

No. 661,059.

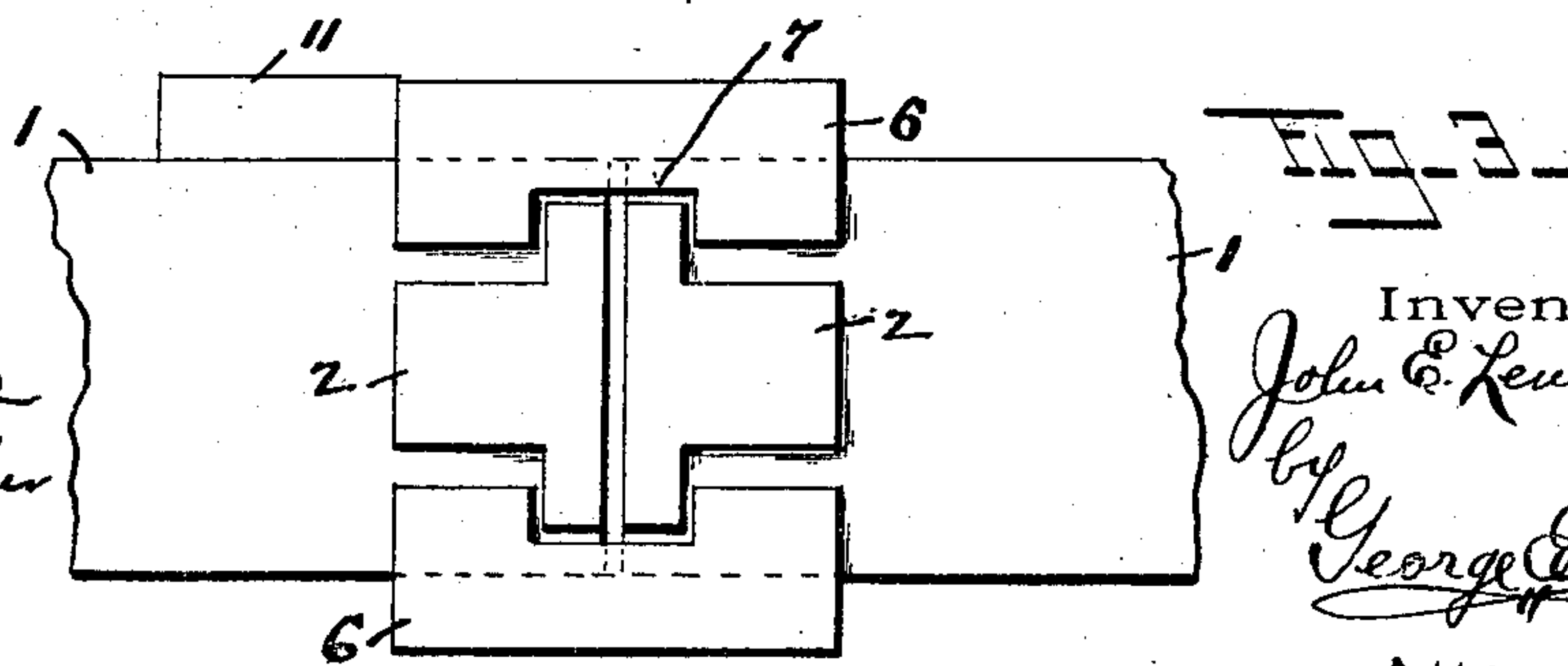
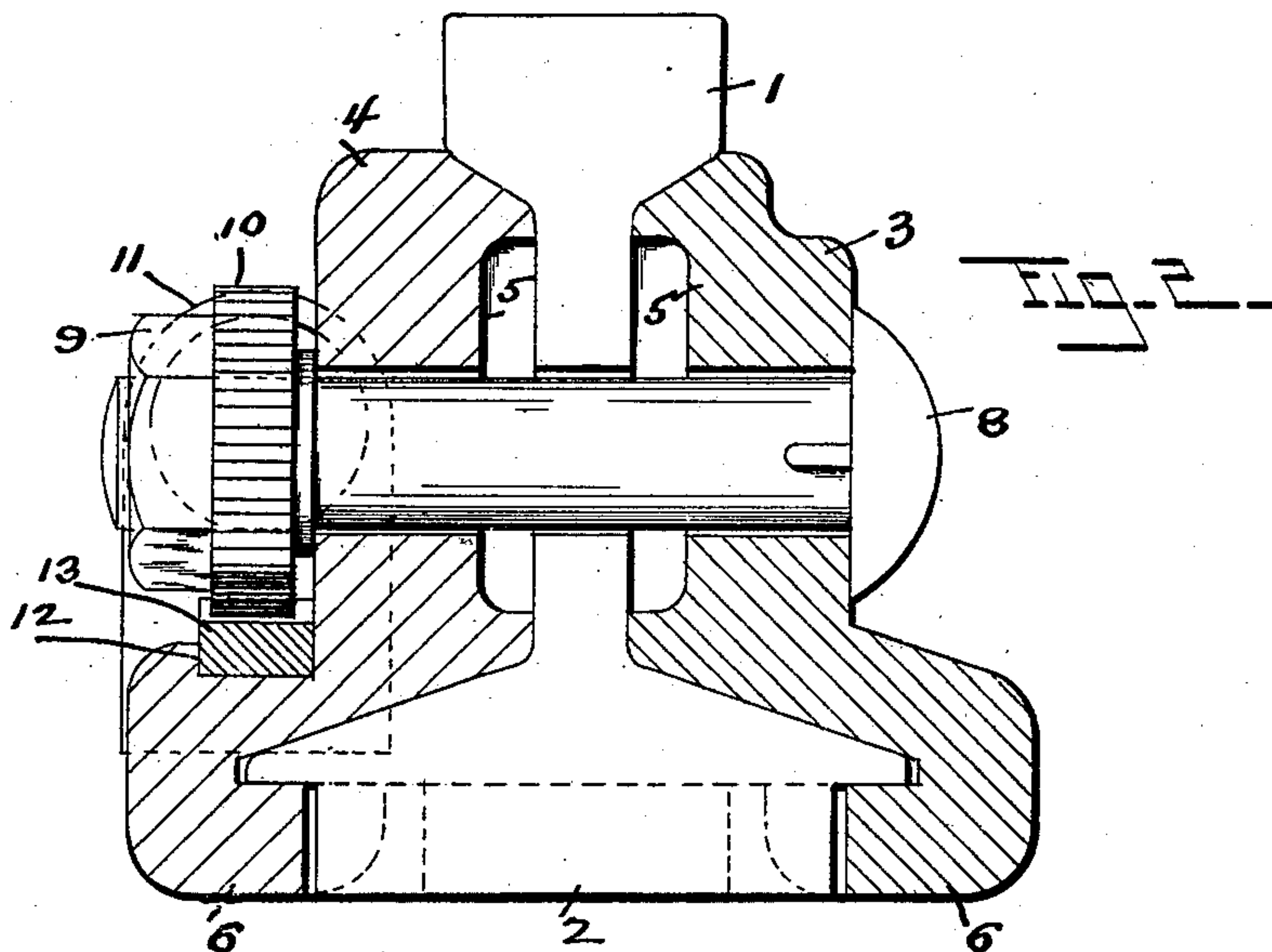
