

(No Model.)

S. P. KIMBALL.

NUT LOCK.

No. 291,913.

Patented Jan. 15, 1884.

Fig. 1.

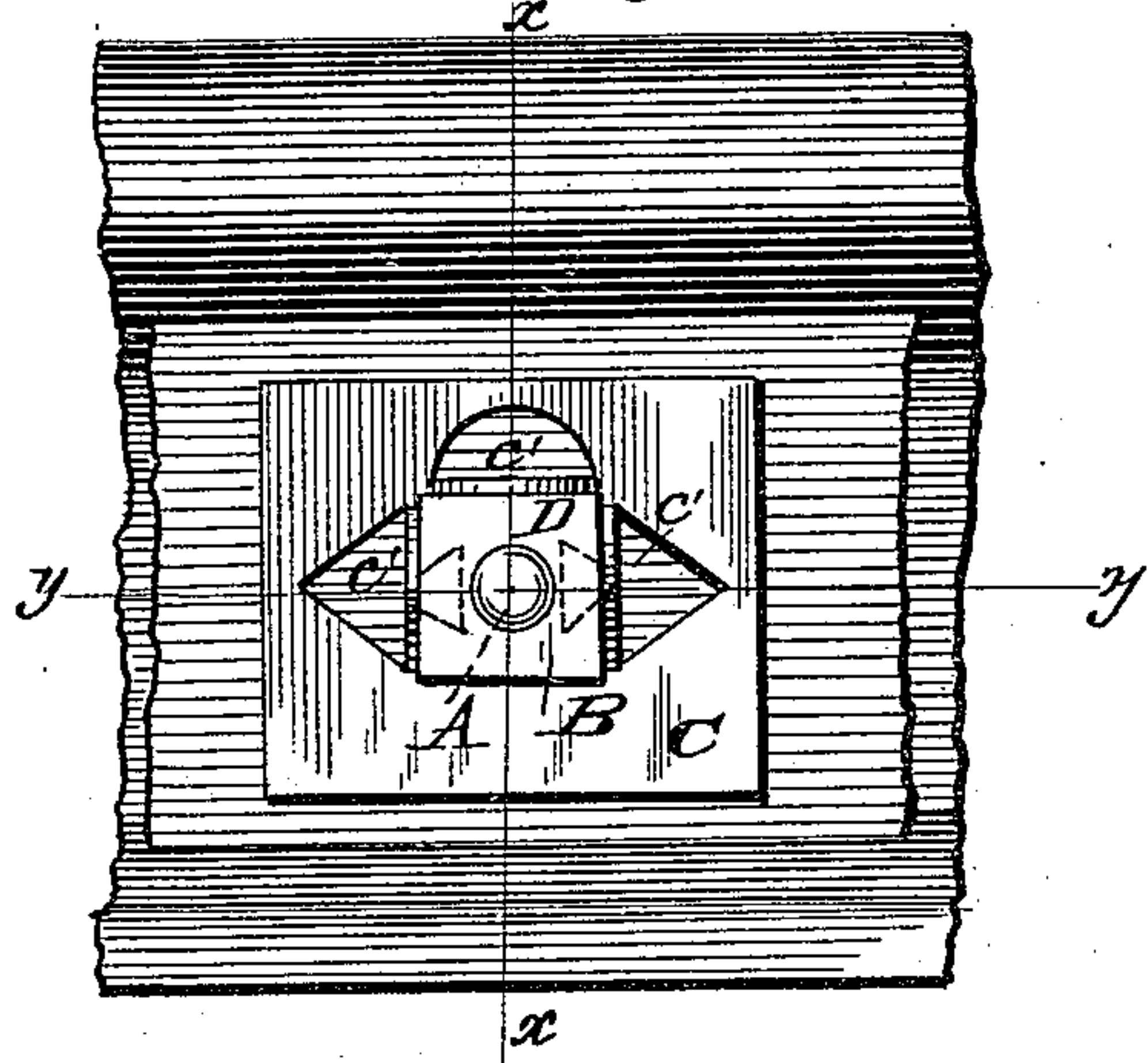


Fig. 2.

