

(No Model.)

H. GAMBLE.
NUT LOCK.

No. 560,028.

Patented May 12, 1896.

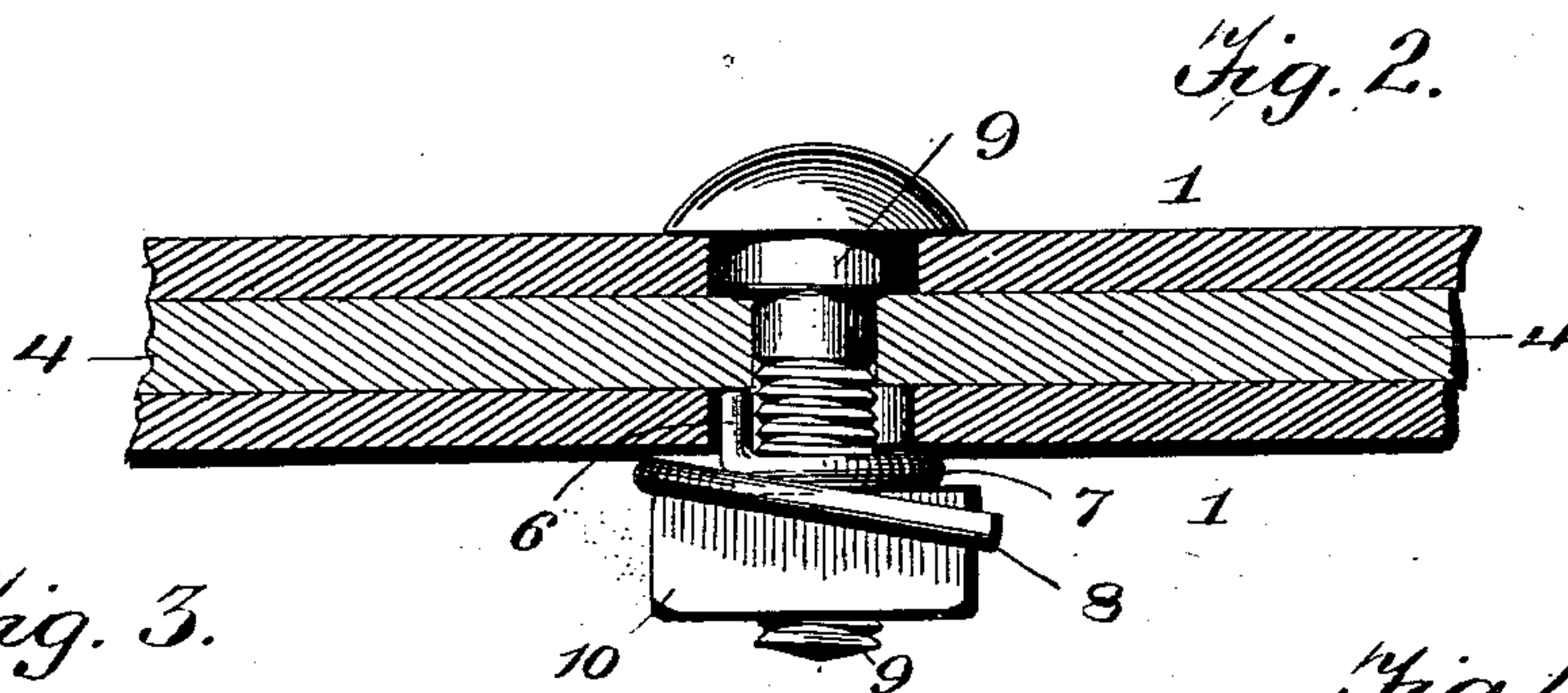
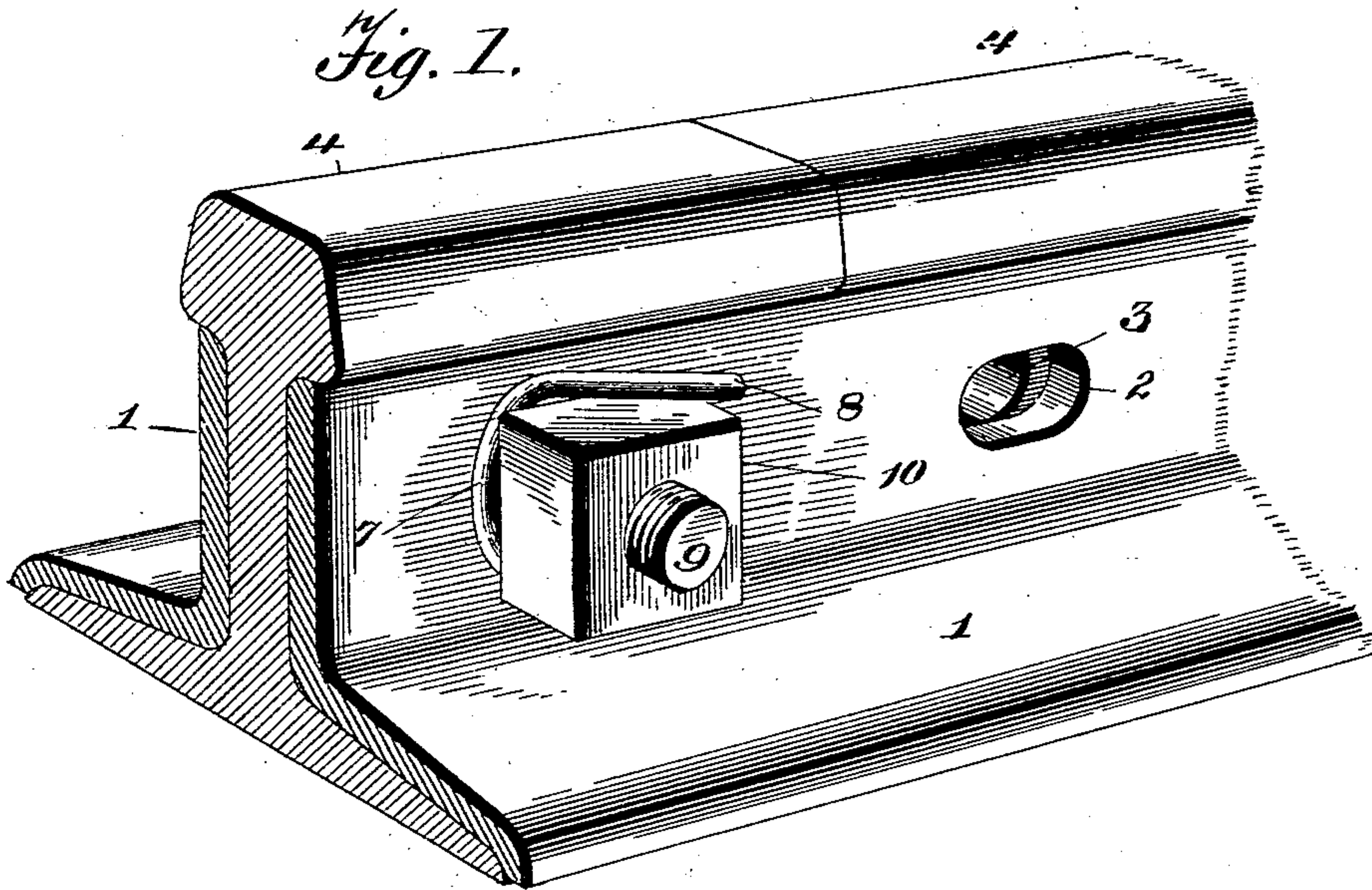


