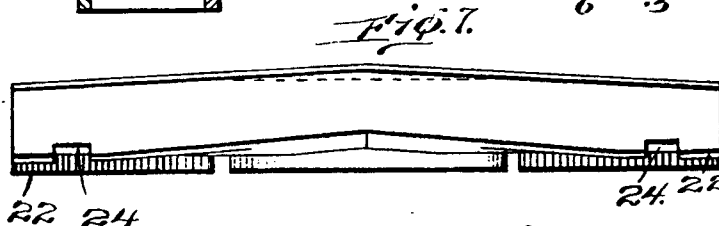
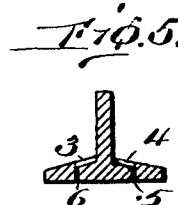
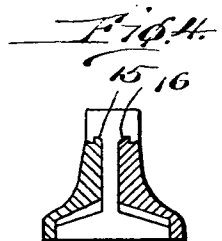
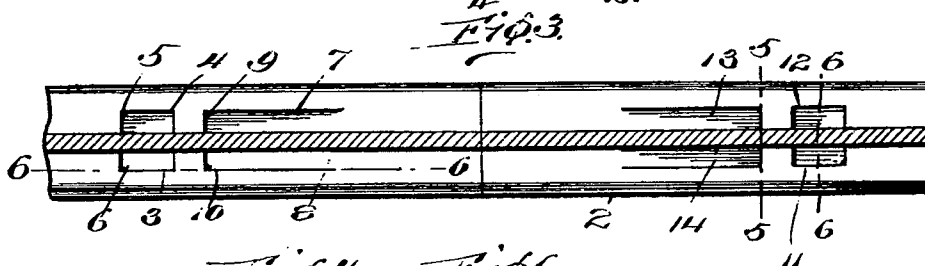
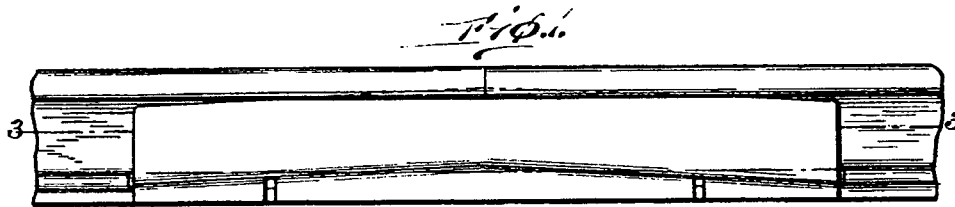


B. M. KEEVER.
RAIL JOINT.
APPLICATION FILED FEB. 25, 1911.

1,050,080.

Patented Jan. 7, 1913.
2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 8.

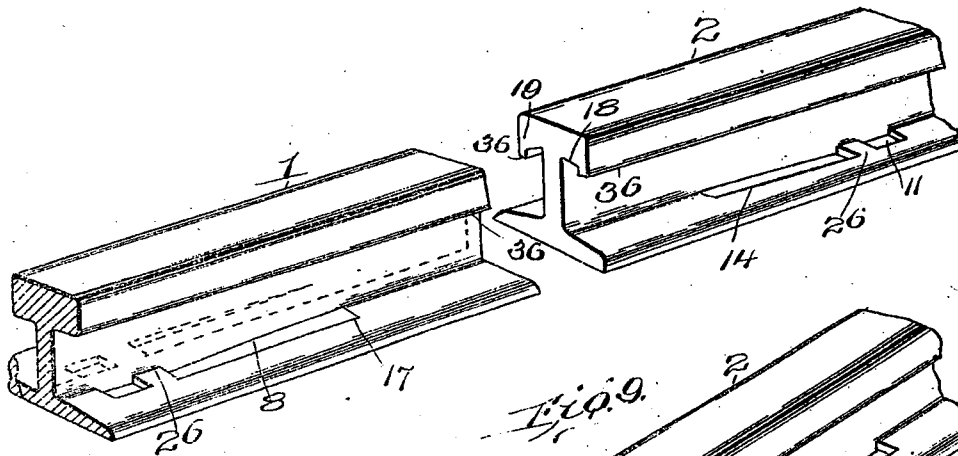


FIG. 9.

