

No. 770,439.

PATENTED SEPT. 20, 1904.

S. E. McLEAN.

RAILWAY RAIL AND FISH PLATE THEREFOR.

APPLICATION FILED SEPT. 4, 1903.

NO MODEL.

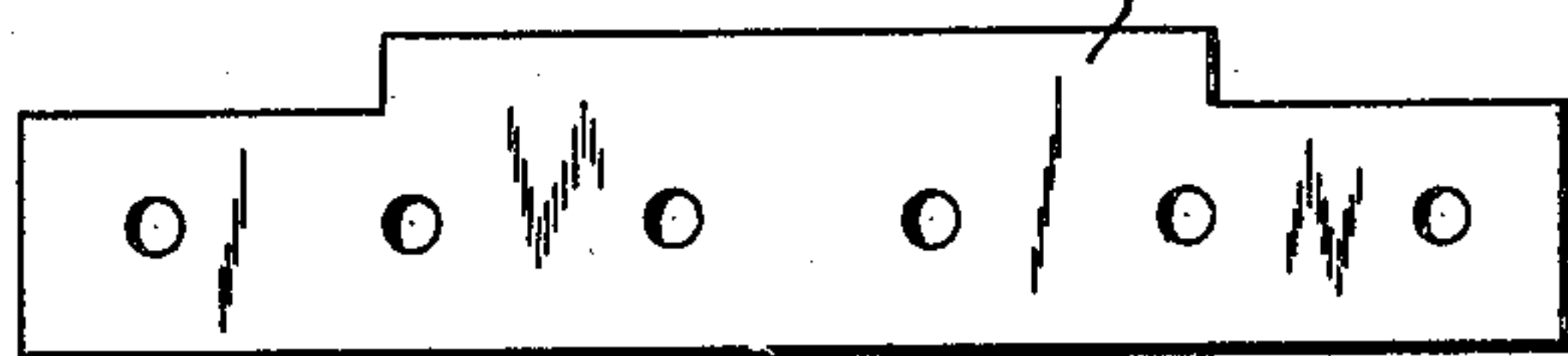
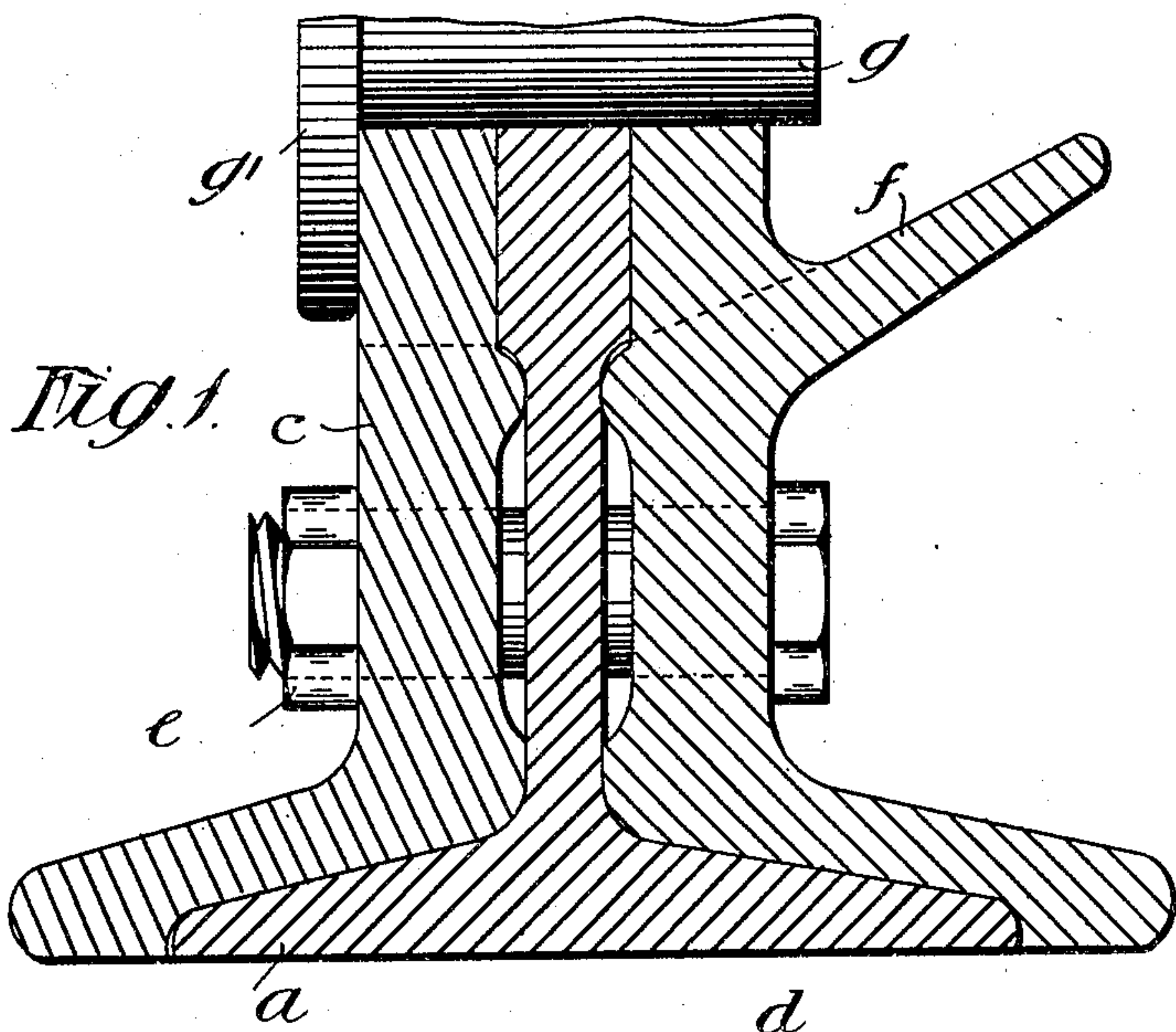


