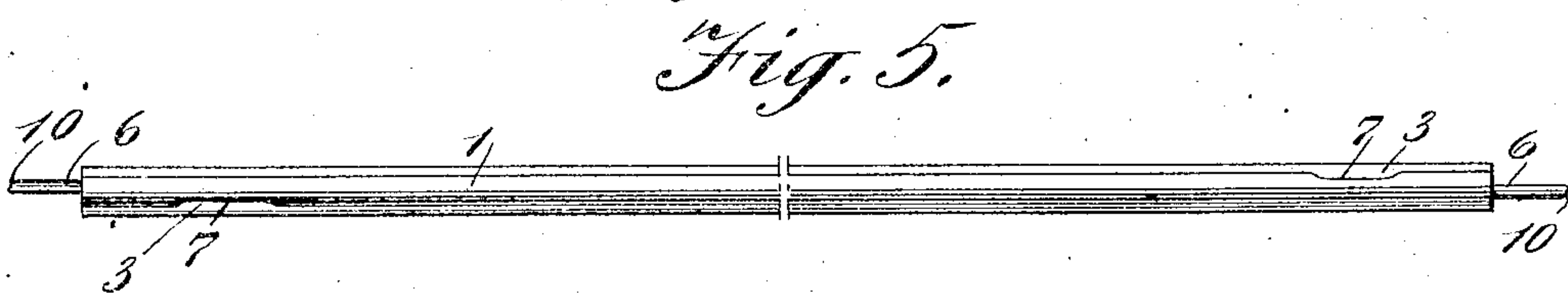
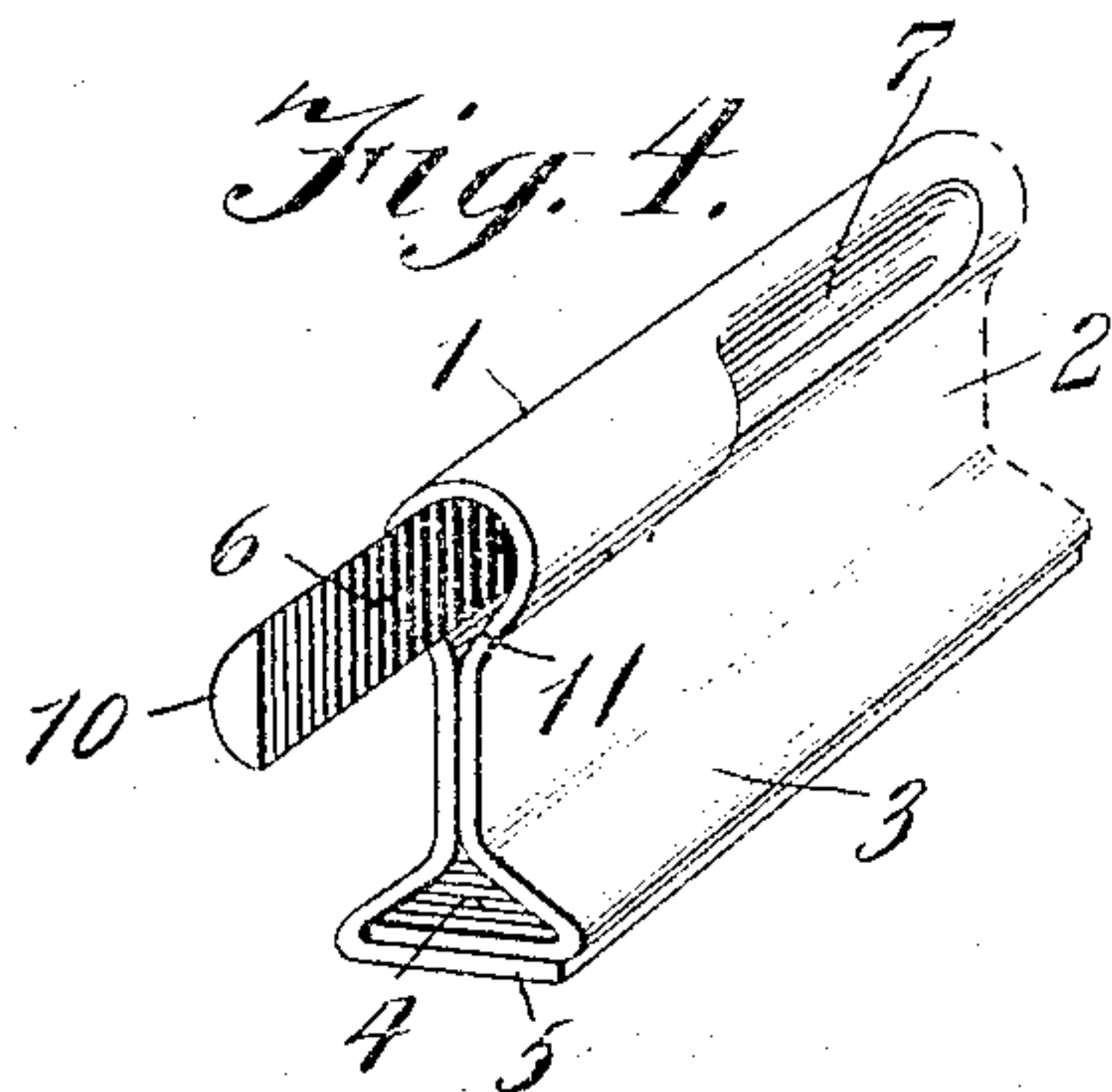
