

(No Model.)

J. P. McGUIRE.

RAILWAY FISH PLATE, SET SCREW, AND NUT LOCK THEREFOR.

No. 484,809.

Patented Oct. 25, 1892.

Fig. 1.

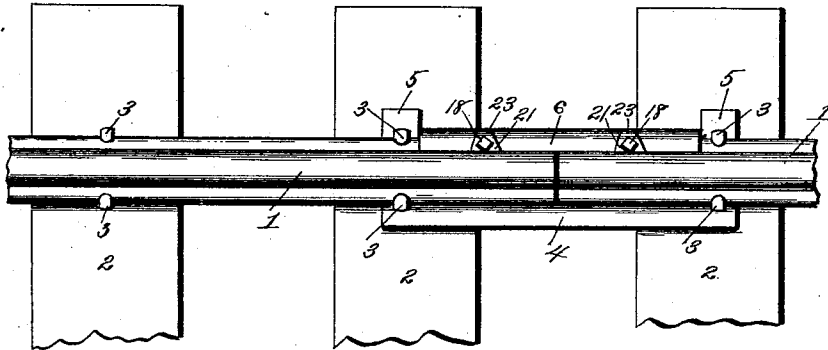


Fig. 2.

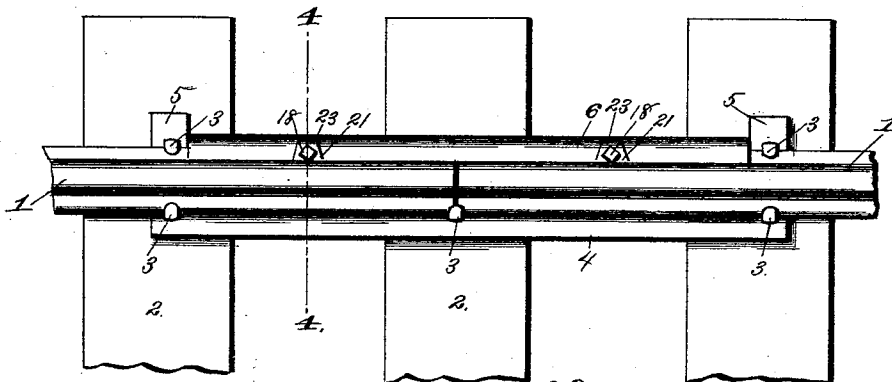
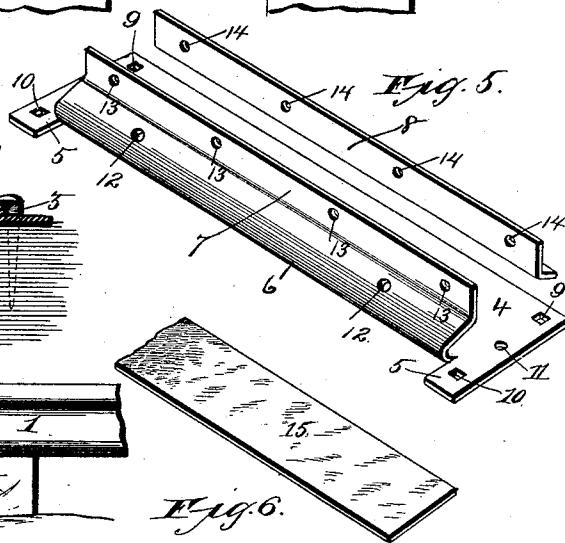
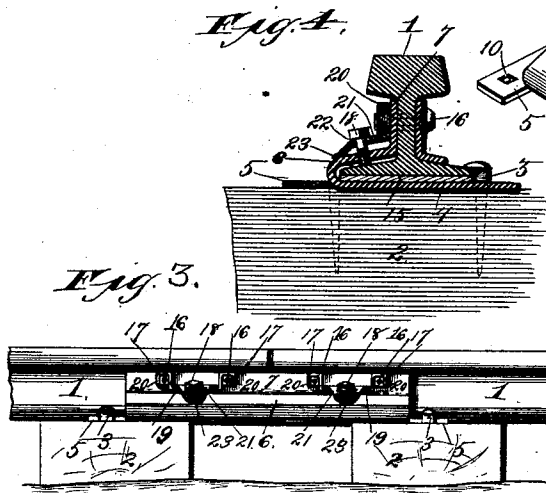


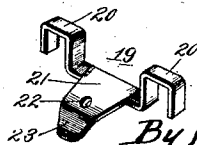
Fig. 3.



