

(Model.)

W. ADAIR.

NUT LOCK.

No. 370,588.

Patented Sept. 27, 1887.

Fig. 1.

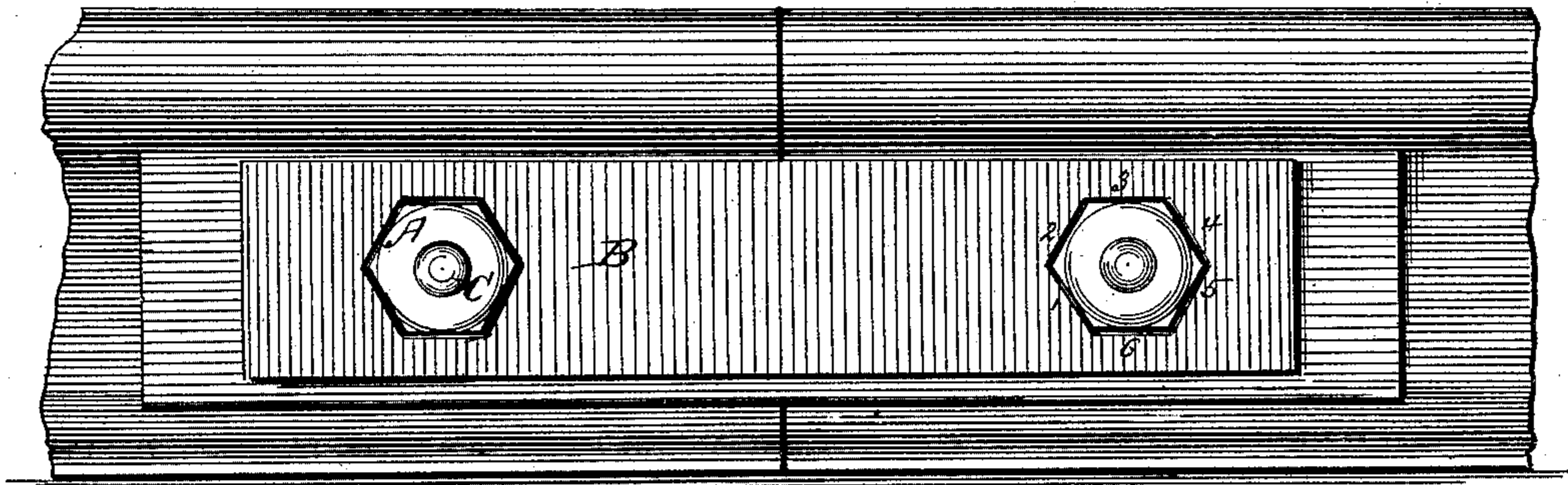


Fig. 2.

