No. 723,030. PATENTED MAR. 17, 1903.

W. U. ROSENTHAL.

NUT LOCK.

APPLICATION FILED AUG. 28, 1902.

NO MODEL.

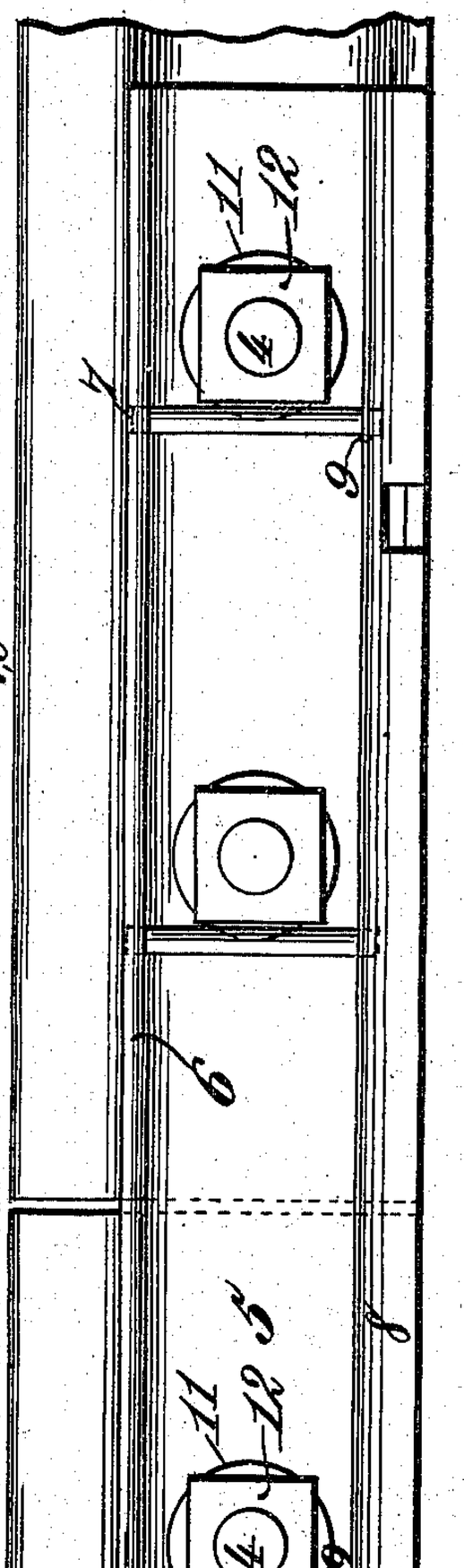

Fig. 1.

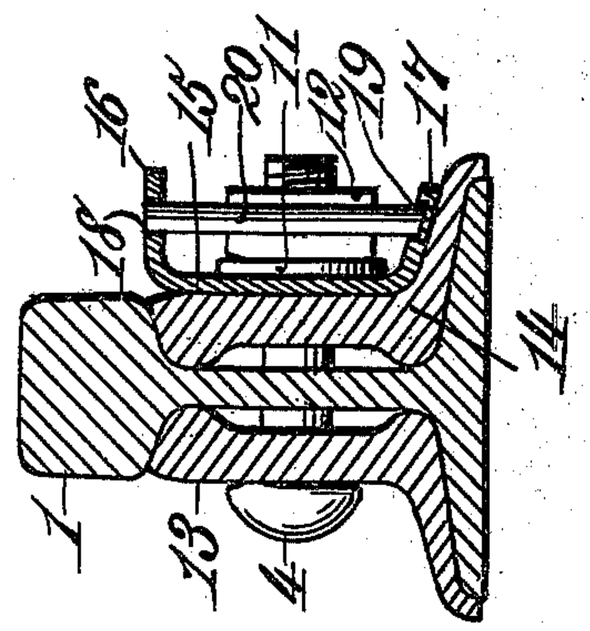

Fig. 3.

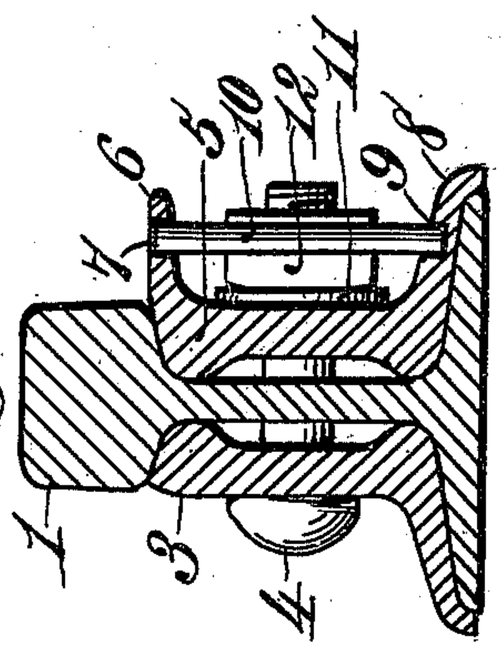

Fig. 2.