Fig. 3.

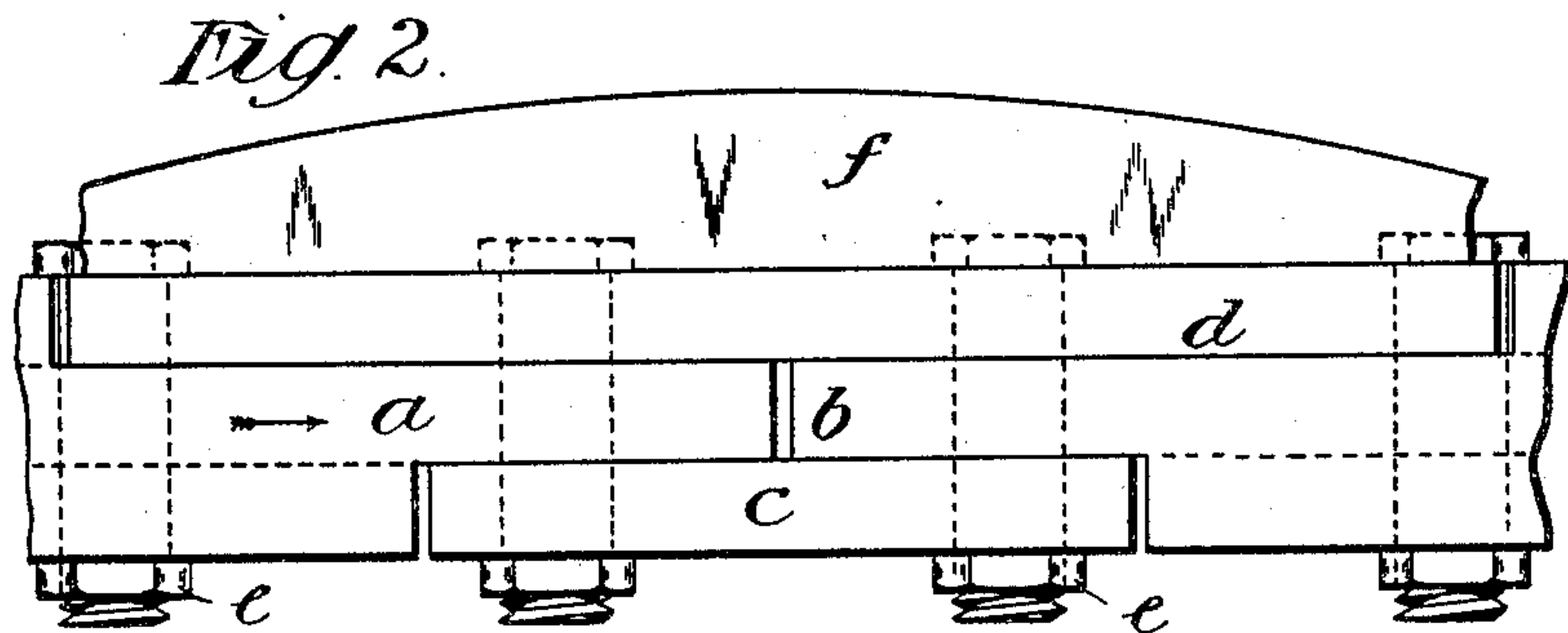
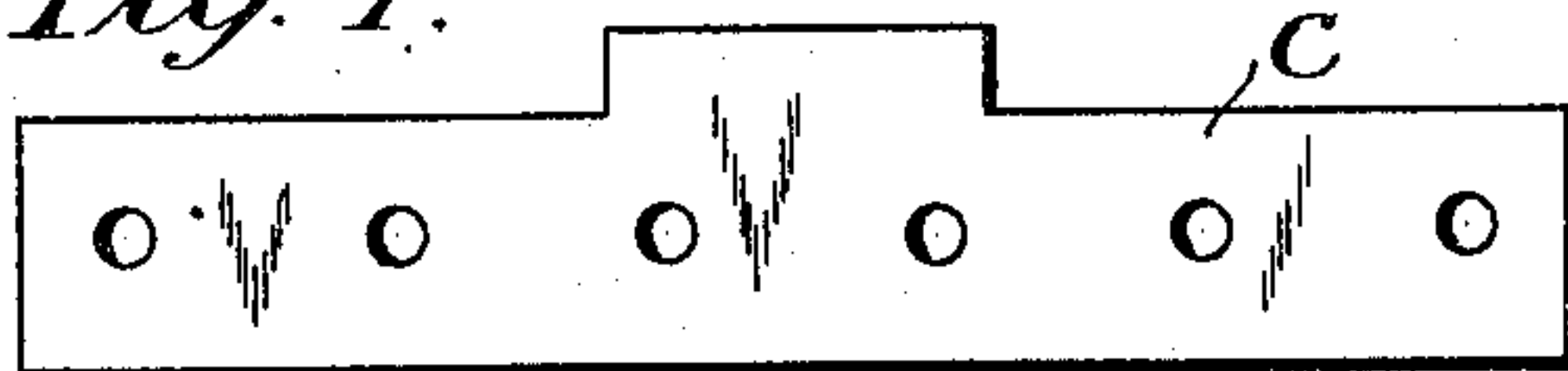


Fig. 4.



WITNESSES

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SAMUEL EDGAR McLEAN, OF MELBOURNE, VICTORIA, AUSTRALIA.

RAILWAY-RAIL AND FISH-PLATES THEREFOR.

SPECIFICATION forming part of Letters Patent No. 770,439, dated September 20, 1904.

Application filed September 4, 1903. Serial No. 171,980. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL EDGAR McLEAN, a subject of the King of Great Britain, residing at No. 82 William street, Melbourne, in the State of Victoria, Australia, have invented certain new and useful Improvements in Railway-Rails and Fish-Plates Therefor, of which the following is a specification.