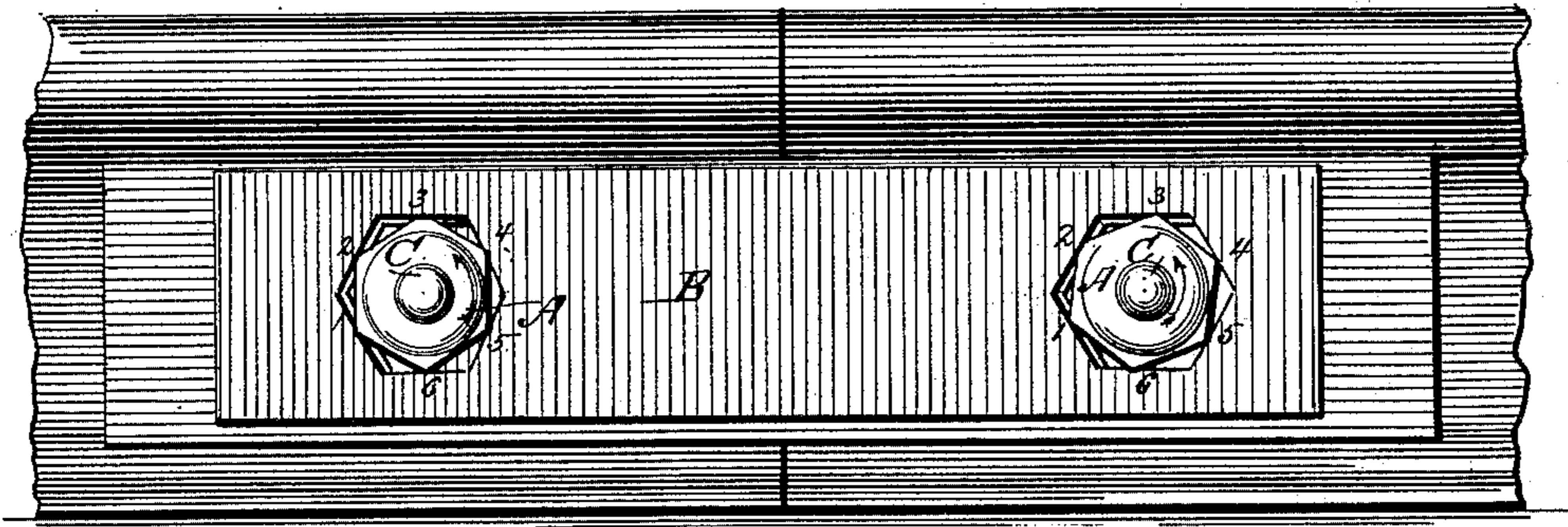


Fig. 3.

