

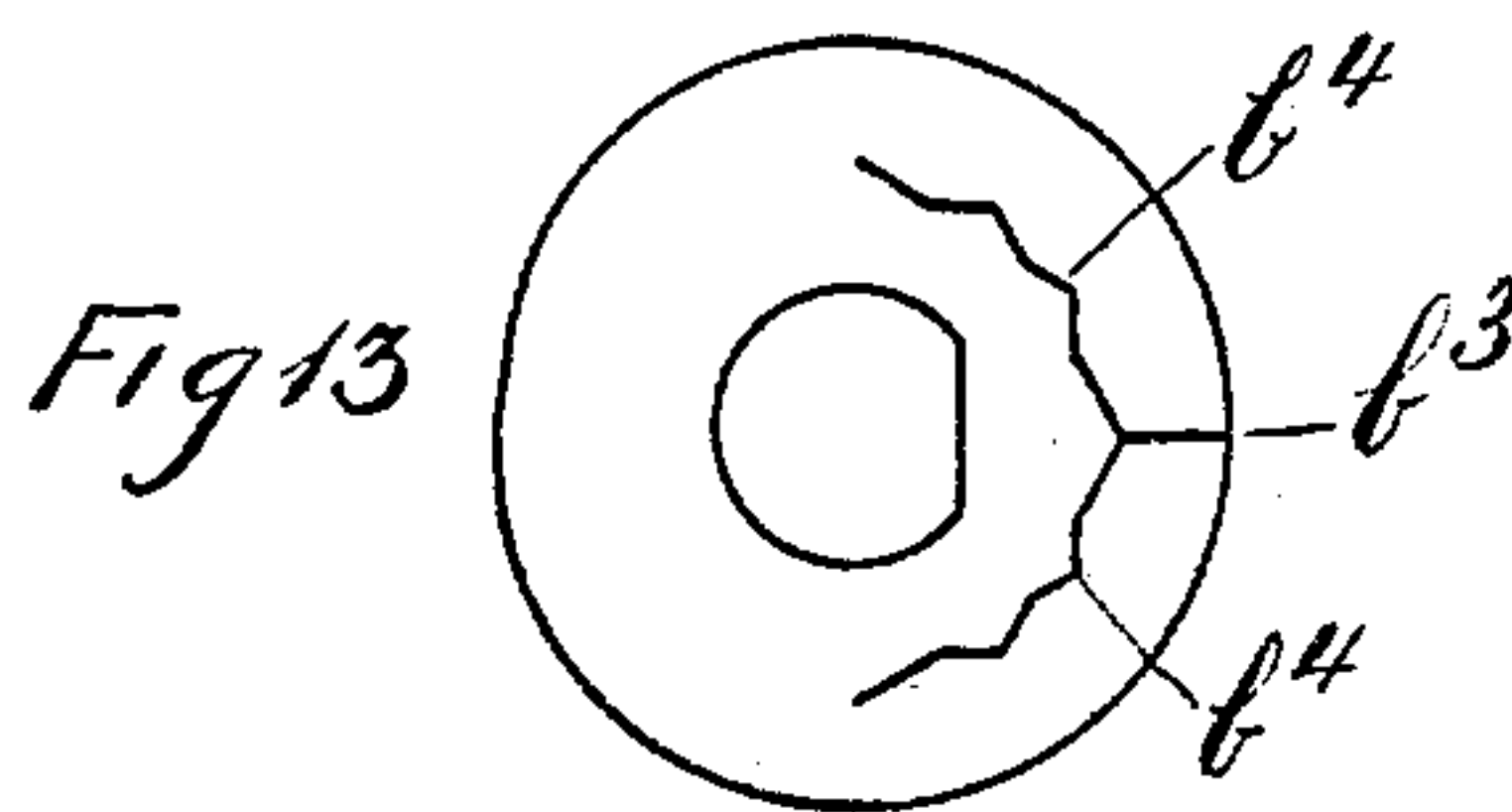
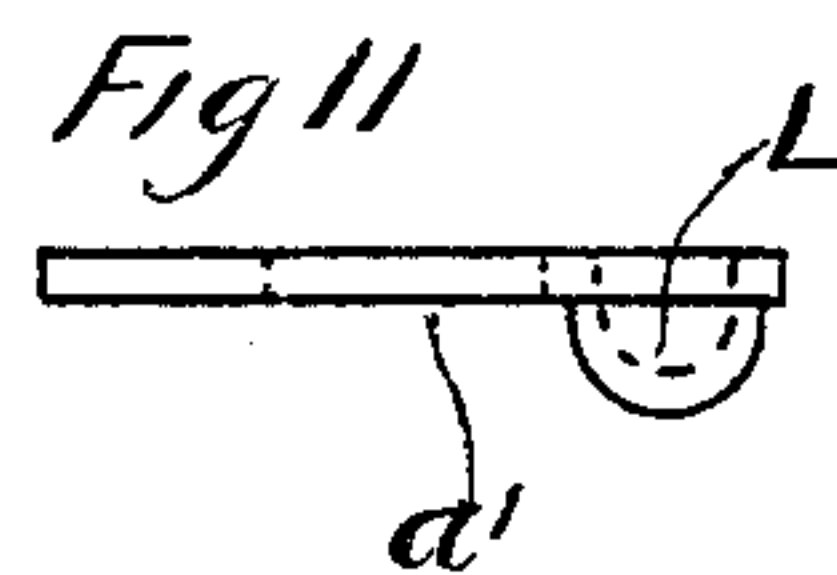
