

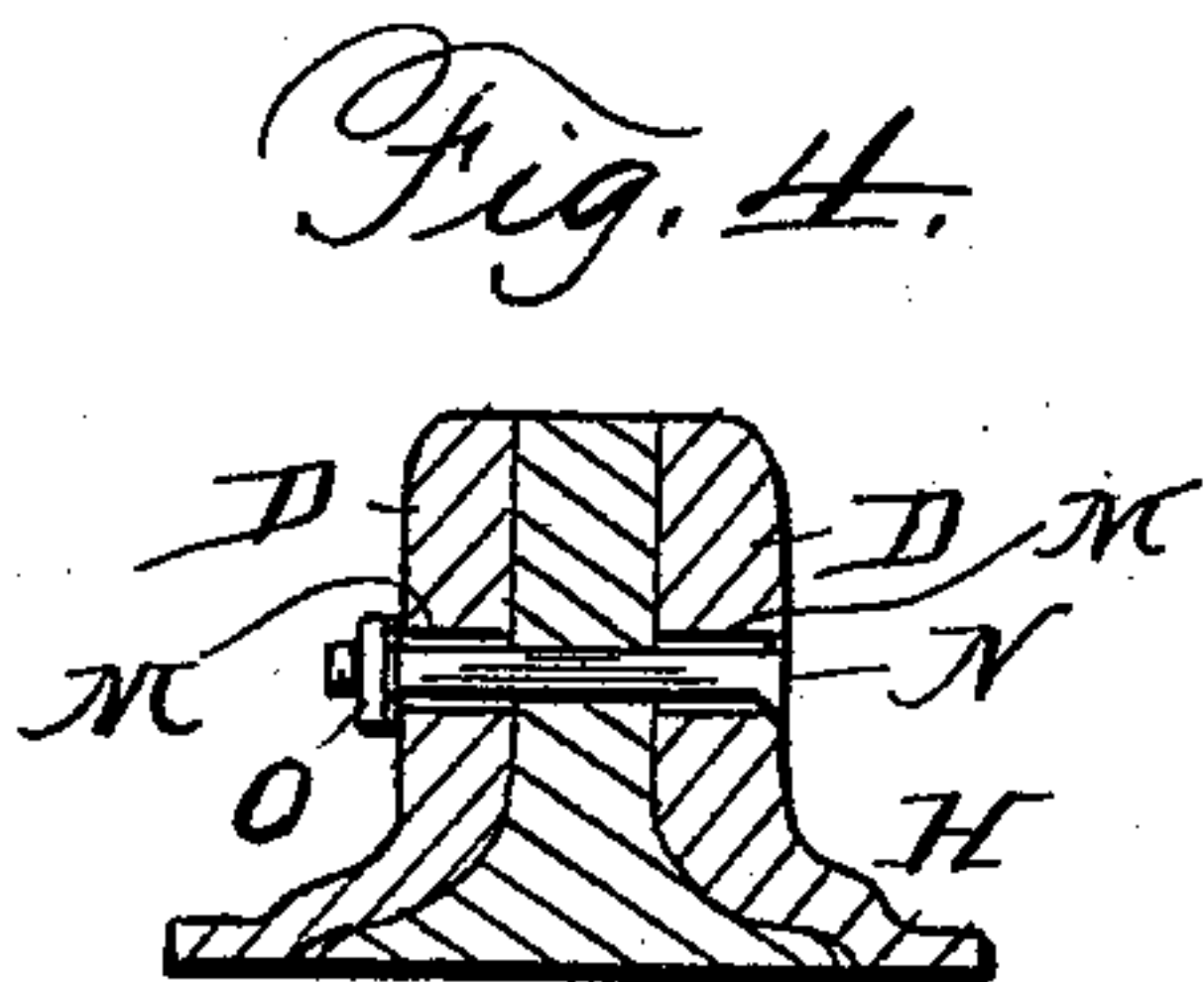