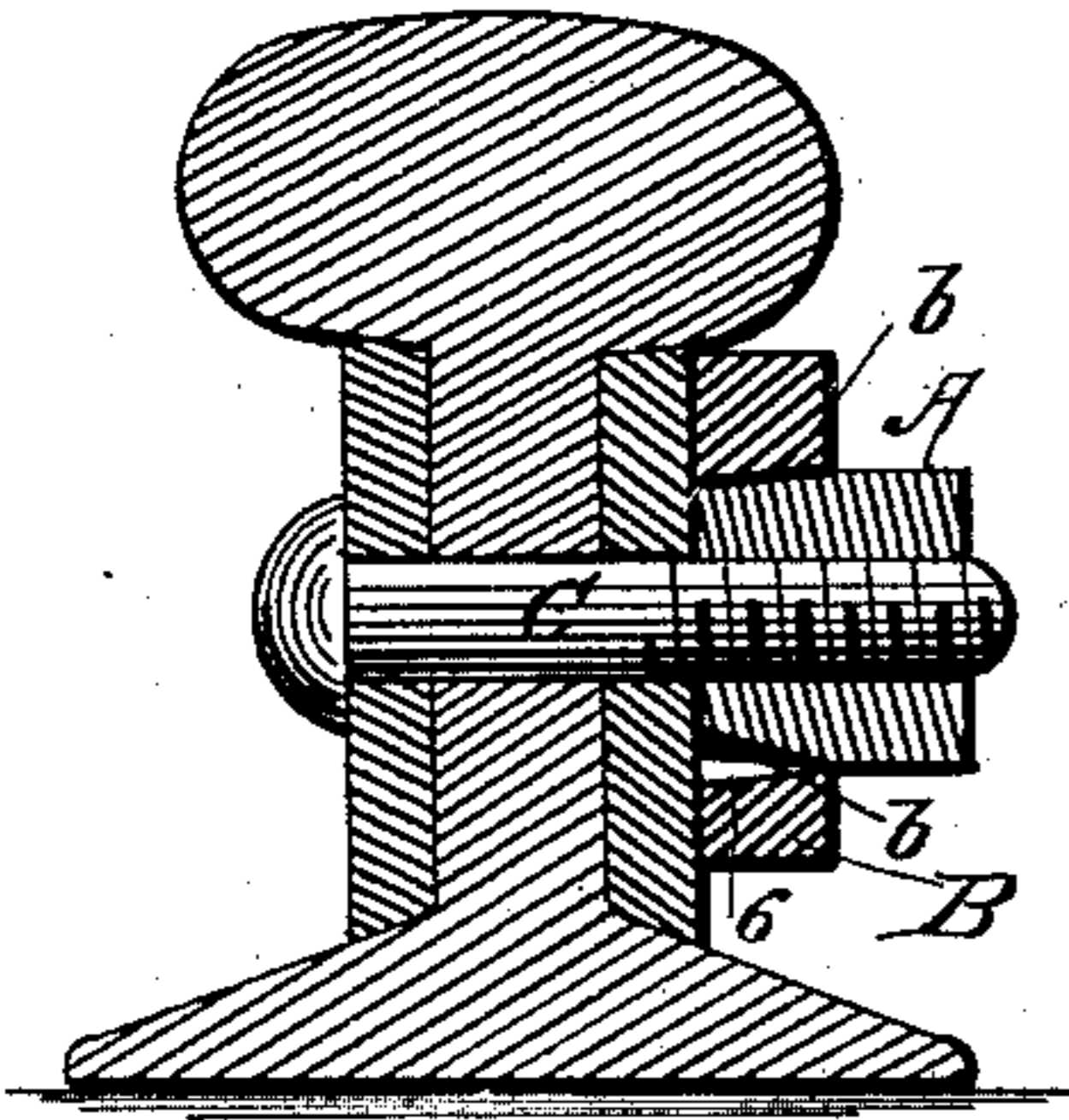


Fig. 4.

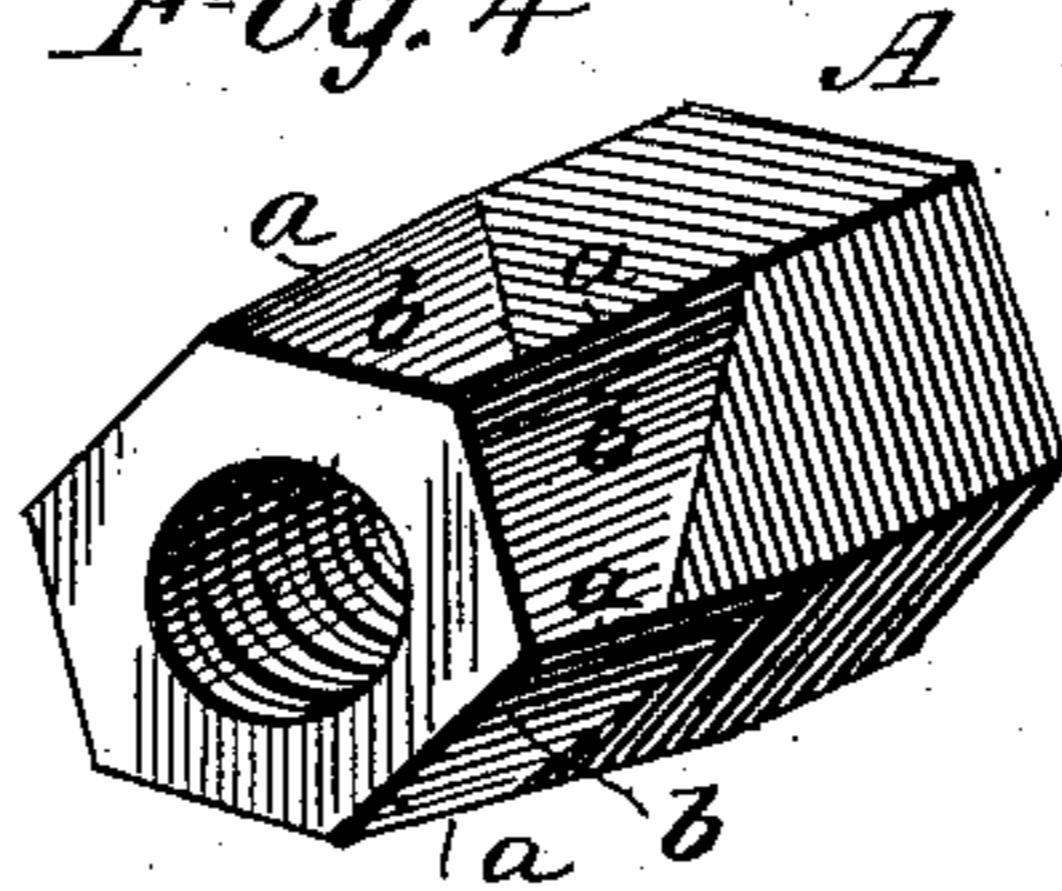


Fig. 5.

