

(No Model.)

W. DAVES.
DETECTOR BAR FOR RAILWAY RAILS.

No. 586,788.

Patented July 20, 1897.

Fig. 1.

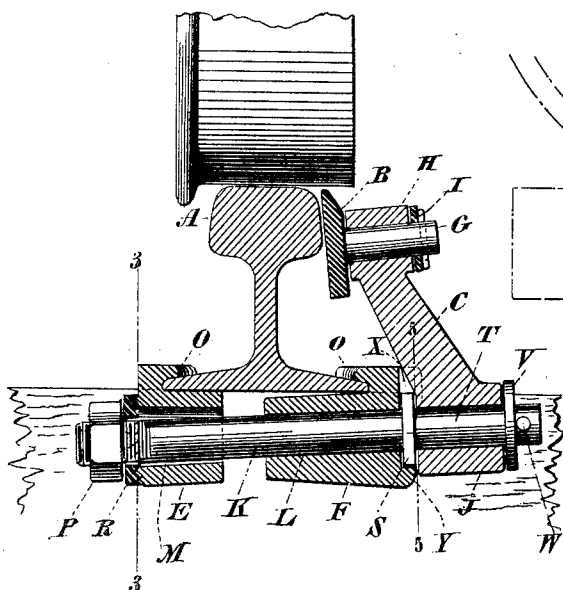


Fig. 2.

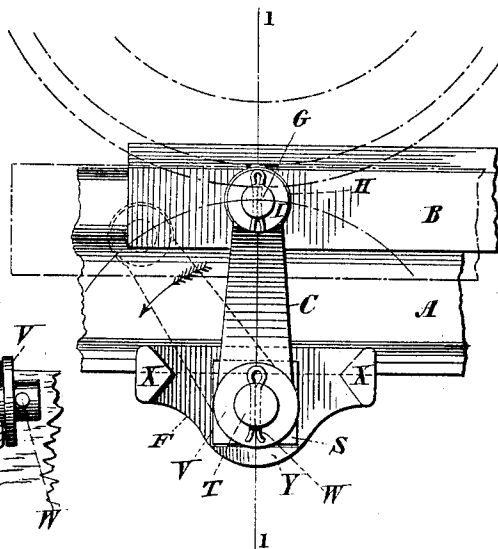


Fig. 4.

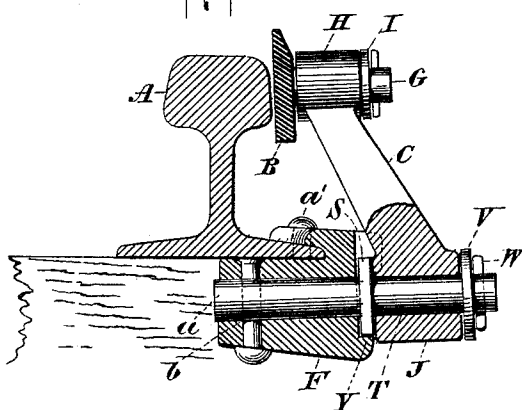


Fig. 3.

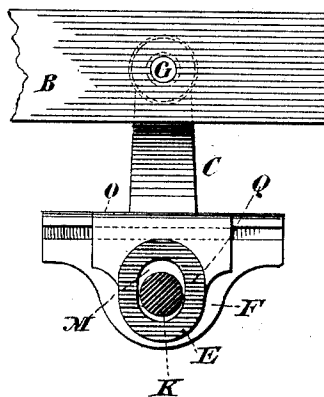
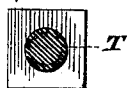


Fig. 5.



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DETECTOR-BAR FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 586,788, dated July 20, 1897.

Application filed November 20, 1896. Serial No. 612,788. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DAVES, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Detector-Bars for Railway-Rails, of which the following is a specification.

The invention relates to improvements in detector-bars for railway-rails; and it consists in the novel features of construction and combinations of parts hereinafter described, and more particularly pointed out in the claims.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical section through the detector-bar and its connecting parts shown applied to a rail which is in vertical transverse section, the section of Fig. 1 being on the dotted line 1 1 of Fig. 2, but showing the detector-bar in its lower position. Fig. 2 is a side elevation of same, the car-wheel being in dotted lines and the detector-bar proper being in its elevated position. Fig. 3 is a detached side elevation of the detector-bar and its connected parts, taken from the left-hand side of Fig. 1 and being partly in section on the dotted line 3 3 of Fig. 1. Fig. 4 is a vertical section through a modified form of the invention; and Fig. 5 is a detached end view of a detailed portion of the invention, the same being partly in section on the dotted line 5 5 of Fig. 1.

