

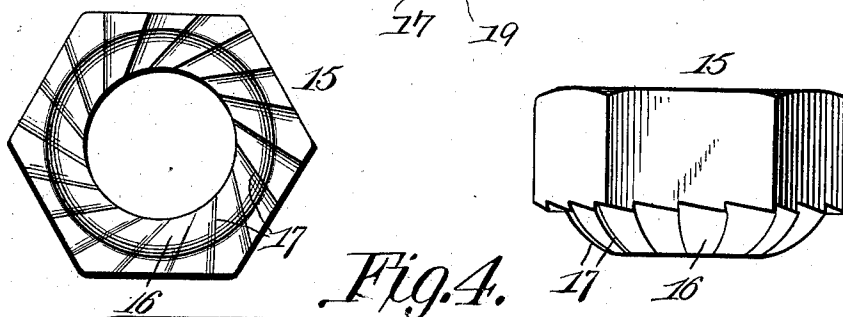
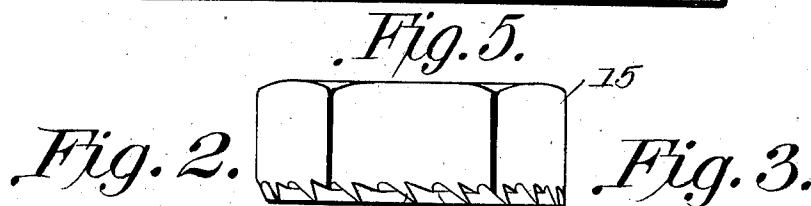
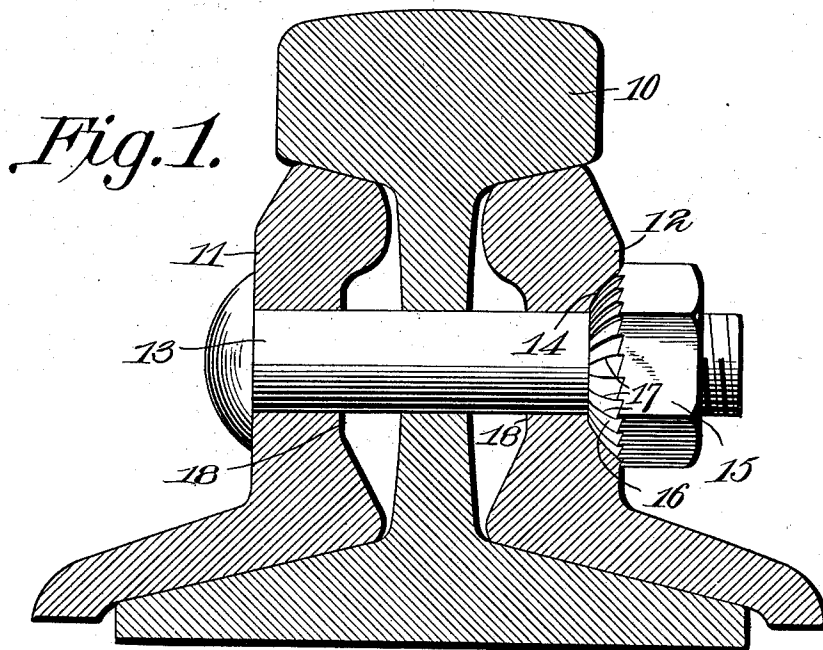
No. 752,628.

PATENTED FEB. 16, 1904.

W. C. MINER.
NUT LOCK.

APPLICATION FILED DEC. 10, 1903.

NO MODEL.



Witnesses
E. J. Stewart
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UNITED STATES PATENT OFFICE.

WILLIAM CHARLES MINER, OF TRAVERSE CITY, MICHIGAN, ASSIGNOR OF
ONE-HALF TO WILLIAM I. DE KAY, OF TRAVERSE CITY, MICHIGAN.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 752,628, dated February 16, 1904.

Application filed December 10, 1903. Serial No. 184,638. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CHARLES MINER, a citizen of the United States, residing at Traverse City, in the county of Grand Traverse and State of Michigan, have invented a new and useful Nut-Lock, of which the following is a specification.

This invention relates to devices employed for preventing nuts turning backward upon their bolts, and has for its object to simplify and improve the construction and efficiency of such devices; and the invention consists in certain novel features of construction, as hereafter shown and described, and specified in the claim.

The invention is more particularly applicable to railway-rail joints and for the purpose of illustration is shown thus applied.

Figure 1 represents a transverse section of a railway-rail joint with the improvement applied. Fig. 2 is a face view, and Fig. 3 is a side view, enlarged, of one of the improved nuts detached. Figs. 4 and 5 are views, similar to Fig. 3, illustrating modifications in the construction of the nut.

The rail is represented at 10, the clamp-plates at 11 12, and the clamp-bolts at 13, of the usual construction except that the clamp-plate 12 at the threaded ends of the bolts is provided with recesses 14 adjacent to the bolts.

The clamp-nuts are represented at 15 and provided with semispherical projections 16 centrally of their face sides with the projection and the face of the nut not occupied by the projection provided with tangentially-disposed ratchet-teeth 17, the portions of the teeth on the projection merging into the portions of the teeth on the nut-face, as shown in Fig. 2. The projection 16 conforms in outline to the recess 14, and when the nut is "set up" on the bolt the projection enters the recess and the ratchet-teeth grind over the inner surface of the plate 12 adjacent thereto and embed themselves in the comparatively soft metal of the plate 12 and effectually prevent any backward rotation of the nut.

The clamp-plates of railway-rail joints are generally formed concaved on their inner surfaces, as at 18, so that they yield somewhat to

the pressure of the nuts and by their reaction materially assist in preventing backward movement or loosening of the nuts, and when the improved nut herein described is employed this advantage of the springiness of the clamp-plate materially increases the efficiency of the device and correspondingly improves the action. The ratchet-teeth will preferably be slightly undercut on their short sides and with relatively sharp or cutting edges to improve their action.

When the nut is to be removed, a sharp blow with a hammer or spike-mail upon the plate 12 at the same time that the wrench is applied to the nut will release it and enable it to be rotated backwardly; but such blows combined with a forcible retrograde movement will not be liable to happen when the nut is in use. No danger, therefore, exists of accidental displacement or loosening no matter how severe the ordinary jarring and concussion may be.

In Figs. 4 and 5 slight modifications are shown in the construction consisting in forming intermediate ratchet-teeth 19 between the teeth 17, preferably between each alternate pair, the intermediate teeth projecting a less distance than the teeth 17, so that in event of the larger teeth becoming worn or crushed under the strains the intermediate teeth will come into action. Thus the intermediate teeth serve as "reserve" teeth to insure continued action of the nut even after the main teeth are destroyed or otherwise rendered non-effective.

Having thus described the invention, what I claim is—

A device of the class described, comprising a nut having primary ratchet-teeth transversely disposed in its face and spaced apart and with supplementary ratchet-teeth between the primary teeth and projecting a less distance than the same.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM CHARLES MINER.

Witnesses:

D. J. YOUKER,
S. M. BROWN.