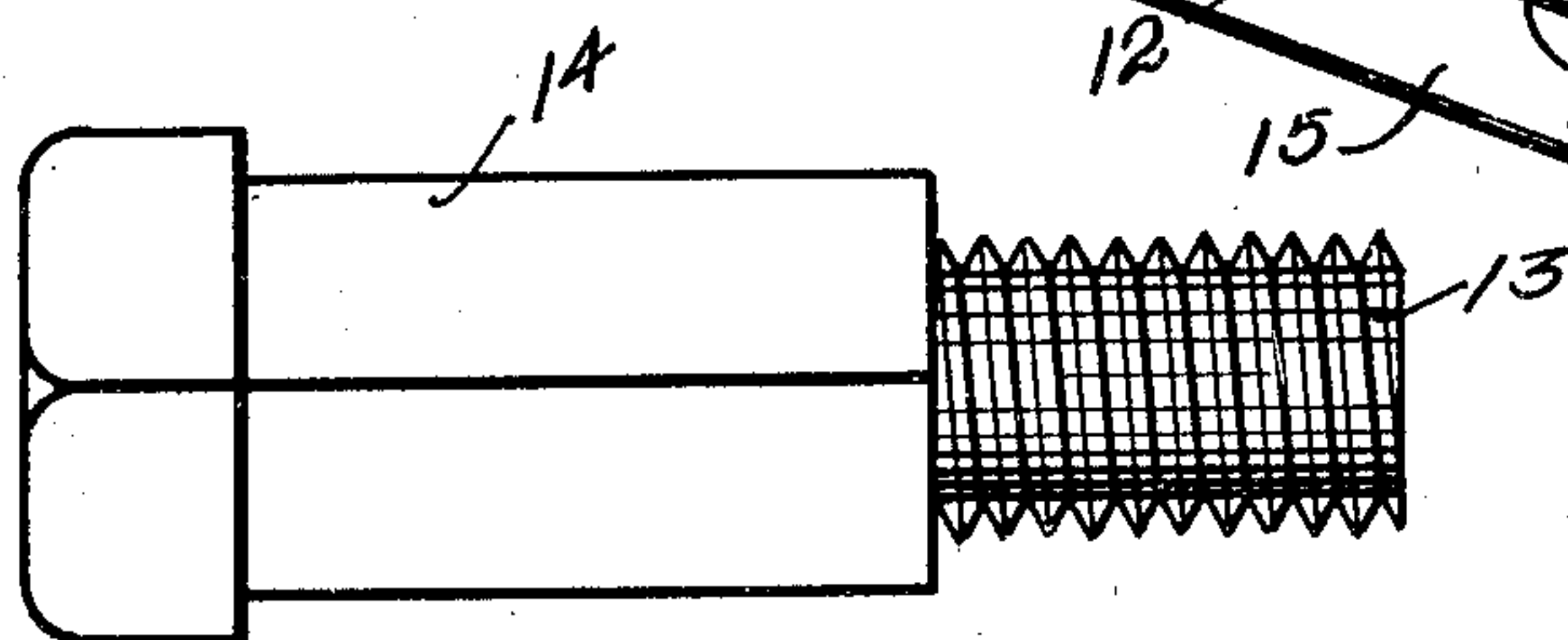