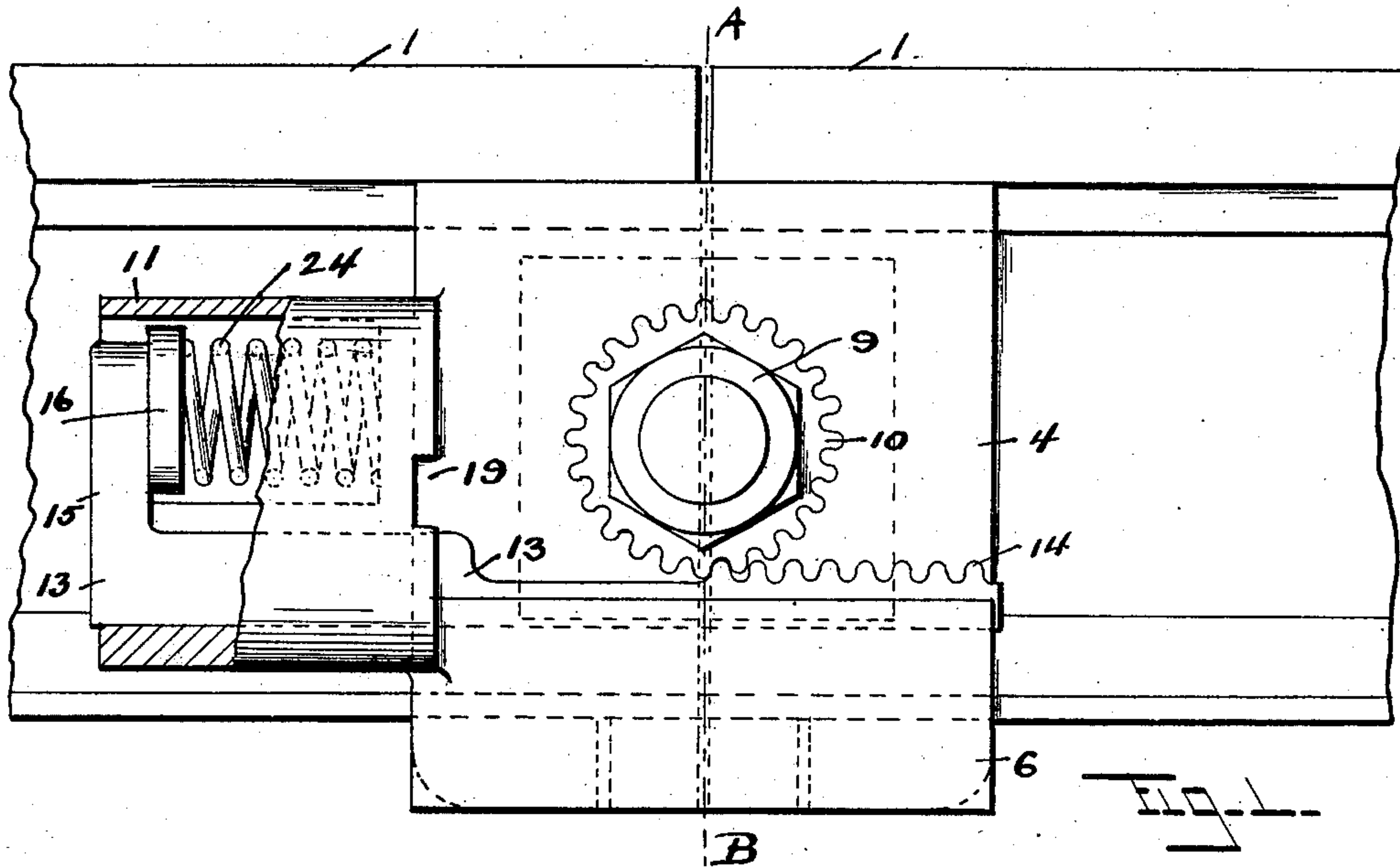
Patented Nov. 6, 1900.

