

No. 725,495.

PATENTED APR. 14, 1903.

C. B. SHAW & W. B. KNIGHT.

FUSIBLE LINK.

APPLICATION FILED APR. 28, 1902.

NO MODEL.

Fig. I.

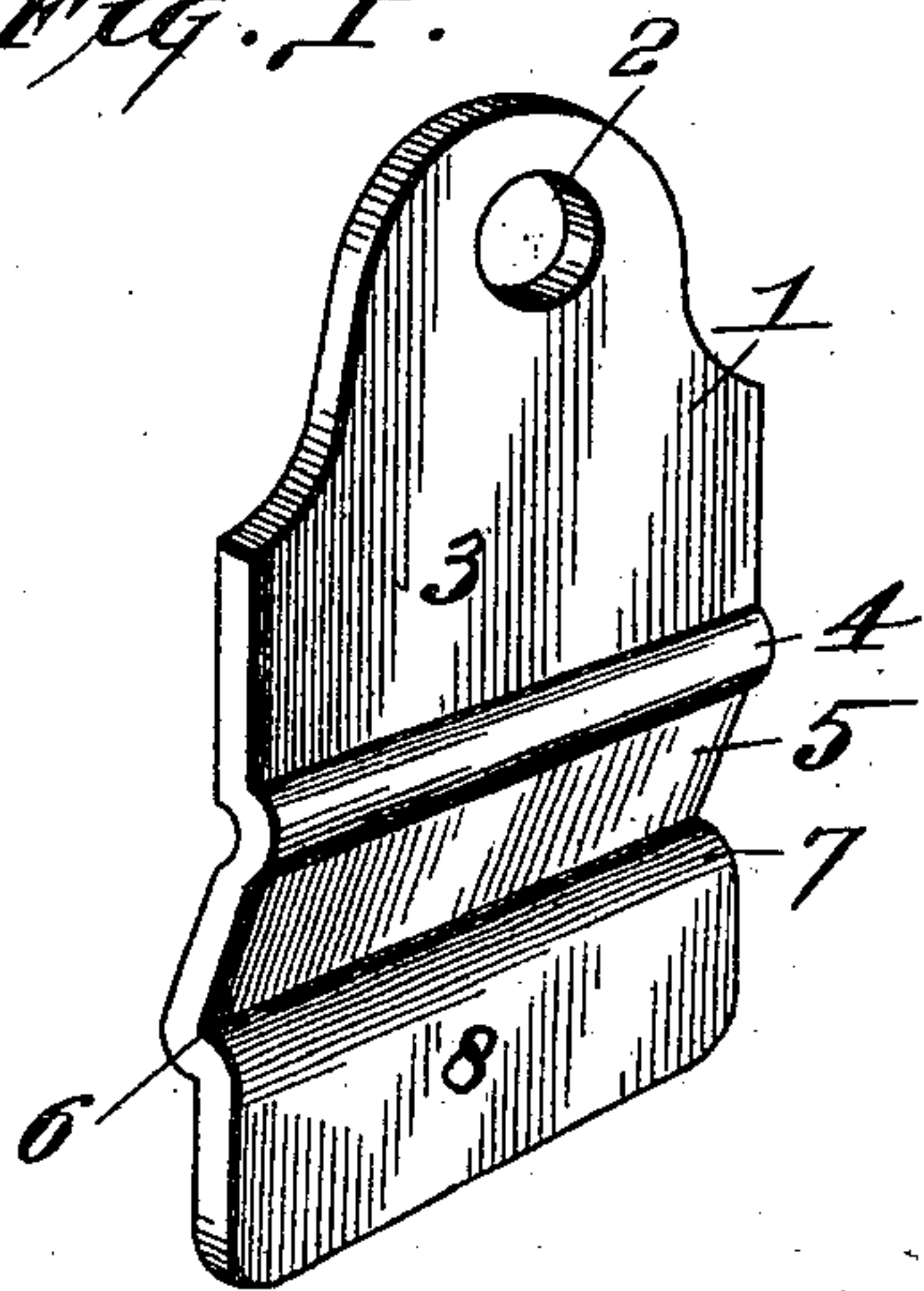


Fig. II.

