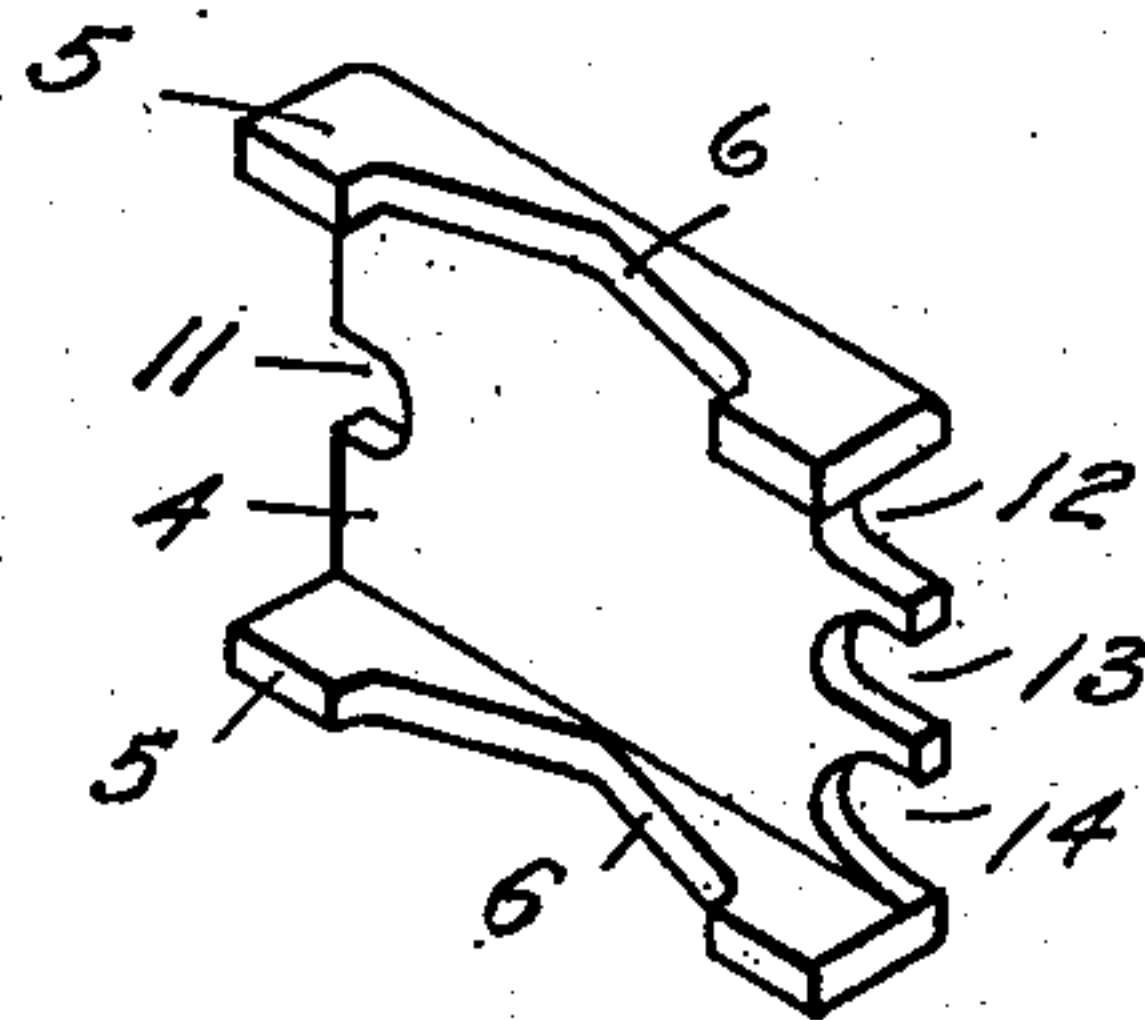