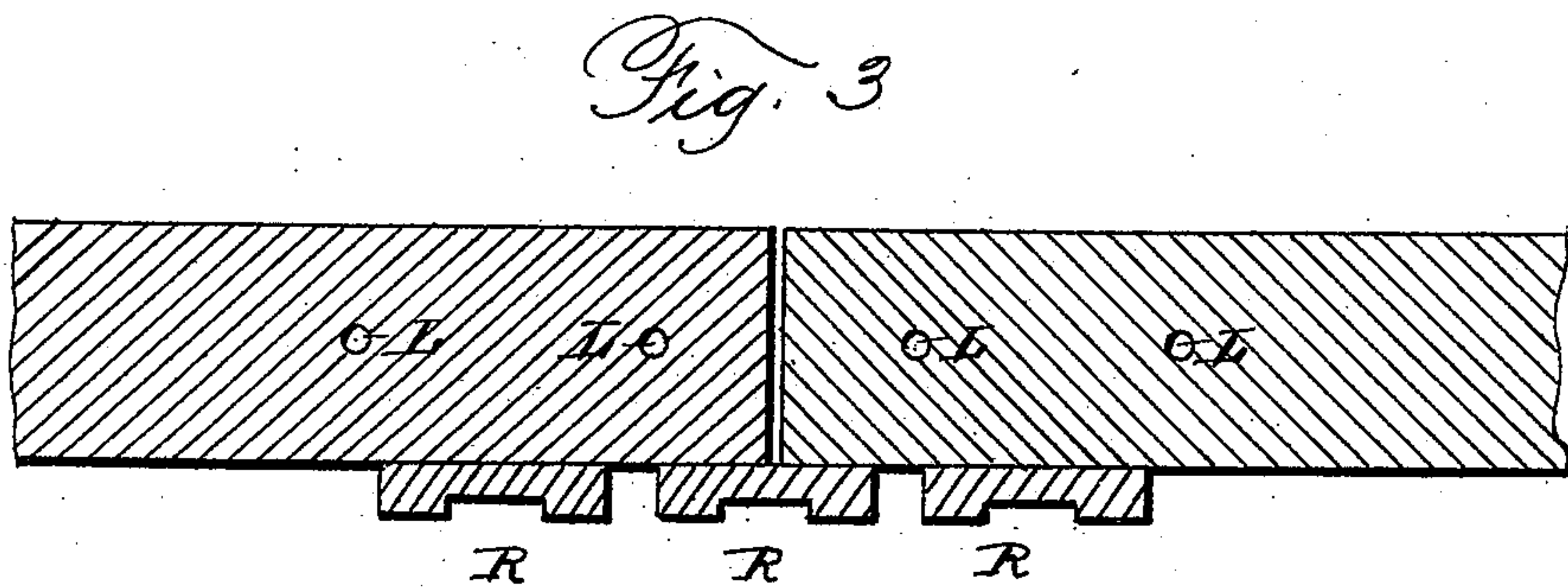
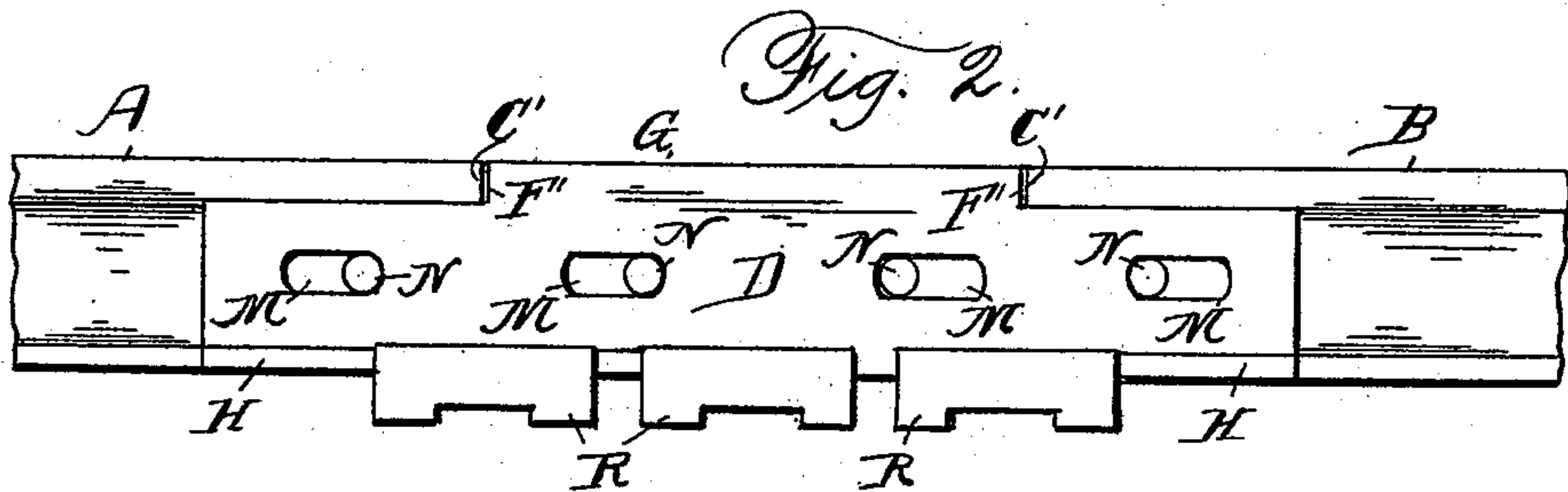
