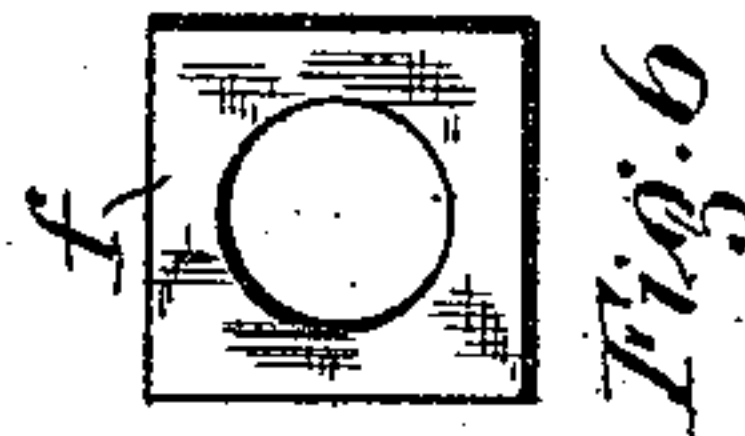
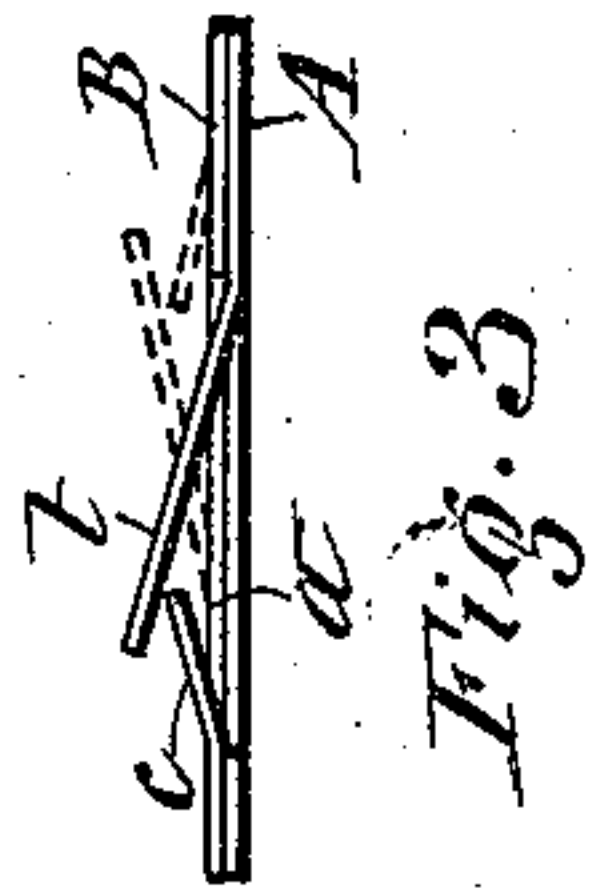