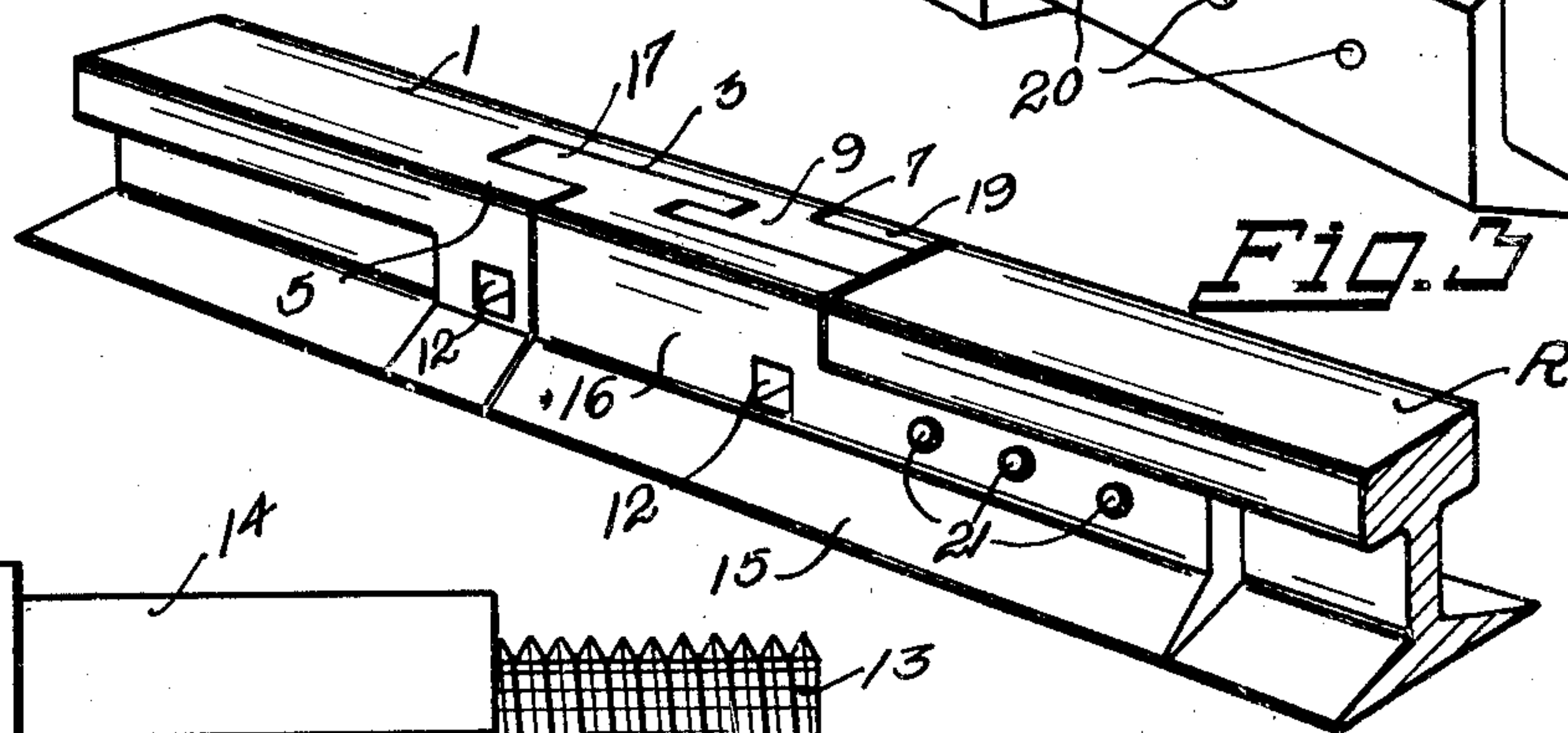
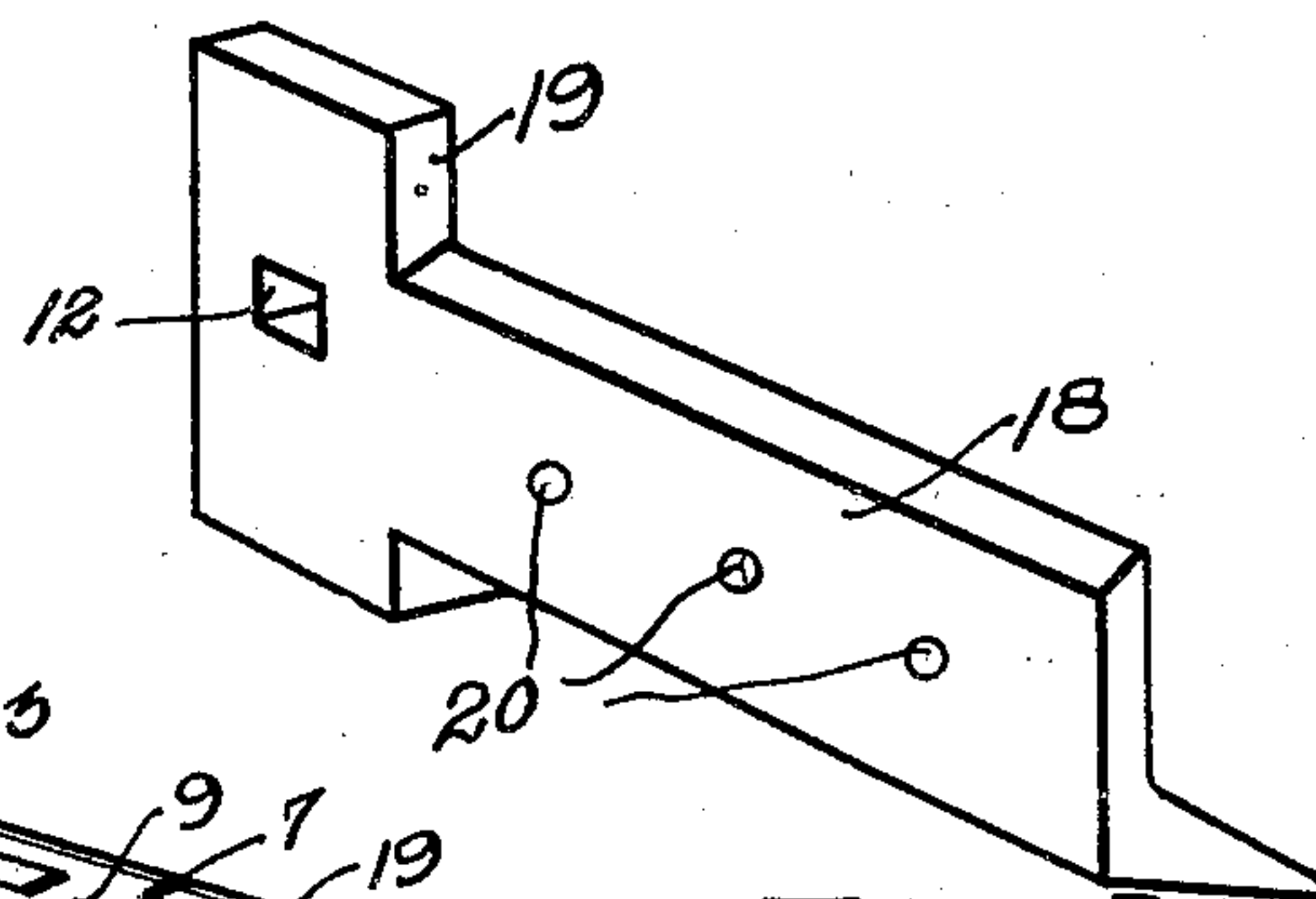
