

No. 675,040.

Patented May 28, 1901.

J. E. GRAHAM.
RAIL BRACE.

(Application filed Feb. 28, 1901.)

(No Model.)

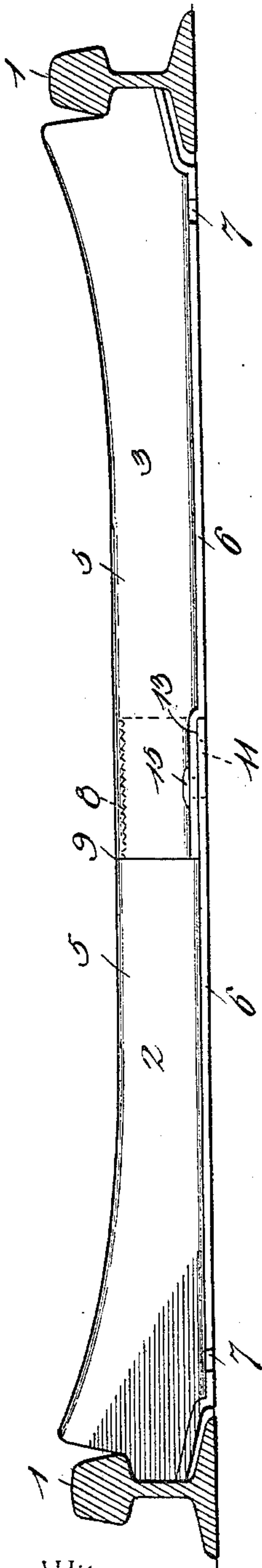


Fig. 1.

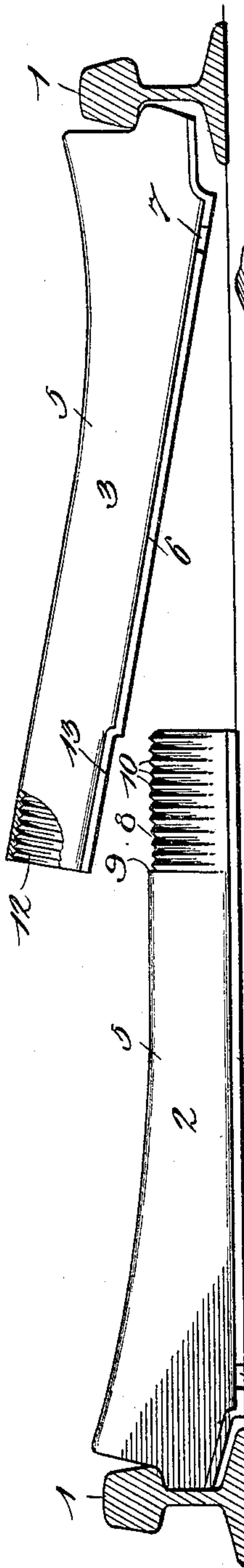


Fig. 2.