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# UNITED STATES PATENT OFFICE.

WILLIAM U. ROSENTHAL, OF NEW ORLEANS, LOUISIANA.

## NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 723,030, dated March 17, 1903.

Application filed August 28, 1902. Serial No. 121,318. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM U. ROSENTHAL, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Nut-Locks, of which the following is a specification.

This invention relates to certain new and useful improvements in nut-locks, and it is particularly adapted for use for connecting the meeting ends of railroad-rails together and for other purposes for which it can be used.

The invention aims to provide a nut-lock which shall be extremely simple in its construction, strong, durable, efficient in its use, and comparatively inexpensive to set up; and to this end it consists of the novel combination and arrangement of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, wherein like reference characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a front elevation of the nut-lock, showing the same connecting a pair of rail-sections together. Fig. 2 is a sectional view thereof, and Fig. 3 is a sectional elevation of a modified form.

Referring to the drawings by reference characters, which for illustration I have shown my improved nut-lock in position for connecting a pair of rail-sections together, 1 and 2 denote the rail-sections, and 3 denotes one of the fish-plates usually employed for connecting rail-sections together and is provided with openings through which extend the headed bolts 4. The fish-plate 3 is of the ordinary construction, arranged at one side of the rail-sections so it will engage the lower face of the tread of the rail, the web of the rail and the base of the rail preferably extending over the top of the base of the rail and flanged at its lower end, so as to engage the edge of the base.

The reference character 5 denotes the fish-plate, which is arranged against the rail-sections opposite to that of the fish-plate 3, and is also provided with a series of openings, through which is adapted to extend the end of the bolts 4. The inner face of the fish-plate 5 is preferably of the same construction as that of the fish-plate 3—that is, engages the web and base of the rail in the same manner as the fish-plate 3. The fish-plate 5 at its top is provided with an outward-extending flange 6, which is of the same length as the fish-plate, or, in other words, projects laterally from the top of the fish-plate 5 throughout its entire length and is provided with a plurality of openings 7. The flange 8 at the lower portion of the fish-plate 5 is provided with a plurality of recesses 9, forming seats. Instead of the recesses being provided in the flange 8 a plurality of openings may be employed instead.

The reference character 10 denotes a plurality of locking-pins, which extend through the opening 7 and engage in the seats 9. The locking-pins 10 may be constructed of any suitable metal, but preferably malleable iron, so that when they are driven home the lower ends of the pins will swag and form a tight fit in the recesses 9. This will prevent the withdrawal of the locking-pins 10 when in their locking position. The openings 7 in the flange 6 are of such a diameter that the pins will tightly fit therein. The pins are adapted to be driven in their locking position—that is to say, the diameter of the openings 7 and the recesses 9 are such that after the pins are driven home they will tightly fit therein. Mounted upon the extended ends of the bolts 4 are the washers 11 and the nuts 12.

The nut-lock is set up as follows: The two rail-sections are placed in position, the fish-plate 3 placed against one side of the rail-sections, the fish-plate 5 placed against the opposite side of the rail-sections, the bolts 4 are extended through the fish-plates and the web of the rail, the washers 11 are placed upon the projecting ends of the bolts, the nuts 12 are screwed home upon the bolts, and the locking-pins driven home, so that they will engage one side of the nuts and prevent the turning thereof. The flanges 6 7 of the fish-plate 5 are arranged such a distance from the openings in the fish-plates through which extend the bolts so as not to interfere with the screwing home of the nuts 12.

From the foregoing construction it will be

evident that when the locking-pins are driven home and engage the sides of the nuts it will be well nigh impossible for the nuts to turn, the locking-pins being in such position that they always engage one side of the nuts and prevent their turning.

In the modified form of construction shown in Fig. 3 the fish-plates 13 14 are of the ordinary construction and are arranged against the side of the rail-sections, and a locking-plate is employed which is substantially the length of the fish-plates and is adapted to be arranged against the outer face of one of the fish-plates—for example, the fish-plate 14, as shown in Fig. 3. The reference character 15 denotes the locking-plate, which is provided at its top and bottom, respectively, with the laterally-extending flanges 16 17, the former provided with a plurality of openings 18 and the latter with a plurality of recesses 19. Instead of providing the flange 17 with the recesses 19 the flange 17 may be provided with openings in the same manner as the flange 16. Within the openings 18 and recesses 19 the locking-pin 20 is adapted to be arranged. The locking-pin 20 is of the same construction as the locking-pin 10. The operation of placing the nut-lock in position in its modified form is the same as that hereinbefore referred to in connection with Figs. 1 and 2. In some instances it may not be necessary to employ the fish-plate 14. Therefore it can be dispensed with and the locking-plate 15 brought against the side of the rail adjacent to that which is engaged by the fish-plate 13. It will be evident that the locking-plate 15 is provided with a plurality of openings, through which extend the bolts.