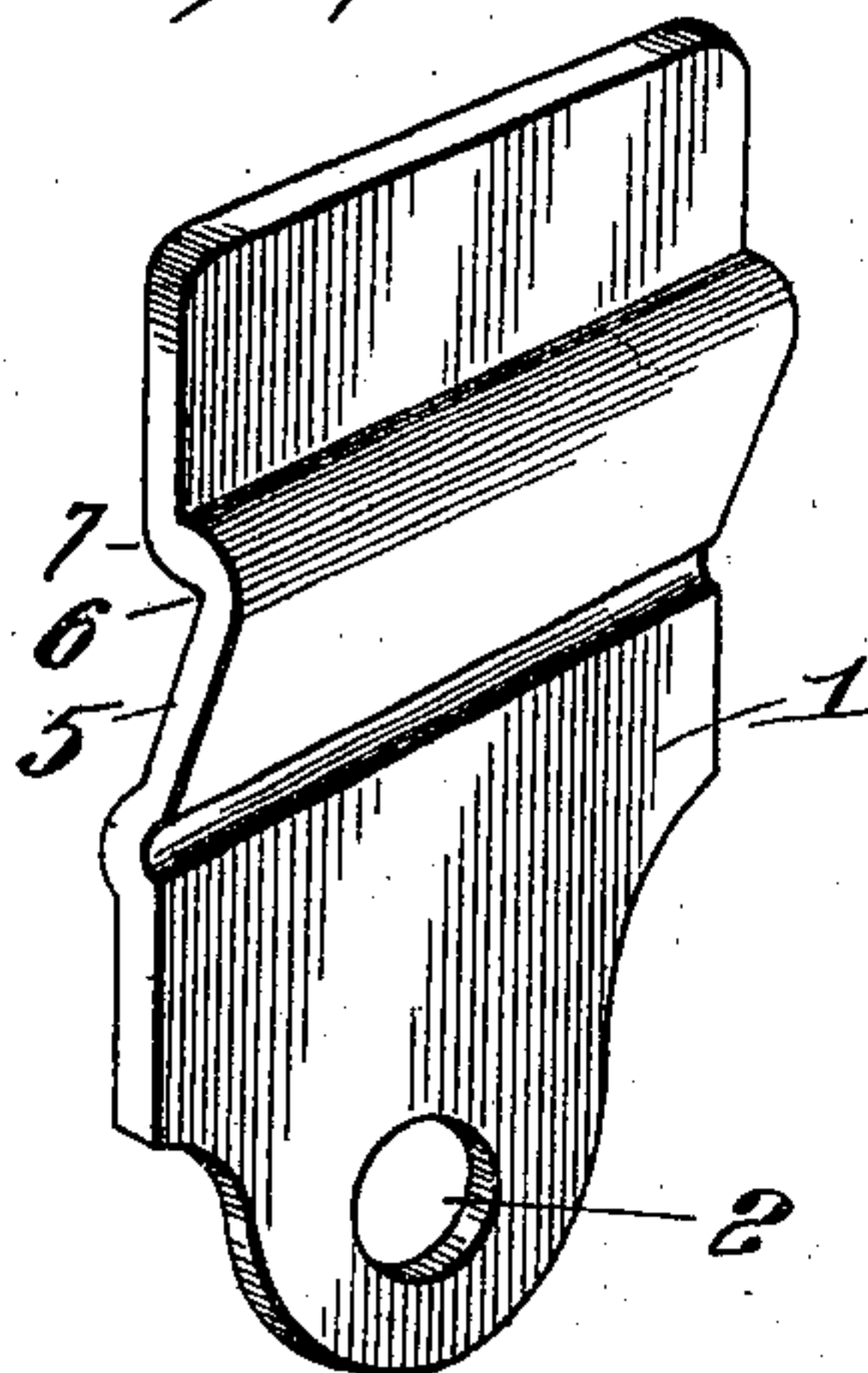


Fig. III.