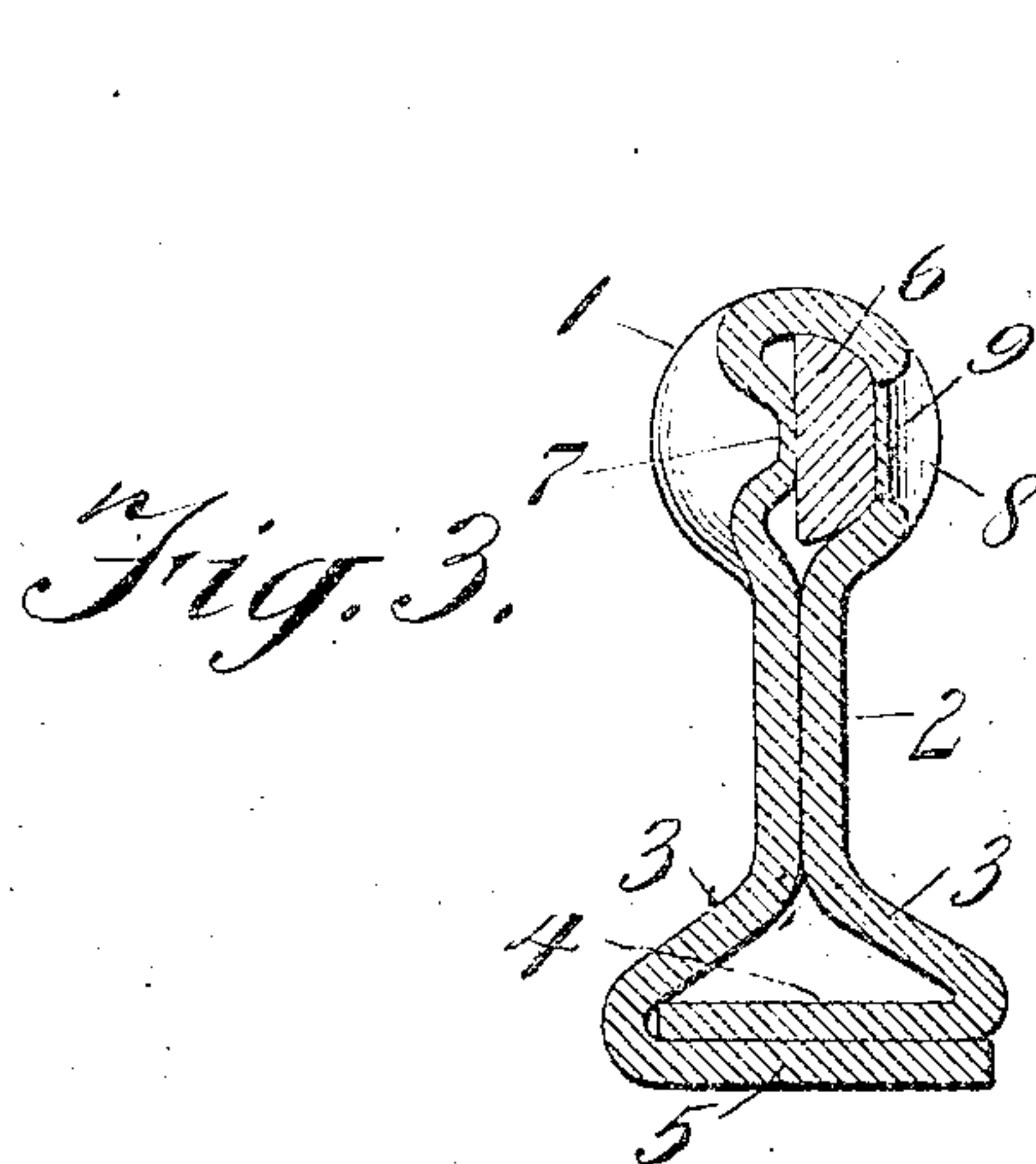
