No. 821,841 PATENTED MAY 29, 1906.

W. G. TOWER.

RAIL FASTENER.

APPLICATION FILED DEC. 4, 1906.

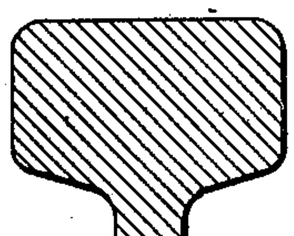

Fig. 1.

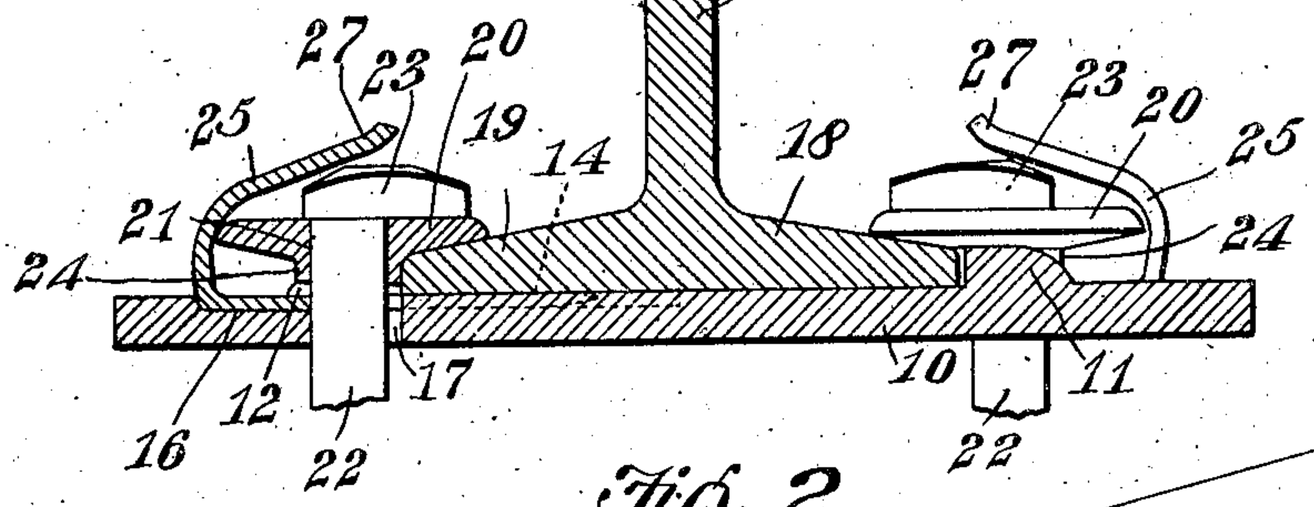

Fig. 2.

