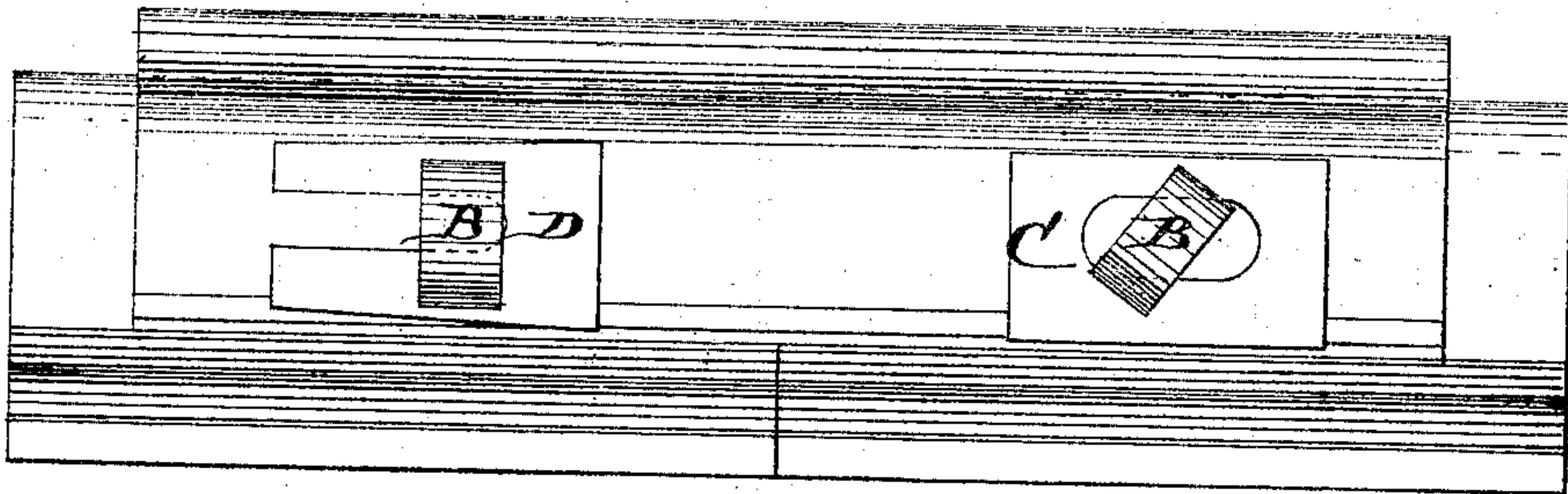


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