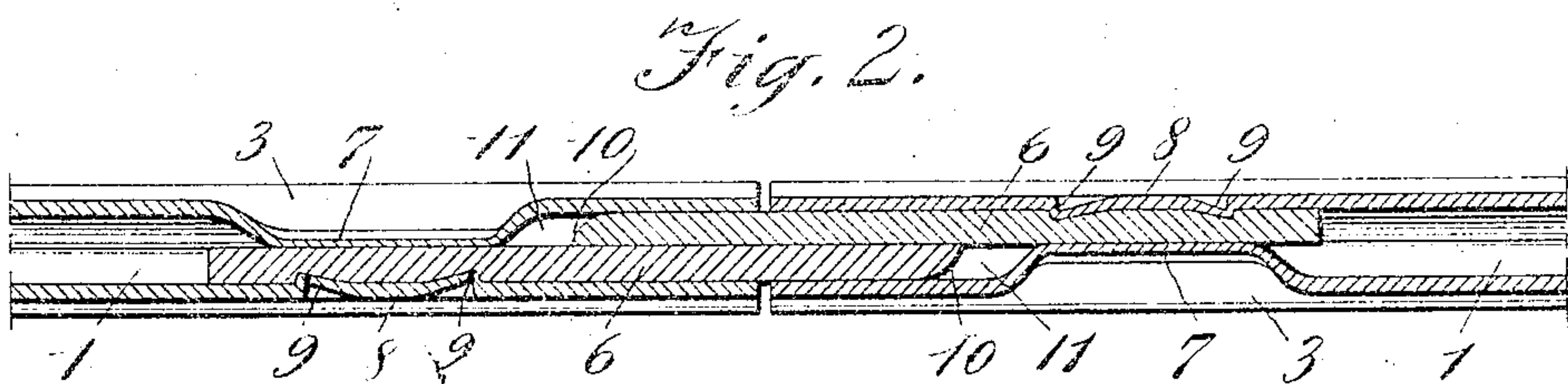
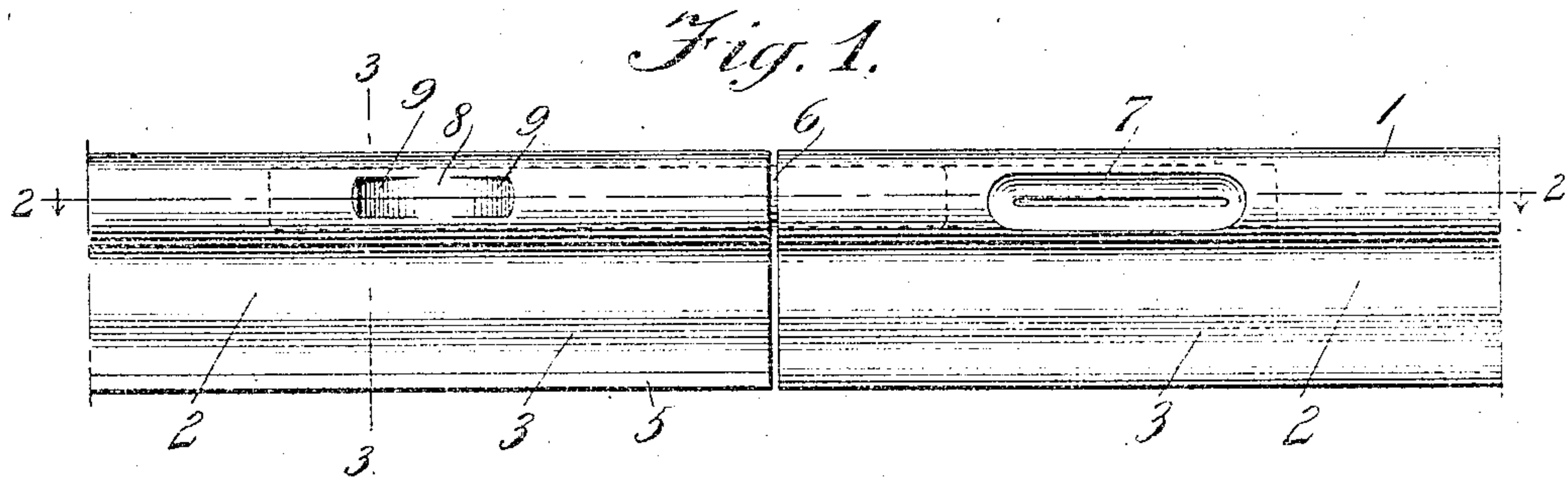