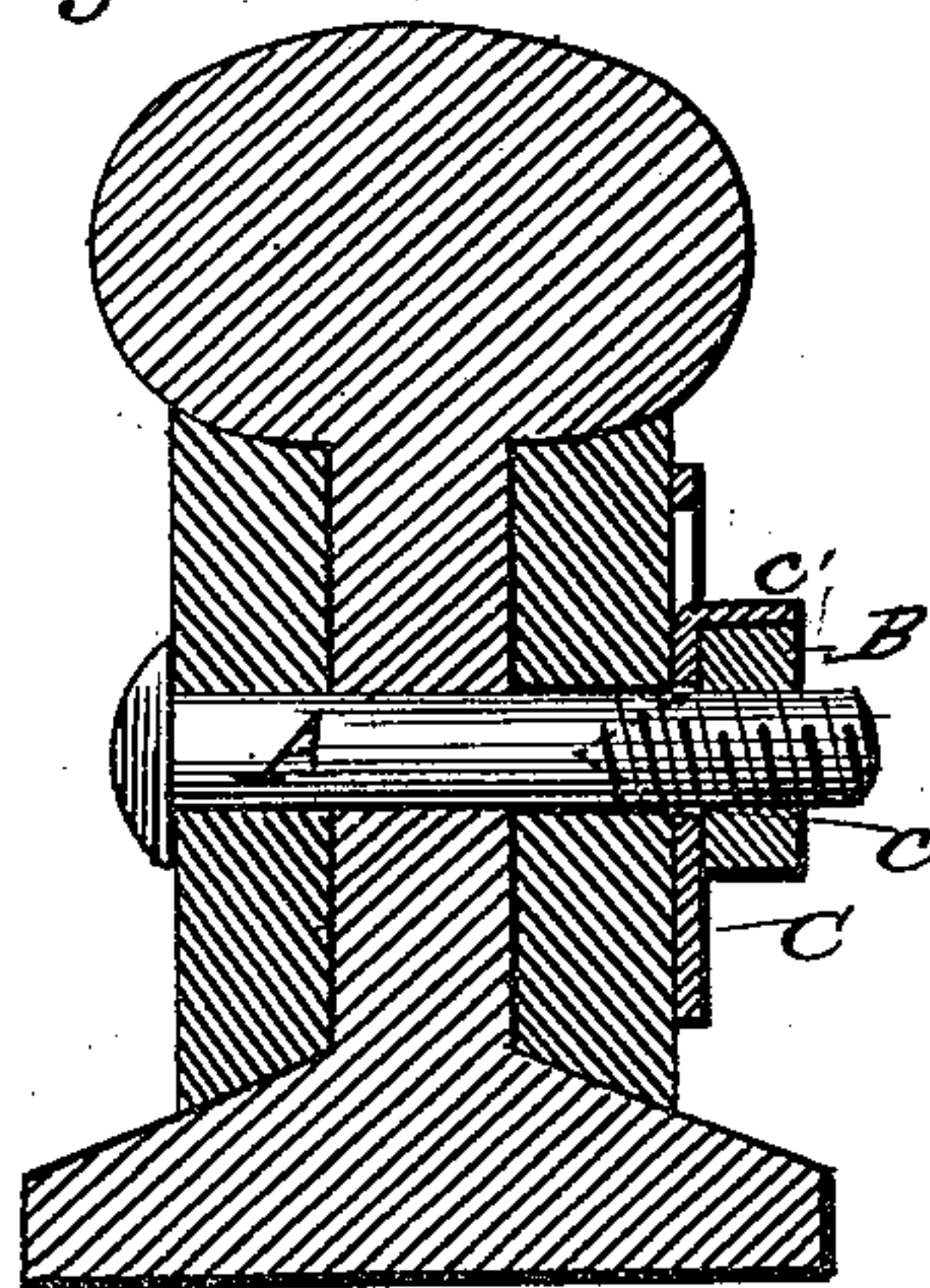


Fig. 3.