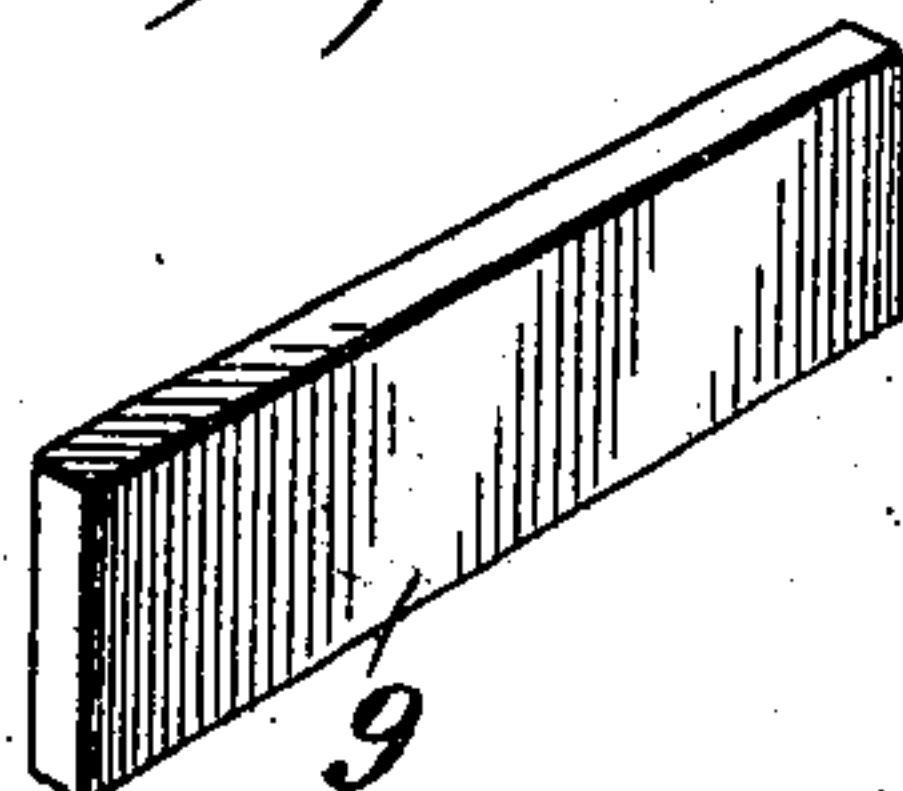


Fig. IV.

