

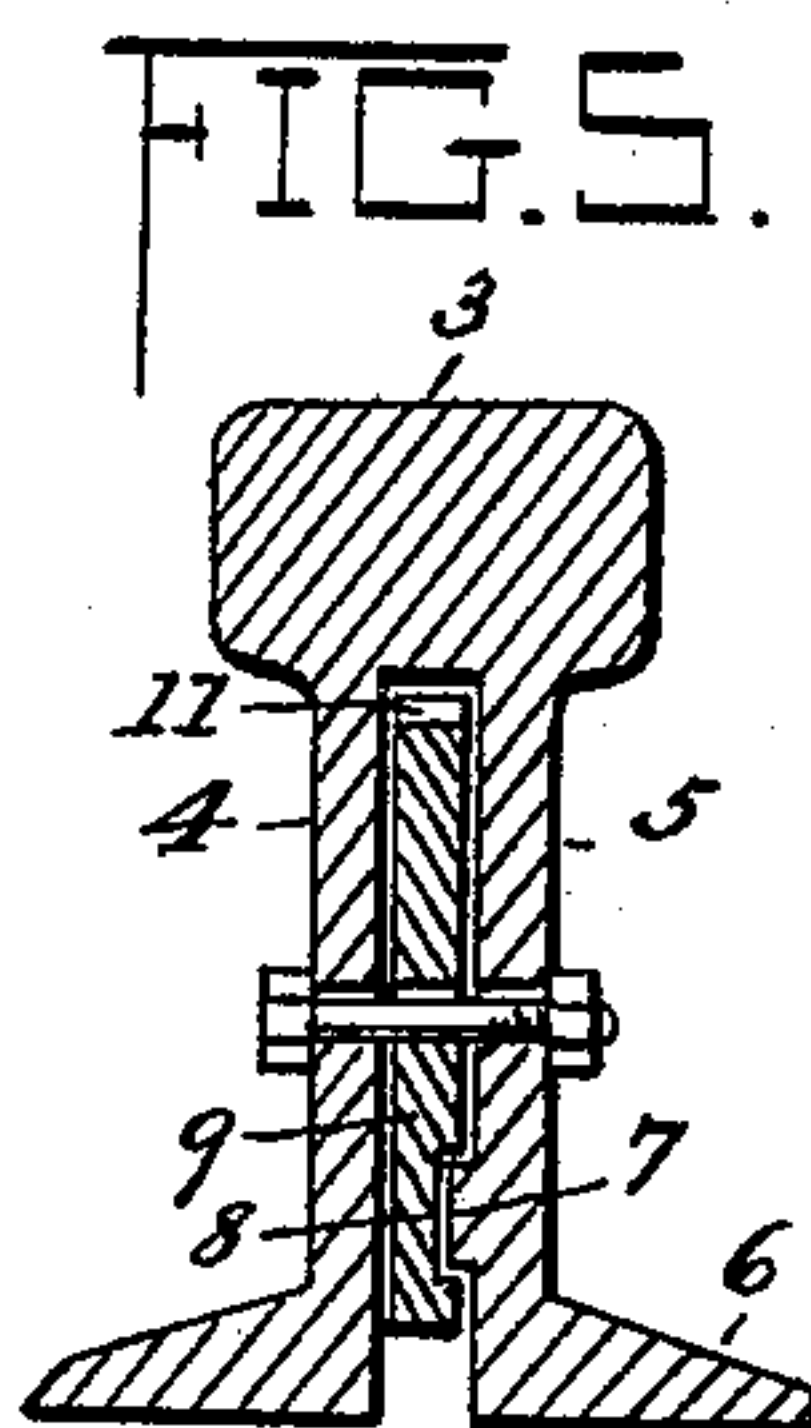
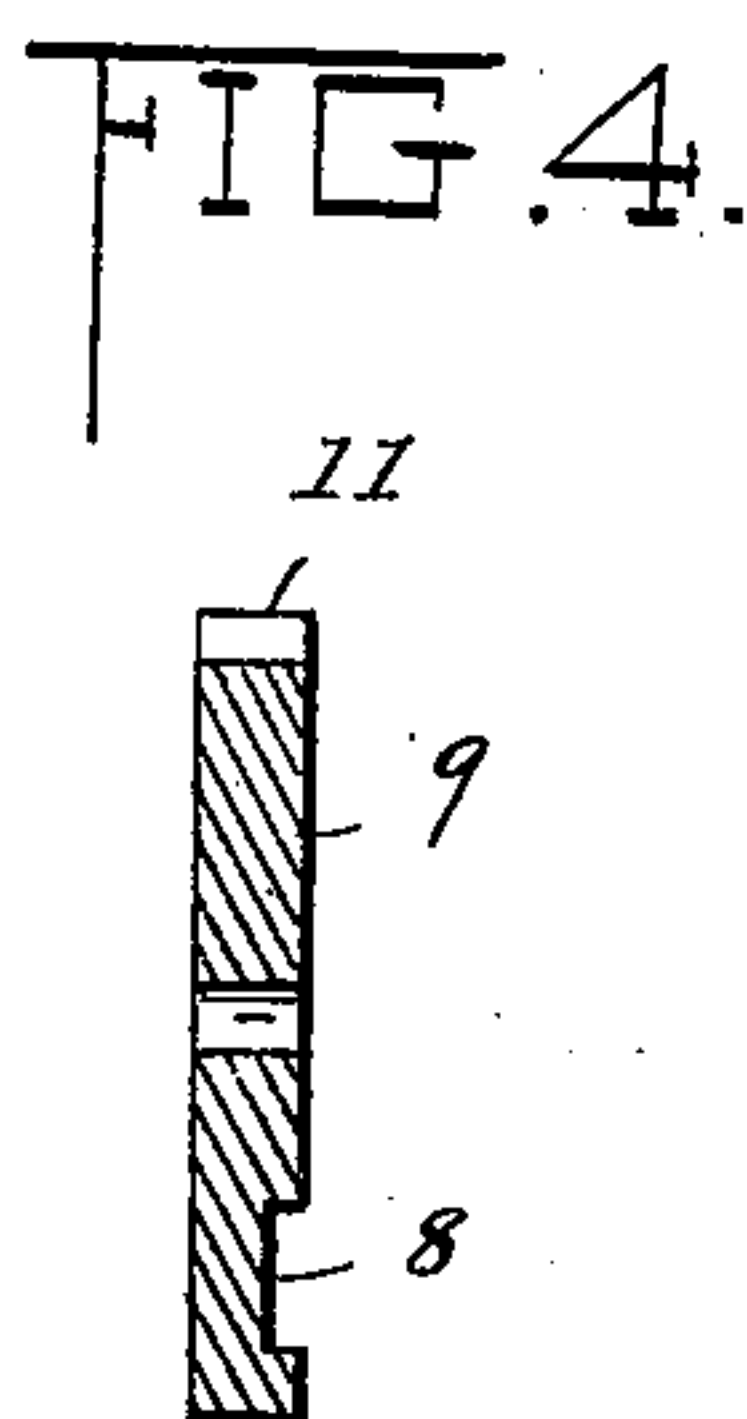
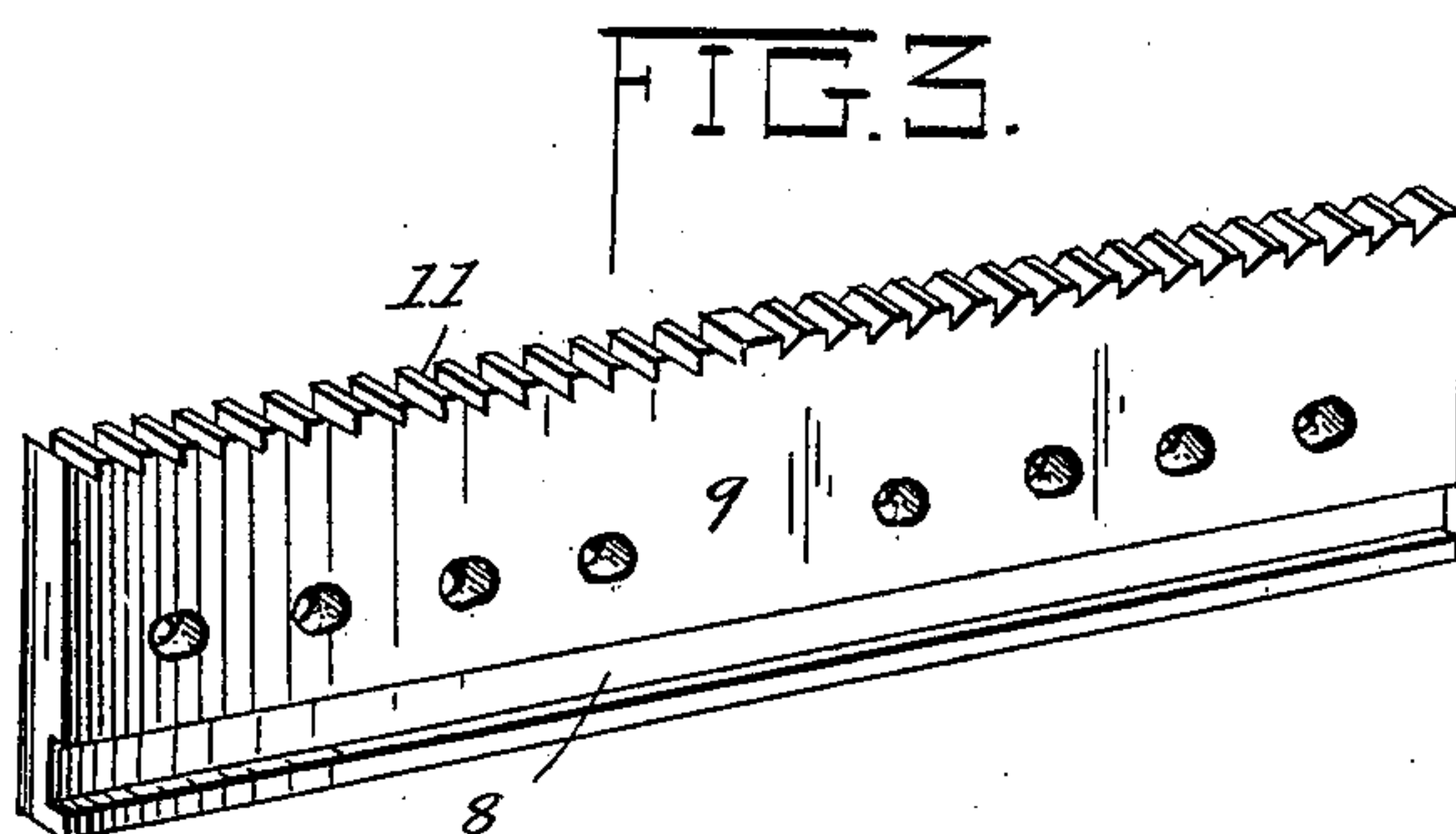
