

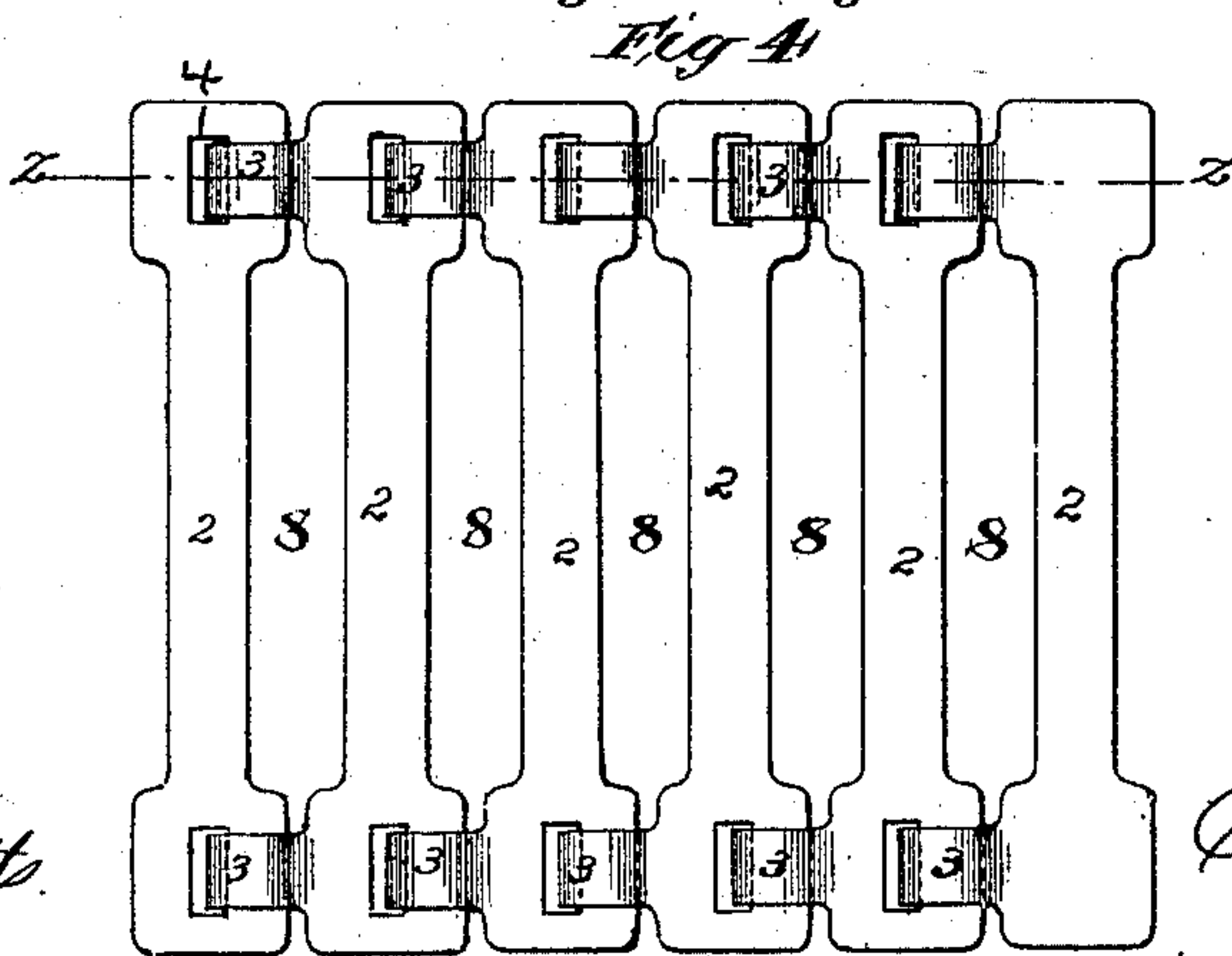
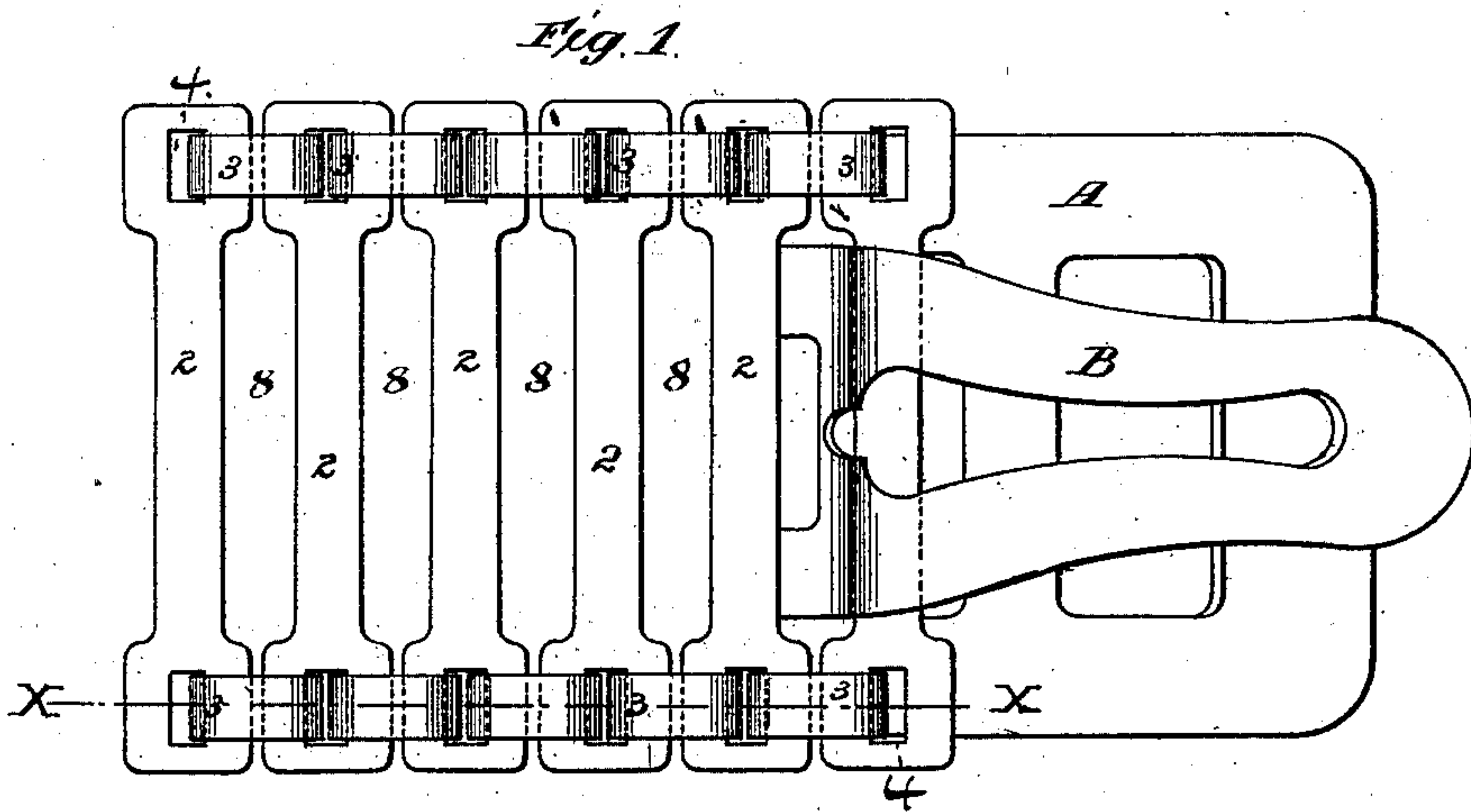