Witnesses:

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Fig. 7.



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UNITED STATES PATENT OFFICE.

JAMES P. MCGUIRE, OF ATCHISON, KANSAS.

RAILWAY FISH-PLATE, SET-SCREW, AND NUT-LOCK THEREFOR.

SPECIFICATION forming part of Letters Patent No. 484,809, dated October 25, 1892.

Application filed February 26, 1892. Serial No. 422,856. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. MCGUIRE, of Atchison, Atchison county, Kansas, have invented certain new and useful Improvements in Railway Fish-Plates, Set-Screws, and Nut-Locks Therefor, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to that class of railway appliances which are employed for connecting the adjacent ends of the rails; and the objects of my invention are to produce a railway fish-plate which shall be simple, strong, durable, and inexpensive in construction and which shall be adapted to all kinds of locations. Furthermore, to produce a fish-plate which in addition to the advantages above enumerated shall securely retain the adjacent ends of the rails in perfect alignment, prevent all noise or pounding of the rails, and also all vertical movement or springing of the ends of the same.

A still further object of my invention is to produce a nut-lock which shall be simple, durable, and inexpensive in its construction and which by virtue of its construction shall be peculiarly adapted for use in connection with fish-plates of the type embraced in my invention and which shall, furthermore, absolutely prevent loosening and accidental detachment of the nuts, while at the same time being easy of application and removal.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a plan view of the adjacent ends of two railway-rails with one form of my improved fish-plate applied thereto. Fig. 2 is a similar view of a slightly-modified form of the same. Fig. 3 is a side elevation of the structure shown in Fig. 1. Fig. 4 is a transverse vertical section of the structure shown in Fig. 2 on the line 4 4 of Fig. 2. Fig. 5 is a detached perspective view of the parts of the fish-plate. Fig. 6 is a detached perspective view of the cushion employed in connection

with the fish-plates. Fig. 7 is a detached perspective view of the nut-lock employed with the fish-plate.

In the said drawings, 1 designates two rails, which are of the usual or any suitable or preferred type of construction and which are shown as placed in alignment with each other, so that their adjacent ends shall lie closely approximate in the usual manner.

2 designates the ties or sleepers, which are also of the usual or any suitable or preferred type of construction, the said rails being secured to the said ties or sleepers by spikes 3, also of the usual or any suitable or preferred type of construction.

4 designates one member of the fish-plate, the said member being of iron or steel or of any other suitable or preferred material. The base or lower portion of this member is of approximately oblong rectangular form, and is either of such length as to extend only partially across two adjacent ties 2, as shown in Fig. 1, or of greater length, so as to extend across three of said ties, as shown in Fig. 2, the said members being also permissibly of as much greater length as desired. One of the longer edges or margins of this plate is perfectly straight throughout its length, while from the ends of the opposite margin project laterally and horizontally outward two ears or lugs 5, each of which is preferably of rectangular form, as shown, and for a purpose to be hereinafter explained. From this margin of the base 4 projects an extension 6, which projects obliquely upward and inward toward the opposite or straight margin of the base and which is formed integrally with said base. At its upper terminus this extension 6 is formed with an integral prolongation 7, which extends directly vertically upward from its point of juncture with the extension 6, the said extension and its prolongation 7 being of as much less length than the base or body portion 4 as the combined width of the lugs or ears 5.

8 designates the companion member of the fish-plate, this companion member being of approximately-L form in cross-section and preferably corresponding in length with the extension 6 and its prolongation 7, and being, also, of iron, steel, or any other suitable or preferred material. Through each corner of

the straight margin of the base or body portion 4 of the fish-plate is formed an opening 9, and a similar opening 10 is formed through each lug 5. A similar opening 11 is formed also through each end of the body portion 4 midway between the openings 9 and 10, for a purpose to be hereinafter explained.

Two internally-screw-threaded openings 12 are formed through the extension 6 midway of its height, and four similar openings 13 are shown as formed through the prolonged portion 7. Four similar openings 14 are shown as formed through the upper part of the companion member of the fish-plate, the arrangements being such that the openings 13 and 14 register with each other when the members of the fish-plate are in proper relative position.

15 designates an elastic cushion, which is of rubber, leather, felt, paper, or any other suitable or preferred cushioning material and which corresponds in length with the length of the body portion or base 4 of the fish-plate and also in width with said fish-plate and with the base of the rail.