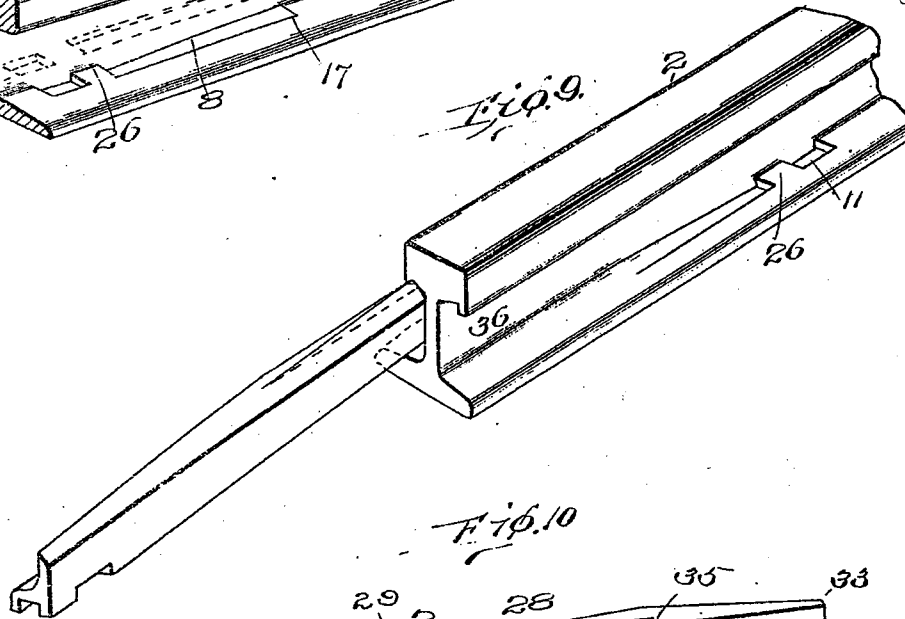
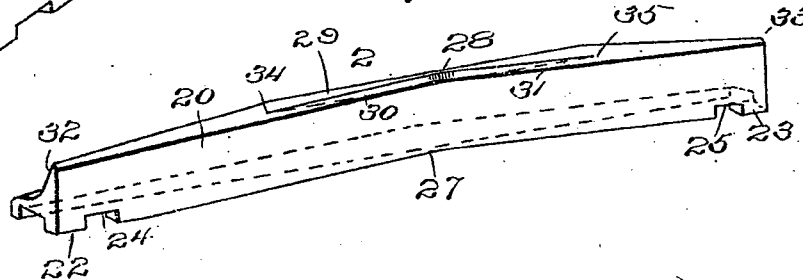


FIG. 10.



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UNITED STATES PATENT OFFICE.

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RAIL-JOINT.

1,050,080.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed February 25, 1911. Serial No. 810,723.

To all whom it may concern:

Be it known that I, BUNDY M. KEEVER, a citizen of the United States, residing at Upland, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Rail-Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in rail joints, and particularly to rail joints in which bolts and the like are eliminated.

The object in view is the arrangement of improved means for holding together the abutting ends of rails without the use of bolts or the like, and yet permit a proper expansion and contraction of the rails.

A further object of the invention is the arrangement of abutting ends of rails formed with grooves and notches therein, and fish plates arranged with corresponding projections and engaging portions for engaging the various grooves and notches of the abutting rails for holding the rails together end for end, and at the same time for holding the fish plates in proper position so as to lock all the members together without the use of auxiliary fastening means.

A still further object of the invention is the arrangement in a rail joint, of abutting ends of rails having the lower side of the ball of the rail grooved and the upper edge of the base of the rail grooved and formed with notches, which grooves and notches coact with interlocking fish plates which act as combined braces and connectors.

With these and other objects in view the invention comprises certain novel constructions, combinations, and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a side view of an embodiment of the invention shown in position. Fig. 2 is a top plan view of the structure shown in Fig. 1. Fig. 3 is a longitudinal sectional view through the abutting ends of rails, approximately on line 3-3 of Fig. 1, the fish plates being removed. Fig. 4 is a section through Fig. 2 on line 4-4. Fig. 5 is a section through Fig. 3 on line 5-5. Fig. 6 is a section through Fig. 3 on line 6-6. Fig. 7 is a side elevation of one of the fish plates look-

ing at the inner side thereof. Fig. 8 is a perspective view of the abutting ends of two rails slightly separated, the same embodying certain features of the invention. Fig. 9 is a perspective view of the end of a rail and a fish plate connected therewith. Fig. 10 is a perspective view of a fish plate embodying certain features of the invention.

In constructing a rail joint embodying the invention the rails are constructed in the usual manner, and formed with notches near the ends thereof and inclined grooves, which notches and grooves are adapted to receive projecting portions of connectors or fish plates. The fish plates are formed so as to fit these respective notches and grooves, and thus bind the rails together end for end without the use of bolts or the like, the notches being made of such a size as to permit the usual contraction and expansion without in any way injuring the fish plates or the ends of the rails.