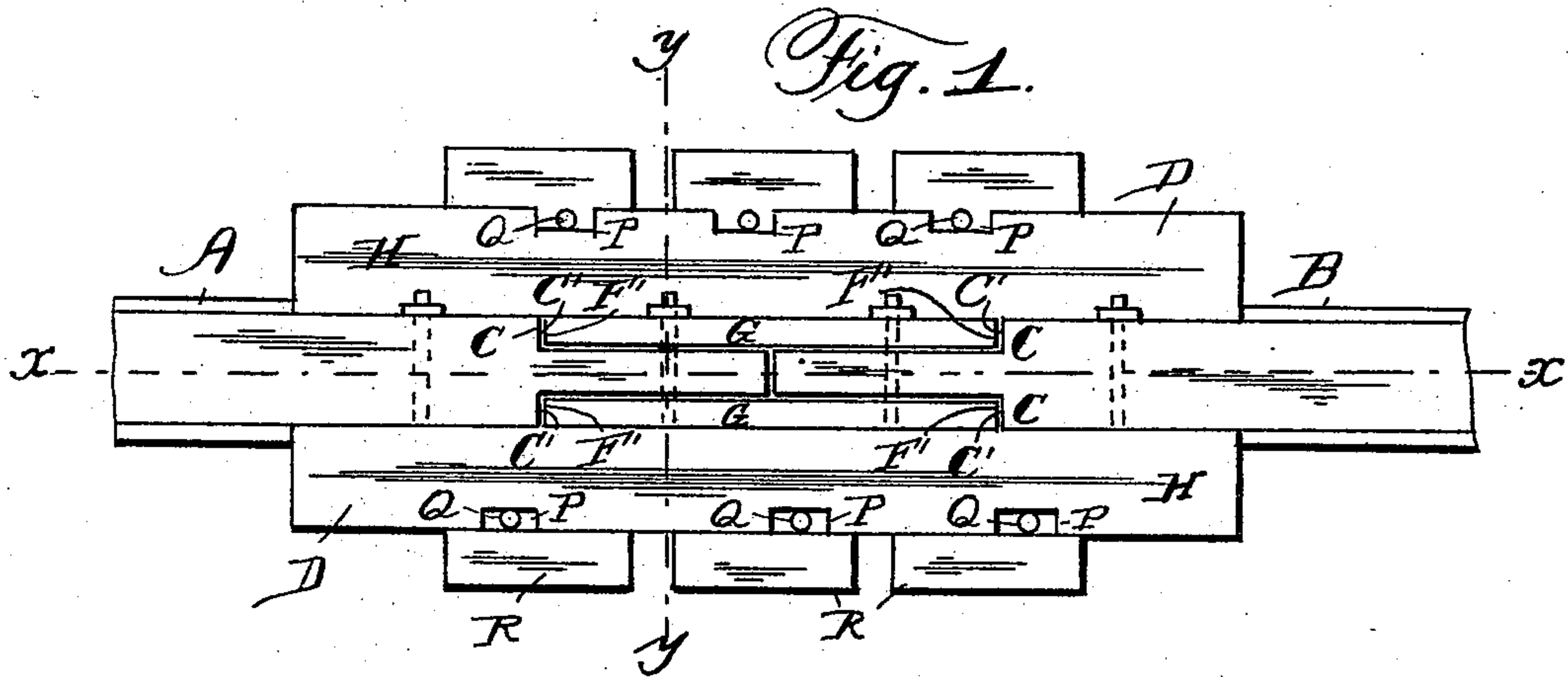
(No Model.)