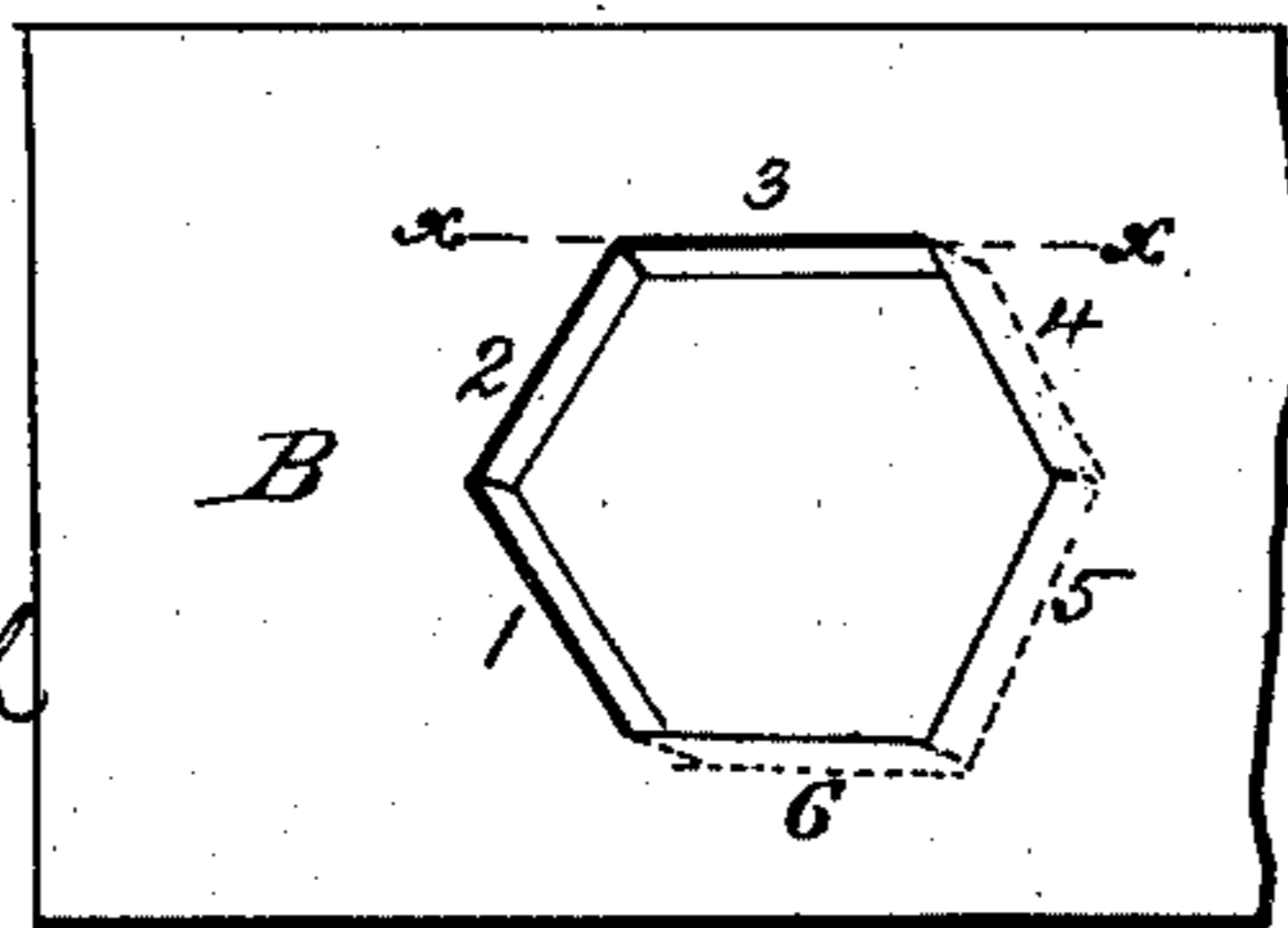


Fig. 6.



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NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 370,588, dated September 27, 1887.

Application filed February 2, 1887. Serial No. 226,290. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM ADAIR, of Leesville, in the county of Carroll and State of Ohio, have invented a new and useful Improvement in Nut-Locks, of which the following is a specification.

My invention is an improvement in the class of nut-locks wherein the nuts are cut away at their inner corners and secured by a plate having slots of such form and size as permits them to receive said nuts, which are then turned a part of a revolution, so that they lock the plate and are also locked by it.

My invention is embodied in a new and improved form of nut and a slot in the locking-plate, as hereinafter described.

