(No Model.)

H. GREER.

RAILWAY SPLICE BAR BOLT.

No. 432,526. Patented July 22, 1890.

Fig. 1

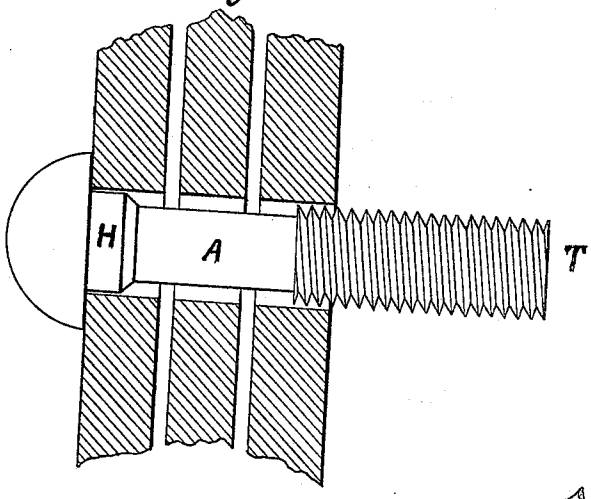


Fig. 3.

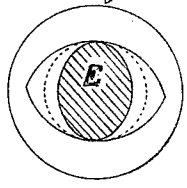
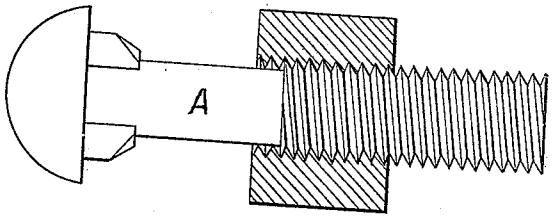


Fig. 2



Witnesses:
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UNITED STATES PATENT OFFICE.

HOWARD GREER, OF CHICAGO, ILLINOIS.

RAILWAY-SPLICE-BAR BOLT.

SPECIFICATION forming part of Letters Patent No. 432,526, dated July 22, 1890.

Application filed July 18, 1889. Serial No. 317,968. (No model.)

To all whom it may concern:

Be it known that I, HOWARD GREER, of Chicago, county of Cook, State of Illinois, have invented or discovered certain new and useful Improvements in Railway-Splice-Bar Bolts, of which improvement the following is a specification.

Figure 1 is a view in horizontal section, showing a railway-rail with a splice-bar on each side of it and my improved expansion track-bolt in the position it occupies when in use. Fig. 2 is a top view of the improved bolt, showing the nut in horizontal section. Fig. 3 is a cross-section showing the shape of the depressed portion.

The object of my invention is to produce a track-bolt of much greater holding power than the splice-bar bolts in present use without increasing the holes in the railway-rails and splice-bars and at the same time provide for the well-known necessary expansion and contraction of the rails due to the variations from the highest temperature of summer to the lowest of winter, which is about one-fourth of an inch to thirty feet of rail, and since standard rails are ten yards long this allowance must be made in every splice-joint. The usual practice is to allow for this contraction and expansion by drilling the holes in the rails seven-eighths of an inch to one inch in diameter and punching the holes in the splice-bars oval, arranging the long way of the holes to accommodate the expansion and the contraction to the standard track-bolt, which is three-quarters of an inch in diameter.

Recently the leading railways have adopted rails weighing from seventy-five to eighty-five pounds to the yard, and notwithstanding these rails are from three-quarters of an inch to one inch higher and broader than the standard sixty-pound rails and are provided with correspondingly-enlarged splice-bars the usual three-quarter-inch track-bolts are employed. Thoughtful engineers deprecate the use of so small a bolt, but accept it as a lesser evil than drilling larger holes in the rails and punching the strength out of the splice-bars to accommodate seven-eighths or one-inch track-bolts. My system of depressing the body of the bolts at A, Fig. 1, the parts that occupy the holes in the rails, while the threaded ends, as at T, Fig. 1, and the necks under the heads, as at H, Fig. 1, are made as large as the holes in the splice-bars and rails will allow to pass through, obviates the aforesaid difficulties, simplifies the question of expansion, and admits of the use of seven-eighths and one-inch bolts in the same holes in the rails that now allow only three-quarter-inch bolts of the usual form. The cross-section of the depressed part should be made elliptical. The major axis should be transverse to the major axis of the oval swell under the bolt-head, as shown at E, Fig. 4. If larger bolts than one inch are required, of course corresponding holes will be drilled in the rails.

These bolts may be made of any suitable material in any of the well-known bolt-heading machines by altering the gripping-dies to the proper shape and size to form the depressed portion while the head is being upset in the usual manner. Suitable iron or steel for the size required may be headed in any bolt-machine in the usual way of forming track-bolts, the bolts being subsequently put through a drop or other proper hammer having a series of dies arranged to form the depressed parts, after which the bolts may be threaded in any convenient bolt-cutter.

I claim herein as my invention—

The combination, to form a railroad-rail joint or coupling, of two railroad-rails the ends of which are provided with bolt-holes, a fish-plate on each side of said ends to be coupled, bolts passed through the holes in said rails, and fish-plates having that portion which lies within the hole in the web of the rail through which it passes reduced in section, so that its diameter is less than the diameters of the adjacent ends of the bolt, and having the vertical diameter of the reduced portion of the bolt substantially equal to the vertical diameter of the said hole in the rail and to the diameter of the adjacent ends of the bolt, substantially as set forth.

HOWARD GREER.

Witnesses:
G. S. BUTLER,
E. D. CLARK.