In the drawings, A designates the usual rail; B, the detector-bar proper; C, one of the hinged arms supporting said bar B, and E F in Figs. 1, 2, and 3 the clips applied to the base of the rail and serving as the means for attaching the arms C and bar B thereto.

It will be understood that the bar B is of the usual form and construction and that in use it is supported by a series of arms C, one of which only is illustrated in the drawings. The bar B is secured to the upper end of each arm C by means of the stud or pin G, connected with said bar and entering the hub H at the upper end of the arm C, a pin I being provided to secure the pin or stud G in place.

The arm C inclines outward and downward, and upon its lower end is formed the hub J, which passes upon the bolt K, each of the latter extending transversely below the rail A and through the apertures L M, formed in the clips E F, as more clearly illustrated in Fig. 1. The clips E F at their upper outer edges are provided with the lips O, which pass over the outer longitudinal edges of the base of the rail A, and said clips, as shown in Fig. 1, extend below the rail A and are pulled together against said rail by means of the nut P, provided upon the outer threaded end of the bolt K. The aperture M in the clip E is in the form of a vertical ellipse, and the outer vertical surface of said clip E is corrugated, as illustrated in Fig. 3 at Q, to receive the similarly-corrugated washer R, against which the nut P has its bearing. The washer R closes the outer end of the aperture M and is prevented from revolving by means of the corrugations Q. The purpose of elongating the aperture M is to adapt the clips E F and bolt K for the various widths of rails A. At the outer vertical edge of the clip F the bolt K is provided with the washer or shoulder S, (or equivalent device,) which is rigid with the bolt K and has a bearing against the outer portion of the clip F, and hence it is apparent that upon the tightening of the nut P the clips E F will be forcibly drawn toward one another and against the base of the rail A. The bolt K is on an inclined line, as shown, and hence some provision is desirable, such as the elongated aperture M, for adapting said bolt with its clips E F to the varying widths of rails A. That portion of the bolt K lettered T and which extends outward beyond the washer S is employed exclusively to receive the hub J of the arm C and operate as an axle upon which said arm C may have its oscillating motion, (illustrated by dotted lines in Fig. 2,) and the said hub J will be retained upon the portion T of the bolt K by means of a suitable washer V and pin W. The tightening of the nut P will have no effect upon that portion of the bolt K lettered T, and hence no matter how tightly the nut P may be screwed home the arm C will be left with its usual freedom to oscillate, and thereby carry the bar B upward or downward, as may be

required. It is important to note, however, that the one bolt K serves both for the purpose of securing the clips E F to the rail and also as a free axle for the arm C, one nut P
 5 securing all of these parts in place upon the rail. Upon the outer end of the clip F are provided the shoulders X, against which the arm C may contact at the end of its downward movement either to the right or left,
 10 as illustrated in Fig. 2.

Upon the outer vertical edge of the clip F is provided the shoulder Y, contacting with the edge of the rigid washer S and serving to prevent the rotating of the bolt K under the
 15 action of the arm C. It is a fact that the bolt K, particularly at the upperside of the portion T thereof, becomes worn in use, and to add to the prolonged utility of the bolt K is a matter of importance which my present invention
 20 accomplishes, owing to the fact that when the upper side of the outer end of the bolt K has become worn by the friction of the arm C the said bolt may, upon the loosening of the nut P, be turned axially until its worn
 25 upper side is moved downward within the lower portion of the hub J, whereupon the nut P will be retightened and the arm C will bear upon the unworn portion of said bolt K. In the construction presented the bolt K is
 30 thus enabled to remain in practical use twice as long as would be the case if the construction did not permit the axial turning of the bolt K.

In Fig. 4 I illustrate a modified form of the invention, the clip E in this modification being dispensed with and the clip F being secured to the rail by pins, rivets, or bolts *a'*
 35 and to the rod or bolt *a*, corresponding with the bolt K of Fig. 1, by means of a pin *b*. The clip F of Fig. 4 is in all respects similar to the clip F of Fig. 1, and hence the clip of Fig. 4 will not be specifically described, but is lettered to correspond with Fig. 1. The arm C
 40 of Fig. 4 is upon the outer end of the rod *a*, which operates as an axle for said arm. Upon the wearing of the upper surface of that portion of the rod *a* within the hub J (shown in Fig. 4) the pin *b* will be withdrawn and the said rod *a* will be given an axial half-turn
 50 within the clip F, thus moving the lower unworn surface of the outer end of the rod *a* upward to receive the friction of the arm C.

