No. 864,300. PATENTED AUG. 27, 1907.

C. F. V. HANSEN.

RAIL JOINT.

APPLICATION FILED NOV. 26, 1906.

2 SHEETS—SHEET 1.

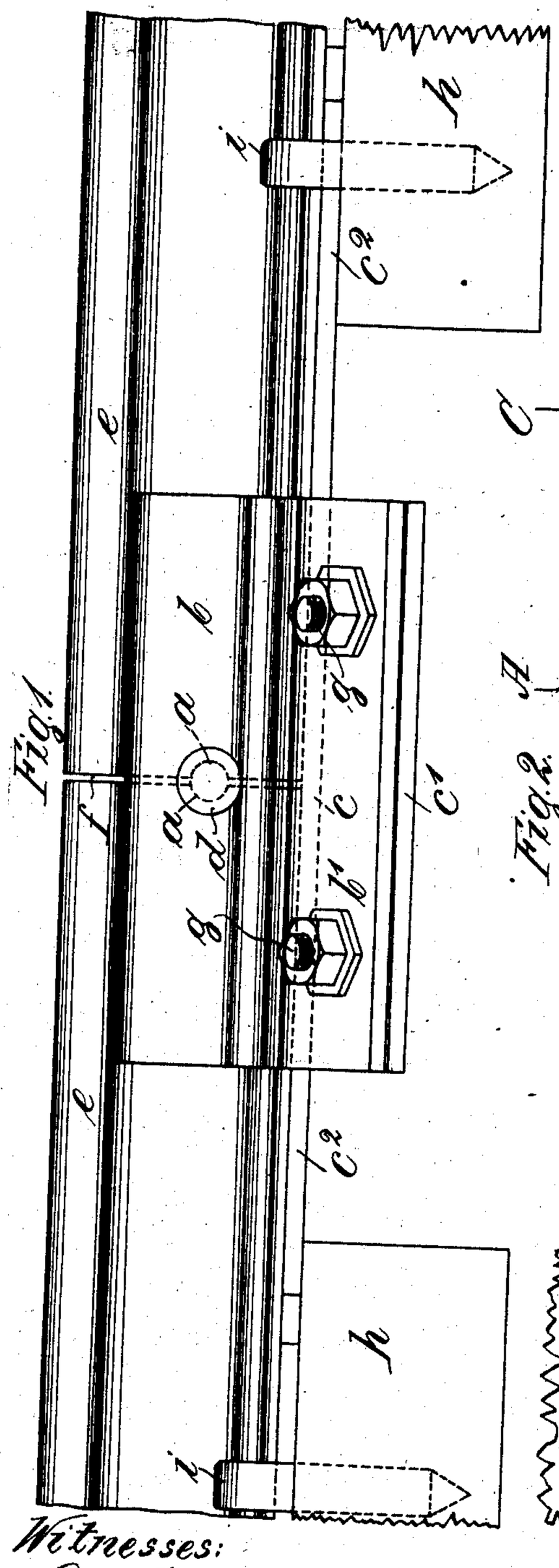

Fig. 1.