Now in using this fish-plate the cushion 15 is first laid upon the base 4 and the adjacent ends of the rails 1 are laid upon the cushion so that each end portion extends half way of the length of the body portion or base, the extension 6 projecting upward over the upper side of the adjacent portions of the rail-bases and against the adjacent sides of the rail-webs. The prolonged portion 7 of the extension lies against the adjacent sides of the rails, and said extension and prolonged portion extend oppositely at equal distances from the meeting ends of the rails. The fish-plate is secured in this position by the spikes 3, which are passed through the openings 9 of the body 4 and 10 of the ears 5. The companion member 8 is now placed against the opposite sides of the rail-webs, the lower part of said companion member overlying the upper sides of the corresponding part of the rail-bases. Bolts 16 are now passed through the openings 13 and 14, and also transversely through the rail-webs, and nuts 17 are screwed upon the threaded ends of said bolts. Two set-bolts 18 are now inserted into the internally-screw-threaded openings 12 in the extensions 6, the lower ends of said bolts thus impinging powerfully upon the upper side of the corresponding parts of the rail-bases, and thus pressing the rails firmly upon the cushions 15 and forcing part of its substance into the openings 11, thus preventing lateral or longitudinal displacement of the cushion. It will thus be seen that by virtue of the above-described construction the joints of the rails are rendered equally as strong as the body portions of the rails, and that owing to the presence of the cushion 15 the joint is rendered perfectly noiseless, so that there is no jar or pounding of the rails at their joints. Moreover, it will be seen that owing to the pressure of the set-nuts there can be no

springing or vertical movements of the ends of the rails, and consequently no strains upon the fish-plate.

19 designates a number of nut-locking bars, which are employed in connection with the set-nuts 18, the said locking-bars being of suitably-tempered steel. The body portion of each of these bars is of straight elongated form, and at each end said body portion is formed with an inverted-U-shaped extension 20. Midway of its length the body portion of the bar is formed with an integral outwardly and downwardly projecting extension 21, the middle of which is formed with an opening 22, and from the outer end of this extension projects outwardly and downwardly a spring-lip 23. Now when these nut-locking bars are in position the inverted-U-shaped extensions 20 embrace the nuts 17 and the extensions 21 and their spring-lips 23 lie upon the upper sides of the extension 6 of the fish-plate. One of the set-bolts 18 passes through the opening 22 of each extension 21, and the head of the set-bolt presses upon the extension 21 and spring-lip 23, so as to firmly hold the inverted-U-shaped portions 20 downward into engagement with the nuts 17. Thus it will be seen that there can be no accidental loosening or detachment of the nuts 17 and that the locking-bar can be readily removed when desired.

From the above description it will be seen that the structure is simple, strong, durable, and inexpensive in construction, and perfectly adapted to the purpose for which it is applied. It will be further seen that owing to its form the fish-plate member 4 serves as an angle-iron, preventing all possibility of spreading of the rails, owing to the fact that such spreading strains tend to pull upon both the inner spikes as well as the outer ones, and that the joints of the rails are thus made equally as strong as the rails themselves.

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

1. A fish-plate composed of a member having an elongated horizontal base portion provided at its ends with integral ears extending outwardly from one of its margins, and provided, also, at its said margin with an integral upward and inward extension terminating at its ends at the ears and having a vertically-prolonged integral upper portion corresponding in length with the extension, substantially as set forth.

2. A fish-plate comprising a member having an elongated horizontal base having at its ends outwardly-projecting integral ears at the ends of one of its margins, and provided, also, at said margin with an upwardly and inwardly projecting integral extension terminating at its ends at said ears and having a vertically-prolonged integral upper portion corresponding in length with the extension, and a companion member of elongated form, substantially as set forth.

3. A fish-plate comprising an integral mem-

ber formed to extend beneath the rail-base and integrally above said base, and also flatly against the corresponding side of the rail-web, and provided with an internally-screw-threaded opening through its extension, and with a set-bolt entering said opening and pressing upon the base of the rail, openings formed through the ends of the base of the fish-plate member, and an elastic cushion placed upon said base of the said member, substantially as set forth.

4. A fish-plate comprising an integral member to lie beneath the base of the rail and to extend integrally upwardly over the base and against the side of the rail-web, and

provided with an internally-screw-threaded opening, a set-bolt working in said opening, and a nut-locking bar comprising an elongated body portion through which the set-bolt passes, having inverted-U-shaped ends to embrace the fish-plate bolt-nuts, and provided, also, with an extension having a spring-lip, substantially as set forth.

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

JAMES P. MCGUIRE.

Witnesses:

JNO. L. CONDRON.

H. E. PRICE.