The rigid washer S on the bolt K and rod *a* will prevent the turning of said bolt and rod until the latter are drawn outward through the clips sufficiently to relieve the washer S
 55 from contact with the shoulder Y, and hence said bolt K and rod *a* will be drawn slightly outward when it is desired to turn the same and will then be moved back to their former position in order that the washer may contact with the said shoulder and prevent the turning of the bolt K and rod *a* under the action of the arm C.

65 The rod *a* of Fig. 4 corresponds with the right-hand portion of the bolt K in Fig. 1, and hence the invention in its broader scope is

not limited technically to a bolt, but the words "bolt" and "rod" are to be considered in their generic sense.

70 The aperture within the clip F of Fig. 4 may closely fit the rod or bolt *a*, since the said clip is applied to but one side of the rail A; but in the construction illustrated in Fig. 1 it is desirable that the aperture in the clip
 75 E be elongated vertically, since the bolt K extends on an inclined line and is more readily adapted to the different widths of rails when the clip E has an aperture which is elongated vertically, as described. The outer
 80 end of the aperture M of the clip E will be entirely closed by the corrugated washer R, which will always retain its position, owing to its engagement with the corrugations Q on the end of said clip.

85 The invention is not limited to the special washer S and shoulder Y above described, since the said washer simply forms a shoulder rigid with the bolt to engage a shoulder rigid with the clip F, and hence any form of
 90 engaging shoulders accomplishing the object desired would be the equivalent of the washer S. The washer S could easily be replaced by a pin extending through the bolt K and engaging a corresponding seat in the end of the
 95 clip F.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The detector-bar, and the pivoted arm supporting the same, combined with the clip
 100 engaging the base of the rail and extending horizontally beneath said base, the substantially horizontal bolt secured within said clip below the base of said rail and forming an
 105 axle at its outer exposed end for said pivoted arm, means engaging said bolt and clip to lock the said bolt against rotating under the action of said pivoted arm and permit, upon the manual loosening of the parts, the turning of said bolt to bring a fresh surface of
 110 said axle upward to receive the wear from said arm, substantially as and for the purposes set forth.

2. The detector-bar, and the arm supporting the same, combined with the clips E, F,
 115 engaging the opposite edges of the base of the rail, the bolt passing through said clips and having an extension on its outer end to receive and act as an axle for said arm, and the rigid washer or shoulder on said bolt between
 120 the clip F and said axle, the outer end of the clip F being provided with the shoulder to engage said washer; substantially as set forth.

3. The detector-bar, and the arm supporting the same, combined with the clips E, F,
 125 engaging the opposite edges of the rail, the bolt K passing through said clips and having beyond the clip F an extension operating as an axle for said arm, the nut at one end of
 130 said bolt, and the shoulder on said bolt to bear against the outer end of the clip F; substantially as set forth.

4. The detector-bar, and the arm supporting the same, combined with the clips E, F,

engaging the opposite edges of the rail, the bolt K passing through said clips and having an extension operating as an axle for said arm, means for tightening the clips E, F, upon the rail without affecting said arm, and means for permitting the turning of said bolt to bring a fresh surface of said axle upward to receive the wear from said arm; substantially as set forth.

10 5. The detector-bar, the arm supporting the same, and the clips E, F, engaging the opposite lower edges of the rail, the clip E having a vertically-elongated aperture and a corrugated outer end, combined with the bolt K
15 passing through said clips and having an extension beyond the clip F operating as an axle for said arm, the washer on said bolt to

engage the outer end of said clip F, and the nut and corrugated washer upon said bolt at the outer end of the clip E; substantially as 20 set forth.

6. The detector-bar B, and the arm C supporting the same, combined with the clips E, F, engaging the opposite edges of the rail, and the bolt K securing said clips and having 25 a free extension operating as an axle for said arm; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 19th day of November, A. D. 1896.

WILLIAM DAVES.

Witnesses:

CHAS. C. GILL,

E. JOS. BELKNAP.