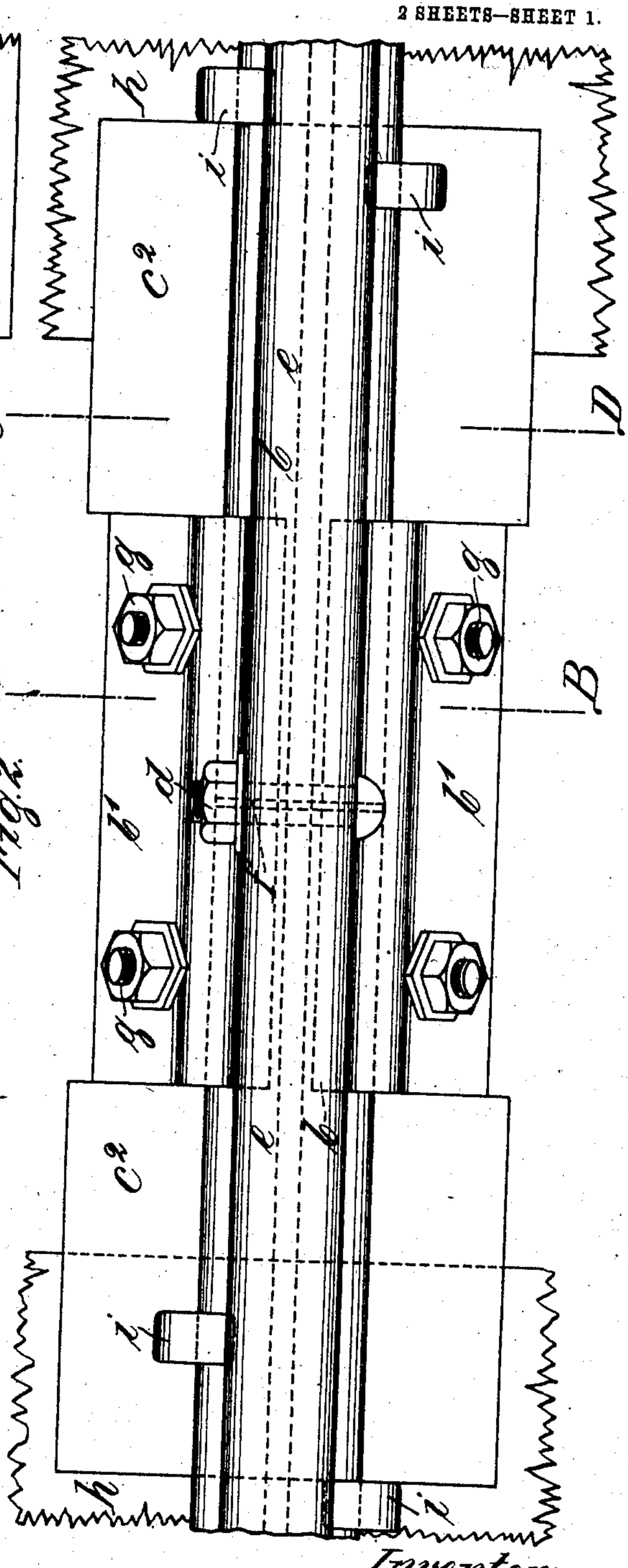

Fig. 2.

Witnesses:
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Arthur Stolz.

Inventor:
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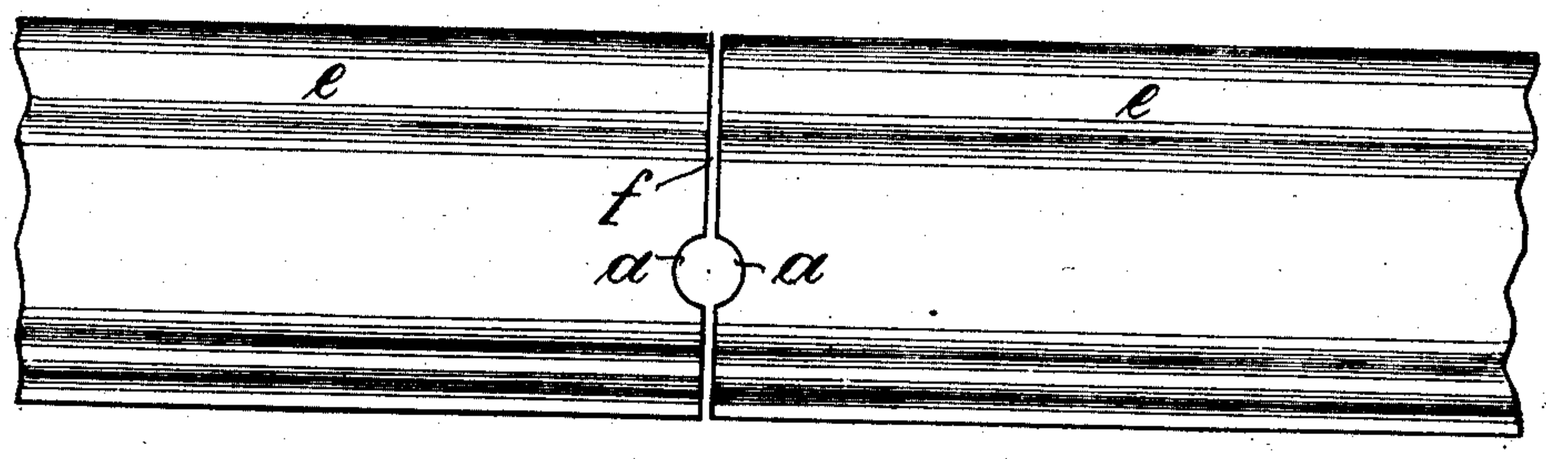
2 SHEETS—SHEET 2.