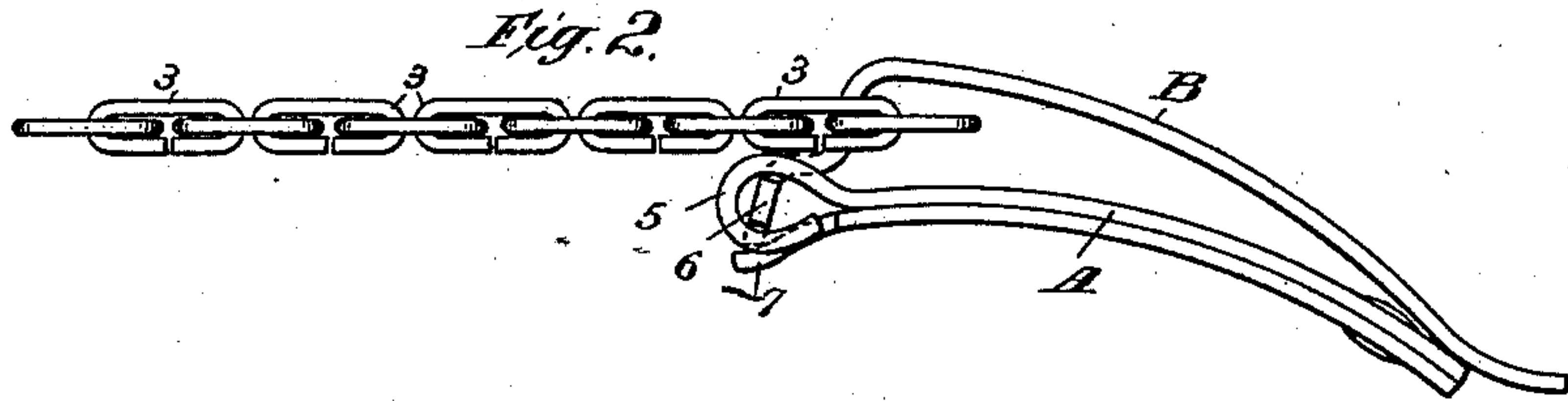
(No Model.)

