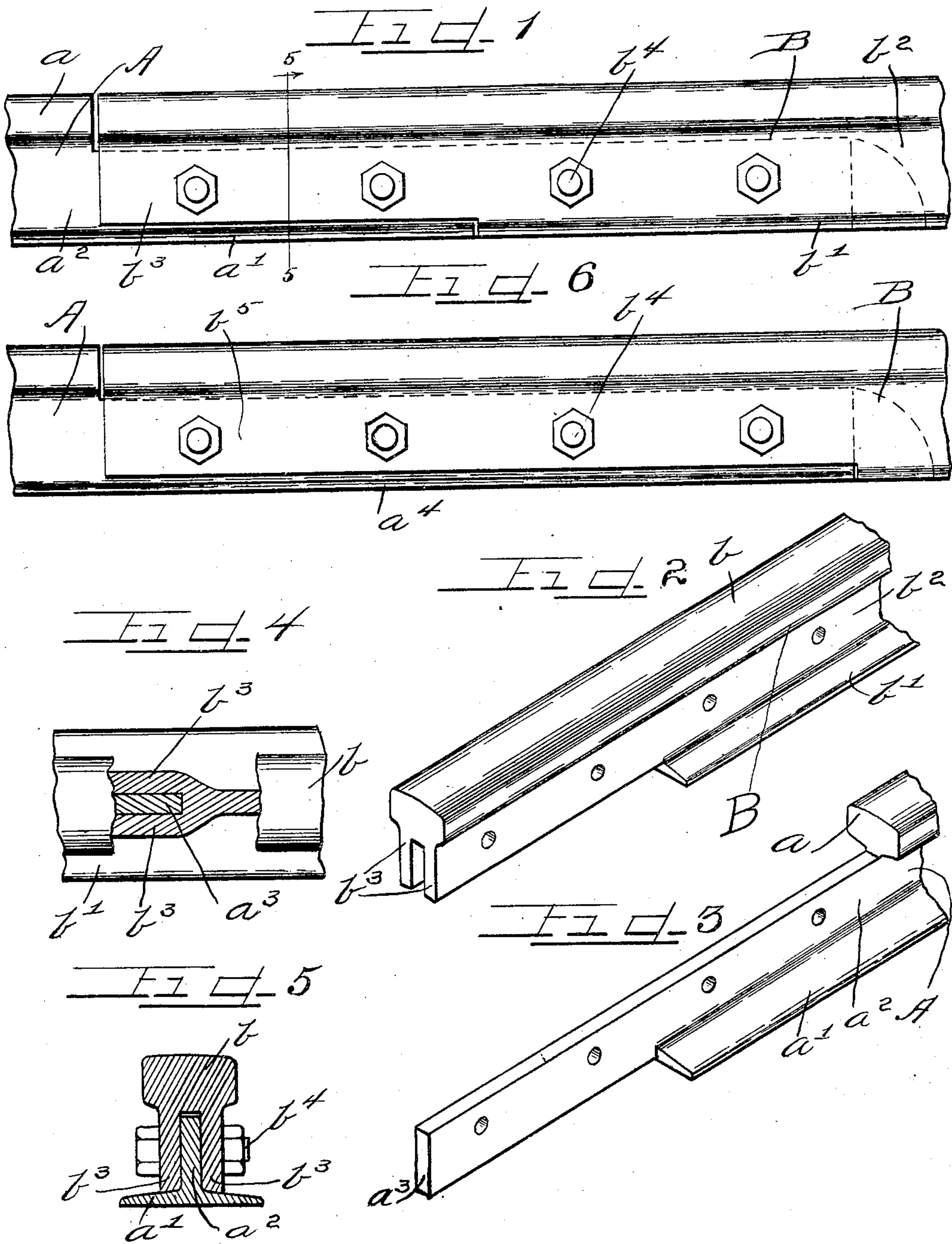


No. 862,171.

PATENTED AUG. 6, 1907.

D. F. KELLY.  
INTERFITTING RAIL JOINT.  
APPLICATION FILED JUNE 18, 1906.



Witnesses

J. W. Angell  
W. W. Withersburg

Inventor

Dennis F. Kelly  
by Charles E. Kelly  
Att'y.



# UNITED STATES PATENT OFFICE.

DENNIS F. KELLY, OF CHICAGO, ILLINOIS.

## INTERFITTING RAIL-JOINT.

No. 862,171.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed June 18, 1906. Serial No. 322,167.

*To all whom it may concern:*

Be it known that I, DENNIS F. KELLY, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Interfitting Rail-Joints; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in interfitting rail joints or rail joints of that class in which the abutting rail ends overlap affording splice bars. Heretofore various rail joints of this class have been devised but many of them have been objectionable because of the difficulty of removing and replacing individual rails after the track has once been completed. Furthermore in many of the joints as heretofore constructed it has been difficult to securely fasten the rail ends together and as a consequence one end may move relatively of the other thereby causing excessive wear as well as creating great annoyance.

The object of this invention is to provide a rail joint in which the abutting rail ends are firmly supported against relative movement and in which independent splice bars, as such, are entirely obviated thereby greatly decreasing the parts required.

It is a further object of the invention to provide a safety rail joint in which, should the splice bolts or a part of them be removed or broken, the rail ends would still retain their relative positions thereby preventing accidents.

It is a further object of this invention to provide a joint splice which, while it affords a stiff joint and securely holds the rails in relative position, yet it will permit them to be readily removed and replaced without necessitating tearing up a great quantity of track.

