

No. 699,617.

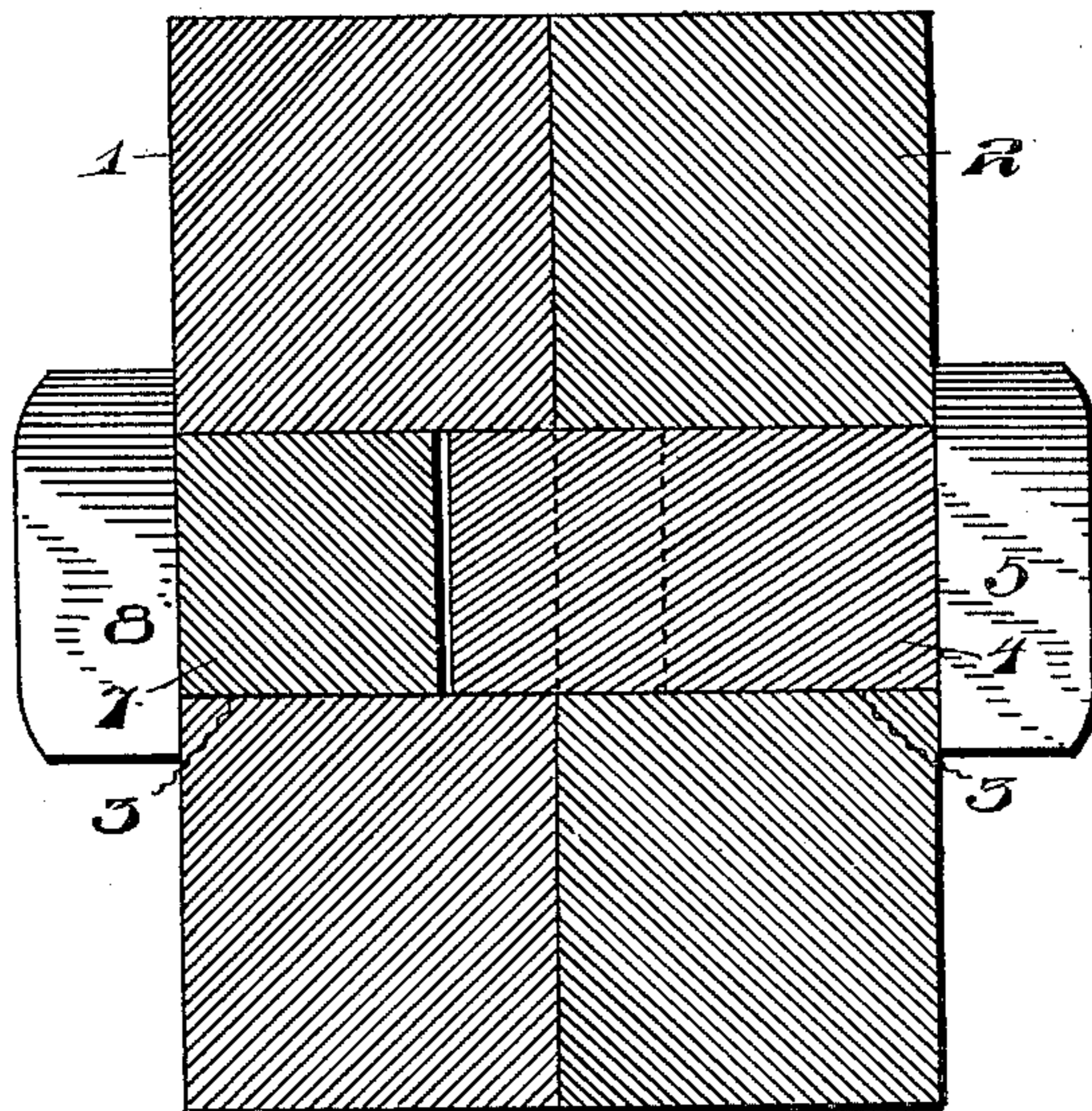
Patented May 6, 1902.