2 Sheets—Sheet 1.

E. S. SMITH.  
LEVER BUCKLE.

No. 310,919.

Patented Jan. 20, 1885.



Attest:

Geo. H. Pett.

E. M. Graham

Inventor:

Edward S. Smith  
Harrison & Philipp  
attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

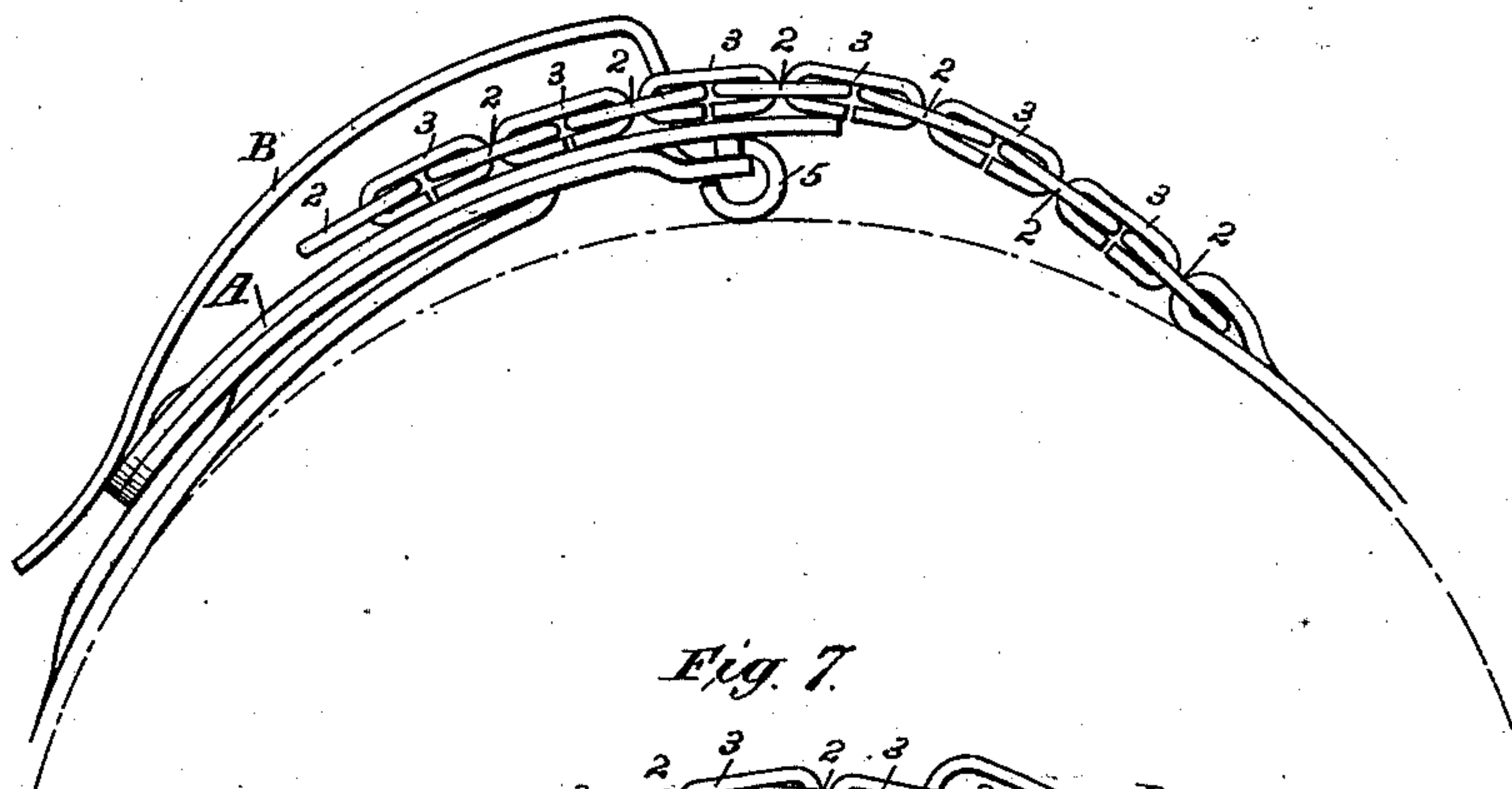


Fig. 7.