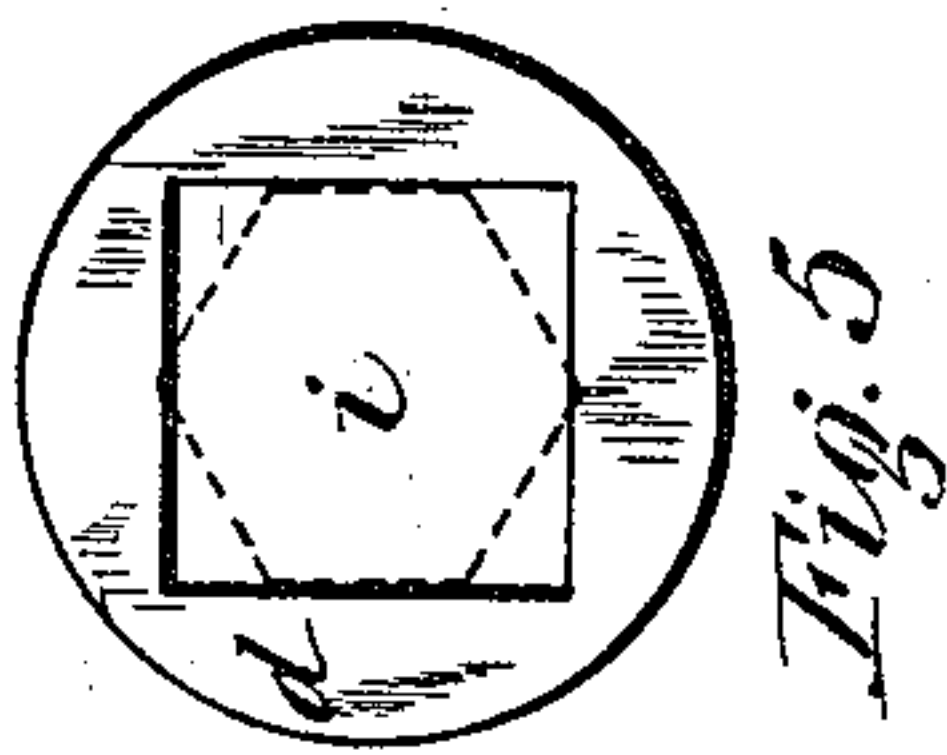
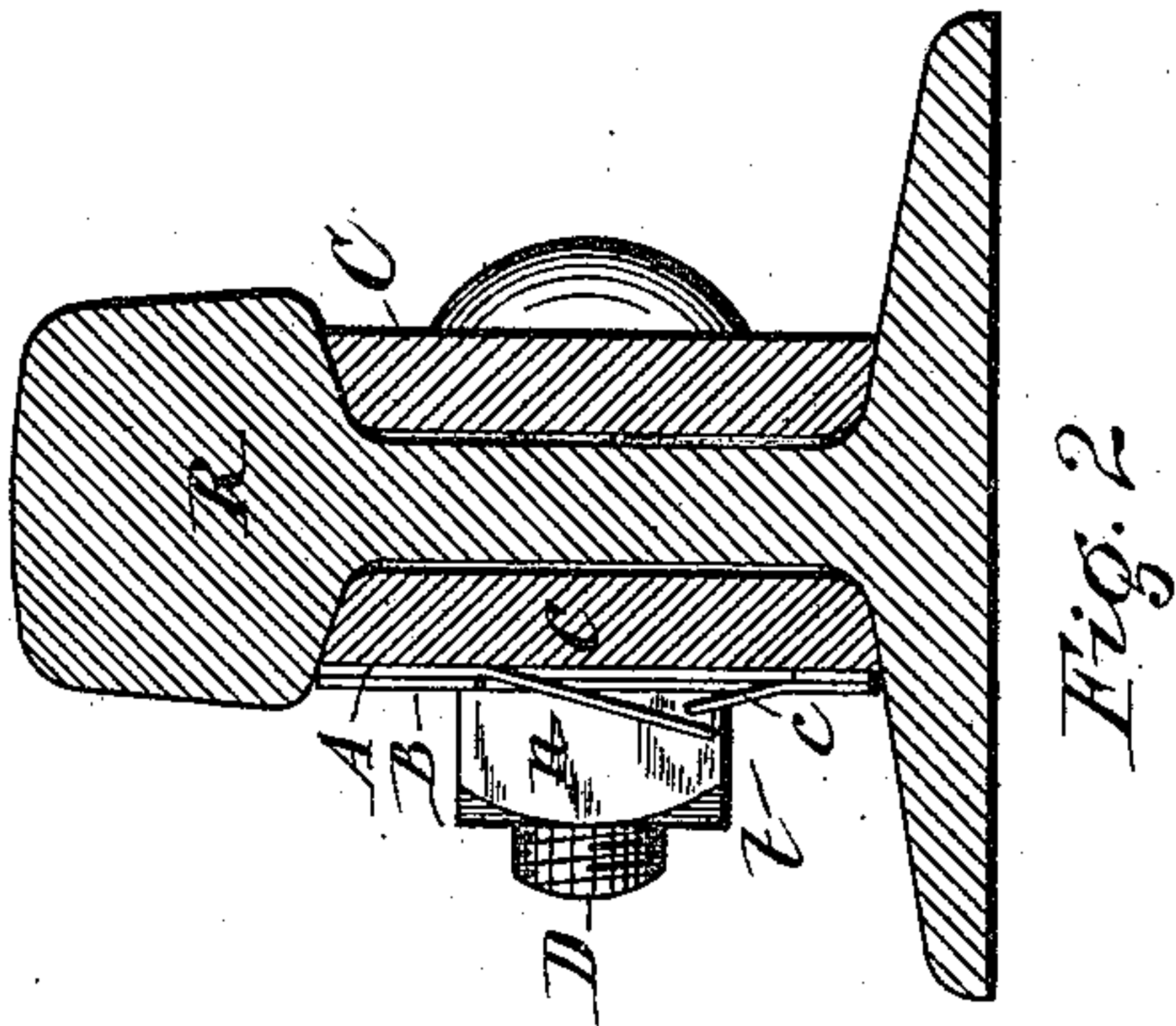