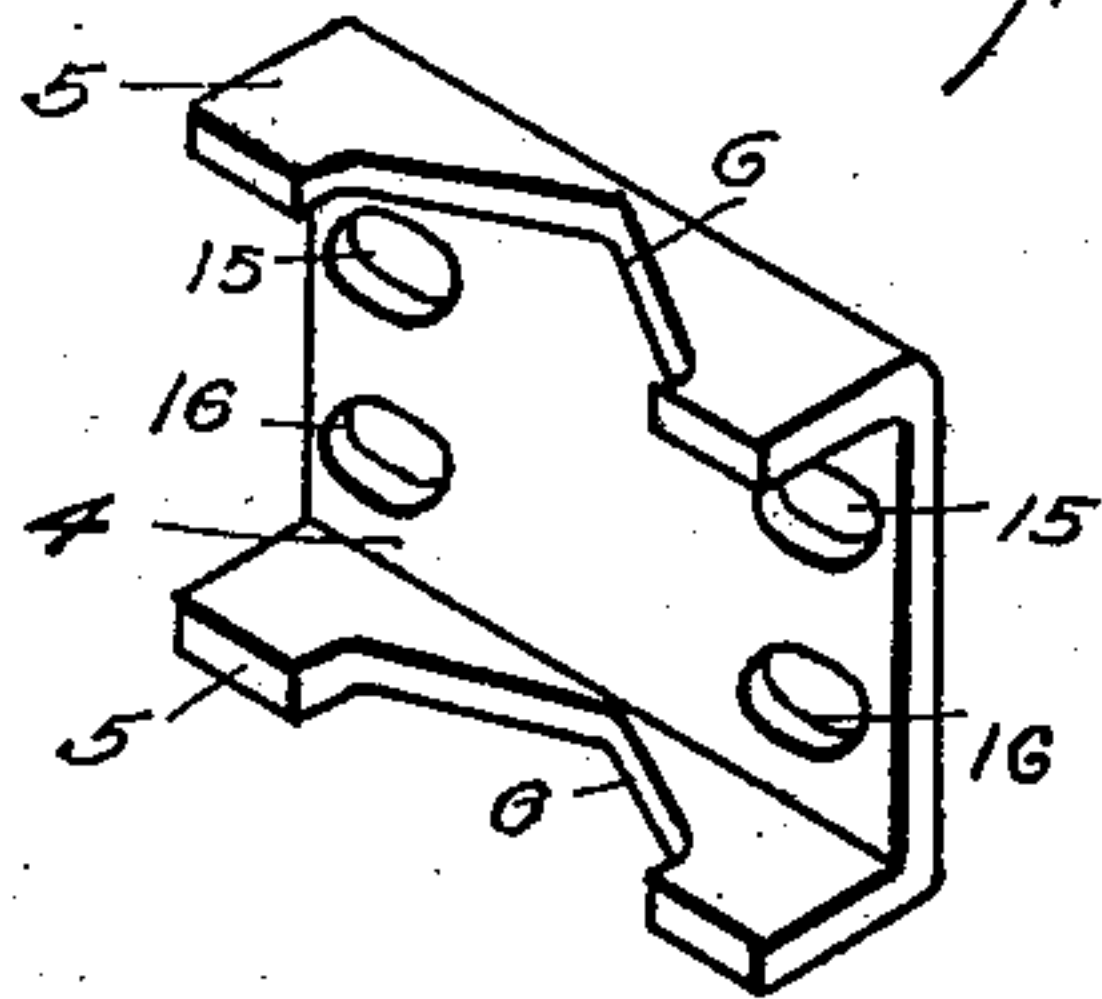
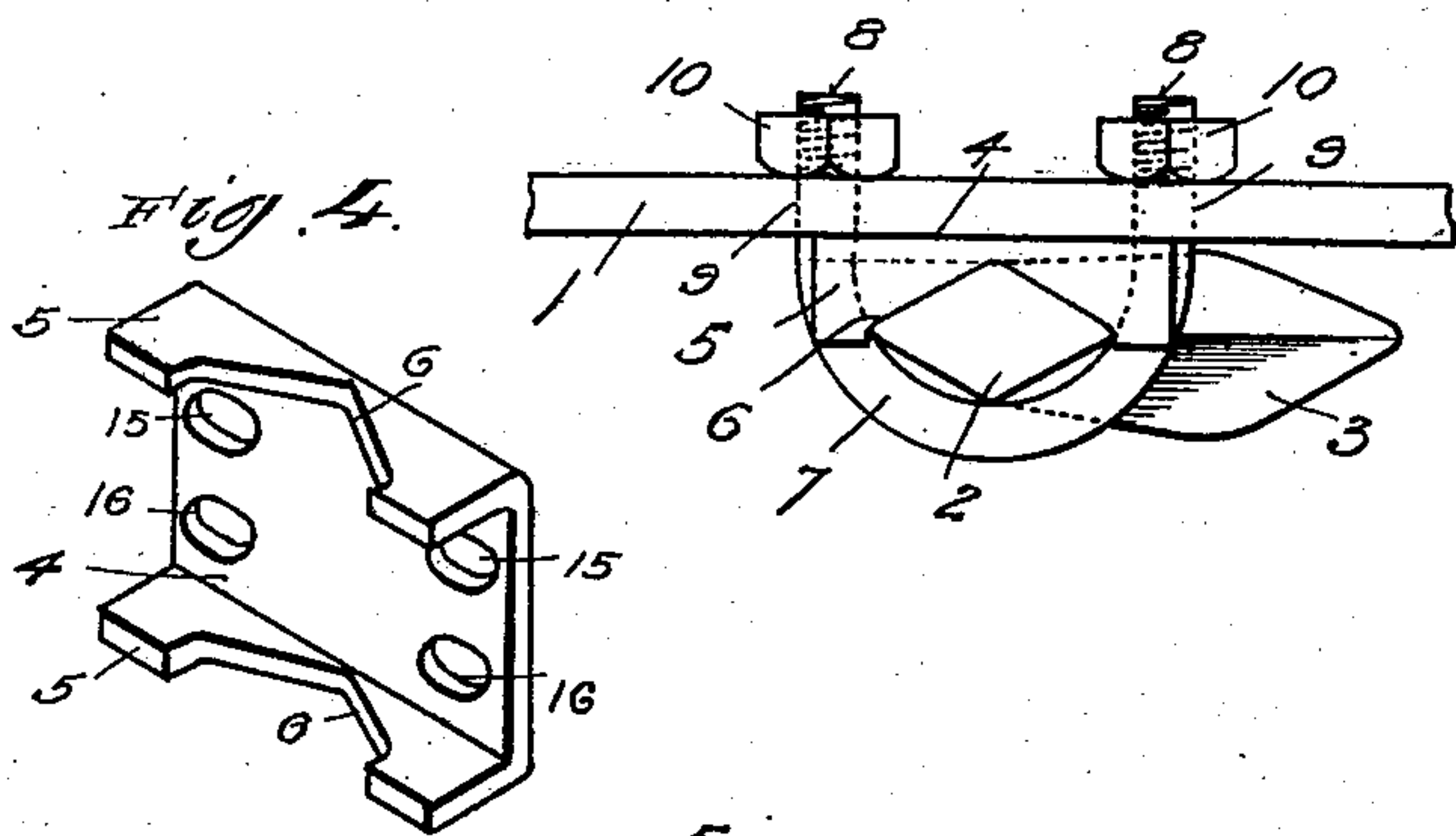