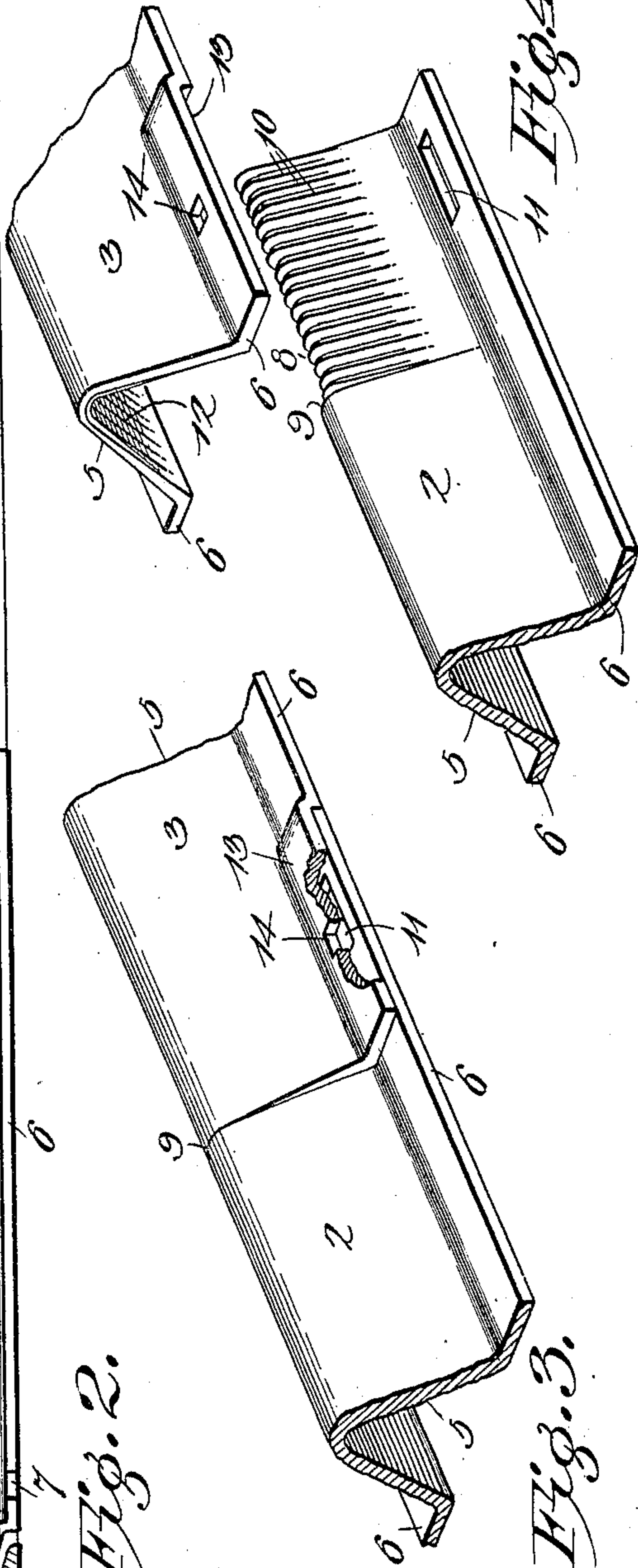


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN E. GRAHAM, OF ROANOKE, VIRGINIA.

RAIL-BRACE.

SPECIFICATION forming part of Letters Patent No. 675,040, dated May 28, 1901.

Application filed February 28, 1901. Serial No. 49,337. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. GRAHAM, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented a new and useful Rail-Brace, of which the following is a specification.

This invention relates to rail-braces adapted for use on all kinds of railroad-rails, including frog and guard rails; and the object of the present improvement is to provide simple and effective means for adjusting the brace to compensate either for different distances between rails as primarily laid or to take up the distance between rails that slightly increases from various causes after the same have been laid, and thus maintain at all times a tight and close engagement of the brace extremities with the rails or rail devices engaged thereby, objectionable and disadvantageous projections being avoided in the entire improved construction.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of the improved device shown applied to rails or rail devices in transverse section. Fig. 2 is a similar view of the improved device, showing the brace-sections disjointed and one raised from the other. Fig. 3 is a detail sectional perspective view of portions of the brace-sections, showing the intermediate joint-fastening means and the mode of adjustment permissible. Fig. 4 is a detail perspective view of the two engaging extremities of the brace-sections.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates ordinary track-rails, frog or guard rails, or other analogous rail devices.

The improved brace comprises two brace-sections 2 and 3, each being substantially duplicate in construction and having bodies 5 substantially triangular in cross-section and for a greater portion of its length, considered from the inner extremity, of less vertical height than the distance from the upper surfaces of the ties to the upper planes of the

rail-heads. Extending from the lower opposite sides of the base portion of the body of each section are flanges 6, which may be provided with spike-notches at intervals, as at 7, both flanges being in the same horizontal plane and providing for each brace-section a flat stable base-rest, which is disposed on the upper side of a tie or analogous support. Each brace-section is hollow, to avoid the use of excess metal and also to strengthen the same, as well as lighten it. The outer extremity of each brace is vertically increased in dimension relatively to the body of the same and formed with recesses, projecting portions, and shoulders, as in my previous brace constructions, to fit snugly against the inner opposing portions of rails or rail devices, and the present specific improvement resides in the particular joint formed at the inner engaging extremities of the sections, whereby the sections may be longitudinally adjusted to compensate for varying distances between the rails or rail devices and which will now be described. The inner extremity of the section 2 is reduced by removing a portion of the metal, as at 8, to form a shoulder 9, the reduction being mainly at the upper portion of said extremity, and the sides thereof gradually slope downwardly and outwardly to the base-flanges 6, so that there is very little reduction adjacent to the said flanges. This reduced extremity is transversely saddled by regularly-formed corrugations or ribs 10, which vanish into the sides below the upper or apex portion of the said extremity in order to have the maximum projection of the corrugations or ribs at said apex portion. These corrugations or ribs 10 are in close arrangement to obtain minute adjustments to compensate for the slightest increase in the transverse distance between the rails or rail devices. The flanges 6 adjacent to said reduced extremity of the section 2 are each formed with a slot 11, which is long enough to permit considerable adjustment of the sections, if necessary.