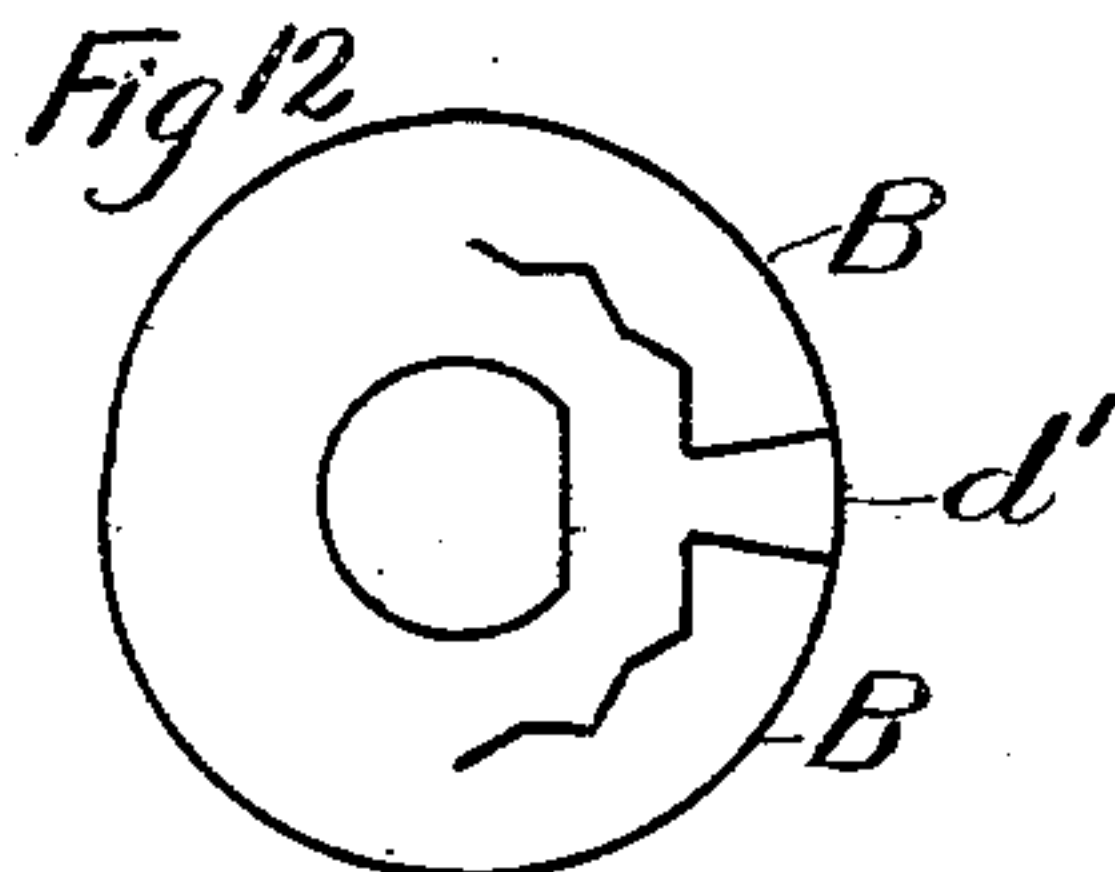
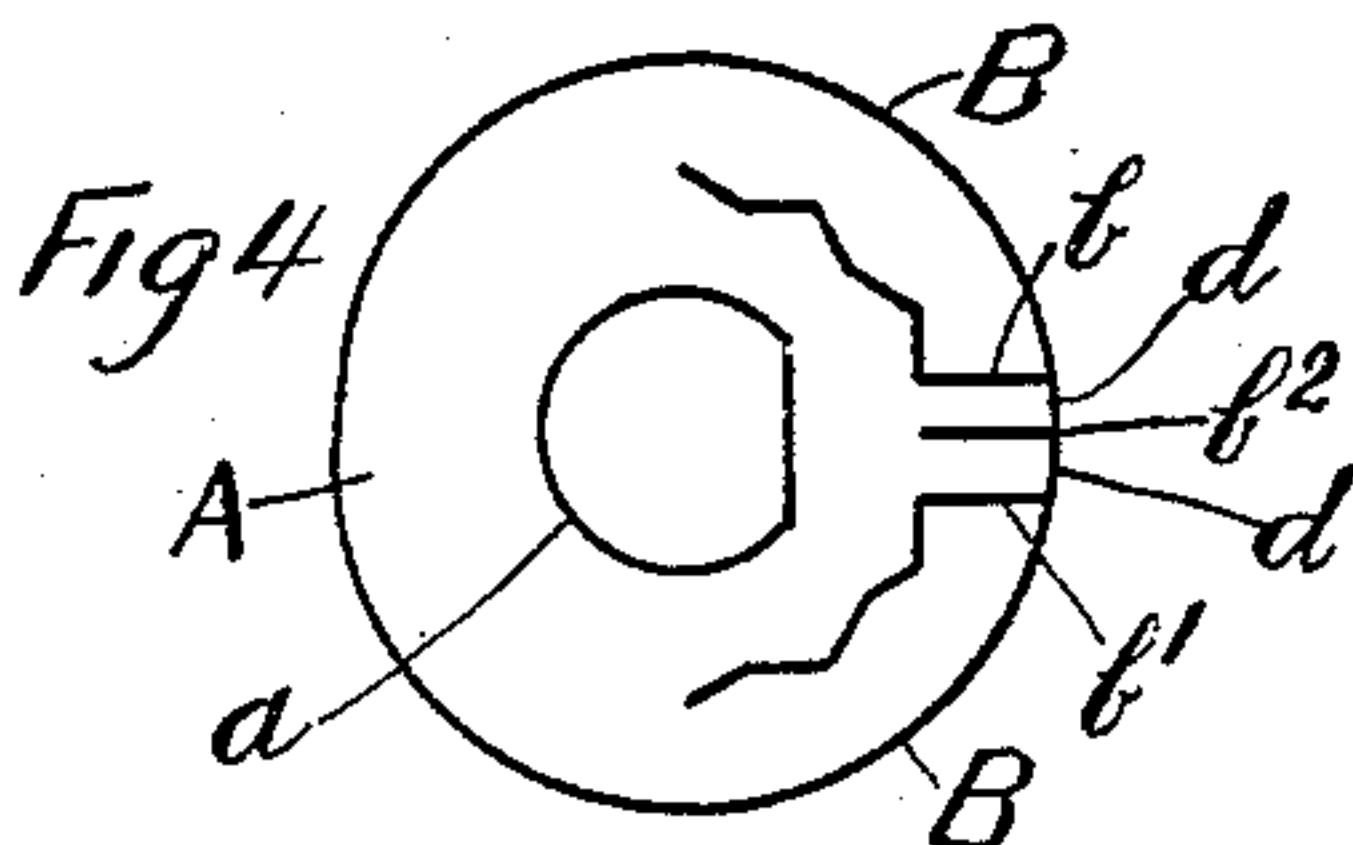