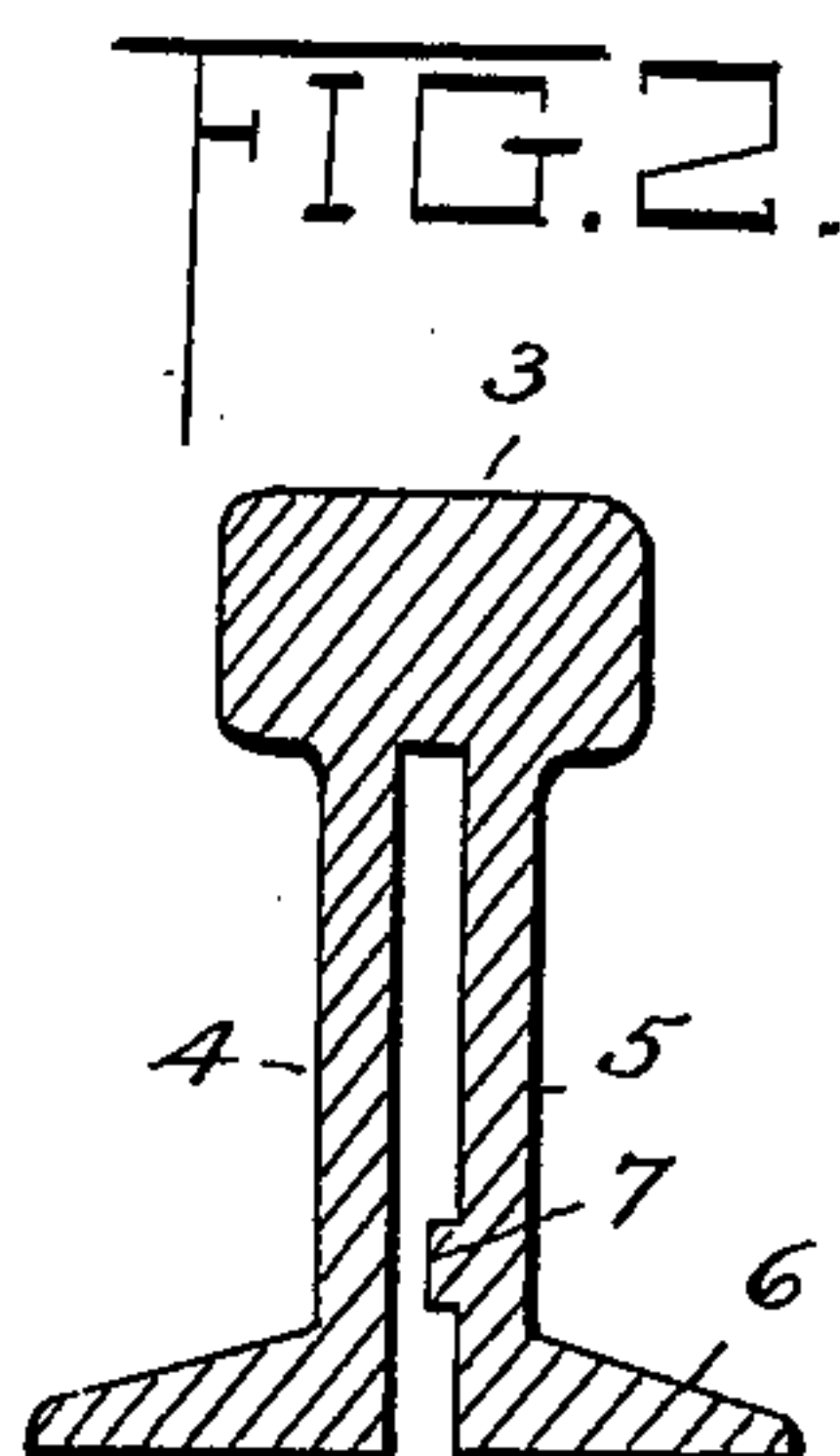
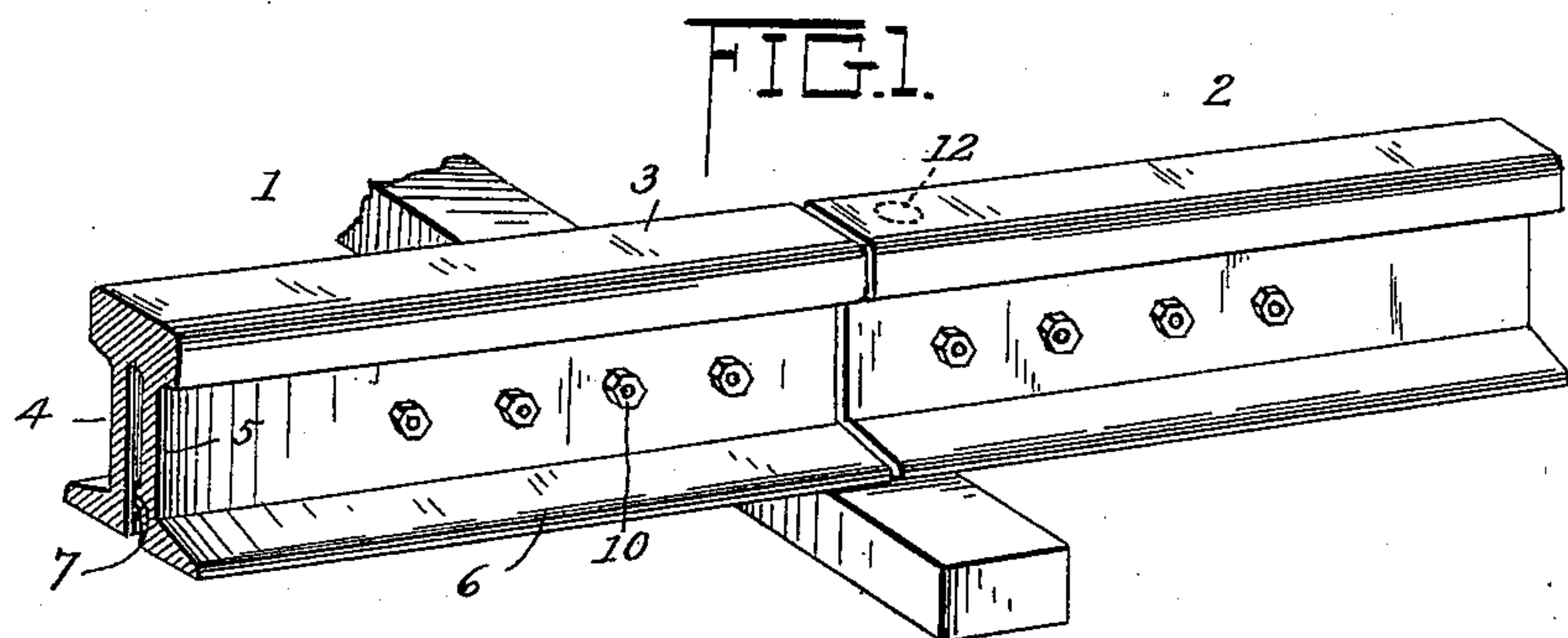
(No Model.)