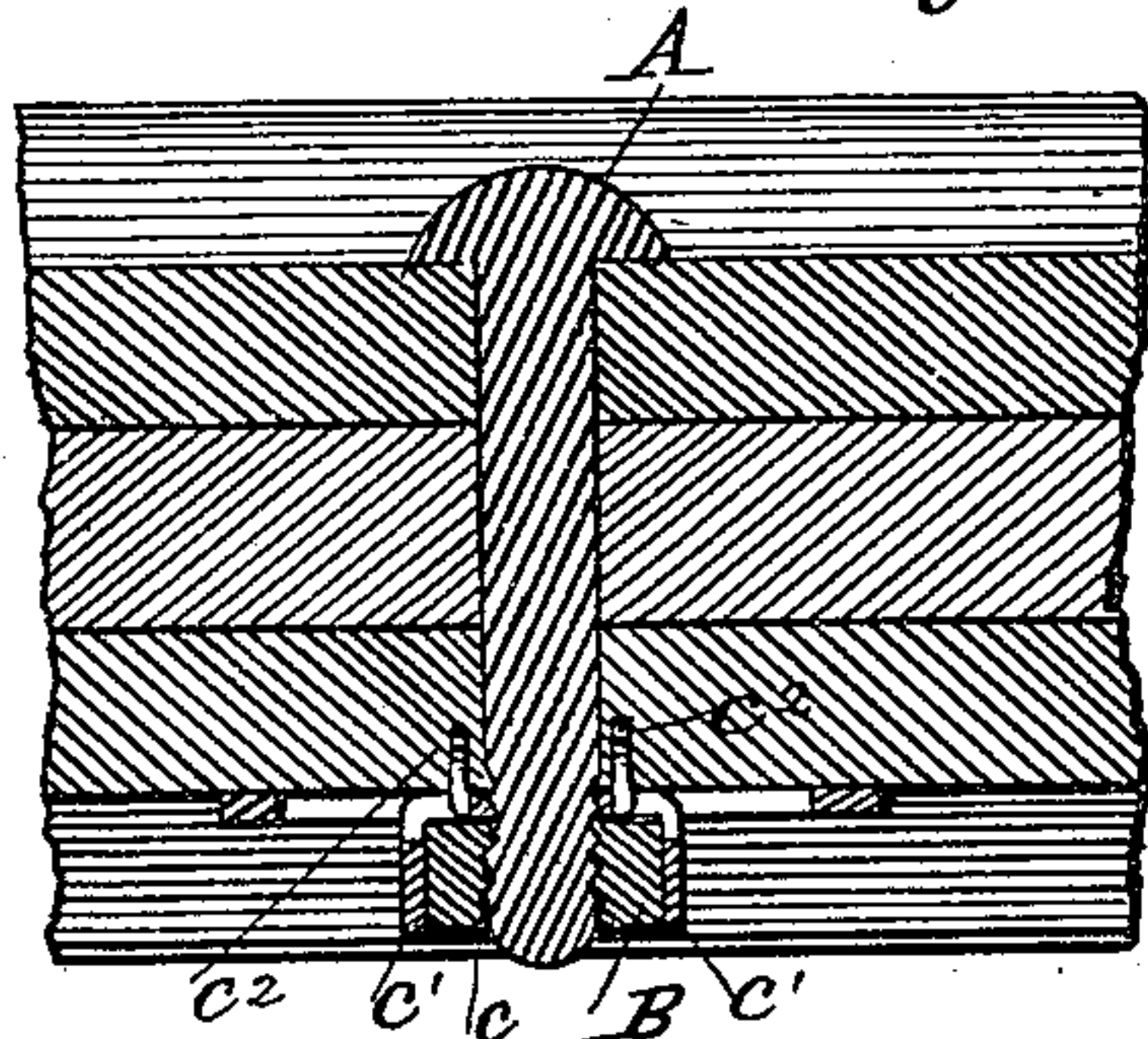


Fig. 4.