2 Sheets—Sheet 1.

C. F. LAIB.
RAILWAY.

No. 528,884.

Patented Nov. 6, 1894.



Witnesses:
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

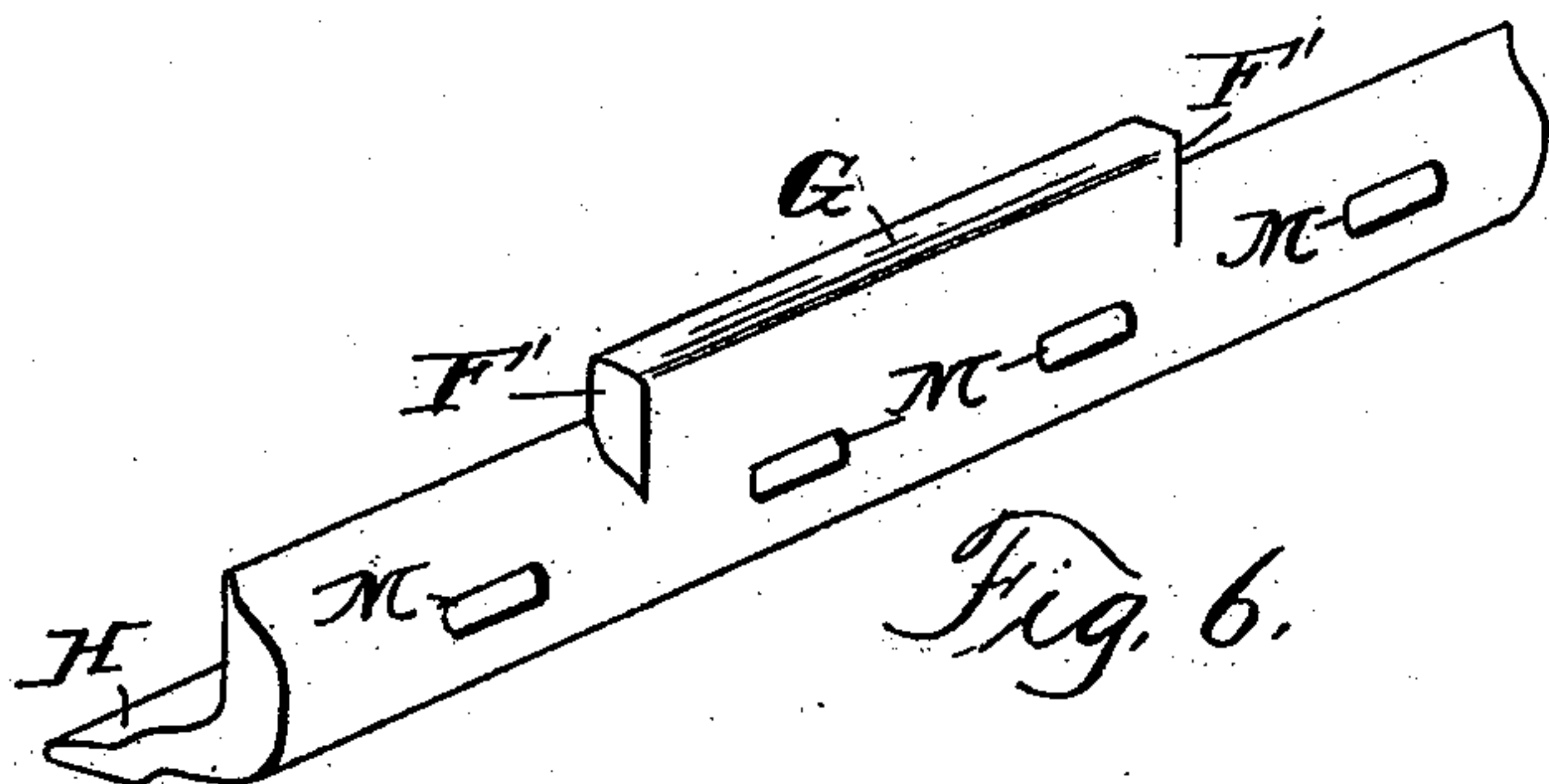
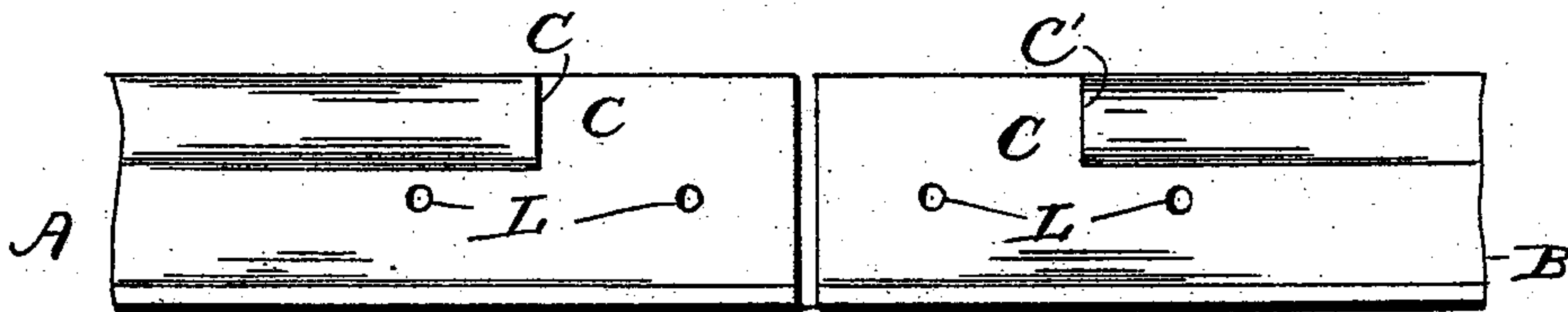


