

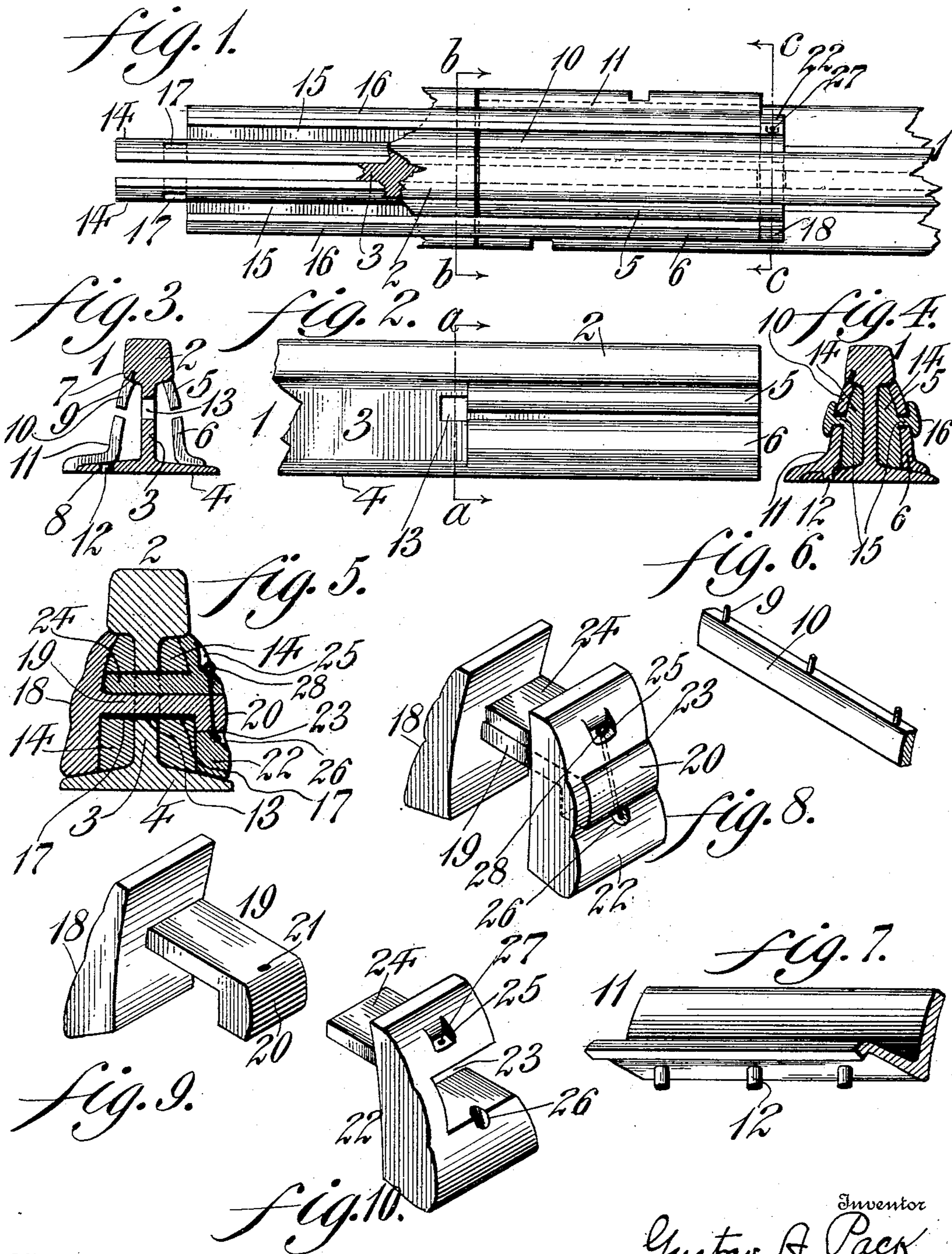
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G. A. PACK.
RAIL JOINT.

APPLICATION FILED OCT. 9, 1903.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

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RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 745,894, dated December 1, 1903.

Application filed October 9, 1903. Serial No. 176,345. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV A. PACK, a citizen of the United States, residing at Bordentown, in the county of Burlington and State of New Jersey, have invented a new and useful Improvement in Rail-Joints, of which the following is a specification.