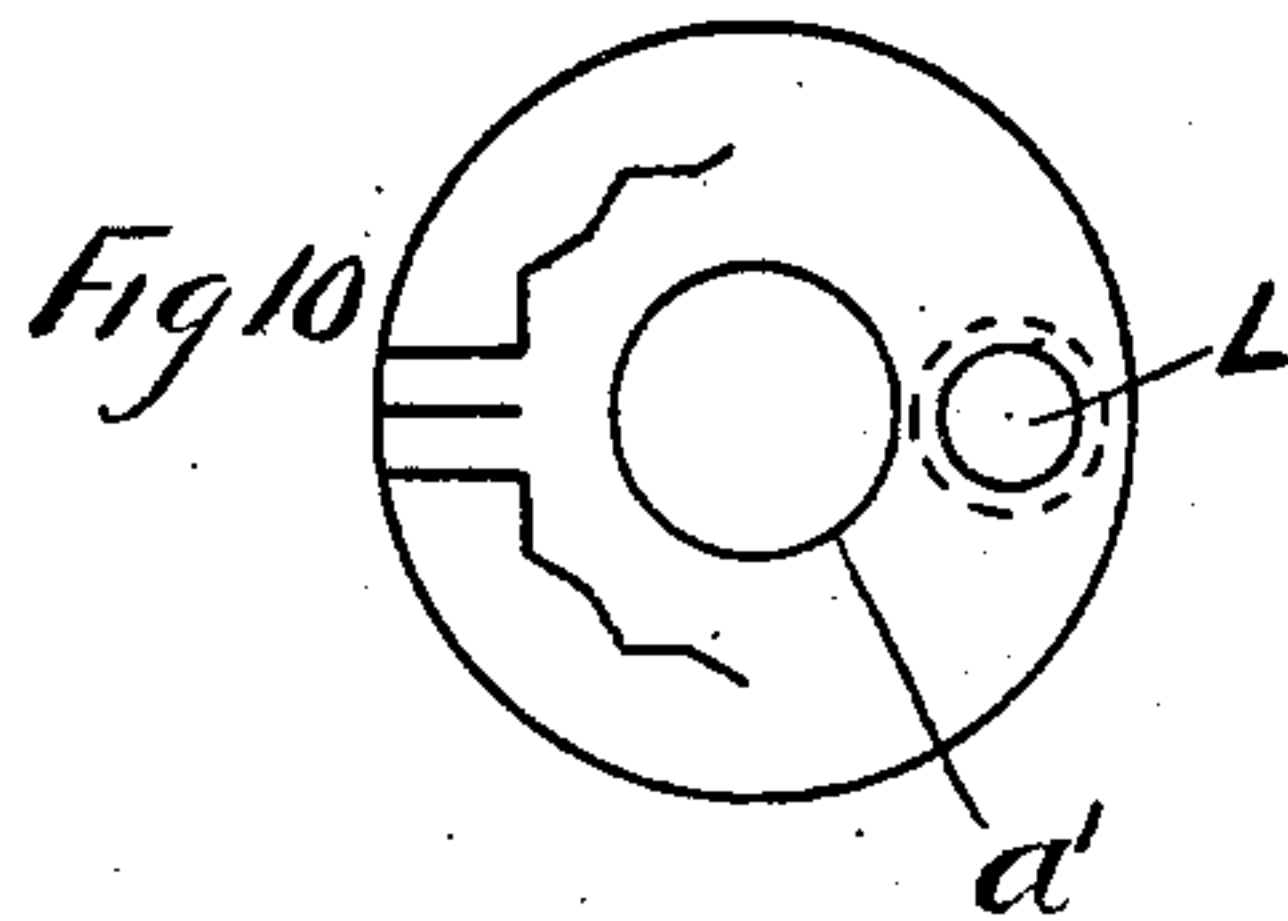
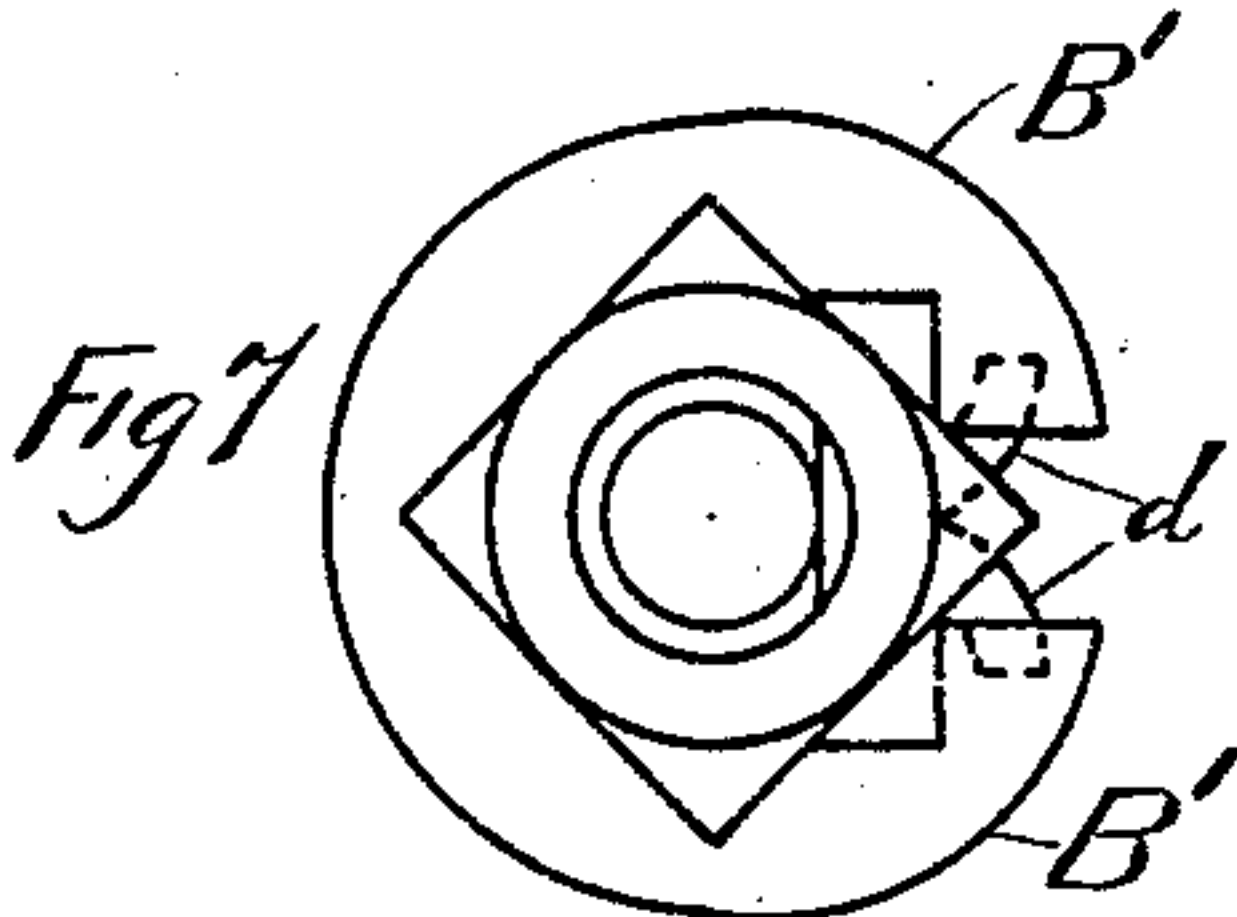
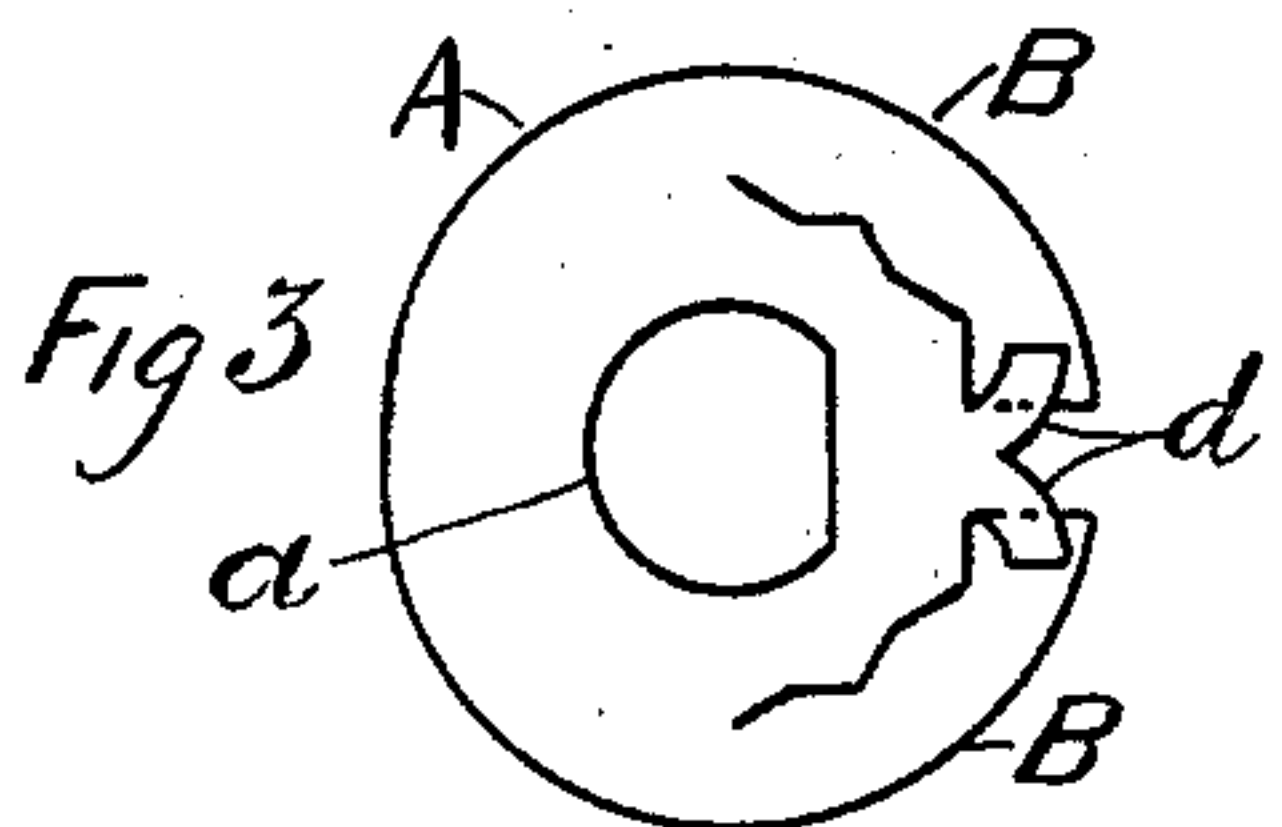