O. C. EARL.  
BOLT.

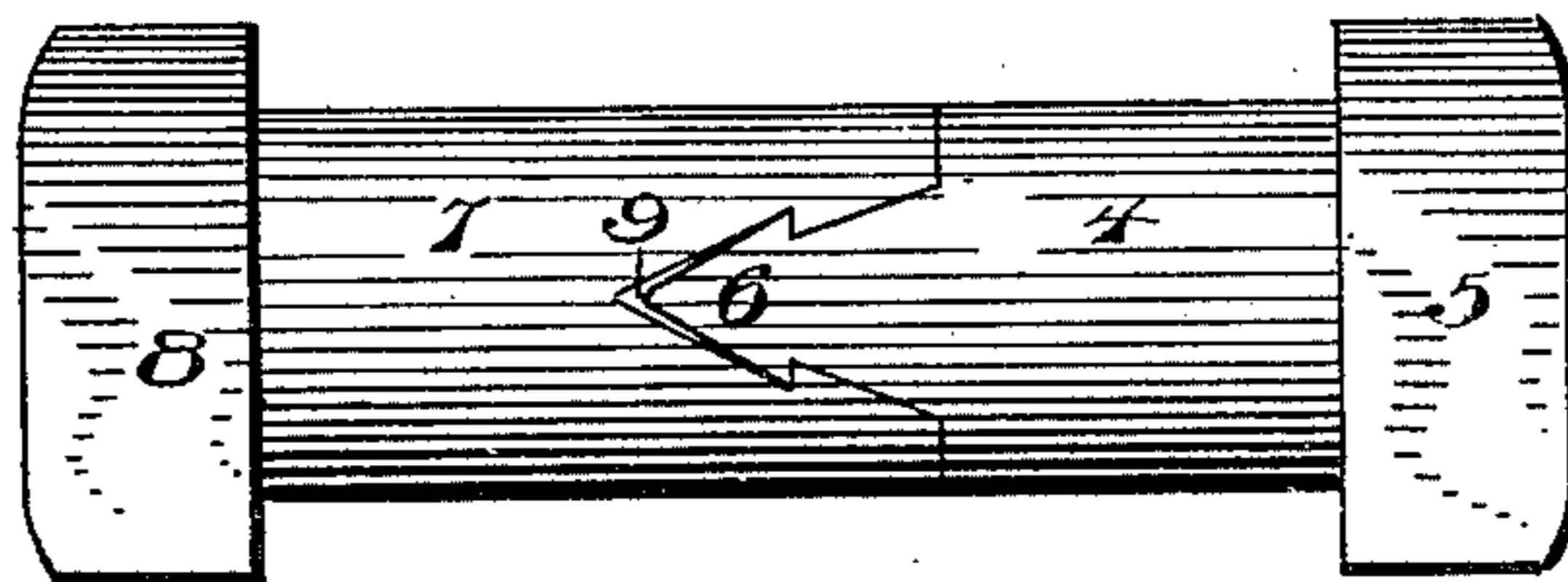
(Application filed Sept. 28, 1900. Renewed Oct. 12, 1901.)

(No Model.)