3 Sheets—Sheet 1.

C. L. WINEGARD.  
RAILWAY RAIL JOINT.

No. 602,382.

Patented Apr. 12, 1898.



Witnesses  
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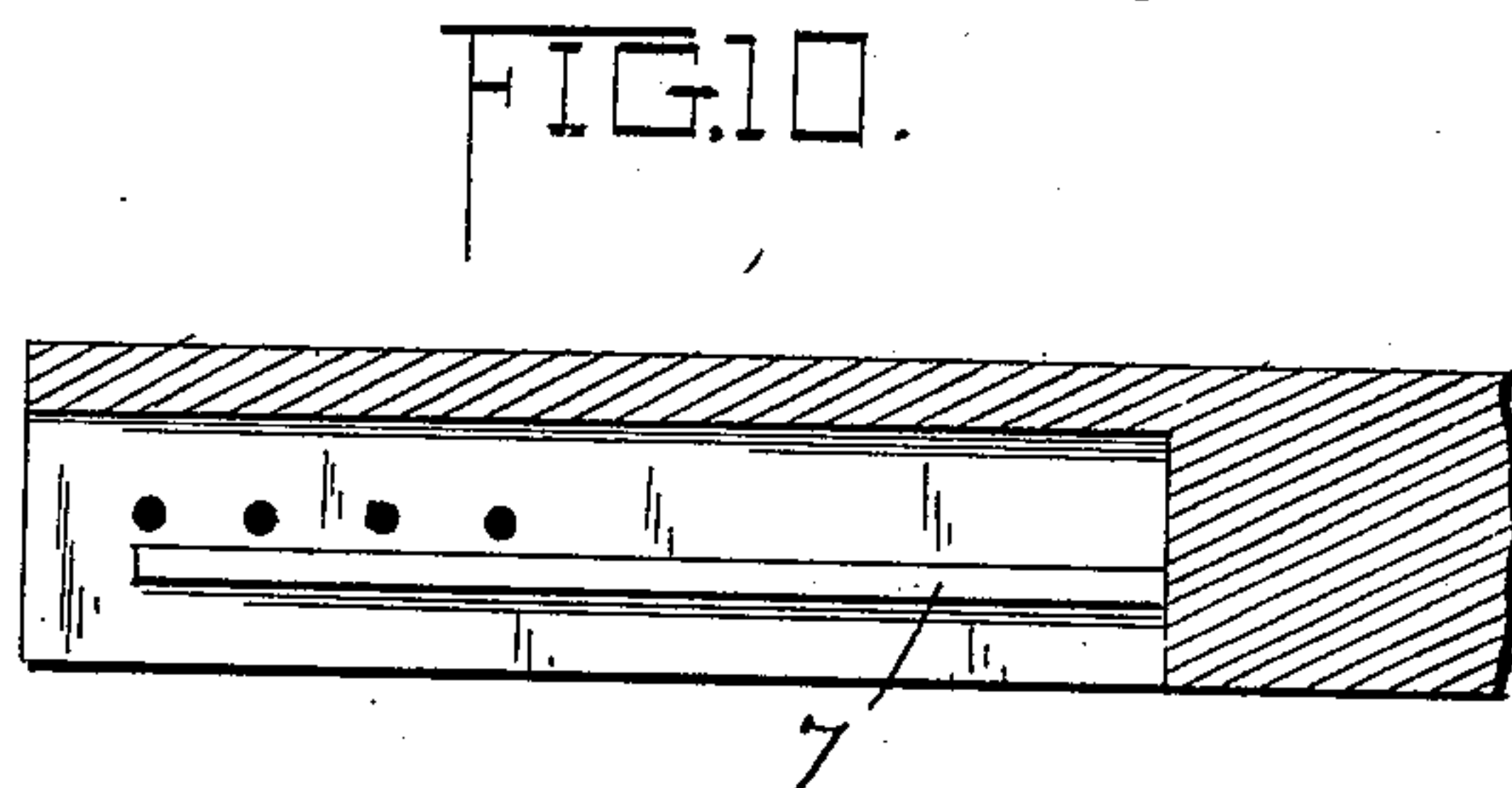
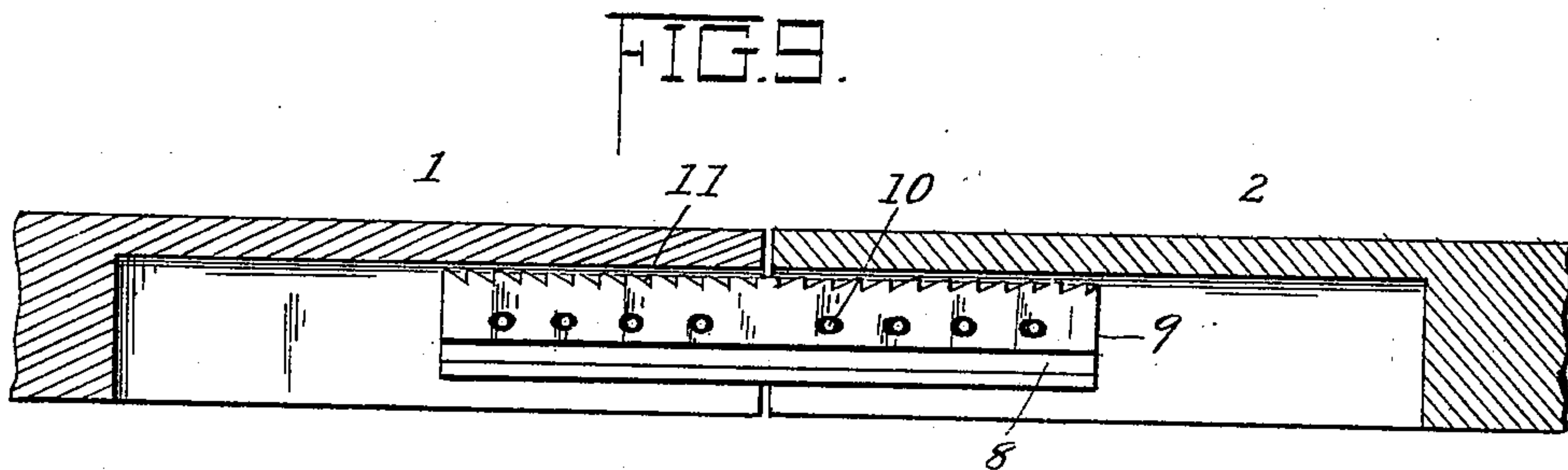
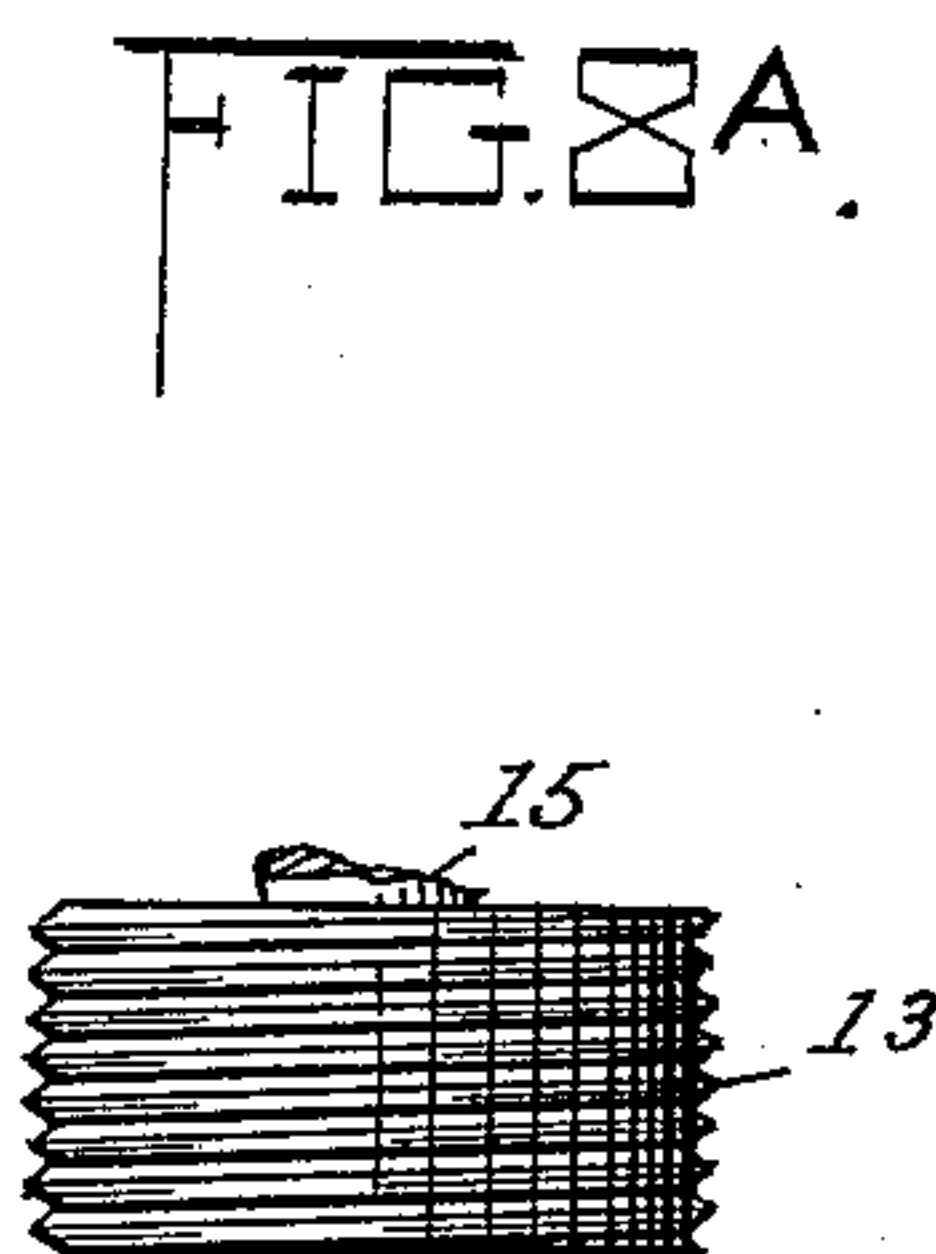