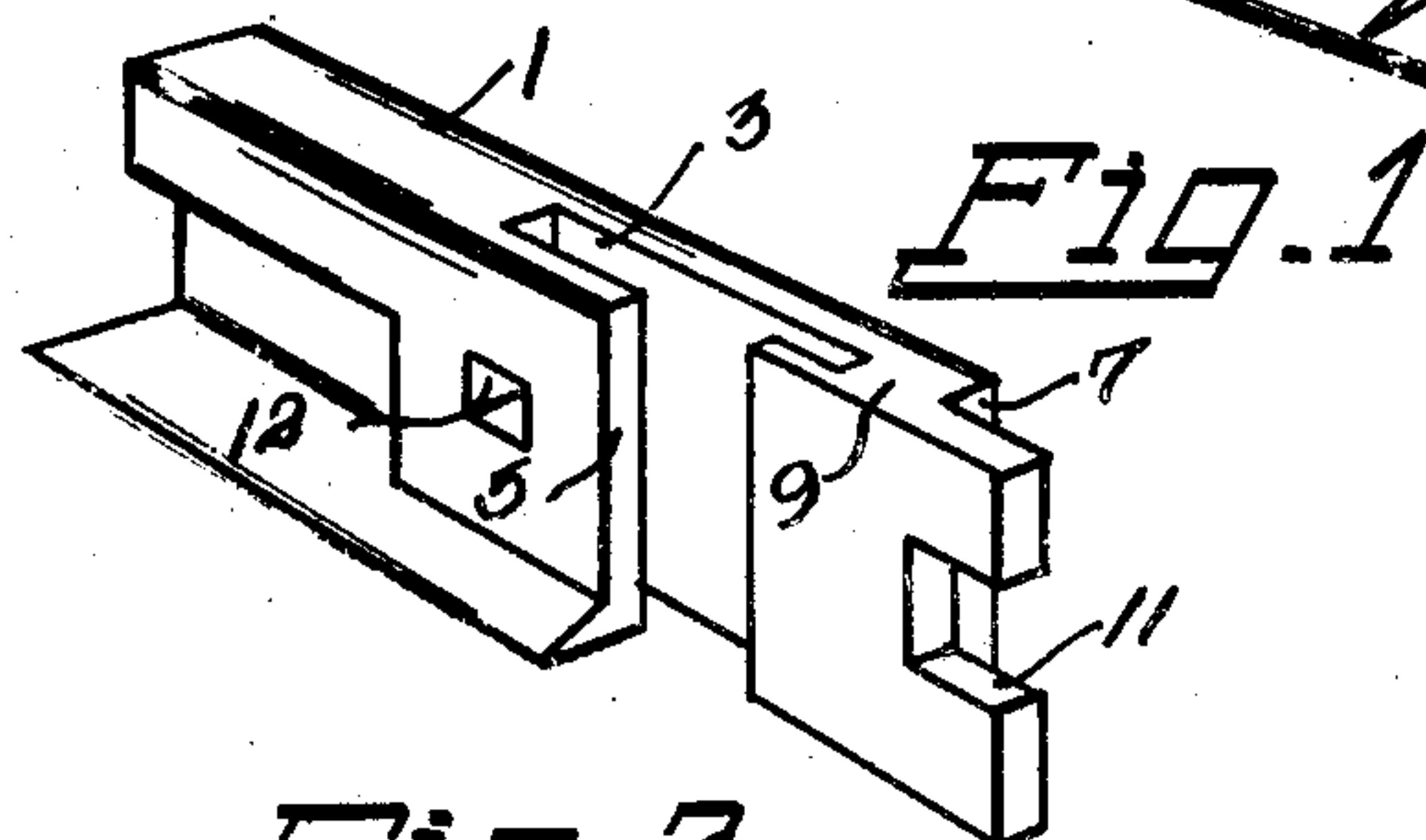