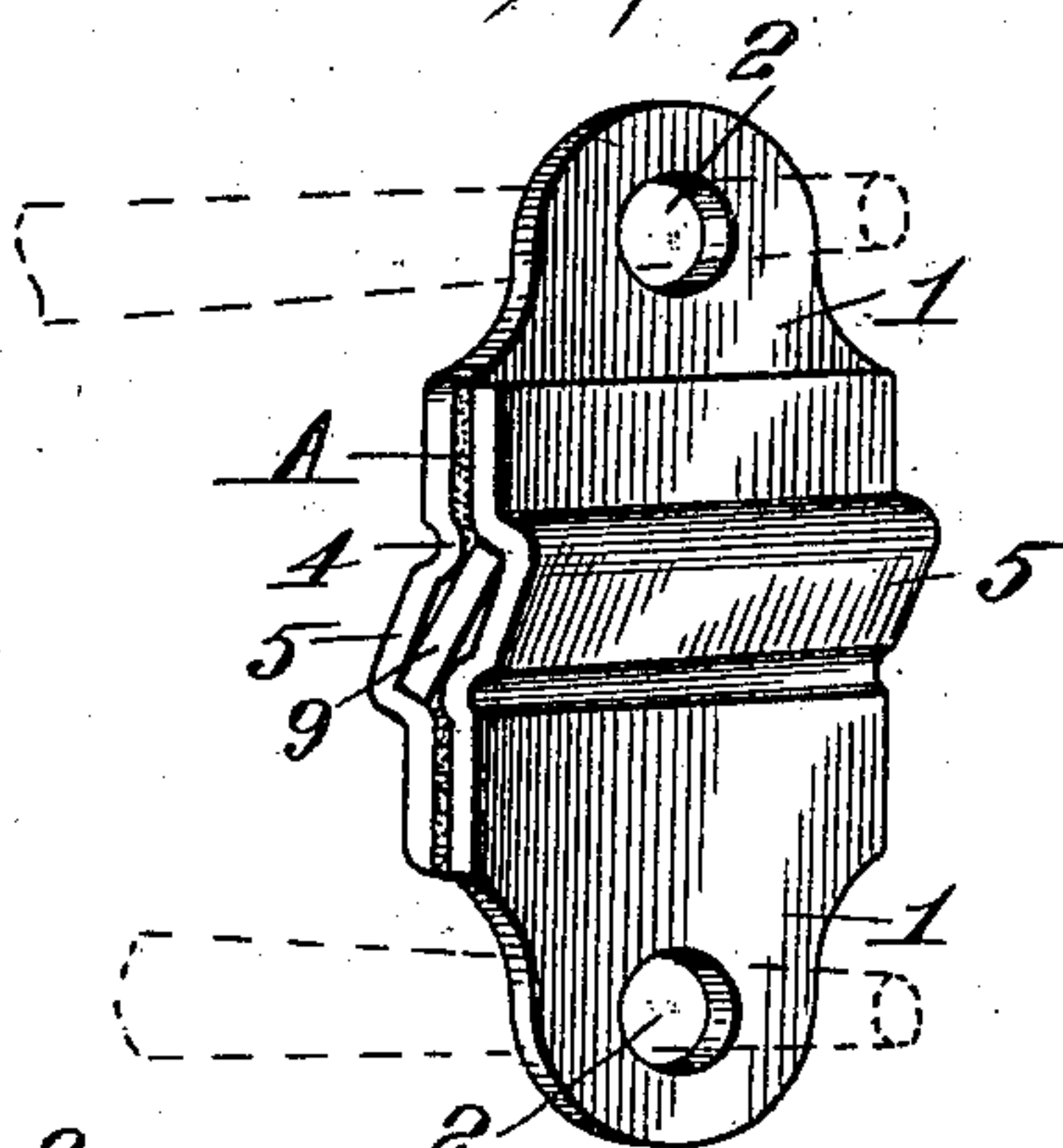


Fig. VII.