Fig. 6.

Fig. 7.

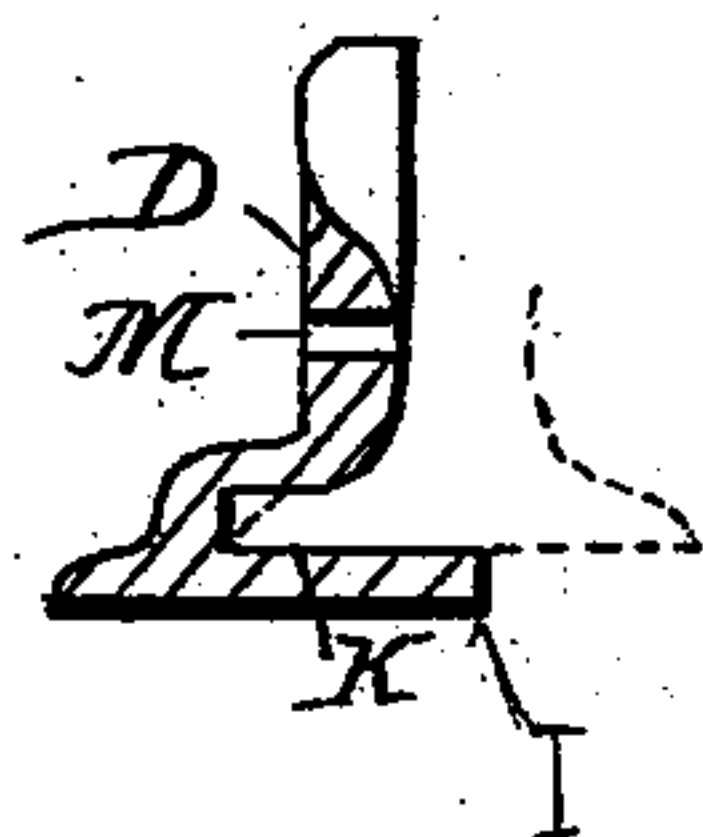


Fig. 8.