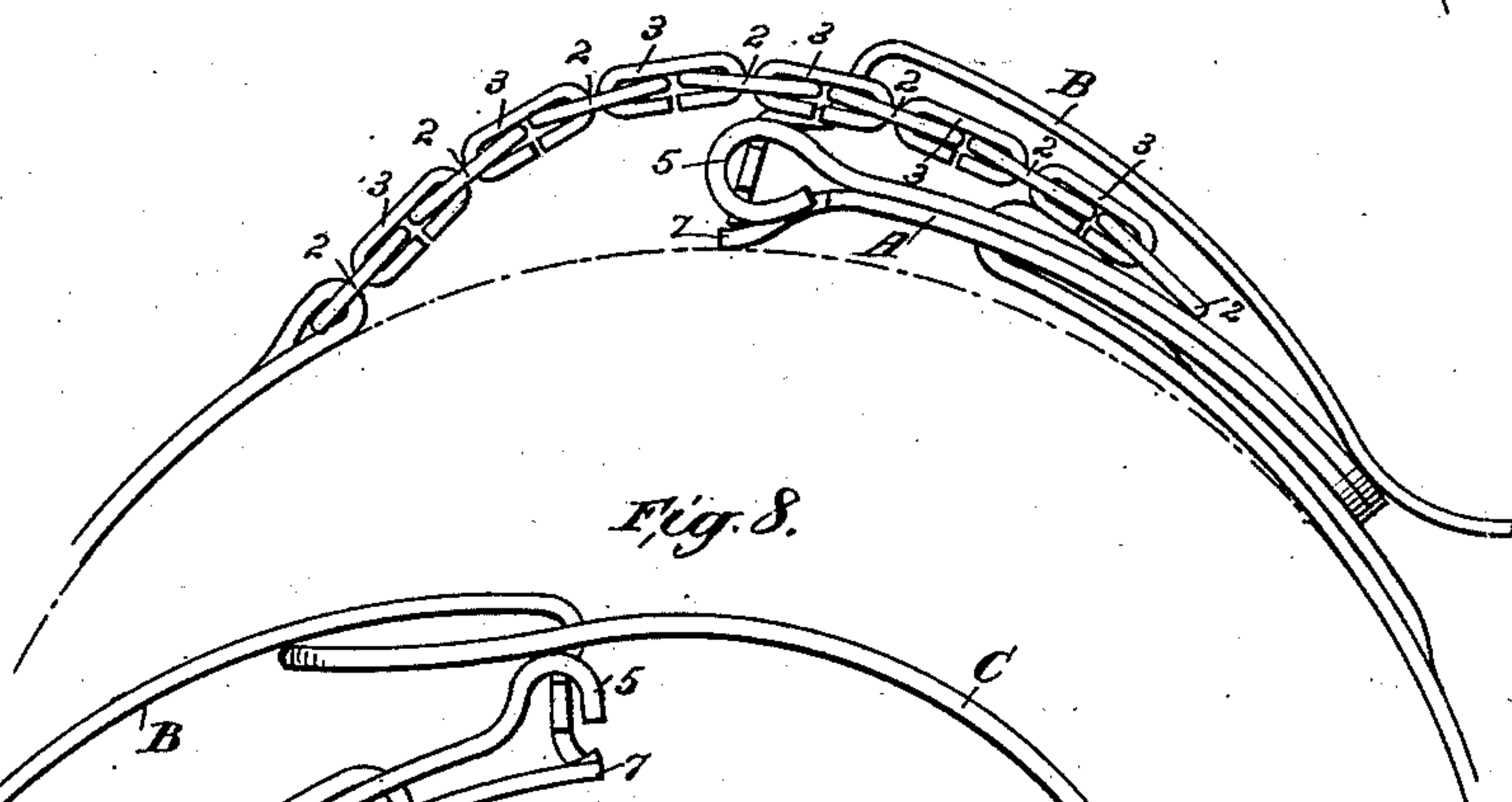


Fig. 8.