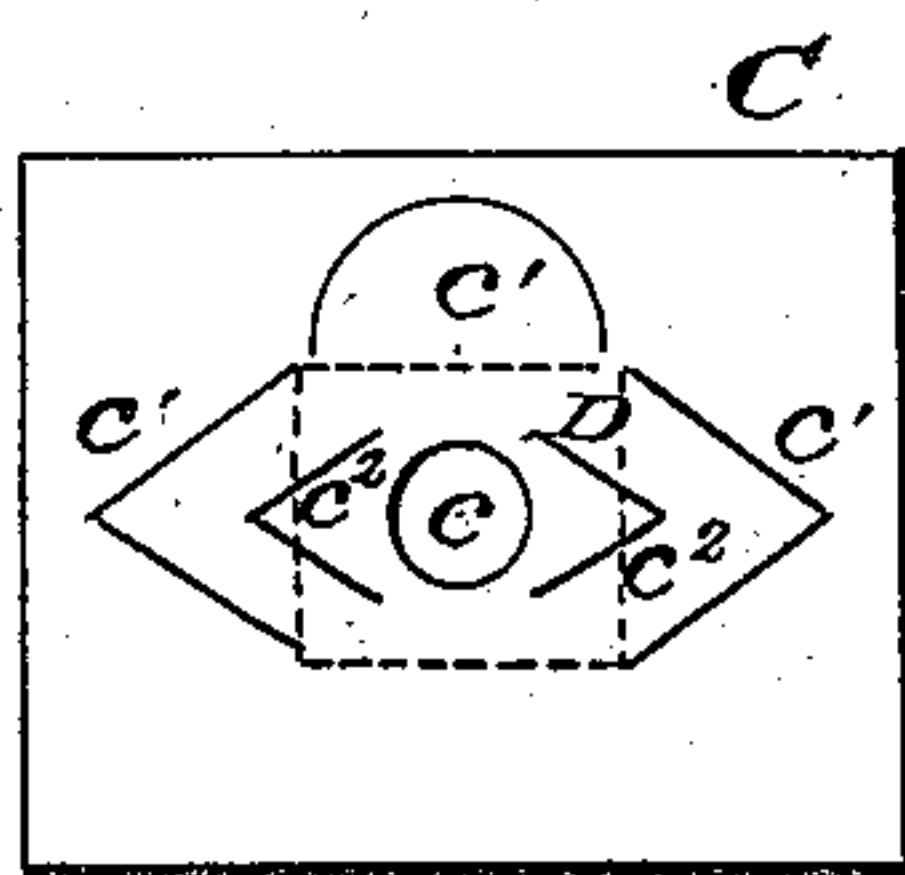


Fig. 5.