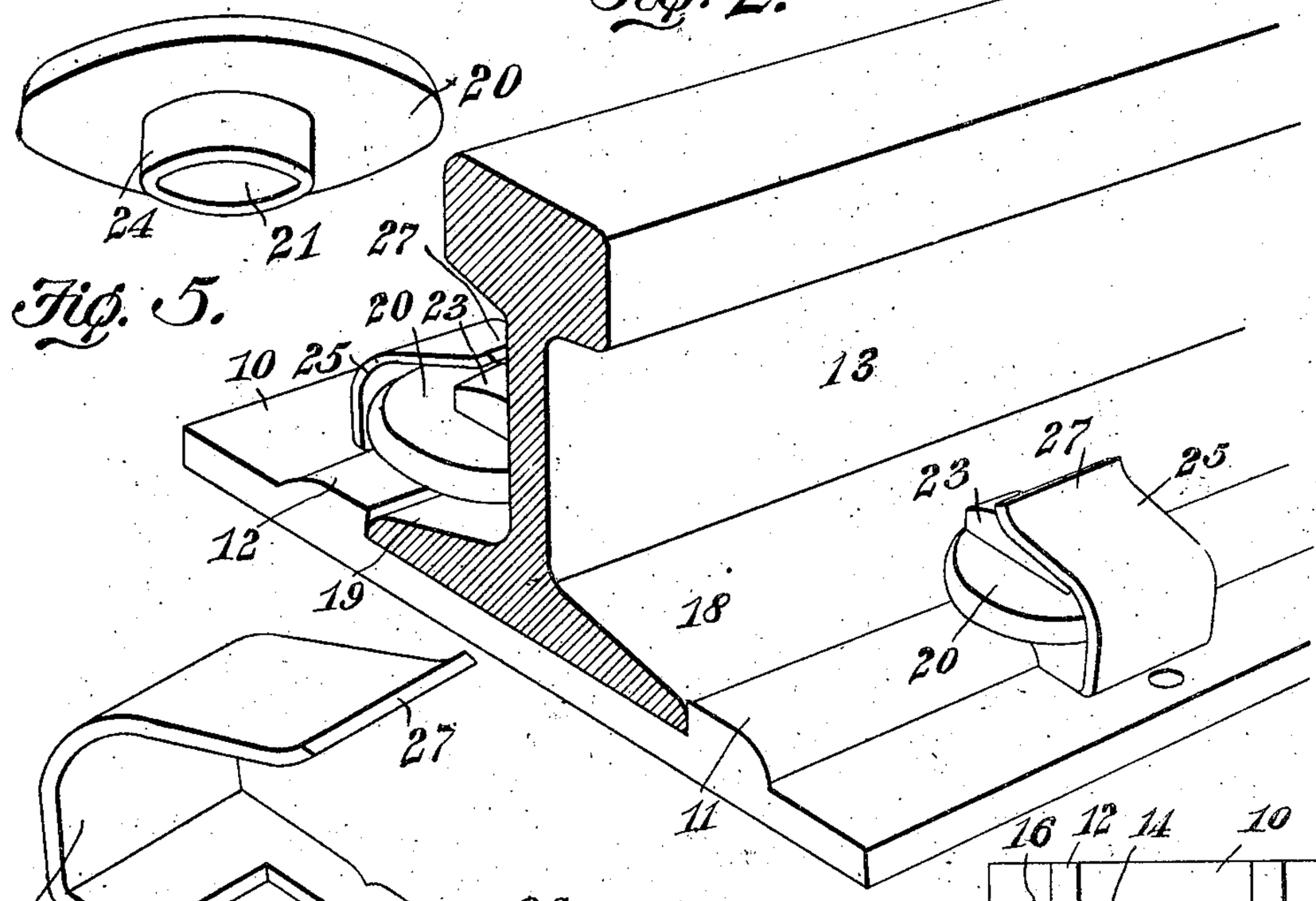

Fig. 5.

Fig. 4.

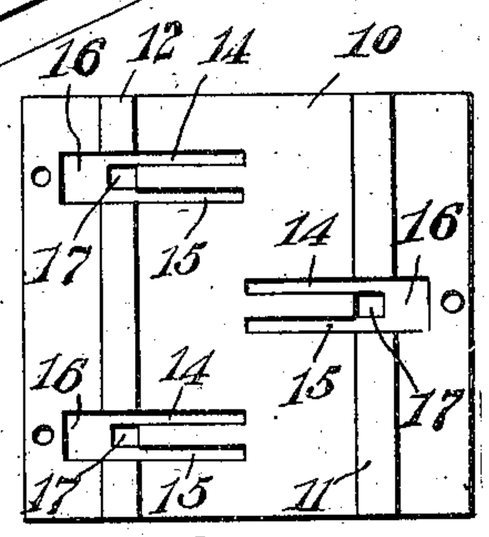

Fig. 3.

WITNESSES:

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WILLIAM GRANT TOWER, OF CORONA, CALIFORNIA.

RAIL-FASTENER.

No. 821,841. Specification of Letters Patent. Patented May 29, 1906.

Application filed December 4, 1905. Serial No. 290,257.

To all whom it may concern:

Be it known that I, WILLIAM GRANT TOWER, a citizen of the United States, residing at Corona, in the county of Riverside and State of California, have invented a new and useful Rail-Fastener, of which the following is a specification.

This invention relates to rail-fasteners, and has for an object to provide a fastener embodying new and improved features of durability, reliability, and efficiency.

A further object of the invention is to provide a rail-fastener embodying improved means to prevent lateral and torsional movements of the rails, but to permit the longitudinal movement resulting from contraction and expansion.

A further object of the invention it to provide improved means for preventing the displacement of the spikes from the ties.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a transverse sectional view of the improved rail-fastener. Fig. 2 is a perspective view of the improved fastener. Fig. 3 is a top plan view of the tie-plate. Fig. 4 is a perspective view of the keeper. Fig. 5 is a perspective view of the roller-disk.

Like characters of reference indicate corresponding parts in all of the figures of the drawings.