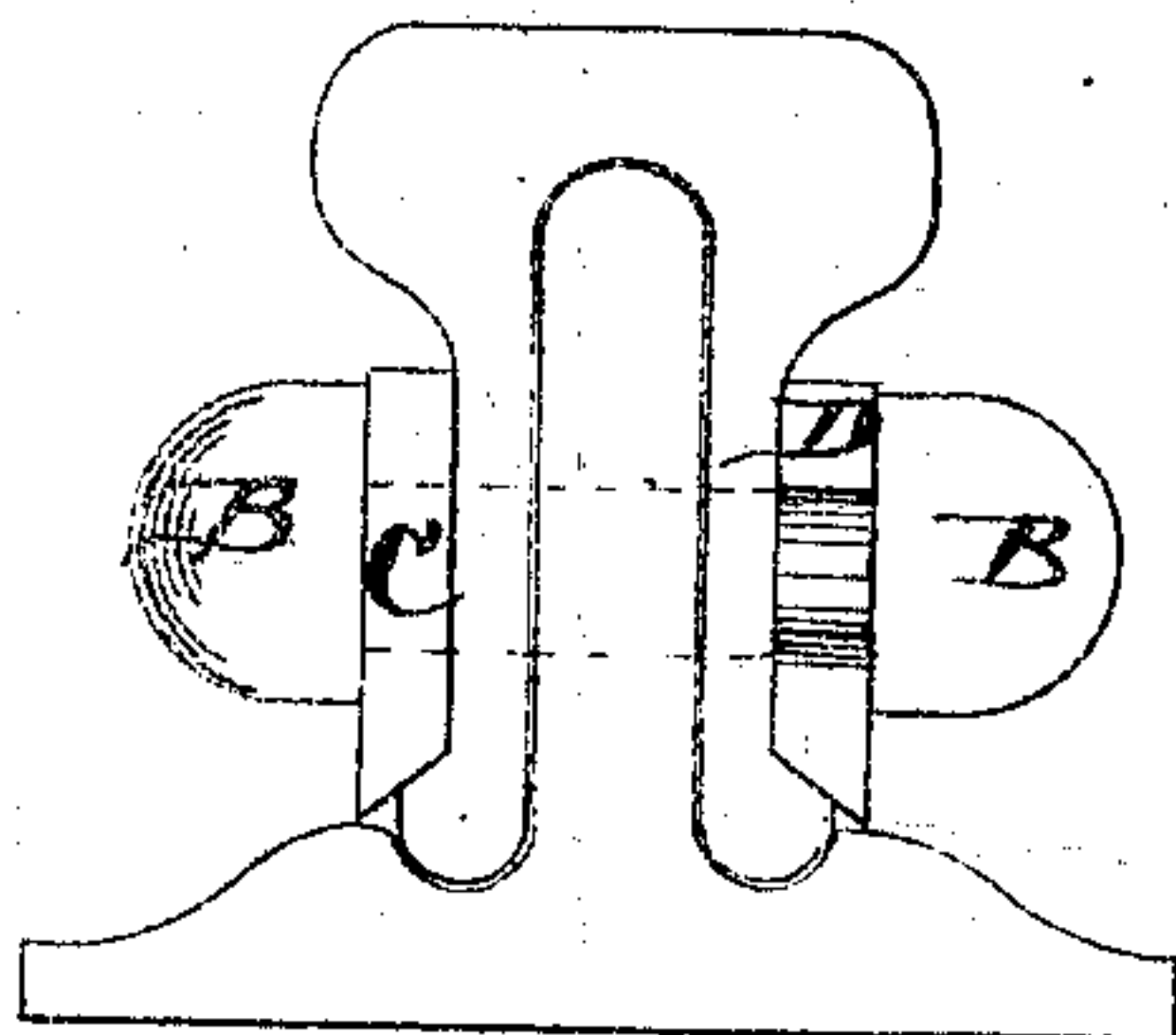
*A. M<sup>c</sup> Kenney,  
Locking Bolts*