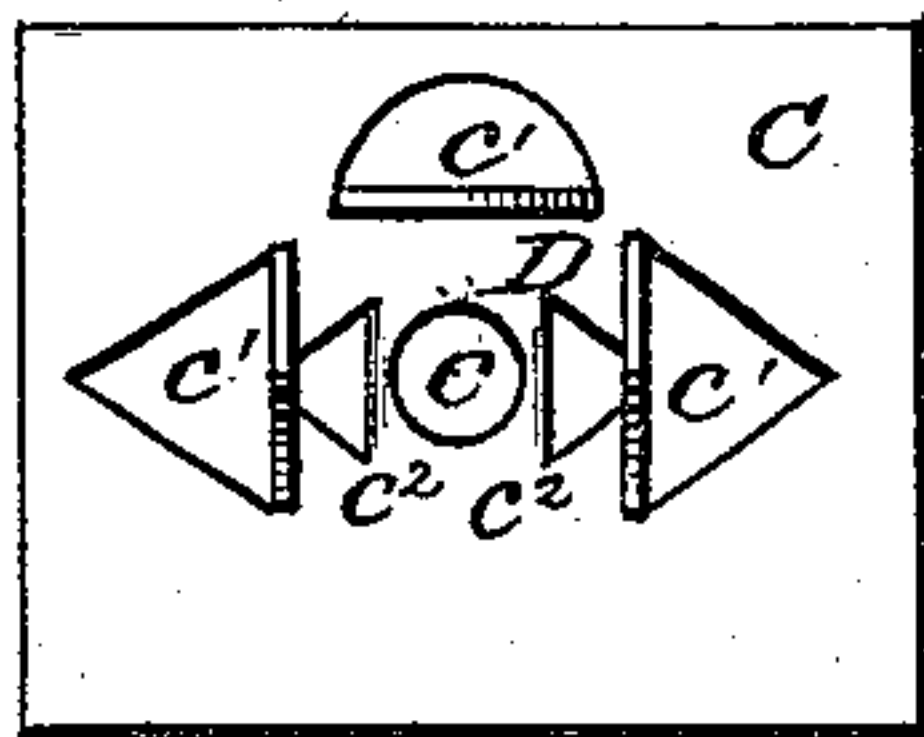
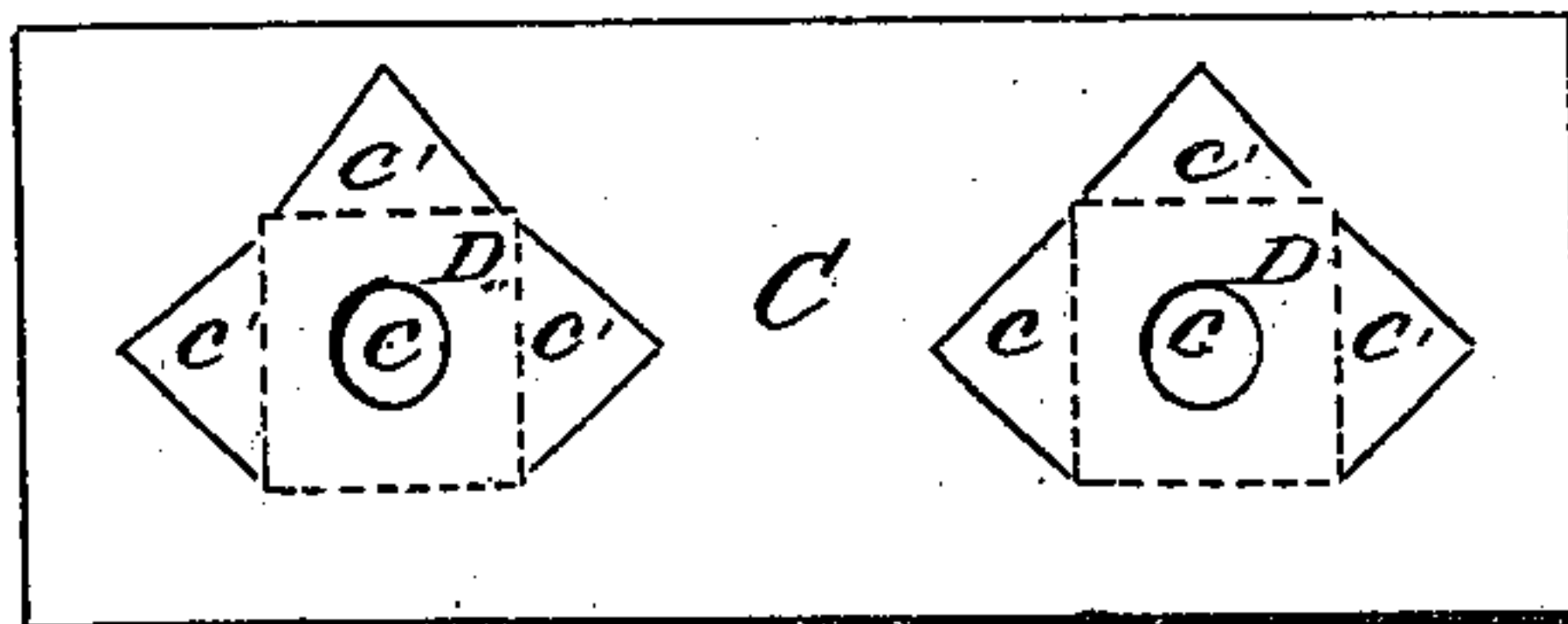


Fig. 6.



WITNESSES:

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NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 291,913, dated January 15, 1884.

Application filed December 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL P. KIMBALL, a citizen of the United States, residing at Woodstock, in the county of Champaign and State of Ohio, have invented certain new and useful Improvements in Nut-Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

This invention relates to nut-locks in which the washer is provided with locking points or flanges, and its object is to provide a device of this class possessing superior advantages
15 in point of simplicity, inexpensiveness, durability, and general efficiency.

In the drawings, Figure 1 is a front elevation, showing my improved nut-lock in position. Fig. 2 is a transverse sectional view of the same on the line *xx*, Fig. 1. Fig. 3 is a longitudinal sectional view of the same on the line *yy*, Fig. 1. Fig. 4 is a plan view of the washer-blank, showing the points or flanges cut therein. Fig. 5 is a corresponding view
25 of the blank, showing the points turned therefrom, as when the washer is in locking position. Fig. 6 is a face view of the washer-plate, illustrating a modified form adapted to lock a pair of nuts.