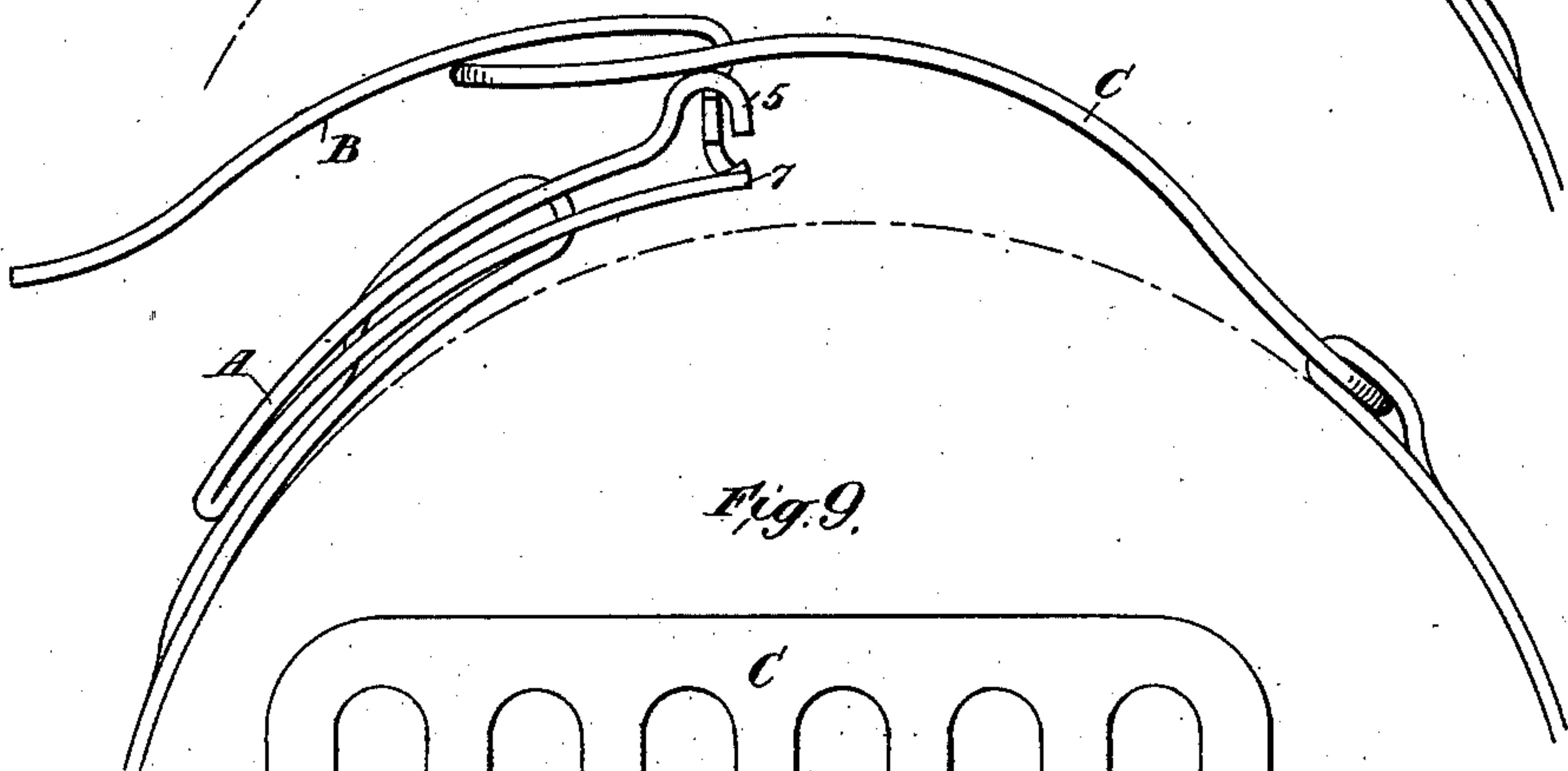