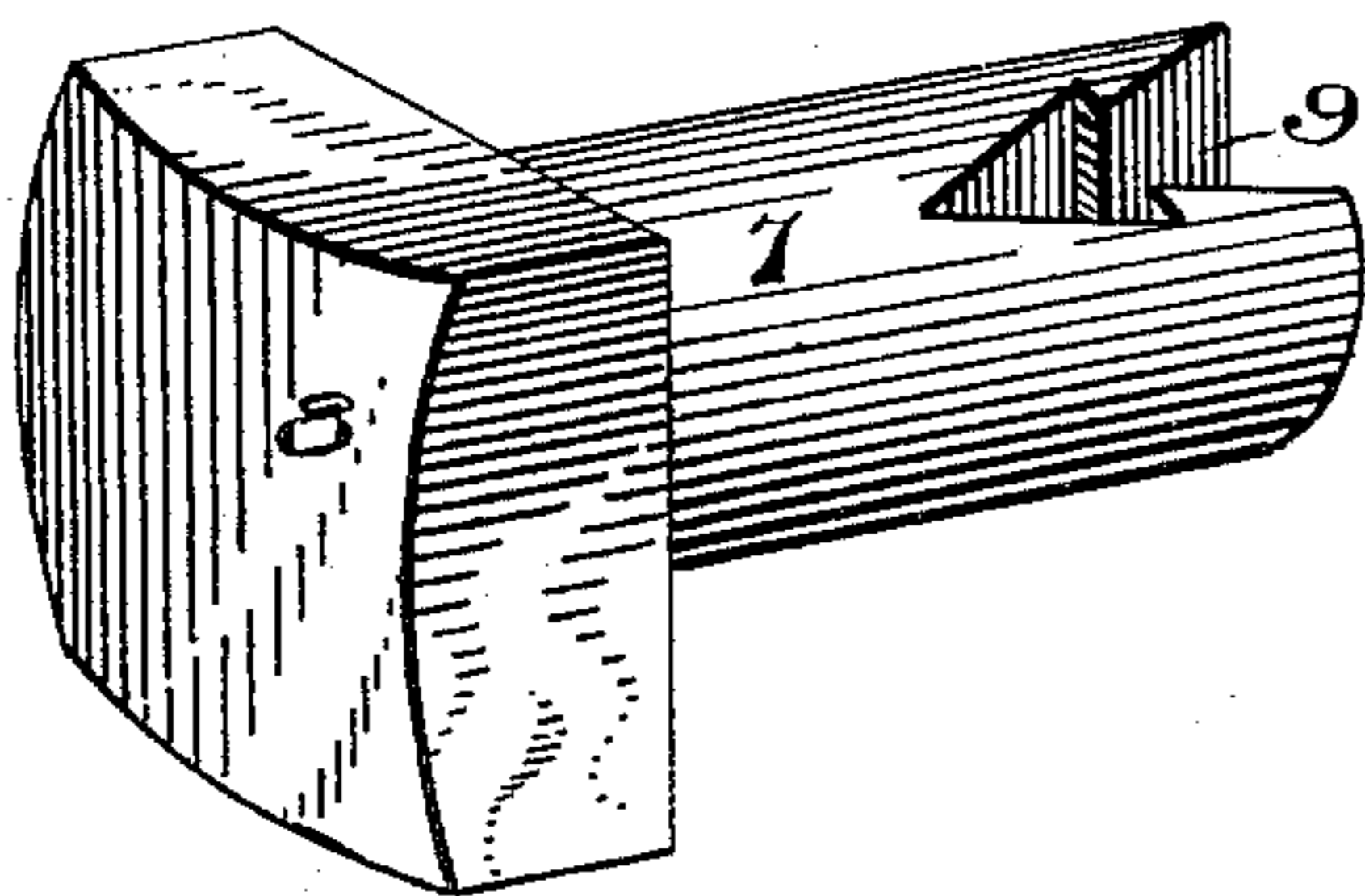
*Fig. 1.*



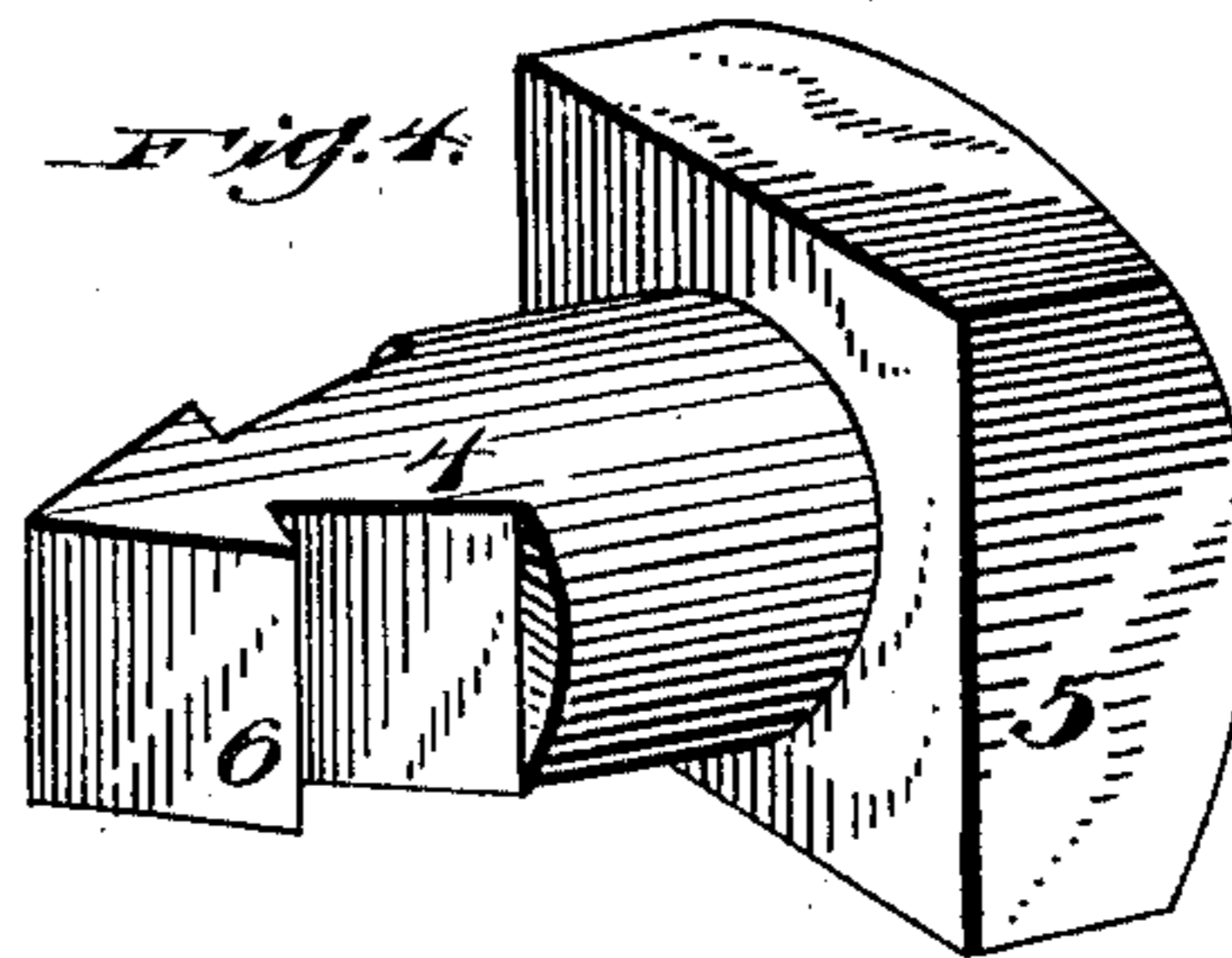
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