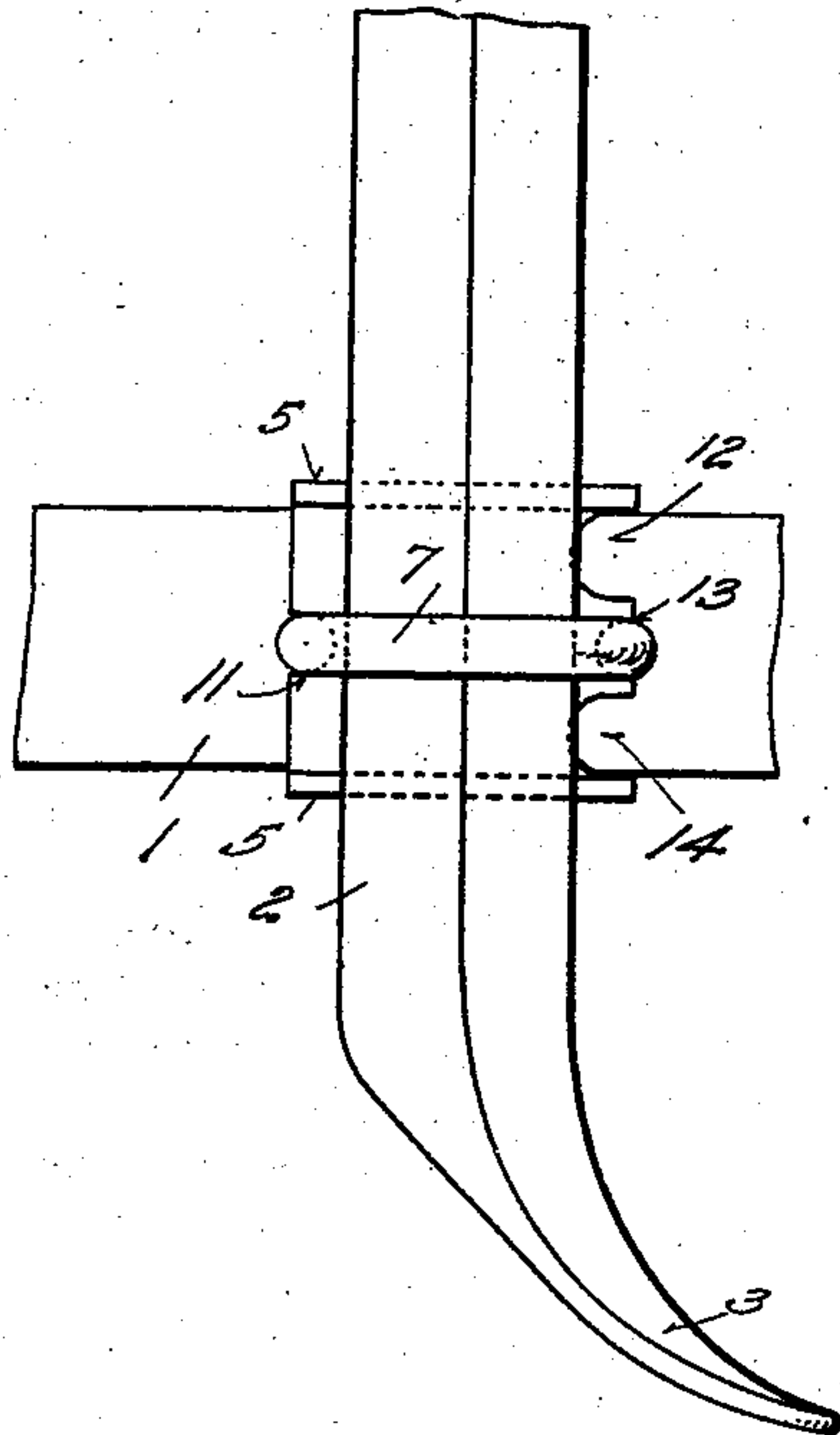