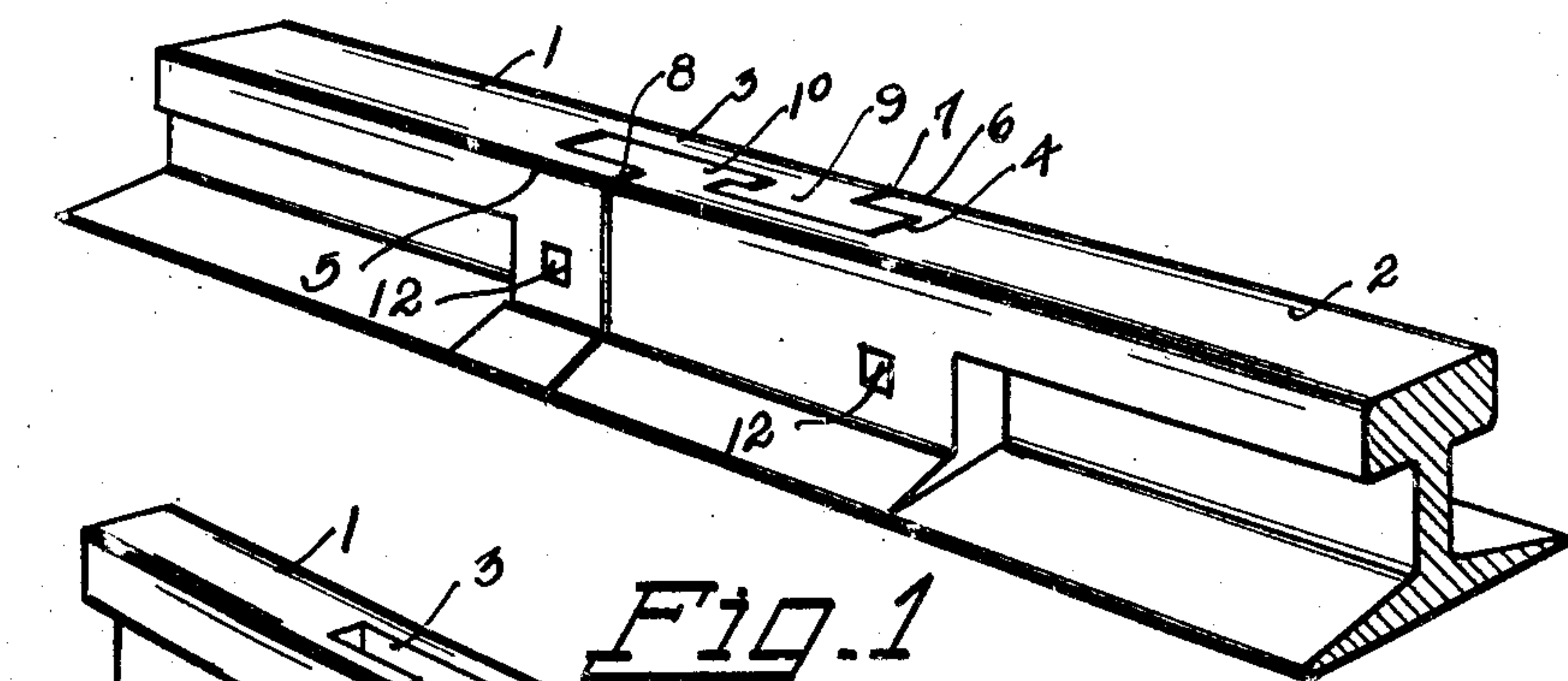