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## BOLT.

SPECIFICATION forming part of Letters Patent No. 699,617, dated May 6, 1902.

Application filed September 28, 1900. Renewed October 12, 1901. Serial No. 78,486. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER C. EARL, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bolts, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in bolts, and has for its object the provision of novel means whereby threads and nuts are dispensed with.

15 The herein-described invention consists of two members, a male member and a female member, and each of said members carries a head, the male member being provided with an arrow-shaped projection formed upon the body portion of the bolt and the female member being provided with an arrow-shaped recess, the latter being also formed in the body portion of the female member of the bolt.

20 In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

30 Figure 1 is a vertical sectional view of two plates or blocks joined together by my improved bolt. Fig. 2 is a side elevation of my improved bolt. Fig. 3 is a perspective view of the female member of the bolt. Fig. 4 is a like view of the male member of my improved bolt.

35 Referring to the drawings by reference-numerals, 1 and 2 represent plates or blocks joined together by my improved bolt, said blocks having formed therein openings 3, which are adapted to receive the male and female body portions of the bolt.

40 The reference-numeral 4 indicates the male member of the bolt, carrying a head 5 on one end and an arrow-shaped projection 6 on its engaging end.

45 The reference-numeral 7 indicates the female member, carrying a head 8 and having formed therein at its other end an arrow-shaped recess 9, which is adapted to receive the arrow-shaped projection 6.

50 The forming of the arrow or dart-shaped head 6 on the male member 4 of the bolt pro-

duces shoulders 6', which are at right angles to the axis of the bolt and receive the ends of the prongs 7', which are formed by recessing the end of the female member. The interior shoulders 8' of the female member engage with the shoulders 9' on the arrow or dart shaped head 6, the inclined side faces of said head engaging on the inclined faces of the prongs 7', and as the pressure of the two members against each other is increased the prongs 7' are spread apart by the wedge action sufficiently to permit the head 6 to pass into the correspondingly-shaped recess 9 and the shoulders 9' to engage the shoulders 8' and lock the members together. It will be observed that when the members are in locked position the bolt is of equal diameter throughout, the same as though constructed of a single solid piece.

60 The operation of my improved bolt is as follows: The female member is first placed in position in one of the blocks or plates to be joined together and firmly held in position until the male member is driven home into the recess 9. The side walls will slightly spring, allowing the arrow-shaped projection 6 to enter therein and wedge itself in the female member. The interior shoulders of the arrow-shaped recess and the shoulders formed upon the arrow-shaped projection will serve to retain the bolt in a locked position, as shown in Fig. 2 of the drawings, the heads 5 and 8 of the bolts serving to clamp the blocks or plates together.

65 From the above description the many advantages obtained by the use of my improved bolt will be readily apparent, and it is thought a further detail description thereof is unnecessary. It will be seen that my improved bolt can be applied with great advantage for many purposes and that the same will be effectually locked when driven home.

70 It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

75 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

80 In a device of the character described, a round shank, a head on one end thereof, said member having formed on opposite sides of

its free end a single pair of inclined cut-away portions, a single pair of shoulders on said portions, and a single arrow-shaped projection made integral with said free end, in combination with a round shank, a head on one end thereof, the other end having formed therein a single pair of inclined recesses, a single pair of shoulders for the reception of the said arrow-shaped projection whereby  
10 the two members are driven into positive

locking engagement with one another and when in this position the said round shanks are of uniform thickness throughout, substantially as described.

In testimony whereof I affix my signature 15  
in the presence of two witnesses.

OLIVER C. EARL.

Witnesses:

JOHN NOLAND,  
H. C. EVERT.