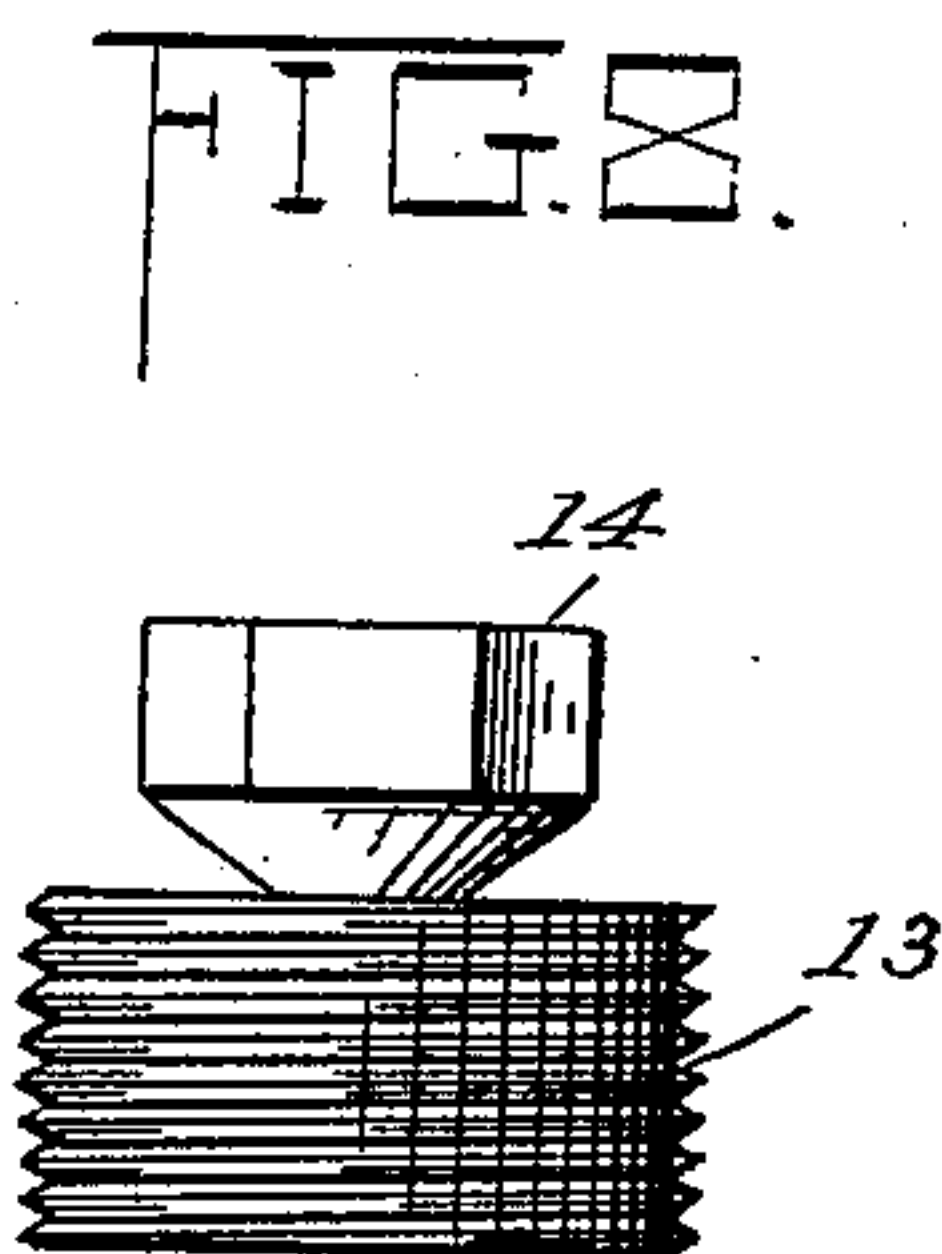
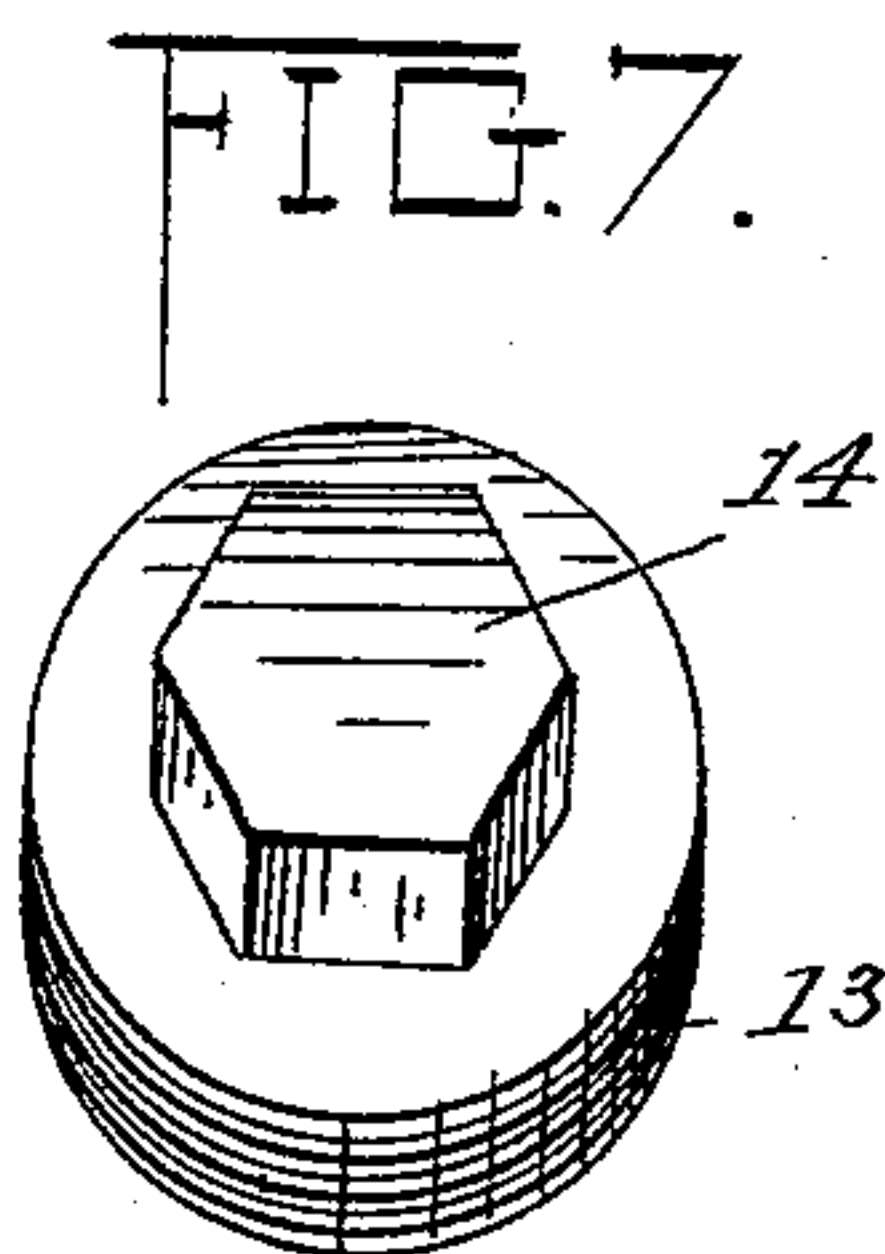
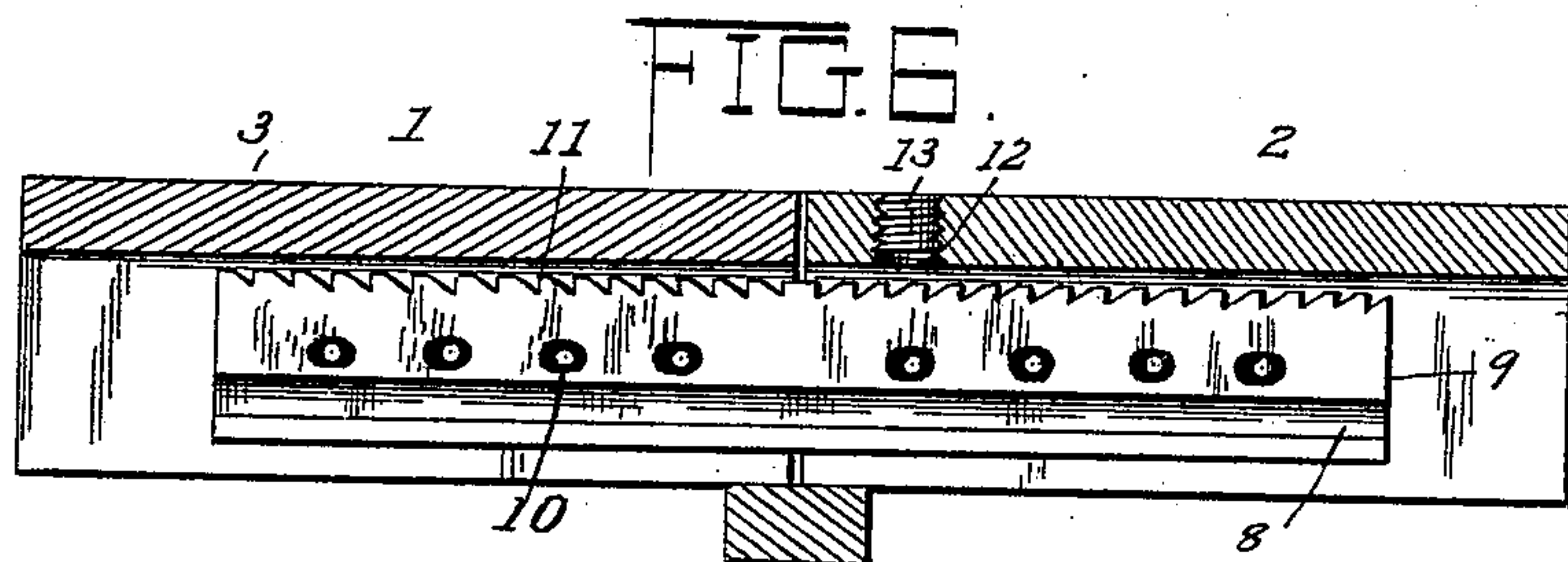