No. 749,226.

PATENTED JAN. 12, 1904.

C. M. RIPPERGER.
HARROW TOOTH FASTENER.
APPLICATION FILED OCT. 31, 1902.

NO MODEL.



WITNESSES:
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UNITED STATES PATENT OFFICE.

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TION OF OHIO.

HARROW-TOOTH FASTENER.

SPECIFICATION forming part of Letters Patent No. 749,226, dated January 12, 1904.

Application filed October 31, 1902. Serial No. 129,523. (No model.)

To all whom it may concern:

Be it known that I, CLEMENS MICHAEL RIPPERGER, a citizen of the United States, residing at Bellevue, in the county of Huron and State of Ohio, have invented certain new and useful Improvements in Harrow-Tooth Fasteners, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to harrow-tooth fasteners, and has for its object to provide a simple and effective device whereby the harrow-tooth may be connected to the bar or member of the harrow-frame which supports it, the connection being such as to permit the adjustment of the tooth to various angular positions with relation to the soil and being of such a character that the tooth is firmly held and readily released, the structure being
20 simple, inexpensive, and efficient.

To these ends my invention consists in certain novel features, which I will now proceed to describe, and will then particularly point out in the claims.

25 In the accompanying drawings, Figure 1 is a side elevation of a structure embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail perspective view of the clamping-plate detached, and Fig. 4 is a similar view of a modified form of the clamping-plate.