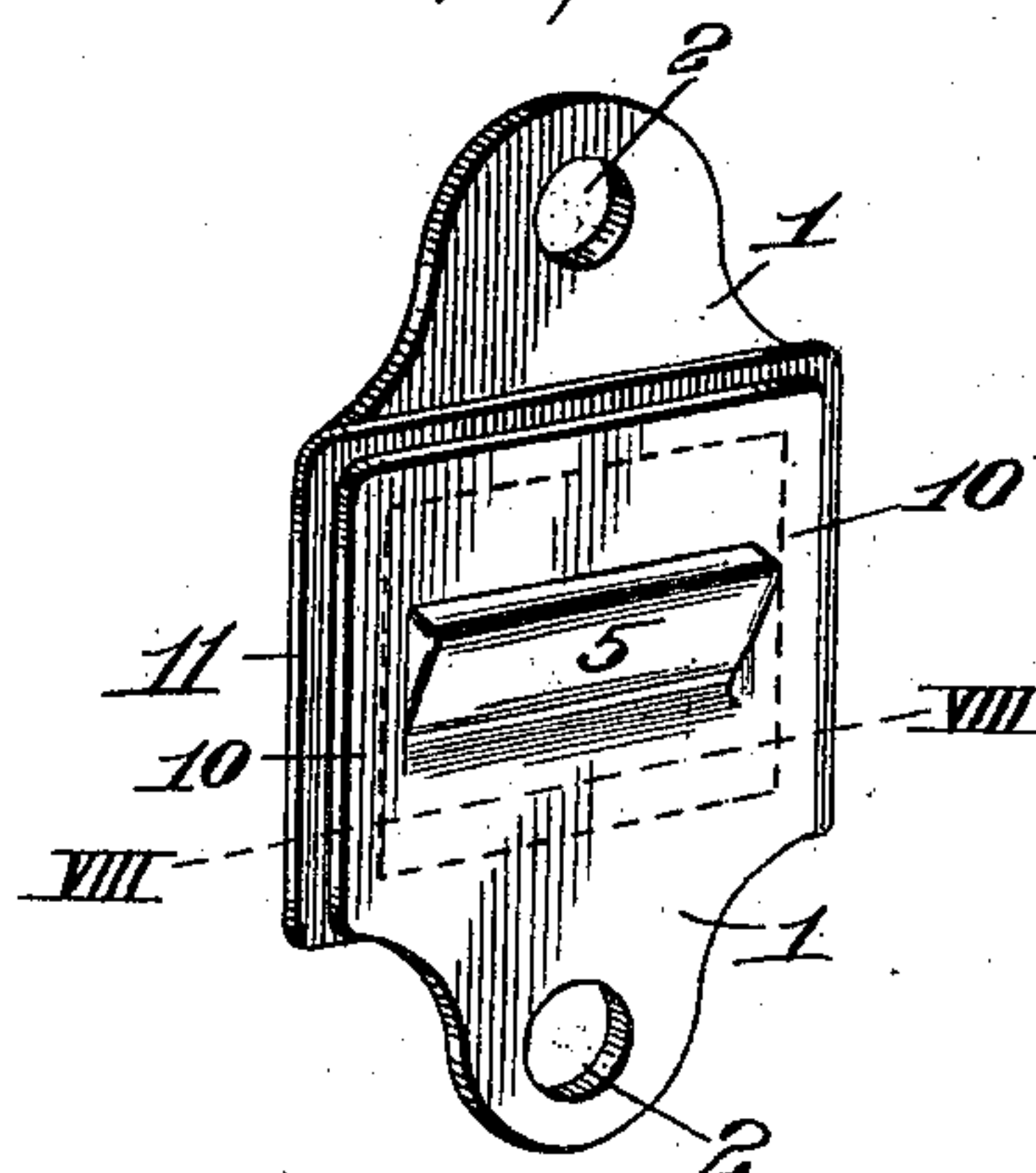


Fig. V.