In order that the invention may be more clearly understood an embodiment of the same is shown in the accompanying drawings, in which—1 indicates the end of a rail, and 2 the end of an adjoining or abutting rail. End 1 is formed with sockets 3 and 4 provided with drain apertures 5 and 6 respectively, and also with inclined grooves 7 and 8 provided with drain apertures 9 and 10 respectively. End 2 is formed with sockets 11 and 12, and inclined grooves 13 and 14 in a similar manner to those in end 1, and also is provided with drain apertures in a similar manner, the inclined grooves, however, extending in an outward direction or rather toward the end of the rail. These grooves and apertures in the ends 1 and 2 are formed in the base of the rail near the web, while in the ball of end 1 are formed inclined grooves 15 and 16. The inclined grooves 15 and 16 commence at the end of the rail and extend back to a point approximately in line with point 17, or the place where groove 8 merges into the top of the base of end 1. End 2 is formed with inclined grooves 18 and 19 in the ball of the rail on each side of the web which extend from the end of the rail back to a point above the point of merging of groove 14 into the top of the rail base.

Fish plates 20 and 21 are provided for the rails, and are arranged on each side thereof, as shown in Fig. 2, for properly holding the rails in alinement and against longitudinal

movement except the ordinary expansion and contraction. The fish plates 20 and 21 are not provided with bolt holes or the like, and are designed to hold the rails firmly together by having various projections thereof engage the sockets and grooves in the rails. In order to accomplish this each of the fish plates is formed with lugs 22 and 23 which fit into the respective sockets, and also each of the fish plates is formed with notches 24 and 25 which fit over the partitions 26 between the sockets and the grooved portions in the base of the rail. The fish plates are each bowed up or inclined toward a central point 27, and each is formed with a central projection 28 (Fig. 10) and a flat or horizontal portion 29. The central projection 28 is designed to be positioned at the juncture of the abutting rails, and the side portions 30 and 31 caused to press against the ball of the rails in the grooves 15 and 19 respectively. The inclined portions 30 and 31 of fish plate 21, of course, will engage the inclined grooves 16 and 18 of the respective ends 1 and 2. It will be noted that the fish plates 20 and 21 are of identical construction and may be interchanged and used on either side of the rail as desired. Also it will be evident that the fish plates may be made of any length, thickness, and other dimensions as desired for accommodating any weight of rail desired to be used. It will be noted that the tops of the fish plates are beveled continuously from point 28 to points 32 and 33, but the bearing portions 30 and 31 only extend from point 28 to points 34 and 35 while the flattened portion 29 extends from point 34 to point 35 and bears against the flange portion 36 on the respective ends 1 and 2. The flange portion 36 may be slightly beveled if desired, or may be perfectly flat and parallel with the top of the ball of the rail. The fish plates are made of such length that the lugs 22 and 23 may easily fit into the respective sockets of the abutting rails but permit a slight longitudinal movement of the rails, the lugs slipping back and forth in the sockets. This will allow for the proper expansion and contraction of the rails without in any way injuring the fish plates, and without preventing the fish plates from properly accomplishing their function, namely, the holding together of the abutting ends of rails, and supporting said abutting ends for preventing any knocking or pounding of the rails at this point. By the arrangement of the interlocking of the fish plates with the abutting ends of rails the rails are prevented, to a large extent, from creeping as when one rail has a tendency to creep, the adjoining rails will not, and consequently the first mentioned rail will be largely prevented from movement.

When it is desired to insert one or more rails the same are brought together end for end in the usual manner, and the fish plates 20 and 21 placed loosely approximately in their correct position. The abutting ends of the rails are then raised a short distance in practice usually five or six inches, and then the fish plates are moved to their proper position and the rails dropped which will cause the fish plates to become properly interlocked with the rails, and prevent any movement thereof. After the fish plates have been placed in position in this manner the same are spiked down in the usual manner. In accomplishing the placing of the fish plates in position when one rail has already been spiked down the spikes must be withdrawn for a short distance back in order to permit a slight raising of the end of the rail.

What I claim is:

1. In a rail joint, the combination with the abutting ends of rails, each of which is formed with a socket on each side of the web, and a grooved portion merging into the top of the base, and also with a grooved portion on each side of the web on the lower side of the ball merging into the bottom of the ball at a point substantially above the point where the groove in the base merges into the upper surface of the base, of fish plates arranged with a plurality of projecting members, said projecting members being designed to fit into said sockets and said grooves for locking said rails together end for end, and for bracing the abutting ends of said rails.
2. In a rail joint, the combination with abutting ends of rails formed with notches therein, of fish plates formed with projections for fitting into said notches for holding said rails together end to end, and also formed with a bowed up central portion having the upper edge engaging the extreme ends of the rails for preventing pounding at that point.

In testimony whereof I affix my signature in presence of two witnesses.

BUNDY M. KREVER.

Witnesses:
SAMUEL S. PATTON,
VANE B. KORNER.