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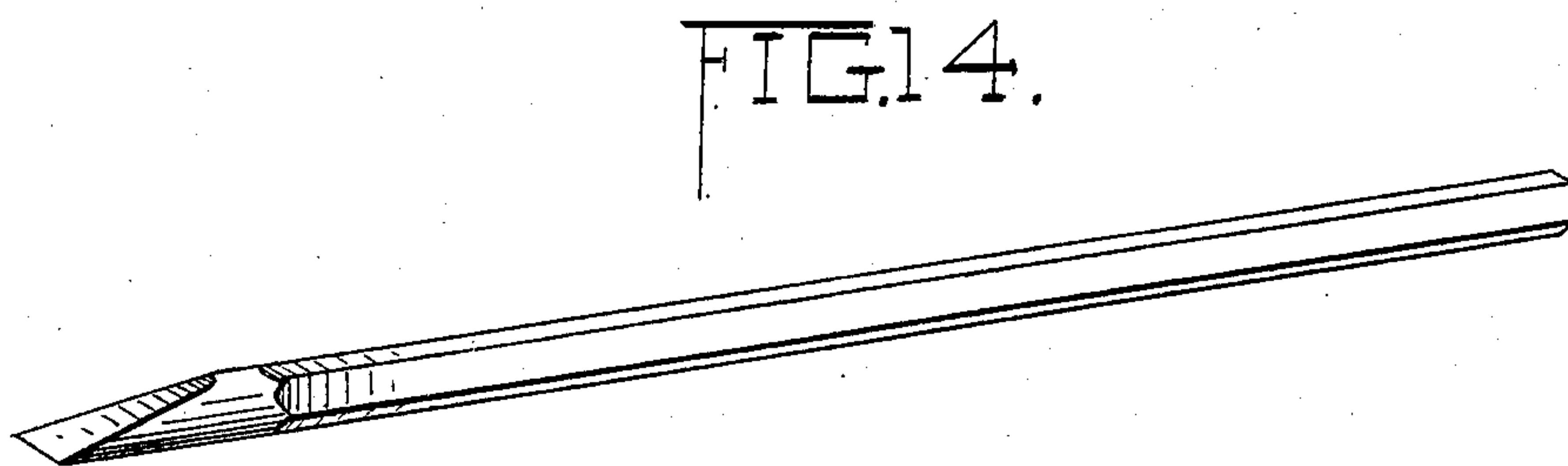
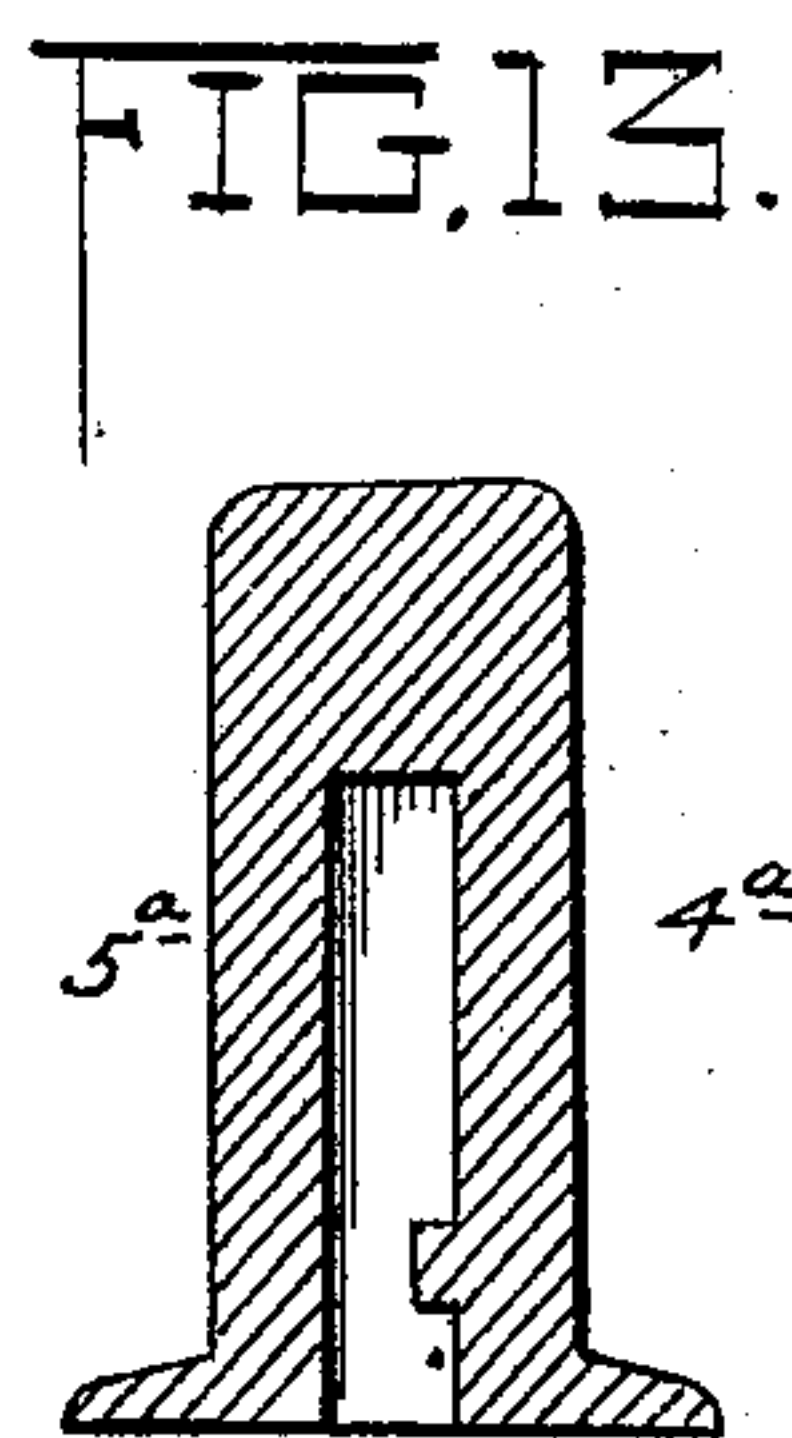
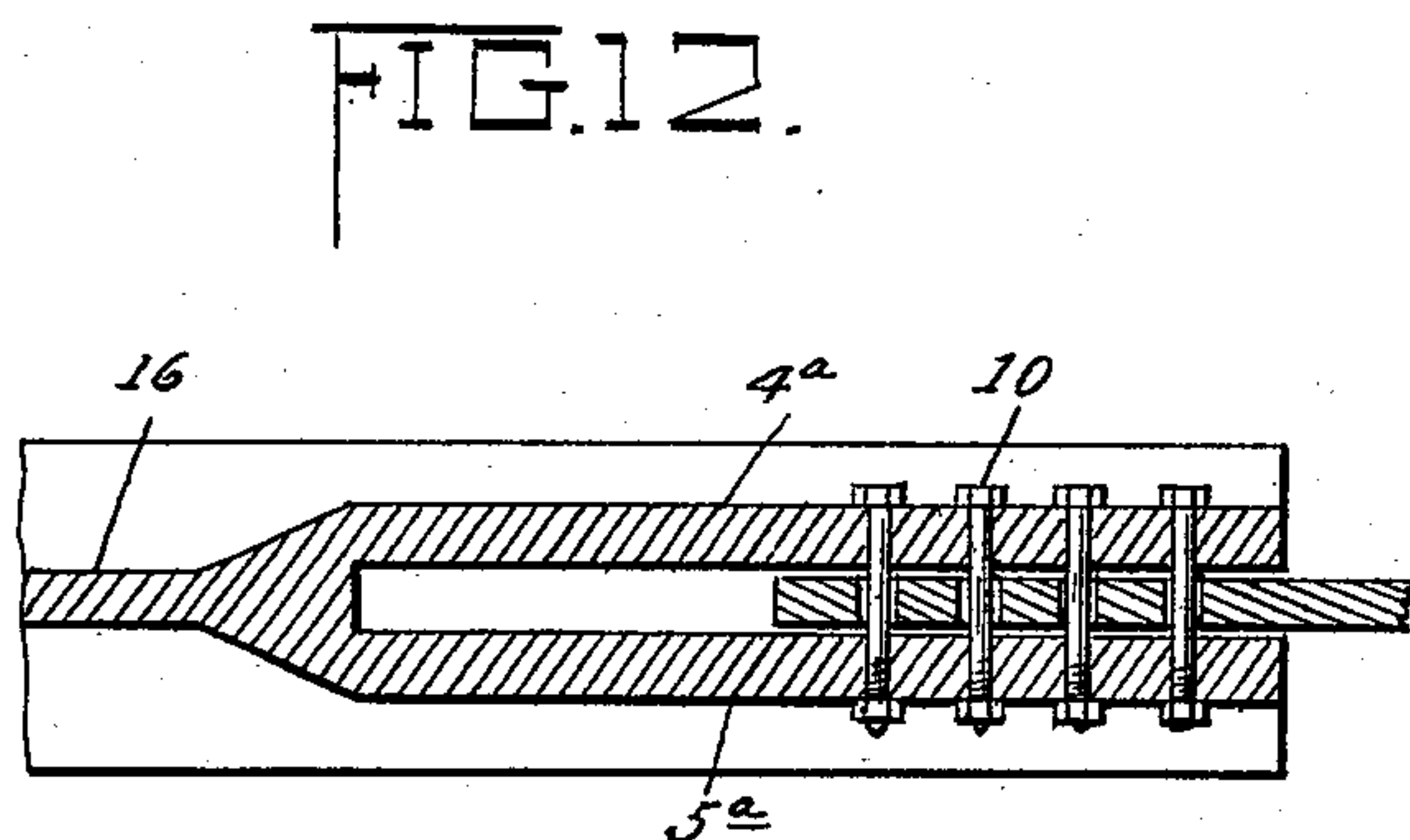