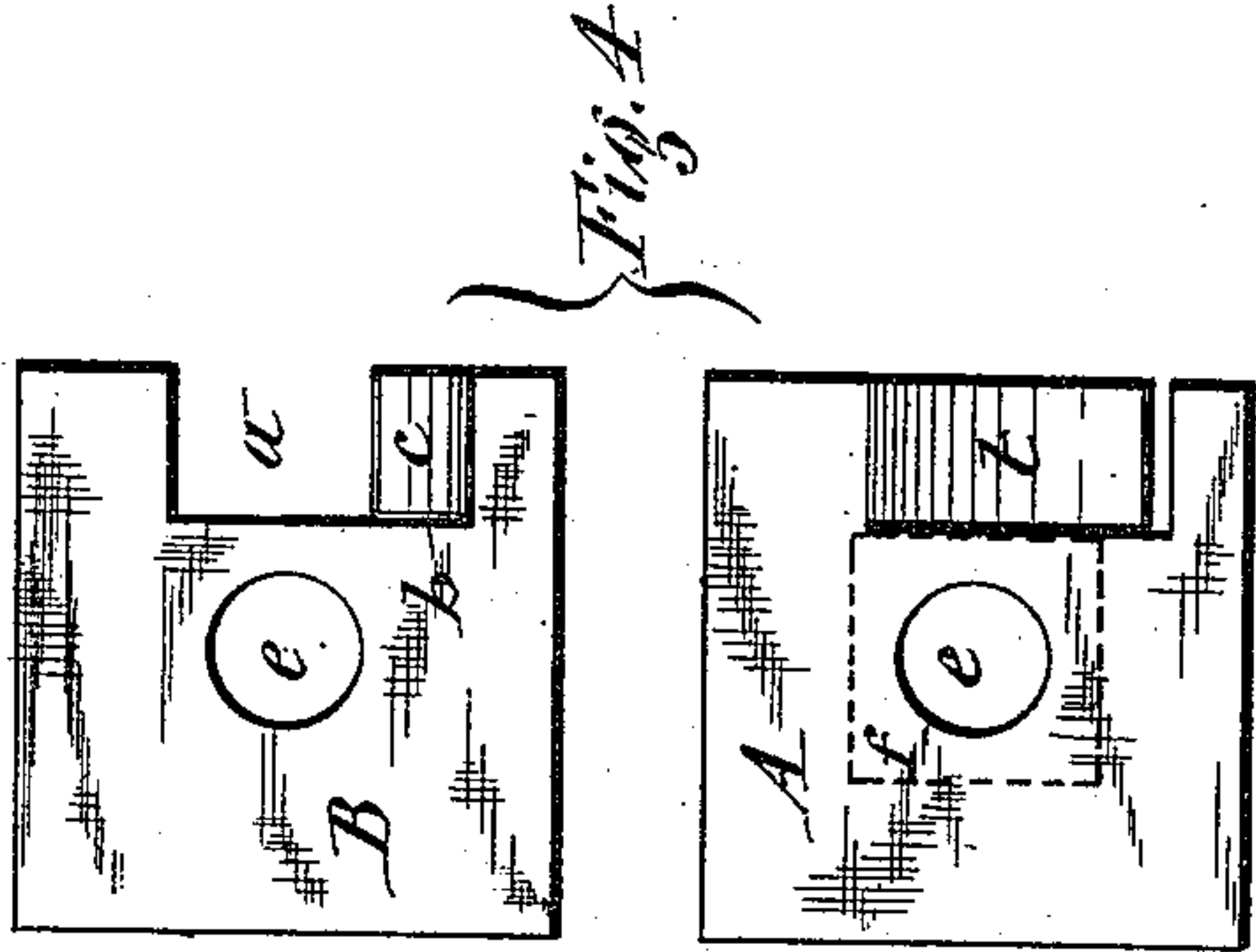
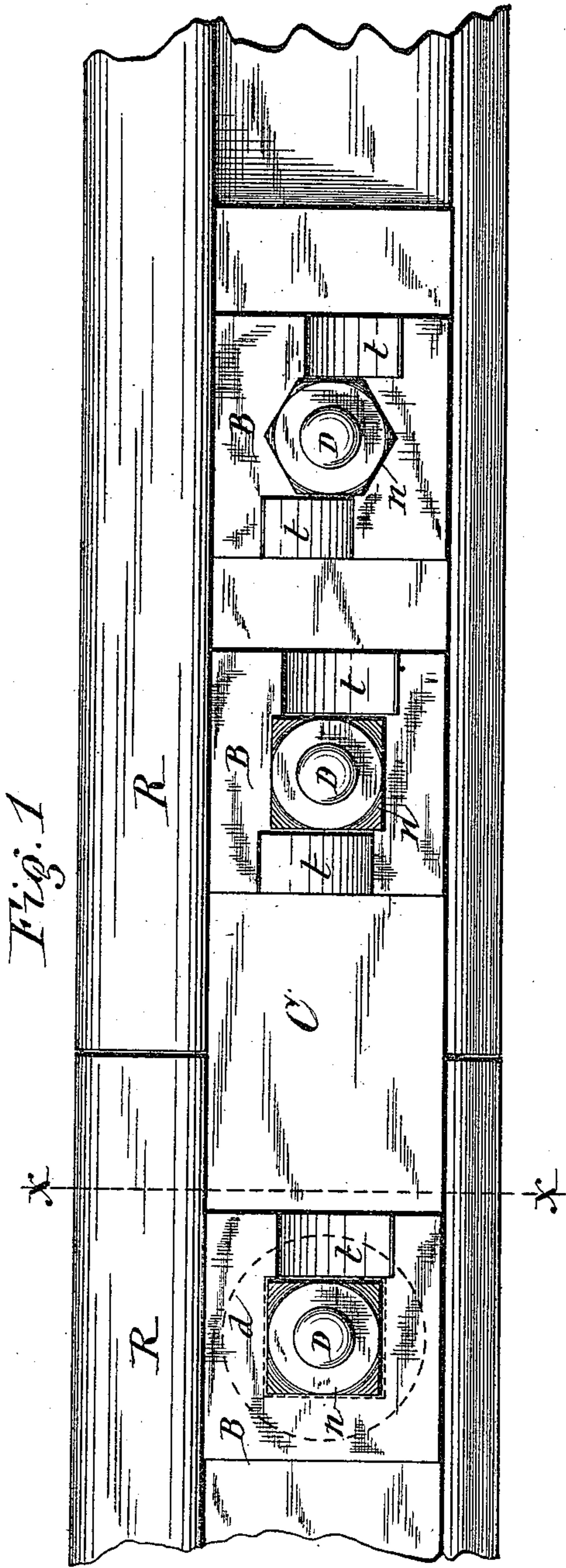