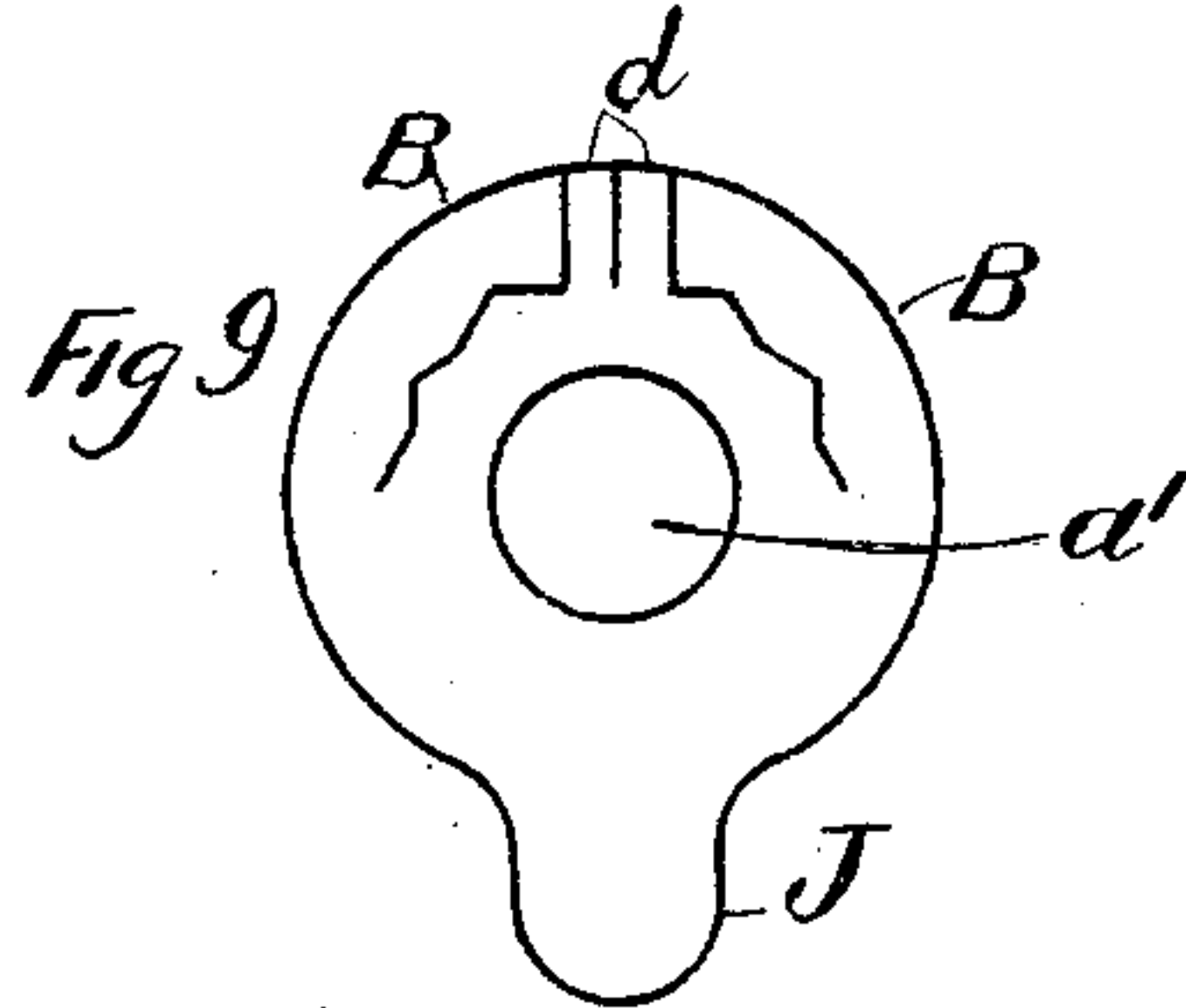
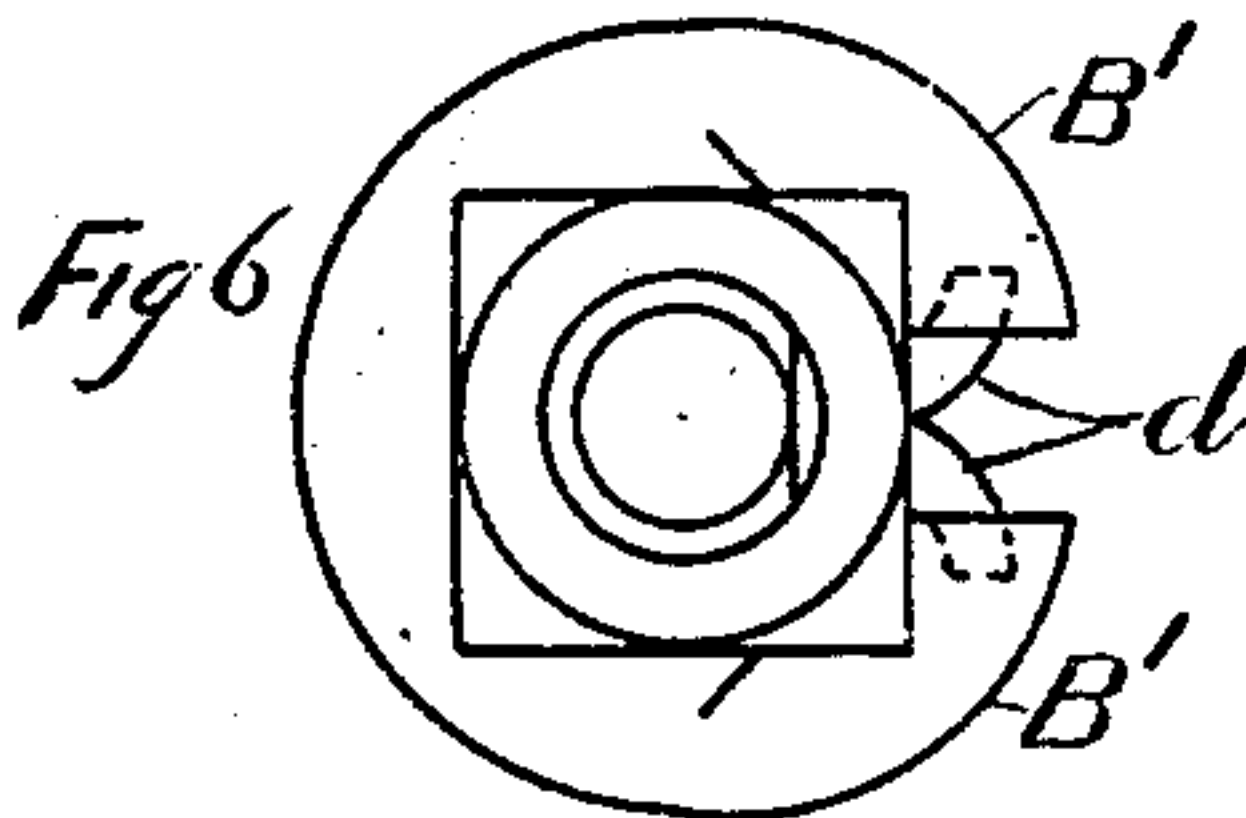