Jan. 2, 1923.

1,440,582

C. CARLSON.
RAIL JOINT.
FILED MAY 31, 1922.



Carl Carlson. ^{Inventor}

By *Herbert E. Smith*
^{Attorney}

UNITED STATES PATENT OFFICE.

CARL CARLSON, OF LINFOR, IDAHO.

RAIL JOINT.

Application filed May 31, 1922. Serial No. 564,838.

To all whom it may concern:

Be it known that I, CARL CARLSON, a citizen of the United States, residing at Linfor, in Shoshone County and State of Idaho, have invented certain new and useful Improvements in Rail Joints, of which the following is a specification.

My present invention relates to improvements in rail joints for railways or railroads, and is designed for use with standard types of rails. The primary object of the invention is the provision of means at the rail joint for insuring a smooth and continuous joint for the passage of rolling stock, which is practically noiseless, and which is free from danger of separation. By the utilization of my invention splitting and uneven wear of the rails are obviated, expansion and contraction are provided for to compensate for changes in temperature in the rails, and lateral displacement of the rails at the joint is prevented.

In the physical embodiment of my invention the rails are fashioned with complementary end structures in order that the adjacent ends of adjoining rails may be properly fitted together, and in carrying out the principles of the invention means are utilized for joining the rail structure of my invention with the existing form of standard railroad rail.

The invention consists in certain novel combinations and arrangements in the structure of the rail ends to complete the rail joint, as will be more specifically pointed out and claimed hereinafter.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention in which the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principles of my invention.