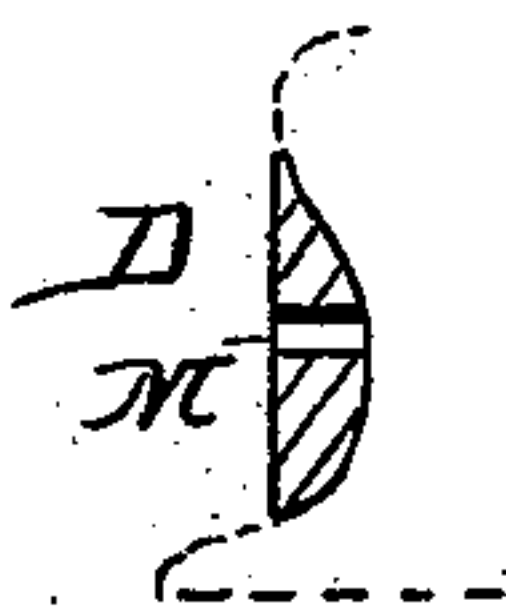
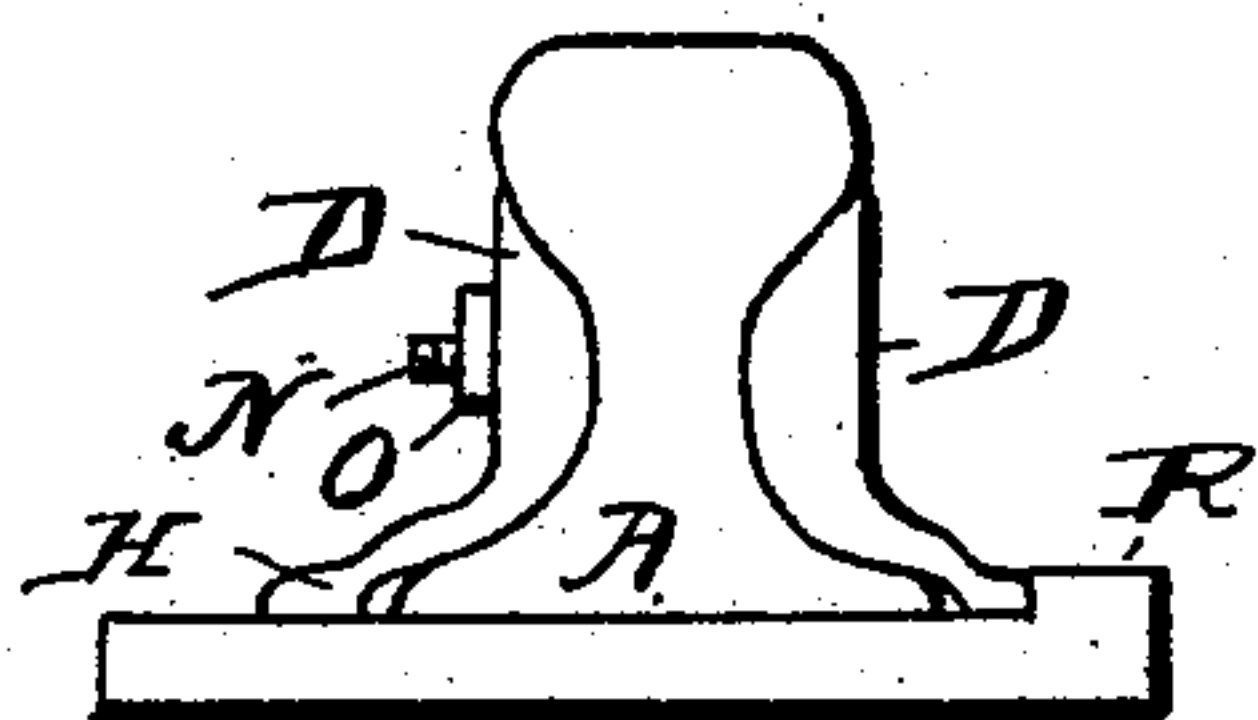


Fig. 9.



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UNITED STATES PATENT OFFICE.

CHRISTIAN F. LAIB, OF NEW LONDON, WISCONSIN.

RAILWAY.

SPECIFICATION forming part of Letters Patent No. 528,884, dated November 6, 1894.