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RAILWAY RAIL.  
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932,464.

Patented Aug. 31, 1909.



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# UNITED STATES PATENT OFFICE.

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## RAILWAY-RAIL.

932,464.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed December 9, 1908. Serial No. 466,635.

*To all whom it may concern:*

Be it known that I, HARRY C. GRANT, a citizen of the United States, and resident of Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Railway-Rails, of which the following is a specification.

This invention relates to improvement in railway rails.

Figure 1 is a side elevation of two ends of joined rails constructed in conformity with this invention. Fig. 2 is a longitudinal section of the same taken on the line —2—2— of Fig. 1. Fig. 3 is a cross-section of the rail taken on the line —3—3— in Fig. 1. Fig. 4 is an isometric perspective of the end of one of the rails. Fig. 5 is a plan view of a rail constructed in conformity with this invention.

The embodiment of the invention as shown in the drawings and as herein described has more particular reference to toy railways wherein lightness, cheapness and simplicity of construction are the prominent and desirable features sought.

With these objects in view, the invention as illustrated in the drawings, consists in a rail formed from sheet metal by bending the same to the shape in cross-section indicated in Fig. 3 of drawing, wherein the tread —1— is formed substantially circular. The rail web —2— is formed of the doubled metal, while the rail flange —3— is formed, as shown, by lapping the metal. For purpose of identification this lapped metal I designate as —4— and —5—, it being understood, however, that this forms the flange —3—.

The rail as constructed is exceedingly strong and at the same time light. The rails being small, and the construction reinforced, by reason of its form, the material from which the rail is constructed may be very thin. These rails are formed in sections of suitable length as shown in Fig. 5. The form of construction further lends itself to the method of manufacture whereby the metal may be rolled into the shape shown.