My invention relates to rail-joints. It consists of pieces secured to each side of the rail and abutting against its base, web, and head and of flanges by which these are securely but detachably held in place.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a top plan view of my device, partly broken away. Fig. 2 represents the end of a rail with the parts which are permanently connected therewith. Fig. 3 represents a section through the line *a a*, Fig. 2. Fig. 4 represents a section through the line *b b*, Fig. 1. Fig. 5 represents a section through the line *c c*, Fig. 1. Figs. 6, 7, 8, 9, and 10 represent in elevation various detached portions of my device.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates a rail, of which 2, 3, and 4 are respectively the head, web, and base. Secured, as by riveting or welding, at the end of the rail are flanges 5 and 6, respectively depending from the head 2 and rising from the base 3. At the opposite side of the web 3 are drilled holes 7 and 8 in the head and base, as shown in Fig. 3. Into the holes 7 are driven pins 9 on a loose flange 10. (Shown in Fig. 6.) In the same way the lower loose flange 11 is secured to the base 4 of the rail by means of pins 12. Through the web 3 adjacent the inner ends of the flanges described is an aperture 13. (Shown in Figs. 2 and 3.)

Joint-bars consisting of a body portion 14, adapted to fill the space between the web 3 of the rail and the inner sides of the flanges, as 5 and 6, a neck 15, adapted to fill the space between said flanges, and a head 16 are forced into place, as shown in Figs. 1 and 4. These bars are somewhat more than twice as long as the flanges and are provided at each end (the head and web portions being cut away for the purpose) with an aperture 17, corre-

sponding to the aperture 13 in the rail-web 3. When the flanges 10 and 11 have been placed in position, as shown in Fig. 3, and the joint-bars driven in, as shown in Figs. 1 and 4, the apertures 13 and 17 will coincide.

To secure the parts *in situ*, the key-pieces shown in Figs. 5, 8, 9, and 10 are used. One of these consists of a body 18, adapted to fit over the body portion 14 of the joint-bar and to abut against the head 2 and base 4 of the rail, and a laterally-extending tongue 19, at the outer end of which is a depending lug 20, pierced by a small vertical hole 21. (*Vide* Fig. 9.) The other key-piece (shown in Fig. 10) has a body 22, having an aperture 23, a tongue 24, and recesses 25 and 26, the upper of which is drilled at 27. It will be observed that the lug 20 passes snugly through the aperture 13 in the rail-web 3 and the aperture 17 in the body 14 and into the aperture 23 of the second key-piece and that these when placed in position are held together by a pin 28, passed through the holes 27 and 21. The manner in which the key-pieces fit each other and the parts to be joined and the binding together of the bar-bodies 14 by the body 18 and lug 20 of the key-piece are so clearly shown in Fig. 5 as to require no further description. To raise a rail so joined, it is necessary to remove the pins 28 and the key-pieces, after which the joint-bars may be driven out, or at least so as to clear the flanges 5, 6, 10, and 11 in one of the adjacent rails.

The expansion and contraction of the rail may be provided for by increasing the length of the apertures 13 in the rails.

It is evident that various changes may be made by those skilled in the art which will come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

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

1. A rail-joint comprising flanges secured at the end of the rail at the side of and spaced away from the rail-web, a joint-bar within the space between said flanges and the web and connecting adjacent rails and means for locking said joint-bar in position.

2. A rail-joint comprising flanges secured at the end of the rail at the side of and spaced away from the rail-web, and from each other, a joint-bar having a body portion within the space between said flanges and the rail-web, a neck portion within the space between said flanges and a head outside of said flanges, said joint-bar connecting adjacent rails and means for locking said joint-bar in position.

3. A rail-joint comprising flanges secured at the end of the rail at the side of and spaced away from the rail-web, a joint-bar within the spaces between said flanges and the web and connecting adjacent rails, said rail-web and said joint-bar being provided with apertures and a key-piece passing through said apertures and operative to lock said joint-bar in position.

4. A rail-joint comprising flanges secured at the end of the rail at each side of and spaced away from the rail-web, joint-bars connecting adjacent rails at each side of said web and within said flanges, said web and said joint-bars being provided with apertures and a pair of coacting key-pieces each having a tongue adapted to pass through said apertures and means for securing said key-pieces together.

5. A rail-joint comprising flanges secured at the end of the rail at each side of and spaced away from the rail-web, joint-bars connecting adjacent rails at each side of said web and within said flanges, said web and said joint-bars being provided with apertures and

a pair of coacting key-pieces each having a tongue adapted to pass through said apertures, one of said tongues being provided with a lug whereby the body of said key-piece and said lug are adapted to bind together said joint-bars and means for securing said key-pieces together.

6. A rail-joint comprising flanges permanently secured at the end of the rail to the head and base thereof respectively and spaced away from the web, flanges detachably secured to the head and base of the rail at the opposite side of the web, joint-bars within the space between said flanges and the web on both sides thereof and connecting adjacent rails and means for locking said joint-bars in position.

7. A rail-joint comprising flanges permanently secured at the end of the rail to the head and base thereof respectively and spaced away from the web, flanges detachably secured to the head and base of the rail at the opposite side of the web, joint-bars adjacent the web on both sides thereof, said joint-bars having body portions within the space between said flanges and the web, a neck portion within the space between said flanges and a head outside of said flanges, said joint-bars connecting adjacent rails and means for locking said joint-bars in position.

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