The section 3 has the upper inner portion of its inner extremity formed with a series of corrugations 12, corresponding to and adapted to interlock with the corrugations or ribs 10 when the inner extremity of the section 3 is fitted over the similar extremity of the sec-

tion 2, as clearly shown by Figs. 1 and 3. The interlocking extremity of the section 3 is fitted flush with the similar extremity of the section 2 at the upper portion of the joint in order to avoid the formation of projections or catching edges at the center of the upper part of the brace, and from the apex the inner extremity of the section 3 gradually slopes outwardly, and the end edge below said apex stands outwardly beyond the shoulder 9, this outward extent of the end edge increasing until the flange 6 at the inner extremity of the section 3 is clear for disposal on the similar flange of the inner extremity of the section 2. To permit the engagement of the flanges as just set forth, the flange 6 at the inner extremity of the section 3 on each side is struck up to form an elongated seat 13, which is equal in length to the extent of the joint for formation of both sections, so as to compensate for considerable longitudinal movement without weakening the joint by taking away or removing the necessary base-support for the same on opposite sides. In the center of these seats 13 are single spike-apertures 14 to receive spikes 15, one on each side, to hold the brace-sections in adjusted position and prevent accidental disengagement of the inner extremities thereof after the desired adjustment has been obtained.

From the foregoing description the mechanical advantages will be apparent and also the operation. When it is desired to adjust the sections, the spikes 15 are loosened, so that the inner extremity of the section 3 can be raised and moved longitudinally or both section extremities moved; and after the two sections have been sufficiently moved to lengthen or shorten the same the spikes are driven home and the desired adjustment will be positively maintained. It will be seen that there are no projecting securing devices and a substantially smooth joint is produced, with the material advantage of minute adjustment to accommodate the least variation in the distance between rails. The vanishing construction of the ribs or corrugations 10 provide for the production of a close joint without in the least detracting from the effective securing operation of the same at the apex, and the disposition of the inner portions of the flanges 6 of the sections as set forth is also permitted by such construction. A further advantage of this rib construction is that the fastenings need not be entirely withdrawn from the ties or other supports to effect an adjustment, as it is obvious that by slightly raising the one section extremity from the other to disengage the ribs movement will be permitted. The brace-sections themselves are not in the least weakened by

fastening devices passing therethrough, and the fastenings used are the ordinary form of railroad-spikes, and the use of nutted bolts, with their many disadvantages, is entirely dispensed with.

The device as an entirety is strong and durable and can be cheaply manufactured.

Having thus described the invention, what is claimed as new is—

1. A device of the class set forth, comprising two hollow sections, the inner extremity of one section being saddled by ribs with the greatest dimension at the apex of the section, the inner extremity of the other section having inner corresponding corrugations to engage the said ribs, and means for fastening said sections to maintain their adjusted positions.

2. A device of the class set forth, comprising two hollow sections having the inner extremity of one adjustably fitted over the similar extremity of the other, the said engaged extremities having overlapped base-flanges at opposite sides, the one extremity having outer projections to enter corresponding structures on the interior wall of the other extremity, and means engaging said overlapped flanges for adjustably fastening said sections to maintain their adjusted positions.

3. A device of the class set forth, comprising two hollow sections having the inner extremity of one adjustably fitted over the similar extremity of the other, the one extremity having outer projections to enter corresponding structures on the interior wall of the other extremity, the two sections having also opposite flanges and the flanges of one at its inner extremity formed with slots and the flanges of the other at its inner extremity provided with seats and apertures to receive and overlap the slotted flange portions of the other extremity, and means for engaging the slotted and apertured portions of the flanges.

4. A device of the class set forth, comprising two hollow sections, the inner end of one section having transverse projections thereover with a maximum extent at the apex, and the other section having an inner end to fit over and inclose the former and provided with corrugations to adjustably receive the said projections, and means engaging the opposite sides of the bases of the two adjustably-connected section ends to maintain the adjustment of the said ends.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN E. GRAHAM.

Witnesses:

J. T. BOBBITT,
E. DIDIER.