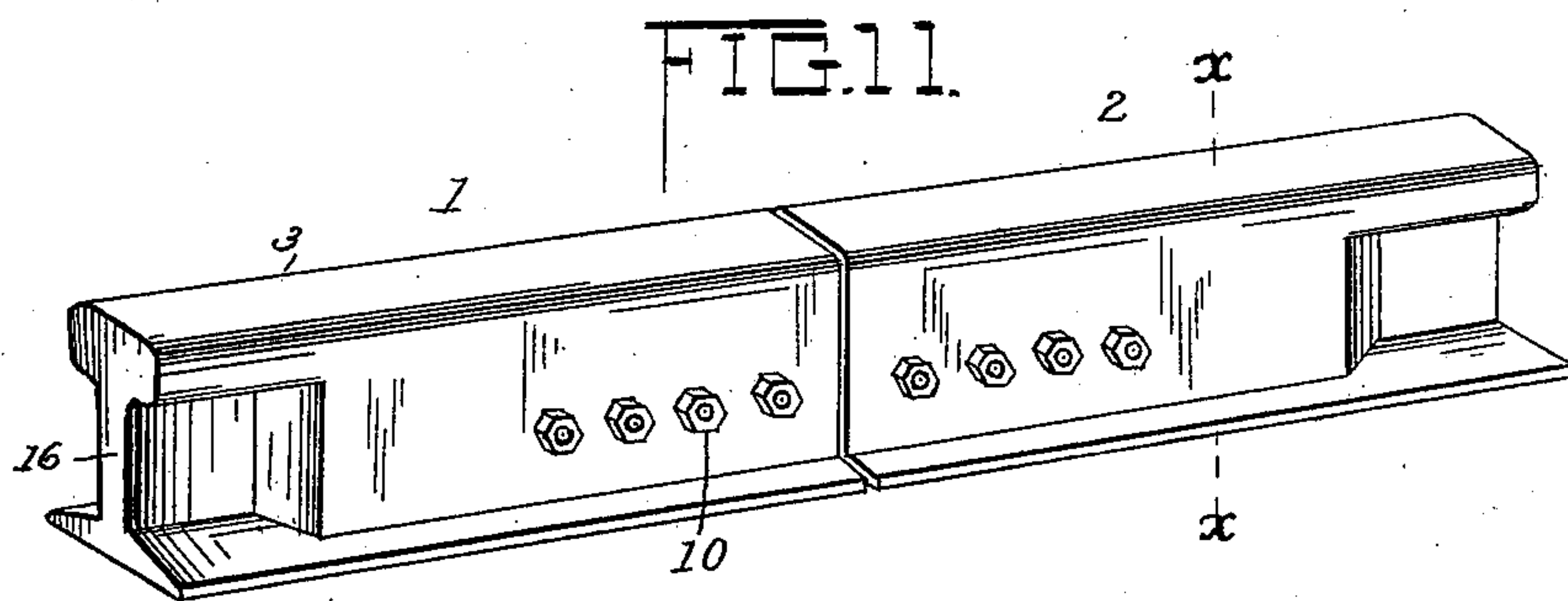
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# UNITED STATES PATENT OFFICE.