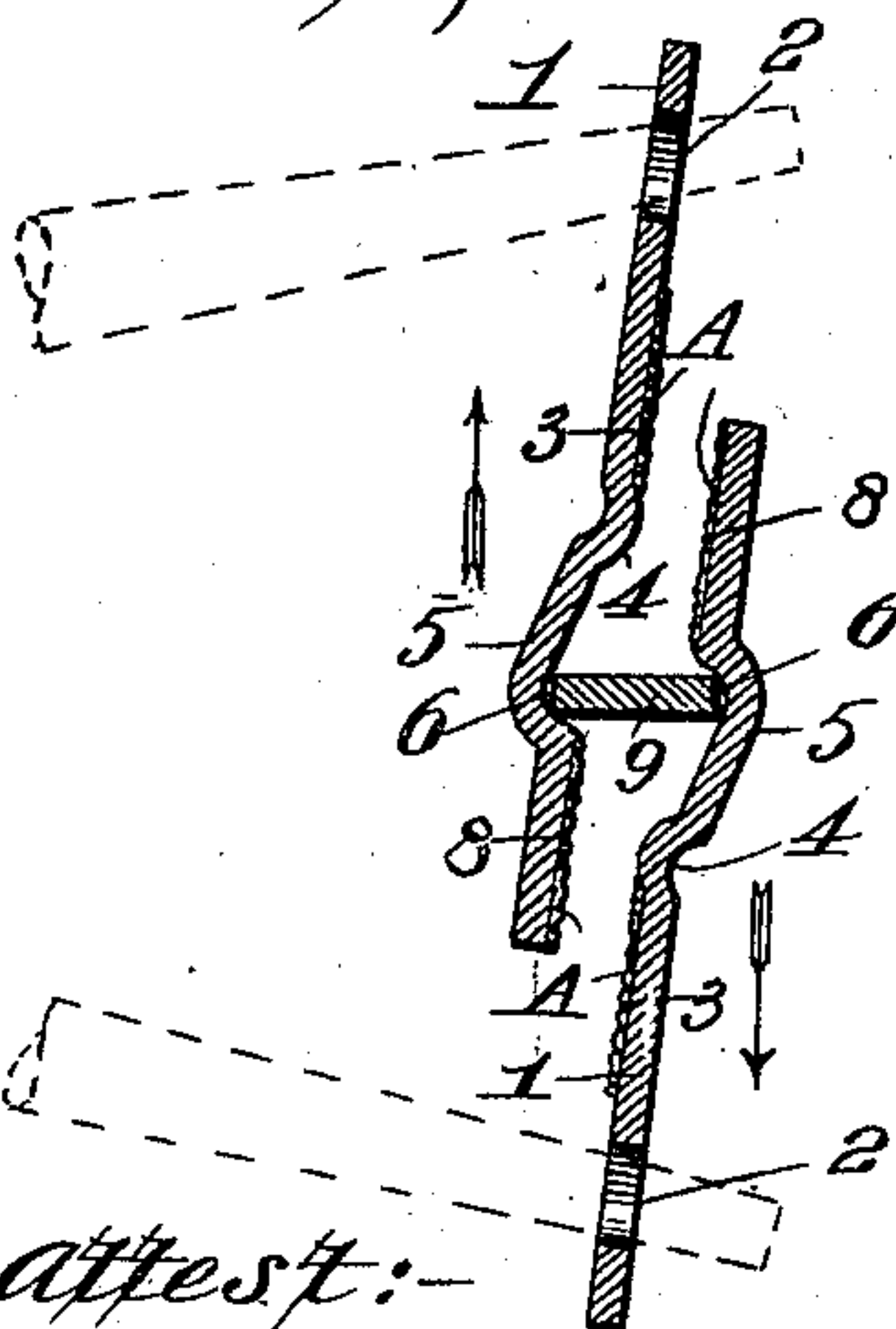


Fig. VI.