The tracks in toy railroads differ more particularly from the tracks of large railroads, in that the road sections are made up:— that is, the ties are joined to the rails forming thereby separable track sections. In the road construction or layout these track sections are so butted that the joints in the railway occur on an even line across the road

bed. The fact that the track sections are laid on carpet or on a table, or other unequal surfaces necessitates a rigid form of union for the track sections. Heretofore tracks of a somewhat similar construction have been made wherein projecting pins have been provided in the one end of the tracks with a corresponding socket in the other end of the track. The pins have been of a size and form to completely fill the socket. By reason of machine inaccuracy in constructions of this character these junctions have been more or less uncertain in fit. The variation in the wire from which the pins have been constructed as well as the variation of the hollow in the tread of the rail forming the socket have operated to produce loose joints. These loose joints have not been particularly objectionable in mere rail joints. But they are very objectionable in constructions wherein the motive power is electricity, and where the current is transmitted through the rail.

It is because of the objection above set forth that I have made the present joint. The pin —6— used herein is a half round pin projected from both ends of the rail, but oppositely disposed: that is to say, looking at the rail in plan, then the disposition of the pins —6— is to extend from the one end on the right hand side, or the left hand side, or the upper side or the lower side of the middle or median line of the rail as desired; and the pin at the other end of the rail would be disposed on the opposite side of the said median line and opposite to the position of the pin first above mentioned. To make this definite, if the pin at the one end is disposed on the right hand of the center of the tread of the rail, the pin at the other end of the rail would be placed to the left hand of the center. By this construction all rails are thus formed with the half round pin extending from each end of the hollow tread of the rail, and each being disposed in opposite relation to the other, the rail is reversible. The road bed may be constructed on two rail, three rail or other multiple of rails. No possibility exists for arranging the rails in the sections incorrectly as all the pins at each end must project in the same manner and from the same side of the center at each end of the rails. These pins —6— are secured by forcing the metal of the rails inwardly against the pins —6— as shown in Figs. 2 and 3. The pin



—6— is inserted in the hollow tread of the rail to a predetermined depth. While held in this position, the rail is placed in a suitable press having dies that come upon and depress the tread of the rail from both sides. 5 From the one side the depression —7— is made, which is extended until it is forced rigidly against the side of the pin —6—: or until it reaches the median line of the rail. 10 From the other side of the rail the dies form the depression —8—. The dies of this side are provided with prick points designed to drive the metal of the rail into the pin from longitudinally opposite directions as shown at —9— —9—. These insertions of the rail 15 metal into the pin —6— prevents any dislodgment of the pin longitudinally, while the compressed section —7— from the opposite side prevents any rotary disadjustment of the pin. The pins are formed with the rounded ends —10— —10— to guide them in their insertion into the sockets —11—.

When the pins —6— are mounted in the rail ends as above described there are formed between the rail end and the depressed portion —7— the sockets —11—. These sockets are designed to receive the free end of the half pins —6— carried by the abutting rails.

By forming the joint in the manner described any looseness of contact between the metal parts can be readily corrected by the simple expedient of slightly bending the pins, or by slightly mashing the metal forming the sockets —11—. But any inaccuracy 35 in the joint above referred to is not as liable in this form of construction as in the old, solid pin construction.

While I have herein described the construction as of a rail having pins formed as half circular in section, and rails having treads of circular form, I do not wish to confine myself to such construction; the change in the form of which is obvious. Whatever the form of the rail may be, the pin —6— will 45 fit within a socket provided on one side of the median line of the rail to receive said pin. Also it is obvious that while I have herein described the construction wherein the pins are mounted in and inserted in the treads of the rail, it is nevertheless obvious that provision might be made to receive the pin between the metal —2—, forming the web of the rail with a corresponding socket to the opposite side of the median line of the rail. 50 Or again, that these joints might be made in the hollow of the flange —3—. All of which constructions I consider as contemplated in the present specification and claims.

Having thus described this invention, it is 60 claimed:—

1. A railway rail formed of sheet metal and having in both ends hollow sockets; and connecting members permanently secured in said sockets and relatively disposed on opposite sides of the median line of said sockets

and extended therefrom and each adapted to be inserted in the socket of the abutting rail.