CLARENCE LAMAN WINEGARD, OF RICHMONDVILLE, NEW YORK.

## RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 602,382, dated April 12, 1898.

Application filed October 4, 1897. Serial No. 653,957. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE LAMAN WINEGARD, a citizen of the United States, residing at Richmondville, in the county of Schoharie and State of New York, have invented certain new and useful Improvements in Railway-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.

My invention has relation to improvements in railway-rail joints; and the object is to provide a simple and effective device of this class.

To this end the novelty consists in the peculiar construction and combination of parts to be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, forming part of this specification, the same reference characters indicate similar parts of the invention.

Figure 1 is a perspective view of a section of railway-track embodying my invention; Fig. 2, a transverse section of the rail; Fig. 3, a perspective view of the locking-bar; Fig. 4, a transverse section of the same; Fig. 5, a transverse section through the rail and bar when the latter is in position; Fig. 6, a longitudinal section of the rail, showing the locking-bar in position and the manner in which the ends of the rails are disjoined. Fig. 7 is a perspective view of the closing-plug. Fig. 8 is a side elevation of the same. Fig. 8<sup>a</sup> is a similar view with the head broken away. Fig. 9 is a longitudinal section showing the channels in ends of rails only. Fig. 10 is a similar view showing the disposition of the tongue. Fig. 11 is a perspective view of the rail ends shown in Fig. 9. Fig. 12 is a horizontal section of the same through the web. Fig. 13 is a vertical section on the line *x* of Fig. 11. Fig. 14 is a perspective view of the operating-tool.

1 and 2 represent the abutting ends of two adjoining rails, and each rail is formed with the head 3 and an integral web portion comprising the parallel members 4 5, disposed at a right angle to said head and forming a right-

angular channel throughout the length of the rail, and the said web portion is provided with the lateral spike-flanges 6 of the usual form. Projecting from the wall of said channel, near each end of the rail, is a horizontal tongue or lug 7, adapted to enter a longitudinal groove 8 in the side of a rectangular bar 9. The said bar 9 conforms in cross-section to the form and dimensions of the channel in the rails, and when inserted in the abutting ends of two rails, so as to "break joint" therewith, it performs the function of the exterior fish-plates commonly employed. The web of each rail and the bar 9 are orificed to receive the transverse bolts 10, firmly uniting the ends of the rails to the said bar and forming a rigid joint. The upper edge of the said bar 9 is provided with two series of transverse notches or serrations 11, the retaining-faces of which are oppositely disposed, as shown, the object of this construction being to provide a means whereby a crow-bar or other suitable tool similar to that shown in Fig. 14 may be inserted through the orifice 12 and engaged with said notches to move the bar out of engagement with the tongue 7 after the transverse bolts 10 have been removed. It will be observed that the tongue 7 does not extend to the end of the rail, (see Fig. 10,) a sufficient space intervening to permit the tongue to disengage the groove 8, when the bar can be moved no farther by means of the tool inserted through the orifice 12. It is apparent that the operation would be in effect the same should the wall of the channel be grooved and the tongue formed on the bar, and the spirit of my invention contemplates this transposition.

When it is desired to remove an old rail from the track and insert a new rail, a hole 12 is drilled vertically through the head of each adjoining rail a distance from the end thereof slightly less than the distance from the end of the tongue 7 to the end of the rail. The bars 9 are then drawn back out of engagement with the rail to be removed in the manner above described, the new rail is laid in place and the bars thrown back in engagement therewith, and the transverse bolts inserted. The hole 12 is then threaded to receive the steel plug 13, which is provided with



an integral head 14 to receive a wrench. The base of the head 14 is reduced at the point of junction with the plug to a minimum size consistent with required strength, and after the plug has been inserted flush with the surface of the rail a blow with a hammer will remove said head, as shown at 15 in Fig. 8<sup>a</sup>, and the point of fracture is readily smoothed with a file to render the surface of the rail uniformly smooth.

In Figs. 9 to 13, inclusive, I show a construction wherein the rails are only channeled at the ends, and the length of the channel may be governed by the length of the bar 9, as the channel should extend far enough to permit the said bar to be drawn out of engagement with the tongue 7. In this form the web is enlarged throughout that portion traversed by the channel, and each fork 4<sup>a</sup> and 5<sup>a</sup> of said channel portion should preferably be equivalent in thickness to the main web 16 of the rail, thus providing a reinforcement at the rail-joints in the track.

From the foregoing it will be seen that I have provided a rail-joint which insures positive rigidity, making the track uniformly solid under a load, while the usual fish-plates, which are constantly loosening under the jar and vibration of traffic, I entirely dispense with. To displace the locking-bar 9 in my construction, all of the transverse bolts 10 must first be removed from each of the adjoining rail ends, and it is practically impossible for this to be accomplished by the jarring action of moving trains, and, furthermore, even after the bolts 10 are removed the rail ends are held in rigid alinement by the locking-bar, and it will be found by actual experiment that the jar of traffic will not move said bar longitudinally, particularly on a level road-bed.

A very important feature of my invention is that it provides a reliable safeguard against evilly-disposed persons who would remove a rail from the track, this being the most common and disastrous means of wrecking trains. As hereinbefore stated, an opening must be made at a particular point in the head of the rail, through which to insert the tool for moving the bar longitudinally out of engagement with the rail, and to make this opening a powerful and ponderous drill-driving mechanism must be employed, which renders the operation most difficult for train-wreckers.

While I have specifically described the construction and relative arrangement of the various elements of my invention, I do not desire to be confined to the same, as various modifications will suggest themselves to those

skilled in the art without departing from the spirit thereof.

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

1. In railway-rail joints, the combination with the abutting ends of two adjoining rails hollowed or channeled longitudinally, and having a longitudinal tongue in the wall of said channel, of a bar provided with a longitudinal groove in the side thereof, said bar adapted to fit in said channel, to break joint with said abutting ends and to secure same in their proper relative positions, substantially as set forth.

2. In railway-rail joints, the combination of the abutting ends of two adjoining rails, said rails hollowed or channeled longitudinally in the web thereof, and a bar adapted to fit in said channel, to break joint with the said abutting ends, the said bar notched or serrated in its upper edge and adapted to be moved longitudinally out of engagement with either rail by means of a tool inserted through an orifice in the head of said rail, substantially as set forth.

3. In rail-joints, the combination with the channeled abutting ends of two adjoining rails, of a locking-bar fitted in the channels of said rails and connecting the same and adapted to be moved out of engagement with either rail by means of a tool inserted through an opening in the head of one of the rails, substantially as described.

4. In a rail-joint, the combination of the abutting ends of two adjoining rails provided with alined channels and locking-tongues, of a locking-bar fitted in the channels of said rails and connecting the same and provided with a groove to receive said rail-tongues, substantially as described.

5. In railway-rail joints, the combination of the rails having their abutting ends channeled and one or both provided with an opening in the head thereof leading down thereinto, a locking-bar fitted in the said channels and connecting the rails, said bar adapted to be moved out of engagement with either rail by means of a tool inserted through the opening, and a plug adapted to be inserted in said opening to close the same, substantially as described.

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

CLARENCE LAMAN WINEGARD.

Witnesses:

W. H. WINEGARD,  
L. M. REIGHTMYER.