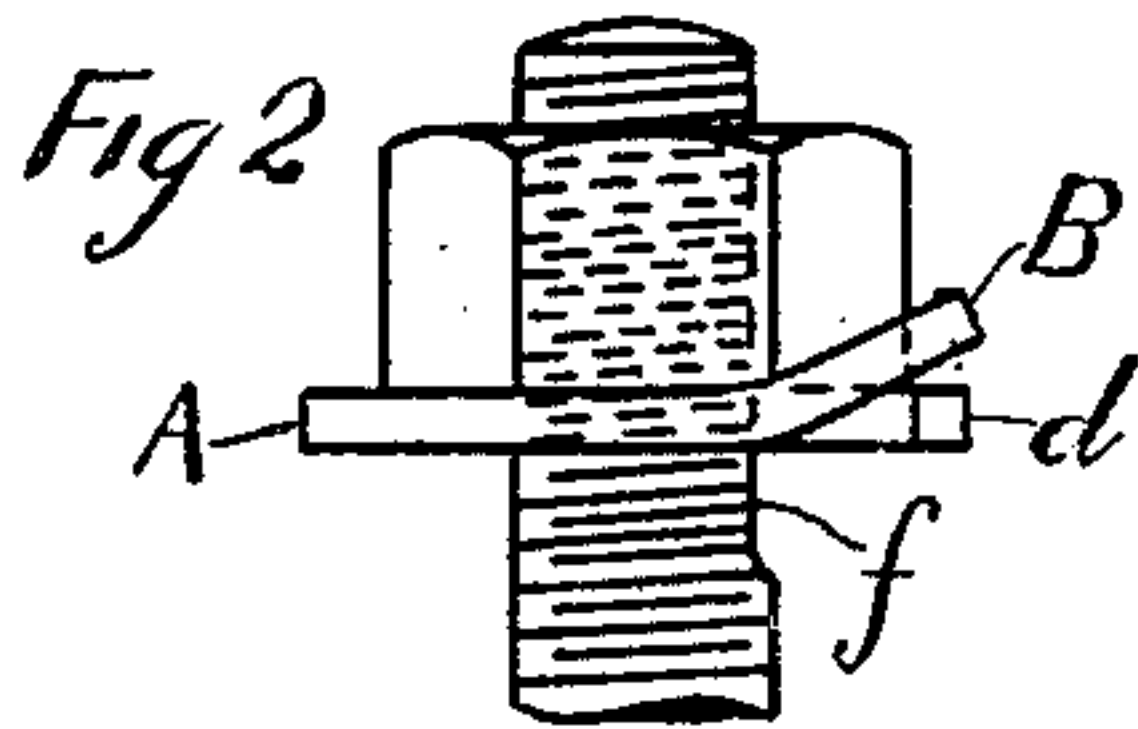
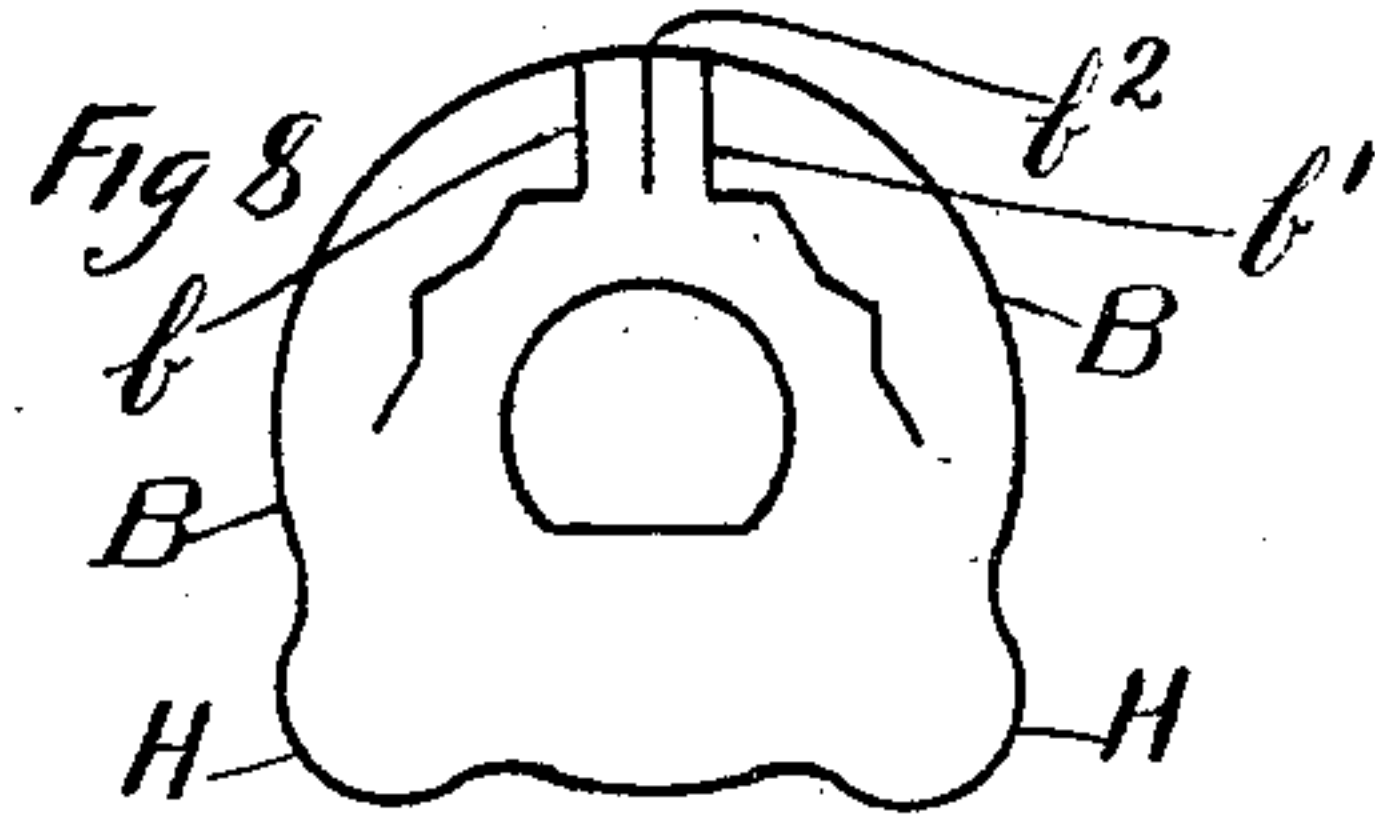