The invention consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a fragmentary side elevation of a device embodying my invention. Fig. 2 is a reduced perspective view of one of the abutting rail ends. Fig. 3 is a similar view of the other abutting rail end. Fig. 4 is a fragmentary horizontal section taken through the rail web. Fig. 5 is a reduced section taken on line 5—5 of Fig. 1. Fig. 6 is a view similar to Fig. 1 but embodying a slight modification.

As shown in said drawings: Referring first to Figs. 1 to 6 inclusive A represents one abutting rail end and B the other, of which the end A, as shown more clearly in Fig. 3, is similar in cross section to the ordinary tee rail and comprises a rail head  $a$ , a rail flange or base  $a'$  and a web  $a^2$  connecting said head and flange. Said flange however is extended longitudinally beyond the end of the rail head and the web is extended

longitudinally beyond the flange to afford one of the splice members  $a^3$  for the joint and on which rests the abutting rail end B when in place. Said end B comprises a head  $b$ , a base or flange  $b'$  and a connecting web  $b^2$  which is relatively thick and together with the head  $b$  extends longitudinally beyond the flange for a distance approximately equal to the length of the extended end of the flange  $a'$  of the end A and affords the other splice member. Said web as shown more clearly in Figs. 2 and 5 is provided with a longitudinal slot which opens through the bottom thereof and affords side webs  $b^3$ — $b^3$  which fit closely on either side of the web  $a^2$  and rest upon the flange  $a'$  while the head  $b$  rests upon the top of the web  $a^2$ . Said webs  $a^2$  and  $b^3$ — $b^3$  are provided with bolt apertures in which are engaged splice bolts  $b^4$  as is usual in such devices. If preferred the flange  $a^4$  of the end A may extend the full length of the projecting end of the web  $a^2$ , as shown in Fig. 6, and the flange of the rail end B may be cut away for approximately the entire length of the slot in the web  $b^5$ .

The operation is as follows: In each of the constructions shown one of the abutting rail ends is provided with an extended web which fits in a complementary slot in the web of the other abutting rail end and when the splice bolts are inserted a practically continuous and rigid rail is formed, since there is no flexibility at the joint to permit one end to move with respect to the other. Inasmuch as in the constructions one end overlaps the other in each instance it is obvious that when the splice bolts are removed the overlapping end of one joint may be raised free from the other member of the joint and the underlying end of the next adjacent joint may be withdrawn thereby enabling any rail to be removed without disturbing the other rails.

Obviously rail joints constructed in accordance with my invention afford a very strong connection in which the danger of accidents from the breakage or removal of splice bolts is entirely obviated and in which the abutting ends are securely held from movement with respect to each other, thereby greatly lessening the jar caused by the car wheels pounding the rail ends.

I claim as my invention:

1. The combination with a rail end having the web thereof extended longitudinally beyond the head and the flange thereof of even length, of an abutting rail end having its web slotted longitudinally beneath the head and opening through the bottom of the rail and having the flange cut away the length of said slot and adapted to receive therein said extended web.

2. In a rail joint the combination with a rail end having the web thereof extended longitudinally beyond the end of the head and the ends of the flange and web being in alinement with each other, of an abutting rail end having a longitudinal slot in its web opening downwardly from the rail head through the bottom of the rail and adapted to receive the extended web of the other rail end.

3. In a device of the class described the combination with a rail end having its head and flange ending at dif-



ferent points and its web extended beyond said head of an abutting rail end having its head and web of equal length and flange out of alinement with the same, said web slotted to secure therein said extended web of the adjacent  
5 rail.

4. In a device of the class described the combination with a rail end having its head and flange terminating at different points on the rail of an abutting rail end having its head and web equal in length and a downwardly opening, central slot in said web adapted to receive the web of  
10 the other rail.

5. In a device of the class described the combination with a rail end having its web extended longitudinally and of a width to extend from the rail head to the flange of  
15 the rail and having its head and flange terminating at points out of vertical alinement, of an abutting rail end having a longitudinal, downwardly opening slot in the web thereof extending from the end of the rail rearwardly and adapted to receive said extended web.

6. In a device of the class described the combination with a rail end having its web extended beyond its head, of an abutting rail end having its flange cut away for a portion of its length and its web and head terminating in alinement, said web slotted to receive said web of the adjacent rail and the flanges of said rail ends adapted to abut  
20 when in place.

7. In a device of the class described the combination with a rail end having its head and web in vertical alinement and extended beyond the end of its flange and having a downwardly opening slot extending longitudinally of  
30

the web, of an abutting rail end having its web extended beyond its head a distance approximately equal to the length of said slot and its flange terminating out of alinement with the head.

8. In a device of the class described the combination with a rail end having a thickened web provided with a downwardly opening longitudinal slot and having its base cut away for the entire length of said slot, of an abutting rail end having a longitudinally extended web adapted to seat in said slot and having its flange equal in length to  
35 said web. 40

9. In a device of the class described the combination with a rail end having its web and flange of equal length and out of alinement with the head of an abutting rail end having its web and head of equal length and out of alinement with the flange said web slotted to receive the web of the adjacent rail. 45

10. In a device of the class described the combination with a rail end having its web and flange terminating in vertical alinement and the head out of alinement therewith of an abutting rail end having its head and web terminating in vertical alinement and the flange out of alinement therewith said web slotted to receive the web of the abutting rail. 50

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses. 55

DENNIS F. KELLY.

Witnesses:

W. W. WITHEMBURY,  
WM. C. SMITH.