In connection with the construction set forth in Figs. 1 and 2 I term the fish-plate provided with the flanges the "locking-plate" and consider the same the equivalent of the locking-plate as shown in Fig. 3. Consequently the locking-plate in Fig. 3 may have its lower flange extended in such a manner as to embrace the base of the rail.

It is thought the many advantages of my improved nut-lock, especially of constructing the locking-pin of malleable iron, so when it is driven in the opening or recess of the lower flange in the locking-plate the locking-pin will spread, causing the pin to be securely held within the said recess or opening, and the arrangement of the pin with the nuts will prevent the nuts from turning, consequently preventing a disengagement of the nut-lock in its entirety when set up to secure rail-sections, objects, or other parts of machinery where the nut-lock is applicable, and it will also be evident that I have devised a simple, inexpensive, and novel form of nut-lock which can be readily set up and employed for connecting railroad-rails together, parts of vehicles, machines, and apparatus of every description, and it will furthermore be evident that changes, variations, and modifications may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages; and I therefore do not wish to restrict myself to the details of construction hereinbefore described and as shown in the accompanying drawings, but reserve the right to make such changes, variations, and modifications as come properly within the scope of the protection prayed.

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

1. In a nut-lock, the combination with a bolt and a nut, of a locking-plate mounted upon the bolt and provided with a pair of flanges out of contact with the nut, and a locking-pin having its ends extending into and secured in and to said flanges and further having a portion of its length engaging one side of said nut to prevent its turning.

2. In combination with a bolt and a nut mounted thereon, of a plate mounted upon said bolt and provided with an upper and a lower flange extending laterally therefrom and out of contact with the nut, and a vertically-arranged pin having its ends extending into and secured in and to the said flanges and having a portion of its length engaging one side of said nut to prevent the turning thereof.

3. In combination with a bolt and a nut mounted thereon, of a plate mounted upon the said bolt and provided with an upper and a lower flange extending laterally therefrom and out of contact with the nut, and a pin constructed of malleable iron and having its ends extending into and secured in and to said flanges and further having a portion of its length engaging in one side of the said nut to prevent the turning thereof.

4. In combination with a bolt having a nut mounted thereon, of a locking-plate mounted upon said bolt and provided with an upper and a lower flange extending laterally therefrom and out of contact with the nut, said upper flange provided with an opening and said lower flange with a recess, and a pin having one end secured in said opening and its other end secured in the said recess, said pin driven in its position so it will be securely held by said flanges, said pin adapted to engage when in position said nut to prevent its turning.

5. In combination with a bolt and a nut mounted thereon, of a locking-plate carried by said bolt and provided with an upper and a lower laterally-projecting flange out of contact with the nut, the upper of which is formed with an opening and the lower of which with a recess, and a locking-pin adapted to have its ends tightly wedged in said opening and recess and adapted to engage said nut to prevent its movement.

6. In combination with a bolt and a nut mounted thereon, of a locking-plate carried by said bolt and provided with an upper and a lower laterally-projecting flange out of contact with the nut, the upper of which is

formed with an opening and the lower of which with a recess, and a vertical extending malleable-iron locking-pin having its ends tightly wedged in said opening and recess and adapted to engage one side of said nut to prevent its movement.

7. In a nut-lock, the combination with a bolt and a nut, of a locking-plate mounted upon the bolt and provided with a pair of flanges extending the length thereof and out of contact with the nut, and a locking-pin having its ends extending into and secured in and to said flanges and a portion of its length engaging one side of the nut to prevent the turning thereof.

8. In combination with a bolt and a nut mounted thereon, of a plate mounted upon the said bolt and provided with an upper and a lower flange extending laterally therefrom and out of contact with the nut, said flanges extending from one end of the plate to the other, and a vertically-arranged locking-pin having its ends extending into and secured in and to the said flanges and further having a portion of its length engaging one side of said nut to prevent the turning thereof.

9. In a nut-lock, the combination with a bolt and a nut, of a locking-plate mounted upon the bolt and provided with a pair of flanges free of the nut, and a locking-pin having its end extending into and secured in and to said flanges and having a portion of its length engaging one side of said nut to prevent the turning thereof, said pin when secured in the flanges being free of said plate.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM U. ROSENTHAL.

Witnesses:
N. L. BOGAN,
GEO. W. REA.