I have also illustrated a rail joint involving a rail of standard form with the rail-end of my special construction coupled thereto to show the adaptation of my invention to existing standard rails.

Figure 1 is a perspective view of a rail joint according to my invention.

Figure 2 is a perspective view of a rail end, which rail is equipped with a complementary end at its other end whereby adjacent rails are joined by a complementary members.

Figure 3 is a perspective view of a splice plate used in the construction of Figure 4.

Figure 4 is a perspective view showing the rail end of my invention joined to a standard form of rail.

Figure 5 shows one of the securing bolts with its squared shank.

In the main embodiment of the invention as shown in Figures 1 and 2 the two rails are equipped with complementary ends 1 and 2, it being understood that each rail has a pair of ends and these adjacent ends on adjoining rails are adapted to interlock as shown in Figure 1. The respective rail ends are fashioned with vertical slots 3 and 4 extending longitudinally of the rail and centrally thereof, and at opposite sides of the rails the ends terminate in side plates 5 and 6 with the edges of the side plates projecting beyond the inner vertical wall of the slots 3 and 4. On each rail end, opposite its side plate is fashioned a recess, as 7 and 8, and the extreme ends are fashioned as central, inset, vertically disposed lugs 9 and 10. These inset lugs thus form lateral or side recesses 7 and 8, and also form a portion of the vertical slots 3 and 4 respectively, and it will be apparent that the slot 3 is adapted to receive the lug 10, while the slot 4 is adapted to receive the lug 9, a notch 11 being shown for use if desired in the extreme edges of these lugs.

The rail-ends thus form a continuation of the flanged top portions of the rails and are used in lieu of fish plates at the joints, while at the same time strengthening and reinforcing the joint. Squared bolt holes 12, 12 are utilized in the rail ends to receive the bolts 13, which are fashioned with squared shanks 14 for seating in the squared holes, and the usual locking nuts are threaded on the ends of the bolts 13 at the sides of the rail joint.

In assembling the joint, with one rail end resting on the ties, the other rail-end is elevated above the first one and alined therewith, then the elevated end is lowered in order that one lug may pass into its respective slot, and the other slot receive its complementary lug, after which the bolts are inserted and secured by nuts. The necessary space is provided at the joint to permit of expansion and contraction under varying temperatures and the rail ends as thus interlocked are maintained in align-

ment and lateral displacement is prevented.

In jointing a standard form of rail end with my rail end, a splice plate 15 having a head 16 thereon conforming to the complementary rail end 1 is used at the end of the standard rail R, as in Figure 4. This splice plate has an inset lug 17 complementary to the lug 9 of the end 1, and the splice-plate is interposed between the rail-end 1 and the standard form of rail R in order that the lugs 9 and 17 may interlock to form the joint. At the side of the rail R opposite to the splice-plate, a fish plate 18 is utilized, which is fashioned with a filler-lug 19 between the end of the rail-end, and the end of the rail R. The flanged fish plate is used in the customary manner on top of the rail flange, and is provided with bolt holes 20 for usual bolts 21 passed through the splice plate, the web, of the rail R and the fish plate. The filler lug 19 thus closes the recess 7 of the rail end 1 and its bearing against the lug 9 assists in holding said lug against lateral strains.

It will be understood that the rail ends 1 and 2 may be fashioned in various ways, as for instance the ends may be welded, or cast around the standard rail, or the ends may be fashioned integrally with the rail as the latter is produced, and various other changes may be made in the invention without departing from its spirit and within the scope of my appended claim.

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

The combination in a rail joint with a standard rail end, of a complementary rail end fashioned with a vertical, longitudinally extending slot and a locking lug beyond said slot, a splice plate having a complementary lug and slot-formation, said lugs projecting to form side recesses, a side plate on the slotted rail end to fill one of said recesses, a fish plate having a member to fill the other recess, and fastening bolts for said joint.

In testimony whereof I affix my signature.

CARL CARLSON.