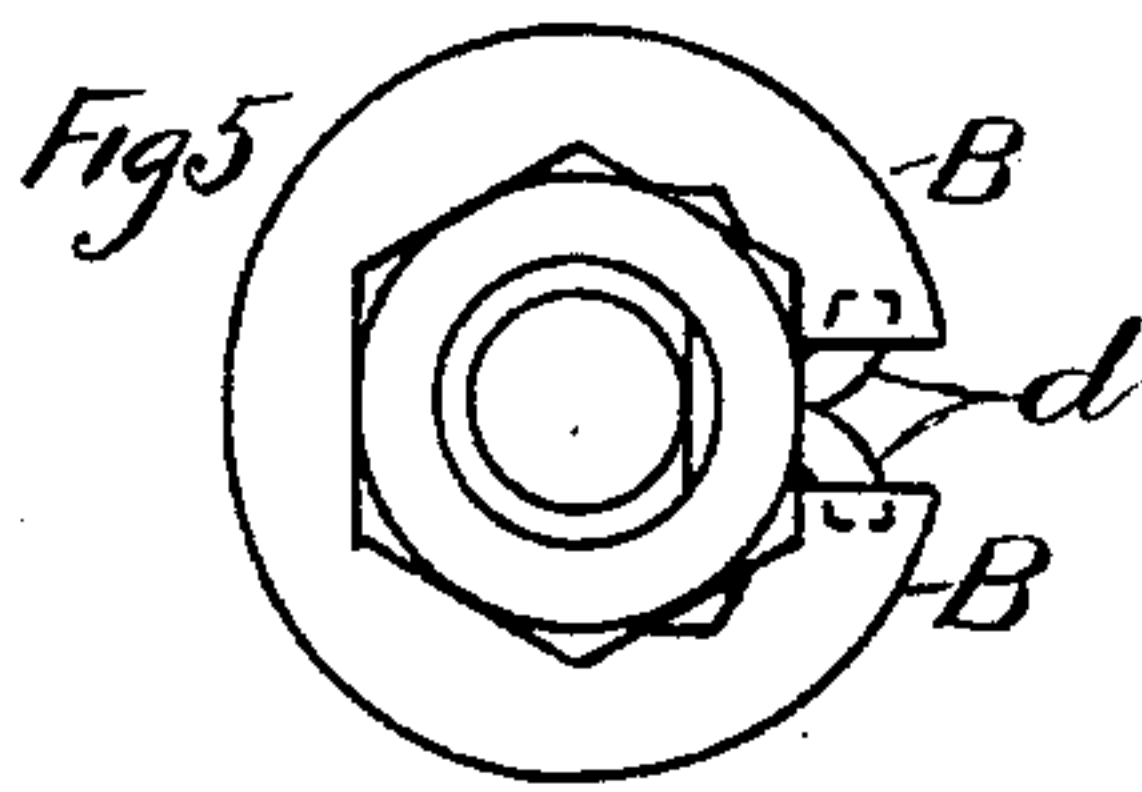
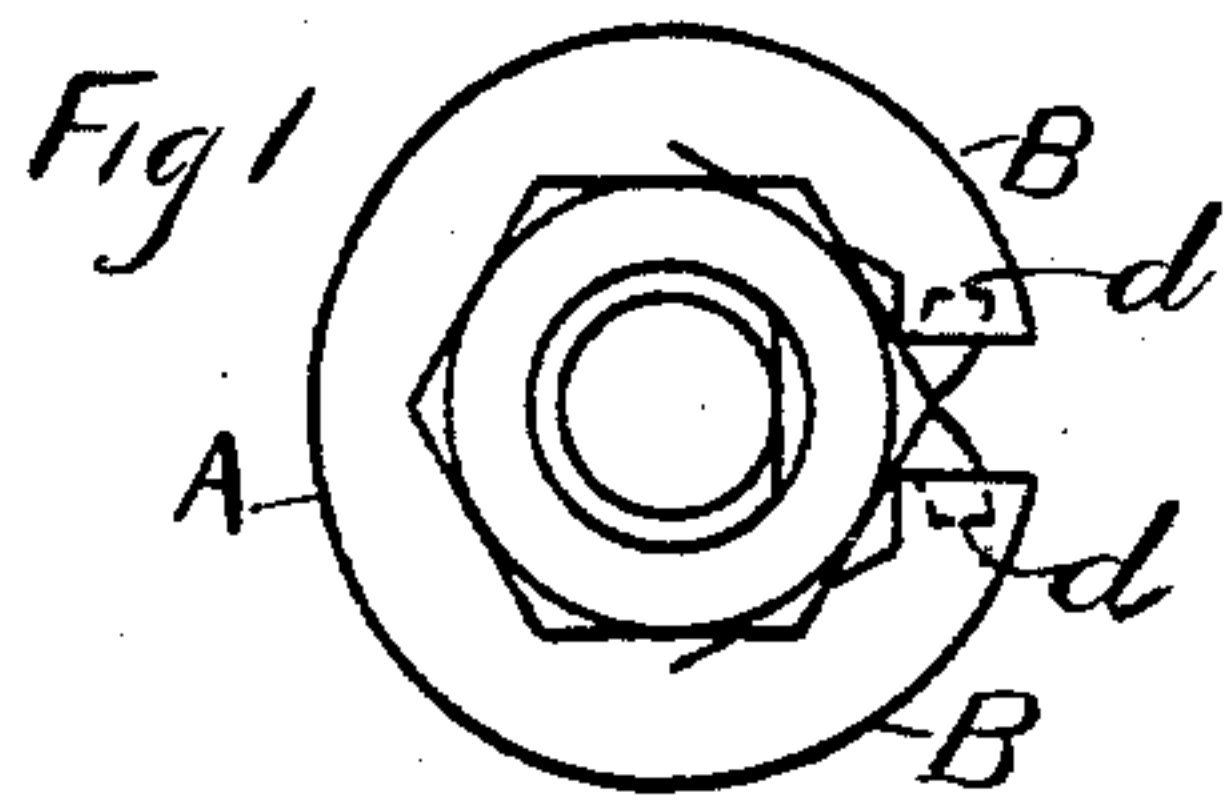
No. 677,546.