(No Model.)

L. H. REDFIELD.
NUT LOCK.

No. 441,194.

Patented Nov. 25, 1890.



WITNESSES:

C. L. Bendixon
J. J. Saasz

INVENTOR:

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UNITED STATES PATENT OFFICE.

LEWIS H. REDFIELD, OF SYRACUSE, NEW YORK, ASSIGNOR TO CHARLES
PER LEE NOXON AND JESSIE A. REDFIELD, BOTH OF SAME PLACE.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 441,194, dated November 25, 1890.

Application filed March 22, 1890. Serial No. 344,888. (No model.)

To all whom it may concern:

Be it known that I, LEWIS H. REDFIELD, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and
5 useful Improvements in Nut-Locks, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of nut-
10 locks in which a spring-metal plate or washer is provided with a spring-tongue bearing with one of its edges against the side of the nut.

The object of this invention is to render the nut-lock more efficient and more reliable
15 in its operation; and to that end the invention consists in the improved construction and combination of parts hereinafter fully described, and set forth in the claim.

In the annexed drawings, Figure 1 is a side
20 view of a splice of two adjacent end portions of railroad-rails provided with my improved nut-lock. Fig. 2 is a transverse section on line $x x$, Fig. 1. Fig. 3 is a detached edge view of the nut-lock. Fig. 4 is a detail plan
25 view of the two nut-locking plates or washers. Fig. 5 is a plan view of the plate which is employed to facilitate the tightening and loosening of the nut on the bolt; and Fig. 6
30 is a detached plan view of the disk, which is employed to render the nut-lock anti-rattling.

Similar letters of reference indicate corresponding parts.

R R represent the end portions of two railroad rails spliced by the usual fish-plates C
35 C and bolts D D, passing through the same and provided with nuts $n n$, which are either square or hexagonal, as shown in Fig. 1 of the drawings.