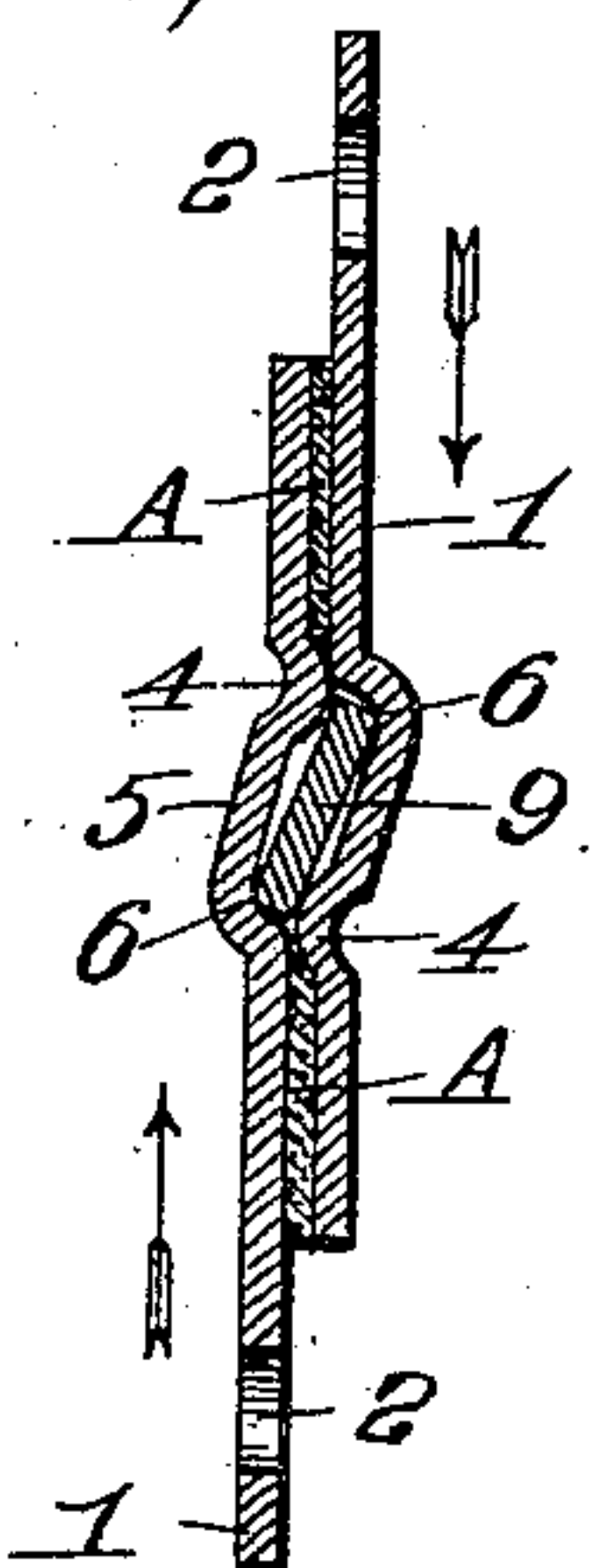


Fig. VIII.



attest:-  
W. B. Knight  
E. S. Knight

Inventors—  
C. B. Shaw and  
W. B. Knight—  
By W. B. Knight Attorney's.



# UNITED STATES PATENT OFFICE.

CAMPBELL B. SHAW, OF KIRKWOOD, AND WILLIAM B. KNIGHT, OF ST. LOUIS, MISSOURI; SAID KNIGHT ASSIGNOR TO HARRY SCULLIN, OF ST. LOUIS, MISSOURI.

## FUSIBLE LINK.

SPECIFICATION forming part of Letters Patent No. 725,495, dated April 14, 1903.

Application filed April 28, 1902. Serial No. 104,918. (No model.)

*To all whom it may concern:*

Be it known that we, CAMPBELL B. SHAW, residing in Kirkwood, in the county of St. Louis, and WILLIAM B. KNIGHT, residing in the city of St. Louis, in the State of Missouri, citizens of the United States, have invented certain new and useful Improvements in Fusible Links, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to a fusible link for use in connection with automatic sprinklers of fire-extinguishing apparatus or other mechanical devices the parts of which it is desired to hold in assembled condition pending the presence of sufficient heat to melt an easily fusible connection by which the members of the link are united.

Our invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a perspective view showing the inside face of one of the pair of mating link-plates of our link. Fig. II is a perspective view showing the outside face of the second link-plate. Fig. III is a perspective view of the fulcrum member used between the link-plates shown in Figs. I and II. Fig. IV is a perspective view of our link in assembled condition ready for use. Fig. V is a longitudinal section taken through the link in its dismembered condition, illustrating the manner in which the parts move when pulled apart. Fig. VI is a longitudinal section taken through a link in assembled condition and illustrating a construction wherein the links are separated by a longitudinal thrust instead of a pulling action. Fig. VII is a perspective view illustrating a link constructed in accordance with our invention and having flat edges with a sealing-gasket located between them for the purpose of preventing the formation of a corrosive connection between the link-plates. Fig. VIII is a cross-section taken on line VIII-VIII, Fig. VII.

11 designates the two plates that are designed to be assembled to constitute our link. These plates are adapted to be placed together, with their outer ends disposed in opposite di-

rections; but they are counterparts, and therefore similar reference characters will be applied to each in describing their construction.

Each plate 1 is provided at its outer end with an aperture 2, adapted to receive parts to be connected by the link when assembled. At the inside face of each plate is a flat surface 3, that preferably extends inwardly from the outer end of the plate to a point approximately central of the length of the plate. At the inner terminus of the flat surface 3 of each plate is a bead or projecting portion 4, that extends from the inner face of the plate. Beginning at the bead 4, each plate is inclined rearwardly, as shown at 5, the incline extending to a point 6. (See Figs. I and II.) From the point 6 each plate extends forwardly at an angle, as shown at 7, to the incline 5, so as to provide a pocket at the junction of the inclined portion and the forward angle portion at 7. The inner end of each link-plate has a flat surface 8, that extends from the angle portion 7 to the inner terminus of the plate.