J. E. LENHULT.
NUT LOCKING DEVICE.

(Application filed Jan. 29, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses.
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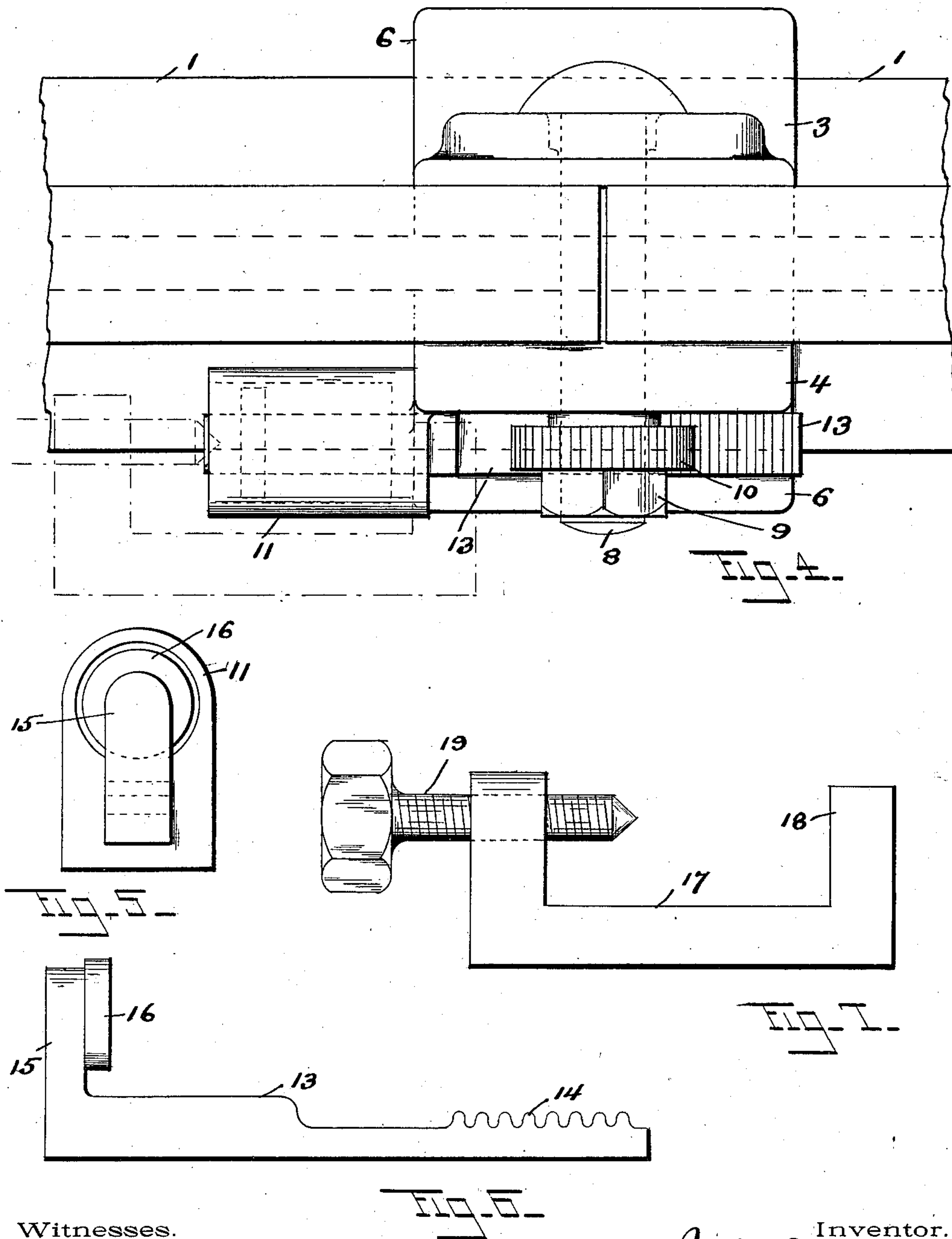
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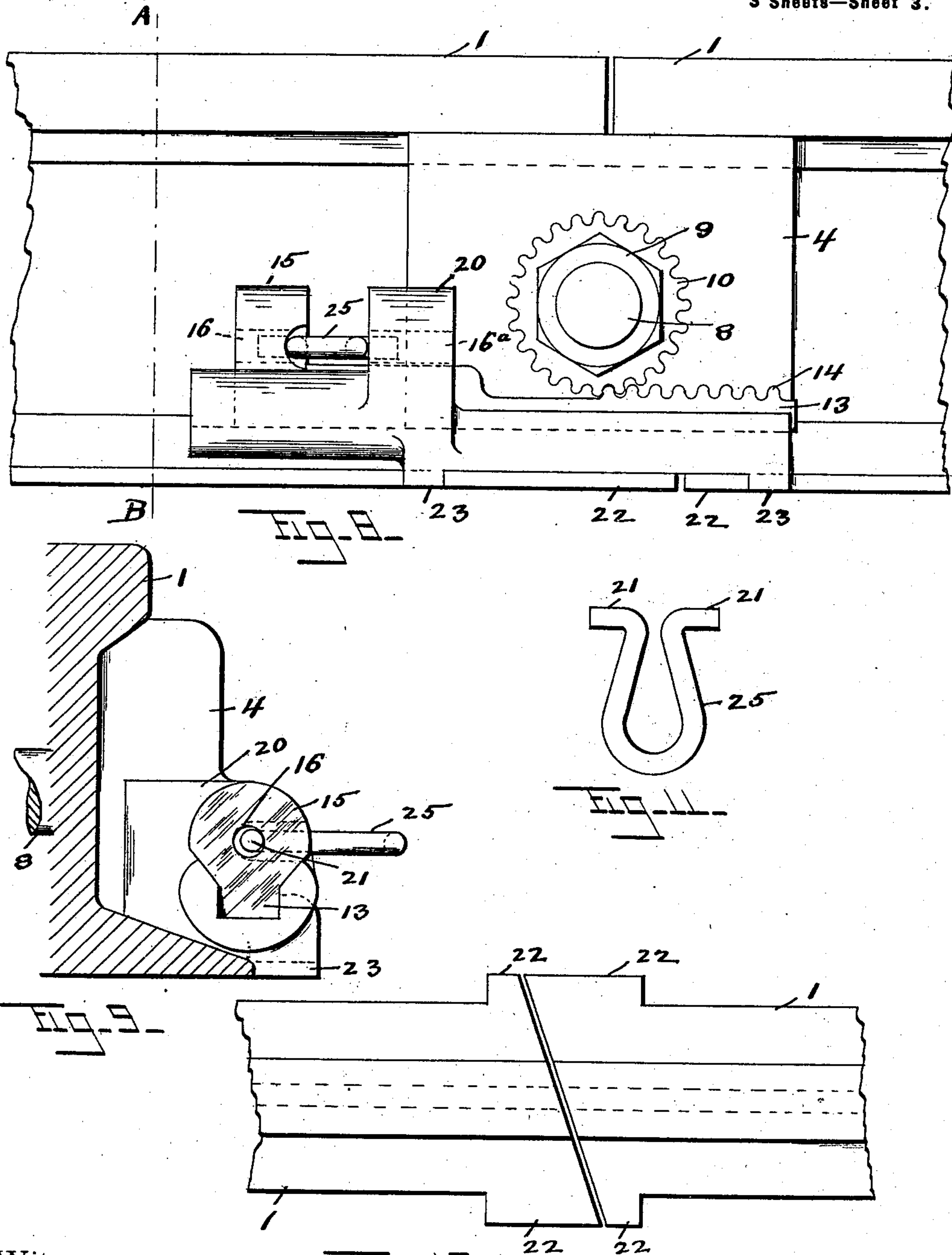
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