Fig. 3.

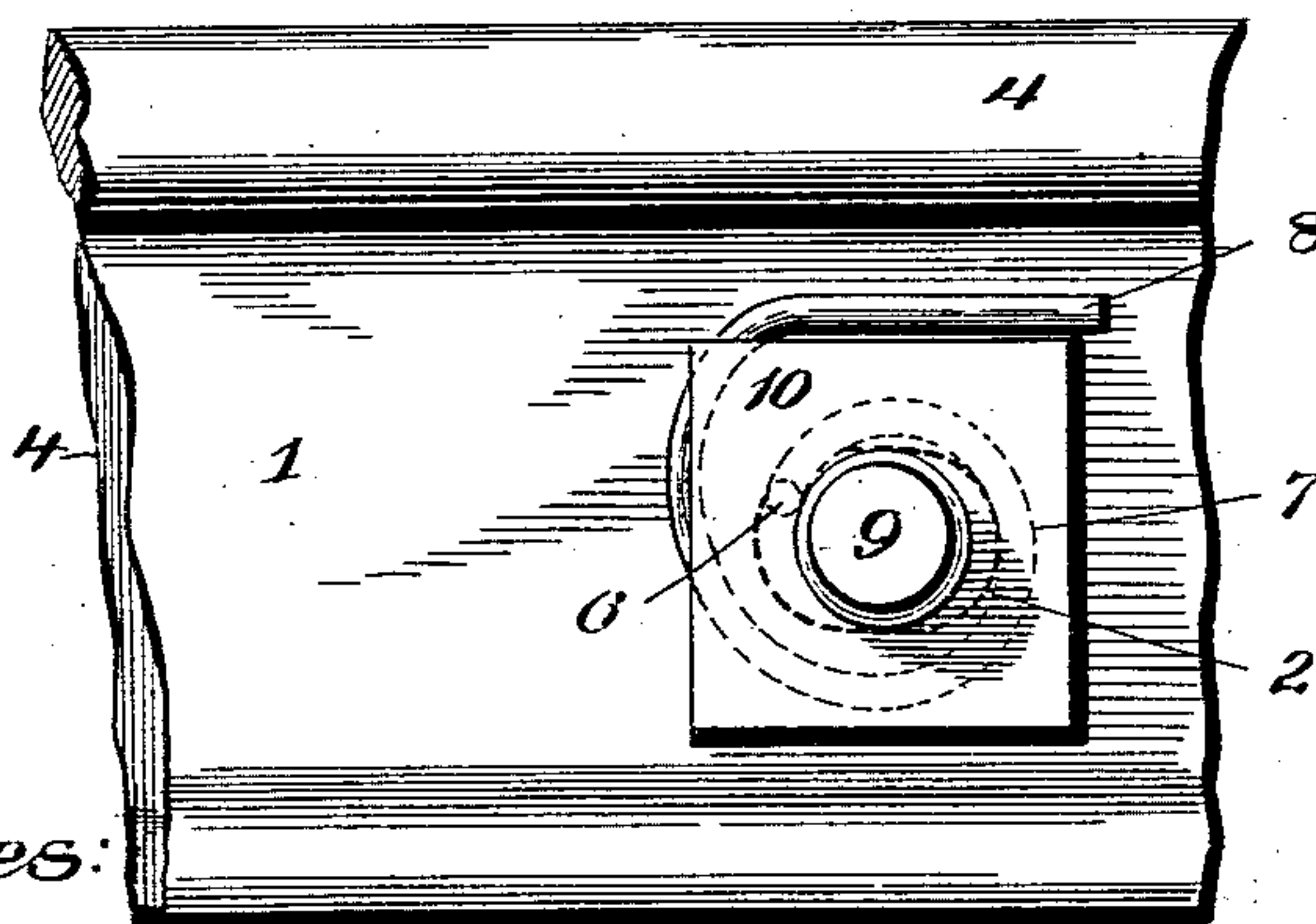
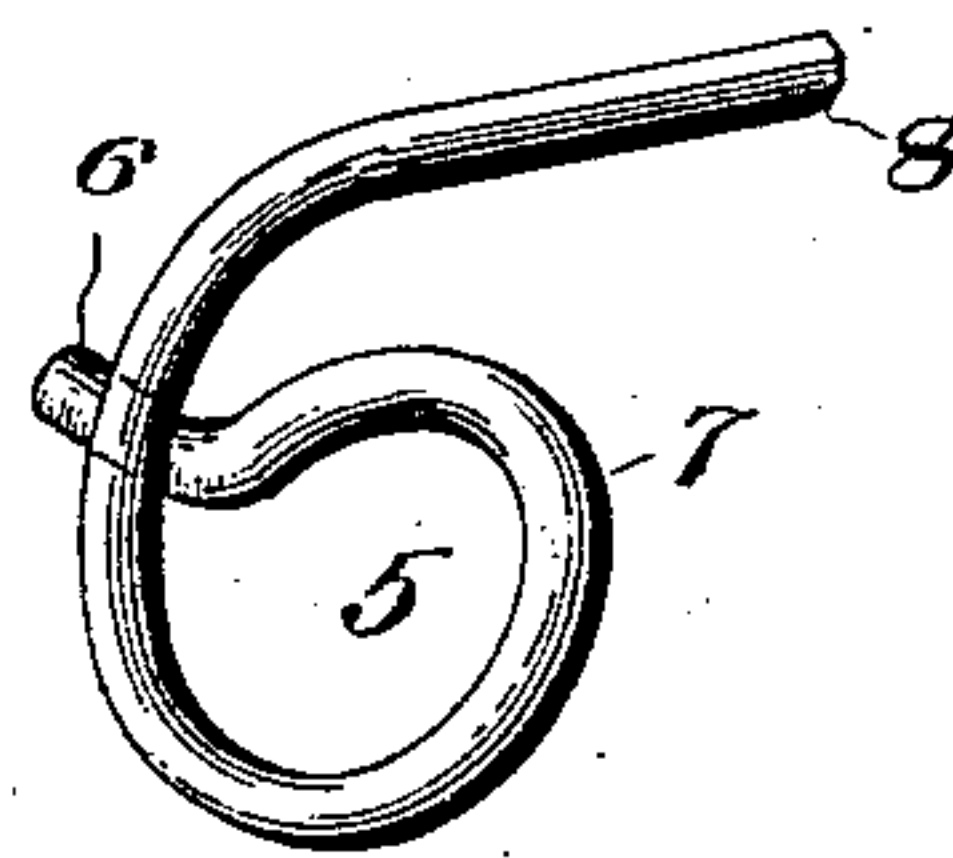


Fig. 4.