Patented July 2, 1901.

H. C. KARLSON.
NUT LOCK.

(Application filed Dec. 10, 1900.)

(No Model.)



WITNESSES:

Samuel Roberts.

Harold Mellbin.

INVENTOR

Henry C. Karlson

BY

A. A. de Bonneville

ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY C. KARLSON, OF NEW YORK, N. Y.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 677,546, dated July 2, 1901.

Application filed December 10, 1900. Serial No. 39,390. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. KARLSON, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Nut-Locks, of which the following is a specification.

The object of this invention is the production of an efficient and reliable nut-lock applicable to both hexagon and square nuts and bolt-heads, so that any ordinary bolt can easily be made to suit the nut-lock.

The accompanying drawings show my invention in some of its different forms.

Figure 1 represents a plan view of one form of my nut-lock, with a bolt and hexagon nut in position. Fig. 2 is an elevation of Fig. 1. Fig. 3 shows an under side plan view of the nut-lock, indicating the manner of spreading the supplementary horns. Fig. 4 shows a plan view of the nut-lock before any portions of the same are bent in operative position. Fig. 5 is similar to Fig. 1, with the nut placed in a different operative position. Fig. 6 shows a top plan view of my invention applied to a square nut. Fig. 7 is similar to Fig. 6, with the nut placed in a different position. Fig. 8 represents a plan view of my nut-lock, with its contour shaped for rail-joints. Fig. 9 is a plan view of the invention, with its contour shaped to be applicable to a tap-bolt, stud, or lag-screw. Figs. 10 and 11 show a plan and side elevation of my nut-lock, with a portion of its surface depressed to engage in a cavity. Fig. 12 represents a plan of the nut-lock, with one supplementary horn. Fig. 13 shows a plan of my invention in which the supplementary horns are dispensed with.