30 In the said drawings, 1 indicates the bar or frame member to which the harrow-tooth is to be attached, and 2 the harrow-tooth, which in the present instance is shown as rhombic in form in cross-section, so far as its shank is concerned, and provided at one or both ends with a blade or working part 3. Between the shank of the tooth and the side of the supporting-bar 1 is located a clamping-plate 4,
40 having a flat body portion which rests against the side of the bar 1, the upper and lower edges of said plate being turned outward to form flanges 5, which are notched or recessed, as shown at 6, to conform to the shape of the shank of the harrow-tooth, which shank fits therein, the clamping-plate being thus formed with a seat to receive the said shank. The clamping-plate and tooth-shank are held in

place against the bar 1 by means of a U-shaped bolt 7, the parallel arms 8 of which extend 50 through apertures 9 in the bar 1 and receive clamping-nuts 10 on the rear side of said bar, by which the curved portion of the bolt 7 may be drawn against the outer side of the shank of the harrow-tooth, so as to press the same 55 firmly into its seat in the clamping-plate and also press this latter firmly against the side of the bar 1. The parallel members 8 of the U-shaped bolt 7 engage with the vertical edges of the clamping-plate 4, said edges being pro- 60 vided for this purpose with notches or recesses, and the arrangement being such that one of said vertical edges is provided with a central notch or recess 11, while the other vertical edge is provided with a plurality of such 65 notches or recesses arranged in a vertical series—three being shown in the present instance and numbered, respectively, 12, 13, and 14. When the parts are assembled, one of the parallel arms 8 of the bolt 7 is always in engagement 70 with the notch 11, while the other arm 8 may be engaged with either one of the notches 12, 13, or 14. In the arrangement of the parts chosen for purposes of illustration the second arm 8 of the bolt is engaged with the central 75 notch 13, so that the shank of the harrow-tooth is vertical. It will be seen, however, that by so assembling the parts that said second arm 8 engages with the upper notch 13 the shank of the tooth may be inclined downward 80 and rearward, while if the engagement is made with the lower notch 14 the shank of the tooth is inclined downward and forward. In this way the angle of the tooth relatively to the surface of the soil may be readily varied, while at the same time the tooth will be 85 firmly held after adjustment. It will be understood, of course, that the tooth may be adjusted longitudinally within its seat before being clamped in position by means of the 90 bolt 7. It will be seen that the construction is simple and inexpensive and that the adjustments referred to are readily effected.

I do not wish to be understood as limiting myself strictly to the precise details of construction hereinbefore described and shown in 95

the accompanying drawings, as it is obvious that these details may be modified without departing from the principle of my invention. For instance, the engagement of the parallel members of the clamping-bolt with the clamping-plate may be by means of openings entirely surrounded by the metal of the base of the clamping-plate instead of openings not thus surrounded on one side. In other words, the opening may be an aperture through the body of the base of the plate instead of a notch in the edge thereof. Furthermore, instead of forming a plurality of such openings along one side of the clamping-plate only, a plurality of such openings may be employed along each side. Such a construction of the clamping-plate is indicated in Fig. 4, in which the plate is shown as provided on each side with two apertures 15 and 16, formed through the body of the plate slightly inward from the edges thereof and sufficiently elongated to enable the parallel members of the U-shaped clamping-bolt to pass either through the two apertures having corresponding numbers—as, for instance, the two apertures 15 or the two apertures 16—or to pass through the two apertures having different numbers—as, for instance, through either aperture 15 and the aperture 16 on the opposite side. In this way the plate may be so tilted relatively to the bar as to hold the harrow-tooth either in a vertical position or in a tilted or angular position either forward or rearward, as desired. I therefore use in the claim hereinafter following the word “opening” as a generic term, including both an aperture formed in and entirely surrounded by

the body of the plate and a notch or recess formed in the edge of the plate.

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

The combination, with a harrow-frame bar-tooth-supporting member, and a harrow-tooth non-circular in cross-section, of a clamping-plate located between the tooth and bar and constructed of a flat plate of wrought metal having its top and bottom edges bent at right angles to form flanges, said flanges being provided with recesses forming seats to fit the tooth, the body of said clamping-plate being provided in one of its vertical edges with a central open notch, the other vertical edge being provided with a plurality of similar open notches, and a U-shaped clamping-bolt passing around the tooth and through the bar, one of the parallel members of said bolt engaging the central notch of one edge of the clamping-plate, and the other parallel member of the bolt engaging any desired one of the notches of the other vertical edge of the clamping-plate, the parallel members of the clamping-bolt being always in engagement with the notches on both sides of the plate when the parts are assembled, substantially as described.

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

CLEMENS M. RIPPERGER.

Witnesses:

D. I. HOCT,

D. V. BOOKER.