2. A railway rail formed of sheet metal and having hollow sockets formed in each end; and a pin located in each socket and disposed 70 on opposite sides of the median line of same and extended therefrom; each pin being formed semicircular when viewed in cross section and being permanently fastened in their respective sockets. 75

3. A railway rail formed of sheet metal and having a socket at each end and an extended member fastened in each socket and disposed on opposite sides of the median line of the rail. 80

4. A railway rail having at each end an extended member and a socket, said extended member lying within and partially filling said socket and fastened permanently therein, each of said sockets adapted to receive a 85 corresponding extended member of an abutting rail.

5. A railway rail comprising hollow end sections, the walls of which are compressed to engage and hold members adapted to extend 90 beyond the ends of said rail and on opposite sides of the median line of said rail.

6. A railway rail comprising hollow end sections, the walls of which are compressed to engage and hold flat sided members adapted 95 to extend beyond the ends of said rail and on the opposite sides of the median line of said rail.

7. A railway rail comprising hollow end sections; flattened members inserted in said 100 hollow end sections and adapted to extend beyond the rail on one side of the median line thereof, said members being disposed on opposite sides of the median line of the rail; a section of the walls of said hollow sections 105 engaged with said inserted member to hold the same, said engaging section being removed from the end of the rail.

8. A railway rail comprising hollow end sections; flattened members inserted in said 110 hollow end section and adapted to extend beyond the rail on one side of the median line thereof, said members being disposed on opposite sides of the median line of the rail; a section of the wall of said end section engaging 115 said flattened member by being forced into the surface of the same.

9. A railway rail formed from sheet metal and comprising two abutting sections each having hollow end sections; members inserted 120 in said hollow end sections and adapted to extend beyond the holding section to engage an abutting section; a section of the walls of said hollow sections engaged with said inserted member to hold the same, said 125 engaging section being removed from the end of the rail.

10. A railway rail formed from sheet metal and comprising two abutting sections each having hollow end sections; members 130



inserted in said hollow end sections and adapted to extend beyond the holding section to engage an abutting section; a section of the walls of said hollow sections compressed inward upon said inserted member to hold the same, said compressed sections being removed from the ends of the rail.

11. A railway rail formed from sheet metal and having hollow end sections; flattened members inserted in said hollow end sections and adapted to extend beyond the rail on the median line thereof, said members being disposed on opposite sides of the median line of the rail; a section of the walls of said hollow sections engaged with said inserted members to hold the same, said engaging section being removed from the end of the rail.

12. A railway rail formed from sheet metal and having hollow end sections; flattened members inserted in said hollow end section and adapted to extend beyond the rail on the median line thereof, said members being disposed on opposite sides of the median line of the rail; a section of the wall of said end sections engaging said flattened member by being forced into the surface of the same.

13. A railway rail formed from sheet metal and having a circular tread forming at each end thereof hollow end sections; flattened members inserted in said hollow end sections and adapted to extend beyond the rail on one side of the median line thereof, said members being disposed on opposite sides of the median line of the rail.

14. A railway rail formed from sheet metal and having a circular tread forming at

each end thereof hollow end sections; flattened members inserted in said hollow end section and adapted to extend beyond the rail on the median line thereof, said members being disposed on opposite sides of the median line of the rail; a section of the walls of said hollow sections engaged with said inserted member to hold the same, said engaging section being removed from the end of the rail.

15. A railway rail formed from sheet metal and having a circular tread forming at each end thereof hollow end sections; flattened members inserted in said hollow end section and adapted to extend beyond the rail on one side of the median line thereof, said members being disposed on opposite sides of the median line of the rail; a section of the walls of said hollow sections compressed inward upon said inserted member to hold the same, said compressed sections being removed from the ends of the rail.

16. A rail formed of sheet metal and having a socket at each end, a pin permanently fastened in said socket and partially filling the same and projecting therefrom, and a similar pin located in the opposite socket and permanently fastened therein and located on the opposite side of the median line of the opposite socket.

Signed at New York in the county of New York and State of New York this 4th day of December A. D. 1908.

HARRY C. GRANT.

Witnesses:

E. F. MURDOCK,  
A. T. SCHARPS.