In its preferred embodiment the improved rail-fastener forming the subject-matter of this application comprises a tie-plate 10, having longitudinally-parallel ribs 11 and 12 spaced to accommodate a rail, as 13, therebetween. Within the surface of the tie-plate contacting with or seating the rail are formed the grooves 14 and 15, joining to form wider grooves 16, cutting the ribs, and with spike openings 17 within the limits of the grooves. Upon the tops of the base-flanges 18 and 19 are disposed the roller-disks 20, having central openings 21 proportioned to receive and be pivoted upon spikes, as 22, with the heads 23 bearing upon the upper surfaces of the disks and with axial bosses 24 encircling the spikes and bearing against the edges of the flanges.

Within the grooves 16 are disposed keepers 25, bifurcated to form the fingers 26, embracing the spikes 22 and seated in the grooves 14 and 15 and with the outer ends 27 bent over and bearing upon the upper surfaces of the heads 23 of the spikes. The keepers are constructed of resilient material and are retained to seat by their own resiliency and the weight of the track and passing trains.

In operation the rails will be laid upon the plates and gaged in the usual manner. Spikes are then inserted through the axial openings of the rollers and driven through the spike-openings of the plate in such position that the disk of the roller bears upon the top and the boss upon the edge of the base-flange and the spike-head upon the disk. The keeper 25 is then entered in the slots and driven home with the end 27 extending over and bearing upon the spike-head and the fingers forcibly clamped between the rail and plate.

It will be obvious that the roller constructed and applied as described and shown will hold the rail firmly against lateral or torsional displacement, but will move rotatively upon the spikes to permit the usual expansion and contraction.

Having thus described the invention, what is claimed is—

1. A rail-fastener comprising a tie-plate provided with a spike-opening and a groove adjacent the opening and a keeper proportioned to be seated in the groove beneath a rail and to extend over and bear upon the head of a spike.

2. A rail-fastener comprising a tie-plate provided with a groove in its rail-receiving surface and with a spike-opening within the limits of the groove and a bifurcated keeper proportioned to be seated within the groove and to embrace the shank of a spike and to extend over and bear upon the top of the spike.

3. A rail-fastener comprising an annular disk proportioned to bear upon the top of the base-flange of a rail and provided with concentric means to bear against the edge of the flange and means to pivot the disk to a tie.

4. A rail-fastener comprising a rotatable disk provided with a central opening and with a laterally-extending boss about the opening and proportioned to be pivoted adjacent a rail with the disk engaging the upper

surface and the boss engaging the edge of the base-flange said disk adapted to be rotated by the expansion or contraction of the rail.

5. A rail-fastener comprising a fastening for penetrating the tie and a roller centrally pivoted upon the fastening and engaging the base-flange of the rail.

6. A rail-fastener comprising a pivot rigidly secured adjacent the rail and a rotatable disk mounted at its center upon the pivot and engaging the top and having a boss engaging the edge of the base-flange said disk adapted to be rotated by the expansion or contraction of the rail.

7. A rail-fastener comprising a tie-plate provided with rail-engaging ribs, a roller pivoted upon the plate and engaging the top and edge of the base-flange.

8. A rail-fastener comprising a tie-plate, a roller engaging the top and edge of the base-flange and means to pivot the roller upon the plate and the plate upon a tie.

9. A rail-fastener comprising a tie-plate provided with a spike-opening, a roller engaging the top and edge of the base-flange and a fastening proportioned for insertion through the plate-opening and to penetrate a tie and to pivot the roller in operative position.

10. A rail-fastener comprising a tie-plate provided with a groove within the rail-engaging surface and with a spike-opening within the limits of the groove, a roller proportioned to engage the top and edge of the base-flange and having an axial spike-receiving opening and a keeper proportioned to be seated in the groove and to extend over and bear upon the top of a spike.

11. A rail-fastener comprising a tie-plate having longitudinal rail-engaging ribs and provided with grooves formed in the rail-engaging surface and cutting the ribs and with spike-openings within the limits of the grooves, a disk bearing upon the top of the base-flange and having an axial spike-receiving opening, a boss formed upon the face of the disk and about the axial opening and proportioned to bear against the edge of the base-flange, a bifurcated keeper proportioned to embrace the shank of a spike and be seated in the groove and with the outer end bent to extend over and bear upon the head of a spike.

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

WILLIAM GRANT TOWER.

Witnesses:

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INEZ E. BAKER.