PATENTED AUG 1 1871

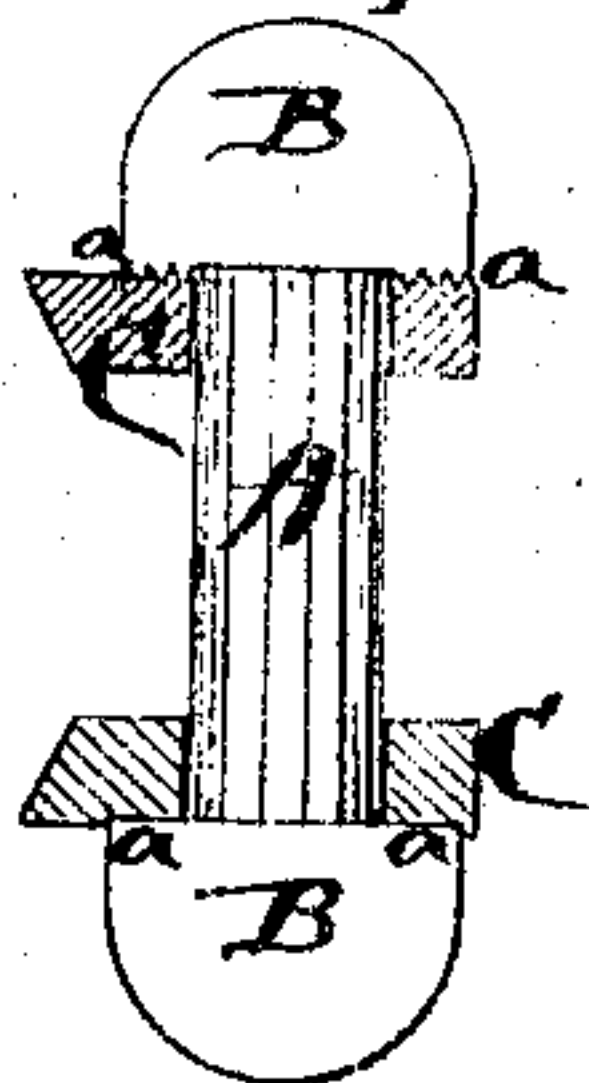
*Fig. 1.*



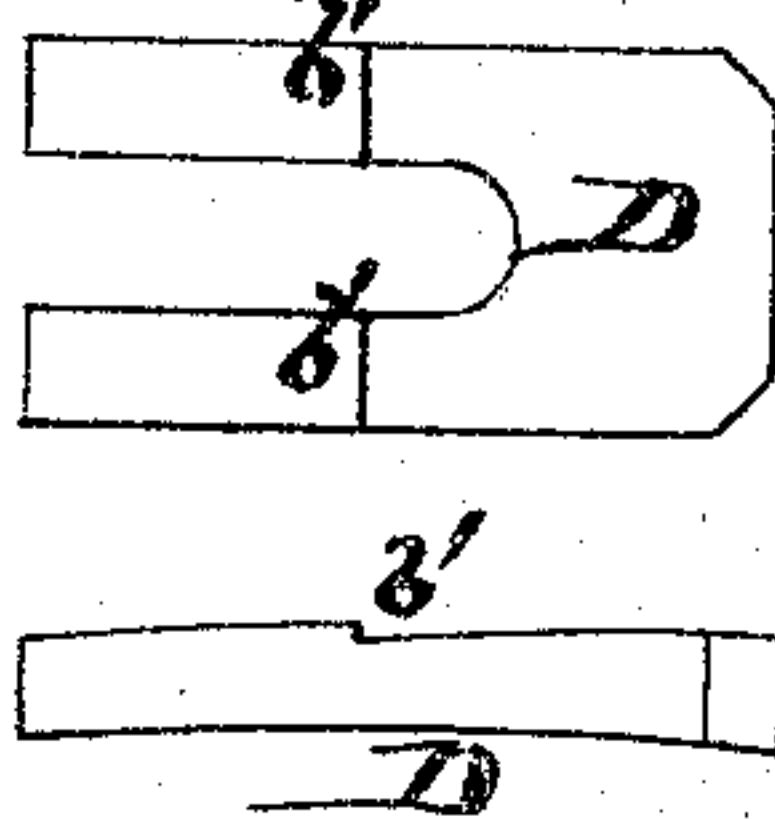
*Fig. 2.*



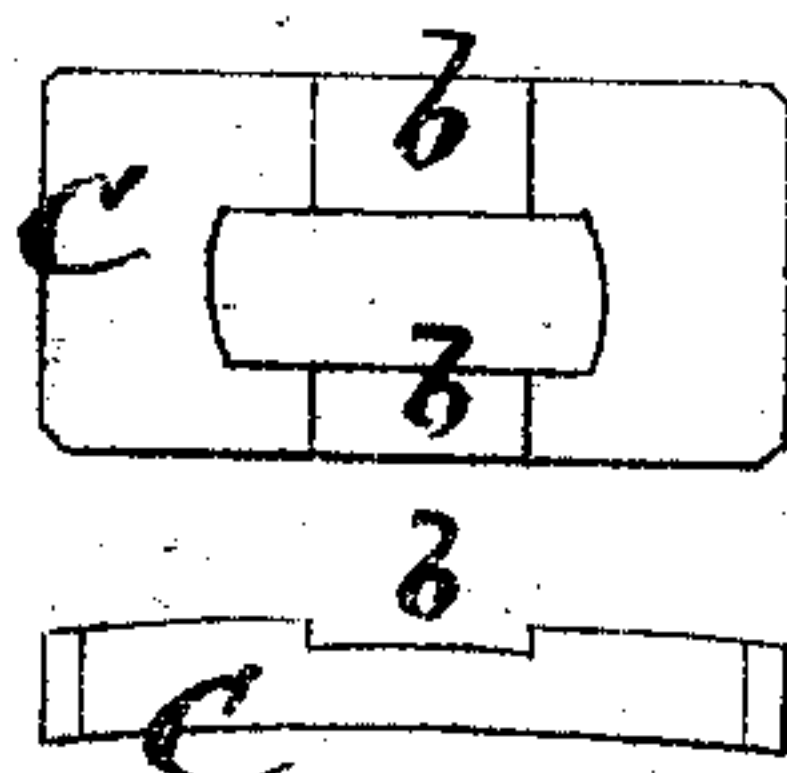
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses.