9 is a fulcrum-block that is adapted to be positioned between the two meeting and opposing link-plates 1 when the plates are placed together in opposite directions, so that one edge of the fulcrum-block will occupy the pocket provided by the inclined portion 5 and angle portion 7 of one plate and be held therein by the bead or projection 4 of the other plate, as seen in Fig. IV, while the other edge of the fulcrum-block occupies the pocket of the other plate in like manner and is held therein by the bead or projection of the first-named plate. The link-plates are united by solder fusible at a low temperature, as shown at A, which is applied to the flat opposing faces III and VIII of the plates, as seen in Fig. IV.

In the practical use of our link it is applied to the article in connection with which it is to be used after the parts have been assembled, as described and as shown in Fig. IV. When sufficient heat occurs in the vicinity of the link to fuse the solder A, it becomes fused, and the strain upon the link-plates normally present in the article to which the link is applied creates a pull upon the plates that tends to draw them apart. When



this occurs, the fulcrum-block 9, located in the pockets of the two plates, is carried by such plates in a rocking manner and fulcruming between them rocks them asunder, as seen in Fig. V, thereby immediately breaking the connection attained by the solder-body, quickly and efficiently freeing the links from each other, so as to permit the movement of the parts previously united by the link.

In Fig. VI we have shown a construction wherein the link-plates are adapted to receive an end thrust instead of a pull for the purpose of thrusting them inwardly, and thereby causing the fulcruming of the fulcrum-block between them by such thrust instead of a pull. To obtain this result, it is only necessary to have the outer ends of the links extend from the angle portion 7 of the link-plates instead of from the beads or projections 4.

It is a well-known fact that in the sprinkler-heads of all fire-extinguishing apparatus the greatest difficulty to be contended with is that of corrosion, which occurs on the parts of the apparatus which are connected by fusible solder. This corrosion forms a coating that connects the members united by solder and holds them from separation when the solder is softened by the action of heat thereupon.

In Figs. VII and VIII we have shown a construction whereby the formation of corrosion from one link-plate to the other may be obviated. In this construction the plates are widened beyond the portions 4, 5, 6, and 7, so as to provide flat extensions 10, that meet the flat ends of the link-plates. Between the plates we place a gasket 11, that preferably extends beyond the edges of the plates and may be of any desirable material, but is preferably of tin. By the introduction of the gasket 11, which is of a material not readily attacked by corrosion, such as tin, any corrosive coating that results on the link-plates is kept separated from uniting across the space between the plates in which the fusible solder is contained, to thereby form a bond

connecting the plates. By extending this gasket 11, as illustrated in Figs. VII and VIII, it will be seen that their utility is materially enhanced, inasmuch as the projecting edge of the gasket constitutes a widened border around which there is no liability of the corrosive coating on the link-plates extending to form a bond between them.

We claim as our invention—

1. A fusible link comprising a pair of plates provided with pockets, a fulcrum-block located between said plates in said pockets, and projections carried by said plates at ends of said pockets and arranged to bear against the sides of said fulcrum-block to hold the block seated in said pockets, substantially as described.

2. A fusible link comprising a pair of plates provided with pockets, a fulcrum-block located between said plates and seated in said pockets, and beads carried by said plates at ends of said pockets and arranged to bear against the sides of said fulcrum-block to hold the block seated in said pockets, substantially as described.

3. In a fusible link, the combination of a pair of plates each having flattened portions at their ends, inclined portions and meeting angle portions intermediate of their ends, beads at one termination of each of said inclined portions, and a fulcrum-block located between said plates and seated in the pockets provided by said inclined and angle portions, substantially as described.

4. In a fusible link, the combination with a pair of plates adapted to be connected by solder, of a gasket located between said plates at their edges, substantially as described.

5. In a fusible link, the combination with a pair of plates adapted to be connected by solder, of a gasket located between said plates and extending beyond the edges of said plates, substantially as described.

CAMPBELL B. SHAW.

WILLIAM B. KNIGHT.

In presence of—

E. S. KNIGHT,

M. P. SMITH.