A and B denote two spring-metal plates or
40 washers, which constitute my improved nut-lock, said plates being provided with coinciding eyes $e e$, by which they are slipped onto the bolt D.

The plate A, I form with an elastic tongue
45 t , which rises with its free end normally from the plane of the plate and has its inner longitudinal edge in position to engage the side of the nut n , said tongue being formed, preferably, of a marginal portion of the plate by
50 making a slit in the edge of the plate at right angles thereto and another slit from the in-

ner end of the first slit and at right angles thereto or parallel with the aforesaid edge of the plate, as shown in Fig. 4 of the drawings. The free end of the tongue t thus formed is
55 bent outward from the plane of the plate to normally stand in said position. This plate is placed upon the fish-plate C and the other plate B is placed upon the plate A.

The superimposed plate B is formed with
60 an opening a , through which the tongue t passes, and under the free end of said tongue is a spring-lip c , formed on the plate B by a slit b , extending from the inner edge of the opening a and in line therewith, as shown in
65 Fig. 4 of the drawings. The free end of the lip c is bent so as to normally project from the plane of the plate B, as illustrated in Fig. 3 of the drawings, and serves as an auxiliary
70 to the spring action of the tongue t when depressed by the corners of the nut n passing over the tongue in the operation of tightening the nut, and inasmuch as the inner edges of the lip c and tongue t are parallel and in
75 the same vertical plane a double hold on the side of the nut is obtained, and said hold may be quadrupled by forming the plates with two sets of tongues t and lips c , as shown. It will be observed that by forming the tongue
80 t on the underlying plate A the heel or fixed end of said tongue lies below the plane of the superimposed plate B. This is a very important feature, inasmuch as the nut when
85 turned in the operation of tightening the same does not mount the tongue t until the corner of the nut has passed some distance over the heel or fast end of the tongue, and therefore obviates undue strain and abrasion of the
90 said tongue. If desired, a disk f , of felt or pasteboard or other analogous material soaked in either asphalt or pitch or paraffine or other suitable water-proof substance, may be interposed between the plates A and B, as
95 indicated by dotted lines in Fig. 4 of the drawings. Said disk is to be of the size of the nut n , or at least of such shape and dimensions as to prevent its projecting over the
inner edges of the tongue t and lip c , and interfering with the operation of said parts.

In order to facilitate the operation of re-
100 moving the nut from the bolt, I provide a plate d , preferably of circular form, as shown

in Fig. 5 of the drawings, and represented by dotted lines in the left-hand portion of Fig. 1 of the drawings, said plate being formed with a central aperture *i*, of such shape and size as to allow it to receive through it the nut *n* on the bolt *D*, and when thus applied said plate lies upon the tongues *tt* of the nut-lock. Then by applying the wrench to the nut and pushing the wrench toward the rail, the plate *d*, being pushed in the same direction causes the tongues *tt* to be pressed back to the plane of the plate *B*, and thus allows the nut to be unscrewed. In tightening the nut it is to be left in such a position as to allow the inner edges of both the tongue *t* and lip *c* to bear against one of the sides of the nut, as shown in Fig. 1 of the drawings, said tongue and lip constituting a double nut-lock, and by forming the plates *A* and *B* with two sets of such tongues and lips, as shown in the right-hand portion of Fig. 1 of the drawings, a quadruple nut-lock is obtained.

Aside from the advantages of obtaining a plurality of nut-retaining devices on the nut-lock, it is obvious that by the employment of the two plates *A* and *B* in the manners shown and described the nut-lock can be manufactured of much thinner plates than other nut-locks of this class, and consequently does not

require such heavy and expensive dies and machinery for stamping them out. It is also obvious that the described nut-lock can be used in the construction of bridges, agricultural machines, and, in fact, on any structure in which bolts with nuts are employed, the outlines of the plates being modified to suit the occasion.

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

The improved nut-lock consisting of two spring-metal plates or washers placed one upon the other and provided with coinciding eyes for the reception of the bolt, one of said plates being formed with an elastic projection from the plane thereof and the other plate being formed with an elastic tongue extending with its free end over the afore-said projection and having its inner side edge in position to engage one of the sides of the nut, substantially as set forth.

In testimony whereof I have hereunto signed my name this 20th day of March, 1890.

LEWIS H. REDFIELD. [L. S.]

Witnesses:

J. J. LAASS,
C. H. DUELL.