*Le. L. Ewert,  
Jas. E. Hutchinson*

Inventor.

*Alexander M. Kenney  
per  
Alexander M. Kenney  
attys.*



# UNITED STATES PATENT OFFICE.

ALMERON MCKENNEY, OF MAUMEE CITY, OHIO.

## IMPROVEMENT IN DEVICES FOR LOCKING-BOLTS.

Specification forming part of Letters Patent No. 117,657, dated August 1, 1871.

*To all whom it may concern:*

Be it known that I, ALMERON MCKENNEY, of Maumee City, in the county of Lucas and in the State of Ohio, have invented certain new and useful Improvements in Clamp-Bolt and Washer; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a clamp-bolt and washer for fastening railroad splices or any other articles where the same may be used, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of a railroad splice fastened together with my clamp-bolt and washer. Fig. 2 is an end view of the same. Fig. 3 is a side view of the bolt with the washers in section, and Figs. 4 and 5 are various views of the washers used.

A represents a round bolt of any suitable dimensions, provided at each end with a head, B. One of these heads may be semi-spherical and the other flattened on two sides, or both may be flattened. C and D represent the washers, which may be made of metal or other suitable material. The washer C is in the form of a rectangular plate, with an elongated slot of the same length as the diameter of the head B, and of the same width as the diameter of the bolt A, and the washer is curved on its inner surface, as shown in Fig. 5, so as to allow it to spring, while on the outer surface it is straight, or nearly so.

The articles to be clamped together should be provided with slots similar to that described in the washer C. The bolt being passed through said articles with a washer at each end, or without a washer, as the case may require, is turned so as to bring the flattened head across the slot in the washer. The shoulders *a a* of the head B being square with the bolt, and the washer curved so as to spring against said shoulders, renders the fastening perfectly firm and secure. The edge of the shoulder, or the edge of the slot in the washer, or both, should be slightly beveled, so

as to give the draft for clamping in turning. The bevel on the head of the bolt is made on each side of the shoulders formed by the head, and on an oblique line opposite to each other; and the inclined depressions in the spring-washer on each side of the slot are made to correspond with the bevels on the bolt-head, so that when the latter is turned one-quarter or more around by hand or by a wrench the two bevels and inclines acting against each other will cause the parts to be secured to be closely and effectually clamped together, and prevent their becoming easily disengaged.

It will readily be seen that the beveled bolt-head and the inclined surfaces of the washer are of no little importance in effectually clamping the parts against each other, and will obviate the necessity of heating the headed bolt to shrink the same into a clamping position to secure the parts.

As an additional security I may serrate the shoulders *a a* and also the outer surface of the washer, as shown in Fig. 3; or the washer may be provided across the center with a groove or depression, *b*, of such size that when the flattened head of the bolt is turned across the slot said head will fit into the groove or depression and thus will prevent the bolt from turning, the washer being prevented from turning by resting with one edge against a stationary bearing.

In some cases I may use the washer D, constructed in precisely the same manner as the washer C, with the exception that the slot extends to one end of the washer, and being a little wedging, as shown in Fig. 4, when said washer may be driven in and out, if necessary. It has a shoulder, *b'*, to prevent it from slipping out.

In using this clamp-bolt the object is first to have the bolts the proper length for the parts, it being a trifle shorter between the heads than the thickness of the article to be clamped; and then, with a light beveling of the inner edge of the washer or the side of the slot, or of the edge of the shoulder of the bolt, or both, will allow the edges to pass in turning, which will clamp the parts tightly. Where this exactness cannot easily be obtained the various applications of washers of different thicknesses are used.

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

The combination of the double-headed bolt A with its beveled shoulders, as described, with the slotted or forked spring-washers, through which the head of the bolt is passed and turned to clamp the parts, substantially as shown and described.

In testimony that I claim the foregoing I have

hereunto set my hand this 30th day of June, 1871.

A. McKENNEY.

Witnesses:

C. L. EVERT,  
A. N. MARR.