JOHN E. LENHULT, OF LEETES ISLAND, CONNECTICUT, ASSIGNOR OF ONE-HALF TO JOSEPH MATTSON, OF BRANFORD, CONNECTICUT.

NUT-LOCKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 661,059, dated November 6, 1900.

Application filed January 29, 1900. Serial No. 3,109. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. LENHULT, a citizen of the United States, residing at Leetes Island, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Nut-Locking Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in nut-locking devices, and more especially to that class of nut-locking devices for preventing the unloosening of the tie-bolt nuts on a rail-bond.

It is the object of my invention to construct a device of this character of the fewest possible parts which can be economically constructed and readily assembled.

To these ends my invention consists in the nut-locking device having certain details of construction and combination of parts, as will be hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals designate like parts in the several views, Figure 1 is a side elevation of my improved device, a portion of the spring-cylinder being broken away. Fig. 2 is a section thereof upon line A B of Fig. 1. Fig. 3 is a view of the device looking from underneath. Fig. 4 is a plan view. Fig. 5 is an end view of the spring-cylinder and slide. Fig. 6 is a side elevation of the slide. Fig. 7 is a view of the clamp for setting the slide. Fig. 8 is a modified form of the device. Fig. 9 is a sectional view thereof upon line A B of Fig. 8. Fig. 10 is a plan view of the abutting ends of the rails used in the modified form, and Fig. 11 is a view of the spring used therein.

In the drawings the numerals 1 1 designate the rails, which are of the usual form and construction, but provided upon the under side with lugs 2 2, which are T-shaped, as illustrated in Fig. 3. Upon either side of the rails are tie-plates 3 and 4, having recesses 5 in their inner faces, which only permit a contact of the tie-plates with the rails around the outer edges, thus overcoming any rocking tendency that would ensue from a warped plate. The base portions 6 6 of said tie-plates project underneath the rails and are provided

with a recess 7, within which project the T ends of the lugs 2. The engagement of the lugs 2 with the recesses 7 prevent the withdrawal of the rails endwise after the plates are placed in position. Passing through the said tie-plates and between the ends of the rails 1 1 is the tie-bolt 8, and upon one end thereof is the nut 9, having a circular portion 10, around the periphery of which is cut a plurality of gear-teeth. Integral with the tie-plate 4 is the spring-cylinder 11, having a circular bore therein, and operative within a groove 12 in said plate is a locking-slide 13, which is provided with gear-teeth 14, which are designed to engage with the teeth upon the nut 9. Projecting upwardly from one end of the said slide is an arm 15, carrying a circular plate 16 of smaller diameter than the bore of the spring-cylinder, within which it is movable lengthwise. Between said plate 16 and the inner end of the spring-cylinder 11 is the coil-spring 24.