Referring to Figs. 1 to 5, which represent one of the forms of my invention, the nut-lock is shown to consist of a washer A, having an opening *a*, circular in form, with a segment removed. From the periphery of the nut-lock (see Fig. 4) slits *b b' b''* extend inwardly, the center one taking a direction toward the center of the opening and the two outer slits running for a short distance parallel to the same, after which they follow the contour of a dodecagon or twelve-sided polygon to include two and a half angles on each side, thus shaping themselves to include the corners of a hexagon nut in two positions: first, with one corner of the nut turned to-

ward the center slit, as shown in Fig. 1, and, secondly, as shown in Fig. 5, with one of the sides of the nut at right angles to the said slit, thereby allowing the nut to be locked in twelve different positions. It will be evident that with a bolt having twelve threads per inch the adjustment for each setting will be one one-hundred and forty-fourth of an inch.

To place the nut-lock in operative position, the wings B, formed by the slits, are raised around the sides and corners of the nuts after it has been screwed in place. Then the horns *d* are spread apart and forced under the wings B, thereby absolutely preventing the said wings becoming disengaged from the faces and corners of the nut, obtaining therewith a nut-lock which will positively secure the nut and prevent its unscrewing.

It is evident that in situations where there is no possibility of the wings B being bent down after the nut is secured the horns *d* can be dispensed with.

The bolt is slightly cut away or flattened to arrange it for the nut-lock, as shown at *f*, Fig. 2, and this flattened portion or flat key-way can either be incorporated in the bolt when forged and before threading or it can be cut after the bolt has been threaded.

The flat key-seat does not need to extend deeper than the depth of the bottom of the threads, and consequently no additional weakening of the bolt results than that produced by cutting the threads on the same.

In Figs. 6 and 7 my nut-lock is arranged for a square-headed nut, the wings B' being shaped accordingly. In this form of my invention the slits separating the wings from the body of the nut-lock washer each conform to the sides of a square nut, including one and a half angles. In Fig. 6 the nut is placed with one of its faces at right angles to the edges of the wings formed by the slits, as they extend in lines parallel to a line running toward the center of the washer. In Fig. 7 the nut is turned so that its faces make angles with the said edges.

Fig. 8 represents a plan view of my nut-lock, wherein the slits are arranged for a hexagon nut, but where the contour of the washer includes two ears H, which make it applicable to rail-joints, the said ears H touching the lower flange of a rail, and so constitute an additional safeguard to prevent the nut turning.

Fig. 9 shows my invention with one ear J in addition to the wings B and horns d . This form is used for a tap-bolt, stud, or lag-screw, the ear J being bent over a corner of the material to which it is applied, and if no corner is available and it is of soft material the ear or lug is driven into the same. It will be noted that in this case the center opening a' is round, and consequently does not require any keyway on the bolt.

In Figs. 10 and 11 the center hole a' is also round, the horns and wings are formed as usual, and to further prevent the nut-lock turning a depression is made, as shown at L, which fits into a cavity of the piece to which the bolt is applied.

In Fig. 12 the nut-lock contains only one horn d' , the said horn being capable of being bent under both wings.

In Fig. 13 the supplementary horns are dispensed with. One central slit b^3 runs toward the central opening and then diverges into the slits b^4 , shaped to surround the faces and corners of a nut. In this case each of the slits b^4 constitute two full angles and two half-angles of a nut.

Having described my invention, I desire to secure by United States Letters Patent and claim—

1. A nut-lock comprising a washer with an opening through the flat portion thereof, two slits surrounding the said opening and conforming to the faces and corners of a nut, after which the slits diverge to the outer contour of the washer.

2. A nut-lock, consisting of an approximately round washer, having an approximately circular opening with a segment removed, containing also three slits, the central slit running for a short distance from the circumference of the washer in the direction of a radius, and two slits running for a short distance parallel to and on opposite sides of the central slit, after which they each conform to a portion of the contour of a nut, substantially as described.

3. A nut-lock, consisting of an approximately round washer, with an opening formed to a circle having a segment removed, the washer slitted to form two wings to conform to the faces and corners of a nut, and two horns capable of being spread and bent under the wings.

4. A nut-lock, comprising an approximately round nut-lock washer, containing an opening formed to a circle with a segment removed, the washer slitted to obtain two wings with edges to conform to the faces and corners of a nut, horns contained in the washer bent under the wings, in combination with a bolt having a flat key-seat on its longitudinal surface substantially as described.

5. A nut-lock, comprising an approximately round nut-lock washer, having a central opening formed to a circle with a segment removed, the washer slitted for two wings with the edges of the wings conforming

to the contour of the faces and corners of nuts, horns also contained in the washer to be bent under the wings substantially as described.

6. A nut-lock, comprising an approximately round nut-lock washer, having a central opening in the form of a circle with a segment removed, the washer slitted for two wings and two horns, the edges of the wings to conform to the contour of the faces and corners of nuts, the horns disposed to be spread under the wings, in combination with a bolt containing a flat key-seat substantially as described.

7. A nut-lock comprising a partially-round nut-lock washer, having a central opening in the form of a circle with a segment removed, the washer slitted for two wings and two horns, the edges of the wings made to conform to the contour of the faces and corners of nuts, the horns capable of being spread and bent under the wings, two lugs contained in the contour of the washer, in combination with a bolt containing a flat key-seat on its longitudinal surface substantially as described.

8. A nut-lock comprising a partially-round nut-lock washer with a circular central opening, the washer slitted for two wings to conform to the faces and corners of nuts and bolt-heads, horns also contained in the washer to be bent under the wings, a bent lug in the outer contour of the washer, substantially as described.

9. A nut-lock, comprising a circular washer containing a circular opening, the washer slitted for two wings with edges to conform to the contour of the faces and corners of nuts and bolt-heads, horns contained in the washer to be bent and spread under the wings, in combination with a depression in the washer substantially as described.

10. A nut-lock, comprising a circular washer, having a central opening in the form of a circle with a segment removed, the washer slitted for two wings and a horn, the edges of the wings made to conform to the contour of the faces and corners of nuts, the horn bent under the wings, in combination with a bolt containing a flat key-seat on its longitudinal surface substantially as described.

11. A nut-lock, comprising a circular washer having a central opening in the form of a circle with a segment removed, the washer slitted for two wings, the edges of the wings made to conform to the faces and corners of nuts, in combination with a bolt containing a flat key-seat on its longitudinal surface substantially as described.

Signed at New York, in the county of New York and State of New York, this 30th day of November, A. D. 1900.

HENRY C. KARLSON.

Witnesses:

SAMUEL ROBERTS,
EDWARD LONGTON.