrench. The usual method of overcoming this objection is to increase the number of sides from four to six or more; but by so doing much of the mechanical advantage connected with the square head is lost, for unless the wrench fits more or less exact the corners soon become rounded and their efficiency impaired.

The object of my invention is to produce a bolt-head or nut having the advantages of the square nut and at the same time possessing even to a greater degree than the hexagonal form the property of being manipulated by a wrench in a contracted place. I attain this object in the manner shown in the accompanying drawings, in which—

Figures 1 and 2 are an elevation and plan of a bolt-head embodying my invention. Figs. 3 and 4 are an elevation and plan of a nut. Fig. 5 is a modified form of the others. Fig. 6 shows a method of forming the bolt-head.

As will be seen, the head is formed of two square sections, one being formed or set so that its sides form an angle of forty-five degrees with the sides of the other, their projection on a plane perpendicular to their com-

mon axis showing the symmetrically-angled figure shown in Figs. 2 and 4. This forms virtually an octagonal or eight-sided head, yet retains the desirable features of the simple square nut.

It is obvious that where height is no objection several sections of the head may be used. Thus three sections symmetrically arranged would give twelve sides, and so on.

For most purposes I find that by using square rods or pieces for the heads or nuts and turning therein a groove, as shown at *a* in Fig. 6, the two sections can on being heated be twisted into position shown in Fig. 1 without interfering materially with the proper strength. Where a very good quality of metal is used, the twisting can be done without heating.

Where the extra height due to the groove is objectionable, the form may be produced by milling or other methods. Fig. 5 shows a head formed in this way without a groove.

Bolt-heads or nuts of this form are not of course desirable in all cases, on account of the increased height; but for many purposes they are very desirable. The form is well suited for most kinds of set-screws and for the bolting together of narrow flanges, &c.

I claim—

1. A bolt-head formed from one piece of metal into two square sections, one above the other, one section having its sides stand at an angle of forty-five degrees with the sides of the other, substantially as shown.

2. A bolt-head formed from one piece of metal into two or more sections, arranged one above another, the relative position of their sides being symmetrically angled, substantially as shown and described.

EUCLID ANDERSON.

Witnesses:

F. ANDERSON,
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