To secure the ends of two rails together by this device and lock the nut against movement, the rails are placed end to end and the tie-plates fixed in position with the lugs 2 entering the recesses 7. The rails cannot now be moved endwise. The slide is then placed in the groove 12 and the spring 24 is compressed by means of the clamp 17. The clamp-arm 18 is placed within the recess 19 and the screw-point abuts against the rear end of the arm 15, (see broken lines in Fig. 4,) and by rotating the screw 19 the slide is pushed inward and the spring 24 compressed. The bolt is then placed in position and the nut tightened thereon, after which the clamp 17 is removed and the spring 24 immediately expands, exerting a pressure upon the plate 16 and moving the slide 13 so that the teeth 14 engage with the teeth upon the nut 9. It is apparent that by this construction there is always a constant tightening pressure upon the nut 9, which pressure is determined and only limited by the coil-spring 24.

I am aware that nut-locking devices have been previously made in which a slide has been held in contact with a tie-bolt nut by a spring; but in these constructions there have always been two or more parts to the slide, an expensive device to make and easily dis-

arranged. In my device it will be noted that there is but one piece to the slide. I have shown only one tie-bolt, which passes through between the ends of the rails; but two or more
5 nuts can be used within my invention, if desired.

In Fig. 8 I have shown a modified form of the device. In this case the slide is of substantially the same construction as that shown
10 in Fig. 6, with the exception that the arm 15 has a hole 16 therethrough. A laterally-projecting head 20, having a hole 16^a therethrough, is substituted for the spring-cylinder in the preferred form. The spring 25 is
15 made of circular wire in the form of a loop having outwardly-turned ends 21, which enter the holes 16 16^a. The slide is actuated in exactly the same manner as the slide above described.

20 In Fig. 10 I have shown a construction wherein the lugs upon the base of the rail, as illustrated in Fig. 3, are removed, and the meeting ends of the rails are at an angle to the sides thereof instead of being at right angles, as shown in Fig. 1. In this form the
25 rails are provided with laterally-projecting lips 22 and the tie-plates with outwardly-projecting lugs 23 23, which abut against the end of the lips 22, as shown in Fig. 8.

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

1. In a device of the character described the combination with a tie-plate having a base
35 portion and a spring-cylinder integral therewith; of a tie-bolt; a nut provided with gear-teeth threaded upon said tie-bolt; and a spring-actuated slide within a groove in said tie-plate and movable in one direction by a
40 spring within said cylinder, substantially as described.

2. In a device of the character described, in combination with car-rails; of a tie-plate upon either side thereof having engagement with said rails whereby endwise movement
45 thereof is prevented; a tie-bolt passing through said tie-plates; and between the ends of said rails; a nut threaded upon said tie-bolt; a spring-actuated slide movable upon one of said tie-plates and having teeth thereon
50 which engage with teeth upon said nut and movable in one direction by a spring, substantially as described.

3. In a device of the character described, in combination with a tie-plate having a base
55 portion, upon which is a spring-cylinder; and a groove extending through said cylinder and across said base portion; of a tie-bolt; a nut, provided with gear-teeth, threaded upon said tie-bolt; a slide movable in said groove, hav-
60 ing teeth which mesh into the teeth upon said nut, and terminating at one end in a spring-plate; and a spring within said cylinder, having engagement with said plate whereby the
65 said slide is moved in one direction, substantially as described.

4. In a device of the character described, the combination with the tie-plate 4 having the spring-cylinder 11 thereon and the groove 12 therein; of a tie-bolt 8; a nut 9 provided
70 with gear-teeth threaded upon said bolt; slide 13 within said groove, having teeth 14 thereon, and terminating at one end in the spring-plate 16; and a coil-spring 24 within said cylinder; all constructed and operating substantially
75 as described.

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

JOHN E. LENHULT.

Witnesses:

GEORGE E. HALL,
WALLACE S. MOYLE.