This invention has been devised to provide certain improvements in connection with railway-rails at that point where they are joined together by fish-plates and also has reference to the construction of such fish-plates so that all the parts may form a complete joint to fulfil the function hereinafter set out. By the term "railway-rails" I would have it understood that I include the rails of tramways and like structures.

In existing railways the ends of the rails are brought to within a short distance of one another, (roughly about three-eighths of an inch apart,) the gap or space at each end being allowed for expansion of the rail under varying conditions of temperature, the rails being held firmly in their position and alignment by fish-plates provided with bolts and nuts. The said gap or space presents a defect—that is to say, that the train-wheels are not continuously riding upon metal, but receive an impact, blow, or concussion at the blank space, causing vibration and wear and tear to such wheel and train and reducing economy and the factor of safety. In many cases the end of one rail is slightly higher or lower than the end of the next rail facing it, so that the train-wheel on passing over the higher will fall with concussion upon the lower rail, or, vice versa, will be met with a blow on meeting the end edge of the higher rail. My invention is calculated to overcome such defects by providing a continuous and unbroken line of metal on which the wheel may run.

In order that my invention may be the more easily understood, reference may be made to the accompanying drawings, in which—

Figure 1 shows a section of my improvements when fitted in position, Fig. 2 being a plan view of the rails and fish-plates when

in practical use. Fig. 3 shows a detail view of the outer fish-plate, while Fig. 4 is a detail view of the inner fish-plate.

In the drawings, *a* represents the end of a railway-rail, *b* being its fellow rail opposite same.

c is an inner fish-plate having a deeper portion near its center, while *d* is the outer fish-plate, but having the deep portion of a longer length than the inner one. The rails *a* and *b* have a portion sliced out of them to enable a corresponding portion of the fish-plate *c* to be let into them on the one side and a longer portion sliced out to allow a corresponding portion of the fish-plate *d* to fit in them on the other side. The slicing off of the portions of the rails necessary to admit the fish-plates *c* and *d* may be done by a shearing-machine after the rails have been manufactured, or the rails can be so shaped during the course of their formation.

In practice the fish-plates, which are each, say, thirty inches long, will be provided with a deeper portion near their middle—that is to say, the inner fish-plate *c* has a deep portion of about eight inches in length and the outer fish-plate *d* about sixteen inches in length.

e represents the bolts and nuts passing through *c*, *a*, *b*, and *d*, the bolt-holes in *c* and *d* being made oval, as usual, for expansive working, while *f* is the web or flange usually employed for strengthening the fish-plate *d*.

g is a portion of the engine or wagon wheel, having a flange *g'* thereon and which rides over the top surfaces of *a*, *d*, *c*, and *b*.

It will be seen from the construction shown on these drawings that a train-wheel passing in the direction of the arrow (see Fig. 2) will ride along the rail *a* and the fish-plate portion *d*, thence along *a*, *d*, and *c*. Then (at the gap between *a* and *b*) the said wheel will continue to ride on *d* and *c*, and thence on *b*, *d*, and *c*, and thence on *b* and *d*, and finally along *b* only, so that at no point is the wheel left without a constant bearing-track of metal. Care is exercised that gaps are left for expansion of the rails and fish-plates at the portions or parts where the latter are let into the former.

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

1. In railways and like lines, the combination of two rails placed end to end and having a portion of their heads at such ends sliced off in a line parallel with the web and having at their outer and inner sides respectively a fish-plate the top edge of which is flush with the surface of the rails and the surface of the opposite fish-plate and so arranged that the fish-plates bridge the gap between the two rails and constitute a continuous run of bearing-track for the wheel substantially as and for the purposes set forth.

2. In railways and like lines, the combination of two rails placed end to end and having a portion of their heads at such ends sliced off

in a line parallel with the web and having at their outer and inner sides respectively a fish-plate said fish-plate having a portion of its length of increased depth to be flush with the surface of the rails and the surface of the opposite fish-plate and so arranged that the fish-plates bridge the gap between the two rails and constitute a continuous run of bearing-track for the wheel substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL EDGAR McLEAN.

Witnesses:

A. O. SACHSE,
A. HARKER.