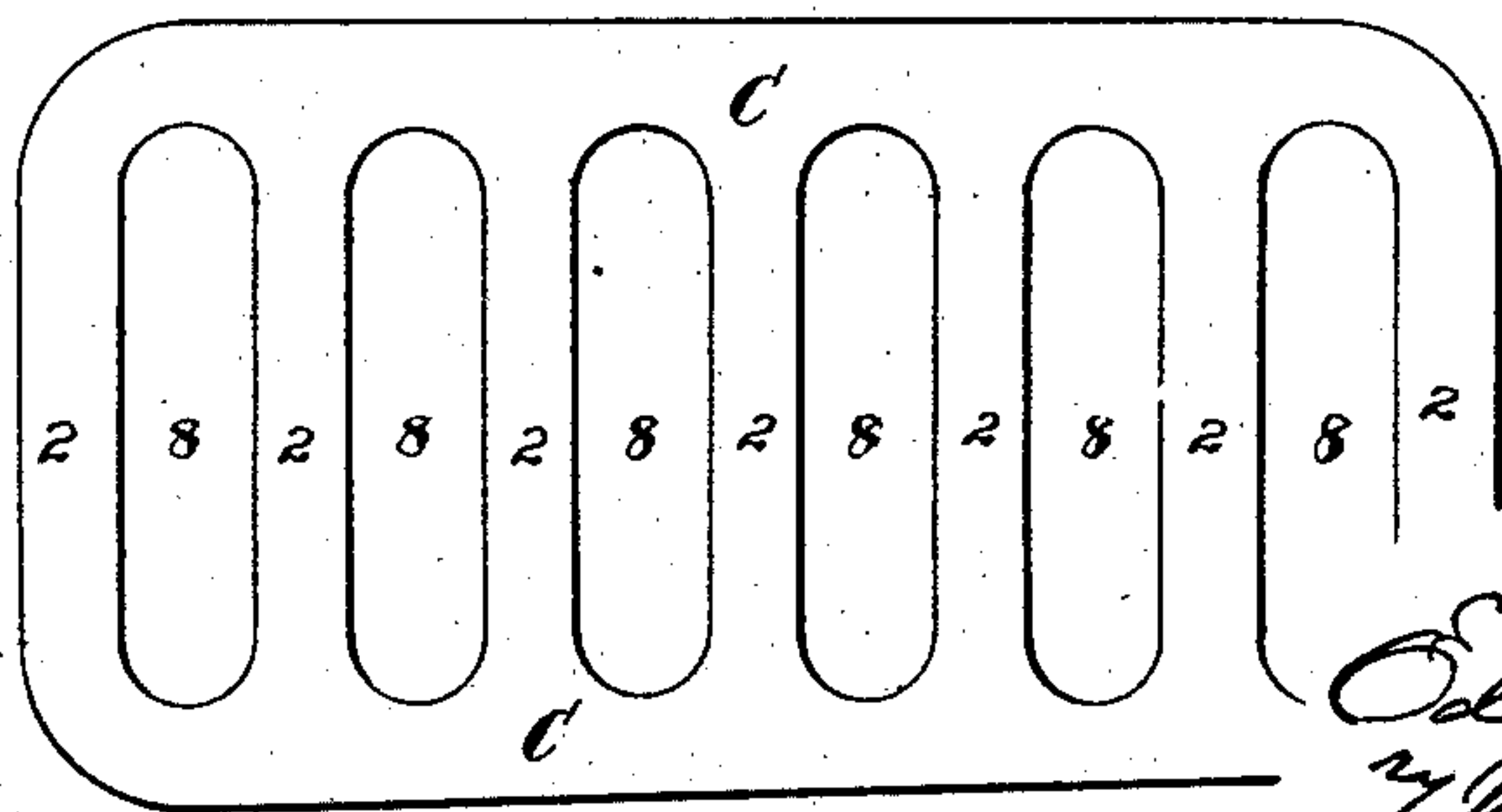