Witnesses:

L. C. Hills,
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Inventor:
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By
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UNITED STATES PATENT OFFICE.

HOWARD GAMBLE, OF LEAVENWORTH, KANSAS.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 560,028, dated May 12, 1896.

Application filed August 12, 1895. Serial No. 558,999. (No model.)

To all whom it may concern:

Be it known that I, HOWARD GAMBLE, a citizen of the United States, residing at Leavenworth, in the county of Leavenworth and State of Kansas, 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 appertains to make and use the same.

This invention relates to a new and useful improvement in nut-locks; and it consists in the construction and arrangement of parts hereinafter described, and definitely pointed out in the claim.

The aim and purpose of this invention are to construct a nut-lock consisting of a single piece of spring-wire or strip of metal or other material which can be used with the rails, fish-plates and bolts now in common use and can be used again after the nut has been removed, and which is cheaply manufactured and easily placed in position. These objects are obtained by the construction illustrated in the accompanying drawings, wherein like letters of reference indicate corresponding parts in the several views, and in which—

Figure 1 is a perspective view of a rail-joint, showing my improved nut-lock applied thereto. Fig. 2 is a horizontal section through the rail at the bolt and nut. Fig. 3 is a front elevation of the rail, fish-plate, bolt, and nut, the portion of the spring-washer under the nut showing in dotted lines; and Fig. 4 is a perspective view of the washer.

In the drawings, 1 represents ordinary fish-plates which are used in making continuous rail-joints in the construction of railroads and are placed on opposite sides of the rails. These fish-plates as now constructed are formed with elongated apertures 2, which are larger than the apertures 3 in the rail 4, as shown in Figs. 1 and 2. My improved washer is adapted to be used in connection with this ordinary style of fish-plate without in any manner altering the construction thereof and can be used again after the nut has been removed.

5 5 designates my improved washer, which consists of a single piece of spring-metal wire

or other suitable material. In the drawings I have shown this washer circular in cross-section, although in practice I may make the washer of other shapes than circular—for instance, rectangular in cross-section. This washer consists of the inwardly-projecting spud or foot 6, which is of a length substantially the thickness of the fish-plate, and the horizontal circular portion 7, extending at an angle from the foot 6, and the straight spring end portion 8. In practice this washer is formed from a single straight piece and is then bent into the form described.

9 represents the bolt, and 10 the nut on one end of the bolt, the bolt and nut being of the usual and ordinary construction.

In the construction of fish-plates the screw-threaded end of the bolt does not fully occupy the aperture in the plate, leaving a space between the sides of the aperture and bolt, as shown in Fig. 2. In this space I place the spud or foot 6 of the washer, the bolt passing within the circular portion 7, as shown in Figs. 2 and 3. I then apply the nut 10. It will be seen that the circular portion 7 is considerably larger than the diameter of the bolt, so as not to bear against the screw-threads thereof, as shown in dotted lines, Fig. 3, and toward its outer end this circular portion becomes larger until it reaches beyond the side of the nut and is then bent straight and upwardly at an acute angle to the plane of the base of the nut and parallel with the sides thereof. This circular portion 7, lying between the nut and plate, forms a bearing-surface or bed for the nut, and the harder the nut is screwed on the firmer will the washer be held in place. By forming the outer end of the circular portion 7 so that it will extend beyond the sides of the nut I am enabled to bend the spring portion 8 perfectly straight, and this spring portion being at an incline to the base of the nut and beyond the sides thereof the edge of the nut in being set will readily ride up over the spring portion and force the same downward, and when the sides of the nut are parallel with this spring portion this portion will spring up and the nut will be prevented from turning off. Another object in making this spring portion 8 straight is that when in unscrewing the nut this portion is

forced down it will rest flush on the face of the fish-plate and be entirely out of the path of the nut.

I am aware that it is not broadly new to
5 construct a washer of spring-wire nor to construct a washer having a spring portion 8 embracing the sides of the nut for locking the same; but

What I claim as new, and desire to secure
10 by Letters Patent, is—

A nut-lock, consisting of a single integral strip of spring metal forming a washer, having a spiral coiled portion adapted to surround a bolt and bear against the base of a nut, one
15 end of the coiled portion being bent at an angle

thereto and adapted to fit into the bolt-aperture of a fish-plate, the opposite end of the coiled portion extending beyond the side of the nut and having a straight-end spring portion extending up from the end of the coiled 20 portion at an acute angle to the plane of the base of the nut and adapted to bear against the side face thereof, substantially as described.

In testimony whereof I affix my signature 25 in presence of two witnesses.

HOWARD GAMBLE.

Witnesses:

ED LANE,

J. D. WILHELM.