Application filed May 15, 1894. Serial No. 511,329. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN F. LAIB, a citizen of the United States, residing at New London, in the county of Waupaca and State of Wisconsin, have invented certain new and useful Improvements in Railways; and I do 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 railways and more particularly to the construction and arrangement of the rails and fish-plates thereof, and among the objects in view is to provide an improved construction and arrangement of rails and fish-plates whereby a very secure locking of the meeting ends of two rails is secured, said rails permitted to expand longitudinally relatively to the fish-plates, and said rails and fish-plates permitted to have a longitudinal expansion relatively to the ties or sleepers, and with the above and other objects in view, the invention consists in the construction, arrangement and combination of parts as hereinafter fully described illustrated in the drawings and pointed out in the appended claim.

In the drawings:—Figure 1 is a plan view of a portion of two meeting rails and the fish-plate connecting the same, and sleepers constructed in accordance with my invention. Fig. 2 is a side view thereof; Fig. 3, a vertical sectional view on line $x-x$ of Fig. 1; Fig. 4, a transverse section on line $y-y$, Fig. 1; Fig. 5, a side elevation of the rails; Fig. 6, a detail perspective view of one of the fish-plates; Fig. 7, a vertical sectional view illustrating a modified form of fish-plate; Fig. 8, a similar view of still another modification. Fig. 9 is an end view of Fig. 1.

A, B, indicate portions of two railroad rails constructed in accordance with my invention. Each of said rails has its tread cut away upon opposite sides of the web as seen at C, forming shoulders C', C'.

D indicates the improved fish-plates which are arranged upon opposite sides of the meeting ends of the rails, said fish-plates being cut away toward each end, whereby shoulders F', F' are formed adapted to abut against the shoulders C' C' of the rails. The fish-plates

have the upwardly extending tread-portions G which lie in the same horizontal plane as the upper edges or faces of the rails and are adapted to form continuations thereof, whereby practically one continuous rail is formed. Each fish-plate may, as shown in Figs. 1, 2, 4, and 6, be provided with a foot or base H which extends beyond the base of the rail, or as shown in Fig. 7 said fish-plate may be provided with an inwardly-projecting base or foot I forming a groove K within which fits snugly the base of the rail, or as shown in Fig. 8 the fish-plate may be devoid of any base and be adapted to rest upon the base of the rail.

For securing the adjacent rails together by means of any of the described constructions of fish-plates, said rails are provided with openings L at suitable intervals apart, and the fish-plates are provided with similar slots M positioned at such distances apart as to align with the openings L. Through the said openings and slots pass headed bolts N one end of each of which is screw-threaded to receive tightening nuts O. By reason of this connection between the parts the rails will be permitted to have a slight longitudinal movement independently of the fish-plates thus adapting said rails to expand and contract without interfering with the proper function of the fish-plates.

For securing the rails and fish-plates to the ties I provide the foot of each fish-plate with recesses P at suitable intervals apart and Q are securing bolts which pass within said recesses and into the ties R which are arranged beneath the parts in a position to break joint with the rails and plates. By this connection of the parts the rails and fish-plates will be permitted to have a slight longitudinal movement independently of the ties.

The shoulders C' C' formed by cutting away the rails at C, may of course be curved instead of being angular as shown in which case the shoulders F' F' on the fish-plates should have a corresponding shape in order to make a neat joint with the shoulders C' C'.

What I claim, and desire to secure by Letters Patent, is—

The combination with the ties or sleepers and the rails having their treads cut away

upon opposite sides of the web to form shoulders C' C', of the fish-plates D arranged upon opposite sides of the rails and cut away toward their ends to form shoulders F' F' abutting against the shoulders C' C', said fish-plates having upwardly-extending tread portions G, lying flush with the treads of the rails, the said rails being provided with openings L, and said fish-plates being provided with slots M adapted to align with said openings L, and bolts passing through the said openings and slots and carrying nuts whereby to adapt said rails to have a longitudinal

movement independently of the fish-plates, and the fish-plates provided with notches or recesses P, and bolts passing through the latter and into the ties to adapt both the rails and fish-plates to have a longitudinal movement independently of the ties or sleepers, as and for the purpose specified.

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

CHRISTIAN F. LAIB.

Witnesses:

G. A. MURRAY,

E. C. PAPE.