Fig. 9.



Attest:

Geo. H. Botts.

Geo. H. Graham

Inventor:

Edmund S. Smith  
by Wm. H. Philp  
attor.



# UNITED STATES PATENT OFFICE.

EDWARD S. SMITH, OF WATERBURY, CONNECTICUT.

## LEVER-BUCKLE.

SPECIFICATION forming part of Letters Patent No. 310,919, dated January 20, 1885.

Application filed December 5, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD S. SMITH, a citizen of the United States, residing at Waterbury, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Lever-Buckles, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 In the drawings illustrating this invention, Figure 1 represents a plan view of a lever-buckle with which is combined the improved attaching-plate. Fig. 2 represents an edge view of the same; and Fig. 3 represents a sectional elevation of the attaching-plate, taken on the line *x* of Fig. 1. Fig. 4 illustrates by a plan view a modified structure of attaching-plate; Fig. 5, a sectional elevation of the same on the line *z* of Fig. 4.

20 In the foregoing views the attaching-plate is shown as stretched out in a horizontal plane, the better to illustrate the structure; but Figs. 6 and 7 are side elevations of the improved attaching-plate connected with a lever-buckle, in which the operative relation and position of the attaching-plate is illustrated when connected with an article that provides a curved support; and Fig. 8 represents in like manner an ordinary stiff plate, of which Fig. 9 is a plan view when attached in like manner.

30 The invention primarily consists in providing an attaching-plate for lever-buckles, or spring-clasps which have a member that engages and holds the plate, with one or more joints and with one or more bars and an interlocking-space, whereby it is capacitated to bend and suit the form of the buckle or clasp and the shape of the article to which it and the buckle or clasp are attached.

40 The invention also comprehends the specific structure shown of such an attaching-plate, and the combination of the improved attaching-plate with a buckle or clasp.

45 Lever-buckles or spring-clasps provided with a member that is adapted to be engaged with a cross-bar carried by an attaching, holding, or catch plate are commonly employed in the fastening together of parts of a garment, as a shoe, or the detached parts of an article, 50 as the curtains of a carriage, the flap of a cartridge-box or pocket-book, and the like.

As heretofore made the attaching, holding, or catch plates used in connection with these buckles or clasps have been constructed of a single plate or piece of metal, which, whether 55 provided with one or several bars or bearing-points for engagement with the holding member of the clasp or buckle, has been constituted a rigid, stiff, non-flexible device, either by reason of its being composed of a single piece 60 or being given great stiffness by corrugating its parts. Such attaching-plates, even though curved to modify the fault, are practically defective, for the reasons that owing to their stiffness they operate as levers under the pressure 65 exerted upon them, due to the shape of the article to which they are applied, and the strain maintained upon them when fastened to the buckle or clasp, and thus tend either to become detached from the buckle or clasp or 70 impinge upon the surface carrying them to such a degree as to injure the same.

A more particular description of the embodiment of the invention with the spring-clasp or lever-buckle commonly used for fastening the flaps or quarters of shoes will now 75 be given.

The clasp or buckle referred to consists of a base, as A, which is provided with sockets, as 5, in which is hung by pivots, as 6, a swinging holding-lever, as B, the positions and movements of which are controlled by a spring, 80 as 7.