Referring to the drawings, A designates the bolt, which receives the nut B in the usual manner.

C designates my improved washer-plate, which is preferably of rectangular form, and
35 is provided with the usual perforation, *c*, to receive the bolt. At the sides of an imaginary square (illustrated by dotted lines, Fig. 4) points *c'* are cut through the washer-plate, these points being preferably of > shape, and
40 formed at two or more sides of the square. As herein shown, the points are formed at the top and end sides of the square, which is the arrangement I prefer when the washer is designed for locking nuts at railroad-joints and
45 like places. This imaginary square is formed around the eye *c* of the washer-plate, and corresponds to the shape of the nut, so that should the nut be of hexagonal or other angular form this space will have a corresponding shape,
50 and the point will be formed at the sides formed by the different angles. Within this square or angular space, (which is designated by the

letter D,) inclosed by the points *c*, are cut (preferably >-shaped) points *c'' c''* on diametrically-opposite sides of the eye *c*, the purpose
55 of which will be presently described. These points *c'* and *c''*, being all cut within the surface of the washer-plate, do not tend to materially weaken said plate, as is the case when locking-points have been cut from the edge of
60 the plate, and this arrangement also secures an especially simple, strong, and durable locking-washer. The washer-plate blank is first cut, as above described, to form the arrangement of points when the middle points, *c'' c''*,
65 are bent from the plate rearwardly, and the plate is adjusted in position on the bolt, so that these said >-shaped points *c''* will be driven home into the contact-surface E by action of the nut as it is screwed on the bolt.
70 The outer series of points, *c'*, which inclose the points, *c''*, are now turned up against the sides of the nut in the usual manner. When it is desired to lock a pair (or more) of nuts, the middle points, *c''*, can be dispensed with,
75 as shown in Fig. 6, and the washer-plate be simply extended, as shown, so as to receive all the bolts of the series.

I am aware that washer-plates have been heretofore provided with various arrange-
80 ments of locking points and flanges, and I claim only my own invention, consisting of the herein-described washer-plate, having the main points cut within the surface of the plate and around the sides of the middle square or
85 angular space, and the auxiliary points formed within this middle space, whereby superior advantages are secured in point of simplicity, durability, strength, and general efficiency.

I claim as my invention—

1. As an improved article of manufacture, the herein-described washer-plate, formed with an eye to receive the bolt, and having locking-points cut within the plate and at the sides of a square or angular space thus formed
95 around said eye, substantially as set forth.

2. As an improved article of manufacture, the herein-described washer-plate, having locking-points cut at the sides of a square or angular space, and having auxiliary locking-
100 points cut within this angular space, substantially as set forth.

3. As an improved article of manufacture, the herein-described washer-plate, formed

with an eye to receive the bolt, having locking-points cut within the plate and at the sides of a square or angular space thus formed around said eye, and having auxiliary locking-points
5 cut within this angular space, substantially as set forth.

4. As an improved article of manufacture, the herein-described washer-plate, having
10 locking-points cut at the sides of a square or angular space and bent up forwardly and from the face of the plate, and having auxiliary locking-points cut within this angular space and bent up rearwardly and from the face of the plate, substantially as set forth.

15 5. As an improved article of manufacture, the herein-described washer-plate, having an eye for the bolt, points cut within the plate and at the sides of a square or angular space thus formed around the eye and bent forwardly
20 from the face of the plate, and auxiliary >-

shaped points cut through the plate within this angular space and on diametrically-opposite sides of the eye, and bent rearwardly from the face of the plate, substantially as set forth.

6. The combination of the bolt, the contact- 25 surface E, the washer-plate arranged on the bolt and having points c' cut at the sides of a square or angular portion extending around the bolt, said points being bent forwardly from the plate, and also having auxiliary >-shaped 30 points c'' cut within the angular space and entering the surface E, and the nut inclosed by points c' , and covering the angular space and auxiliary points, substantially as set forth.

In testimony whereof I affix my signature in 35 presence of two witnesses.

SAMUEL P. KIMBALL.

Witnesses:

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