I propose to make the plate itself the locking device. In other words, I construct the nuts and the openings in the plate so that it locks the nuts, when the latter are turned slightly backward, on their bolts. To accomplish this result I adopt the construction shown in accompanying drawings, in which I have illustrated my invention applied to bolts employed for securing fish-plates to railroad-rails.

Figures 1 and 2 are side views showing two positions of the nut. Fig. 3 is a cross-section. Fig. 4 is a perspective view of a nut. Fig. 5 is a face view of a part of the nut-locking plate. Fig. 6 is a horizontal section on line x x , Fig. 5.

The letter A designates each of two nuts, and B the apertured plate employed for locking the same on the threaded bolts C. The nuts are polygonal, and, in this instance, hexagonal. They differ from the ordinary hexagonal nut in this particular, that the inner end is reduced in diameter by cutting away or beveling each angle a , formed by the intersection of two of the plane sides or surfaces b . In other words, the inner end of each side b is cut away or beveled from left to right, as seen in Fig. 4, and the effect is to give the nut the appearance of having spiral angles a and sides b . The locking-plate B has hexagonal apertures or openings corresponding to the general form of the nuts A, so that the latter will pass easily through said openings. The sides of these apertures are all inclined to the axes of the latter. Three of the said sides—namely, 1 2 3—(see Figs. 5, 6) slope inward from the

front side of the plate B, or toward the axis of the opening, and the other three sides—namely, 4 5 6—slope away from the axis. Thus opposite sides are parallel—as 1 to 5, 2 to 4, 3 to 6—and of course have the same angle to the axis. When the nuts A are screwed “home,” the plate B is placed in position, the nuts A passing through the openings therein. The parts then have the relative position shown in Fig. 1; but by slightly loosening the nuts A—that is to say, by turning them slightly to the left—the relative positions will be as shown in Fig. 2. By thus loosening the nuts the inner edges of the sloping sides 1 2 3 and the outer edges of the sides 4 5 6 of the nut-apertures in plate B are brought into close contact with the spiral and beveled sides of the nuts A, thereby locking them securely without the aid of any independent or supplementary fastening device.

It will be noticed that the nut is not only beveled longitudinally (or in the direction of its bore) toward its inner end, but is also beveled laterally, thus forming approximately a spiral portion. In practice, after the nuts have been turned up tightly against the fish-plate, the locking-plate B is put in place over the nuts. The latter are then turned slightly backward on their bolts, which of course tends to loosen them, and also the fish-plate, correspondingly; but this turning backward of the nuts causes their spiral sides and angles to engage the inwardly-beveled sides 1 2 3 of the locking-plate B, thereby forcing it inward against the fish-plate and counteracting the aforesaid tendency of the latter to become loose. It is not necessary to this co-operation of the nut and locking-plate that all the sides of the aperture in the latter shall be inclined, as shown. In other words, the sides 4 5 6 might be at right angles to the face of the plate, instead of being made inclined. The only object in making the sides 4 5 6 inclined opposite the others is to adapt the locking-plate to be used with either side next the fish-plate, so that no time may be lost by the trackmen in putting the locking-plate in place.

To remove the plate B, it is only necessary to turn the nuts A back to the original position indicated in Fig. 1. Then the plate may be drawn forward off the nuts.

The locking-plate B, may be applied to one or more nuts. When applied to one, the plate will be held immovable by the abutting head and base-flange of the rail.

5 What I claim is—

1. As an improved article of manufacture, a nut the sides of which are cut away or tapered both longitudinally and laterally, thus forming a tapered and approximately-spiral
10 portion, whereby, when the nut is tightened up against its locking-plate and then turned back to its locked position, its spiral wedge-like portion will press the locking-plate tightly against the object bolted, thereby counteract-
15 ing the loosening of the nut incident to its be-

ing turned back, substantially as and for the purpose specified.

2. The combination of the locking-plate having polygonal apertures whose sides 1 2 3 slope from the face of said plate toward the axis of 20 the apertures, and the nuts having a polygonal form similar to said apertures and whose sides are cut away or tapered both longitudinally and laterally, and the screw-bolts, fish-plate, and rail, as shown and described, for the 25 purpose specified.

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Witnesses:

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