The buckle or clasp shown in Figs. 1, 2, and 7 is constructed as is set forth in my Letters 85 Patent No. 303,548, dated August 12, 1884, and is a type of a large class that vary in specific structure, such as that shown in Figs. 6 and 8, both of which are now well known, the latter being like that shown in my Letters 90 Patent No. 303,547, dated August 12, 1884; but all embody a spring-seated holding-lever, as B, which engages with an attaching-plate, as C, Fig. 9, that is slotted, as at 8, to provide interlocking spaces, and form a number 95 of holding-bars, as 2, any one of which may be so engaged. In these clasps or buckles either the pivot-sockets, as 5, rise from the base, as in Figs. 2, 5, 7, and 8, to afford a fulcrum upon which the ordinary stiff attaching- 100 plate C (shown in Figs. 8 and 9) may bear, or the said base extends forward of the pivot, as



in Fig. 6, and thus makes a similar bearing for the attaching-plate. The result of this is that when both devices are applied to the parts of an article, as to a shoe, and engaged together the curvature of the foot, or the strain and pressure otherwise caused, converts the attaching-plate into a lever whose fulcrum is either the sockets of the base-plate, its forward ends, or some other part, and the result of which is that the attaching-plate thus acting as a lever either pries open the holding-lever B, as in Fig. 8, and thus disengages the attaching-plate, or, if the power is insufficient, acts to press the buckle or clasp down onto the material and injure it, or cause a pain or injury to the foot, which necessitates such an adjustment of the attaching-plate to the holding-lever as will avoid the leverage, avoid the pain, or modify the strain. To remove these defects a readjustment is usually made by engaging such a one of the holding-bars of the attaching-plate as will form a loose fastening that greatly modifies the efficiency of the buckle or clasp.

By my improvement, which consists in providing the attaching-plate with one or more joints, whether the same are separated bearings at opposite ends of the bars or continuous single joints, no matter how many holding-bars, as 2, and interlocking spaces, 8, it may have, I constitute it a flexible device suited for use with any form of buckle or clasp, with or without upward or forward projections, for the reason that, no matter what degree of curvature the article carrying the fastening may have, said attaching-plate will bend and adapt itself to that curvature. Furthermore, such a structure will adapt itself to said curvature, and to the shape of the buckle or clasp, no matter what pressure, due to the strain on the parts, is exerted by the fastening, the parts thus being made to bear evenly upon the buckle or clasp and the surface to which it is applied; and when the major or a considerable part of the attaching-plate is entered underneath the holding-lever B, that portion of it will rest beneath said lever without pressing upward upon it, as is seen in Figs. 6 and 7. While in most cases a single joint will be sufficient for the purpose, I prefer to provide the attaching-plate with several joints, as is

shown in the drawings; and I further prefer to construct the same as shown, though it is to be understood that a great variety of jointed structures will be suited to the carrying out of the invention.

In the form shown in Figs. 1, 2, and 3 the attaching-plate is constructed of a number of bars, 2, having their sides so removed as to provide space enough between adjacent bars for the entrance of the holding-lever and enable the rear edge of one of them to rest against the lever when it is closed. These bars 2 are slotted at their ends, as at 4, and are secured together by links 3, bent to envelop the parts 1 of adjacent bars, and thus form a hinged or pivoted structure that is practically flexible.

In the form shown in Figs. 4 and 5 the link 3 is formed integral with one part 1 of the bar, and simply engages the slot 4 of the next adjacent bar as a hook. These are preferable forms, but any means of jointing the parts so as to render the attaching-plate flexible are to be regarded as within the scope of the invention; and it is to be understood that the provision for the reception of the holding-lever or other member of the buckle or clasp that engages the attaching-plate may be through the bars instead of between them.

What, therefore, is claimed is—

1. An attaching or catch plate constructed with one or more joints and provided with bearing-bars and interlocking spaces, whereby it is adapted to bend and interlock with buckles or clasps, substantially as described.

2. The combination, with a buckle or clasp having a swinging lever, of an attaching or catch plate constructed with one or more joints and provided with one or more bearing-bars and interlocking spaces, substantially as described.

3. An attaching-plate for buckles or clasps, consisting of bars 2, spaces 8, and links 3, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD S. SMITH.

Witnesses:

H. T. MUNSON,  
T. H. PALMER.