Fig. 5.



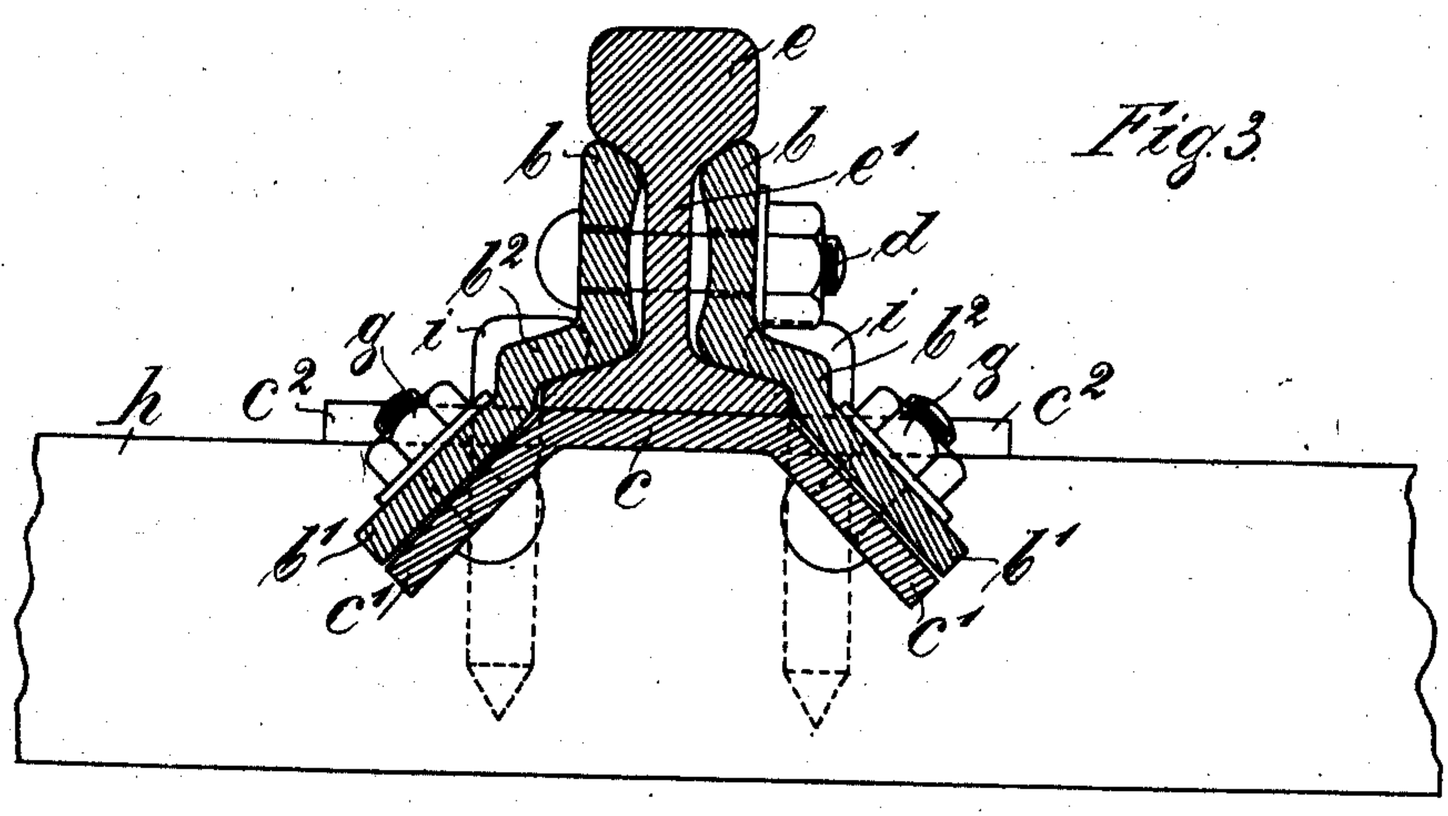


Fig. 3.

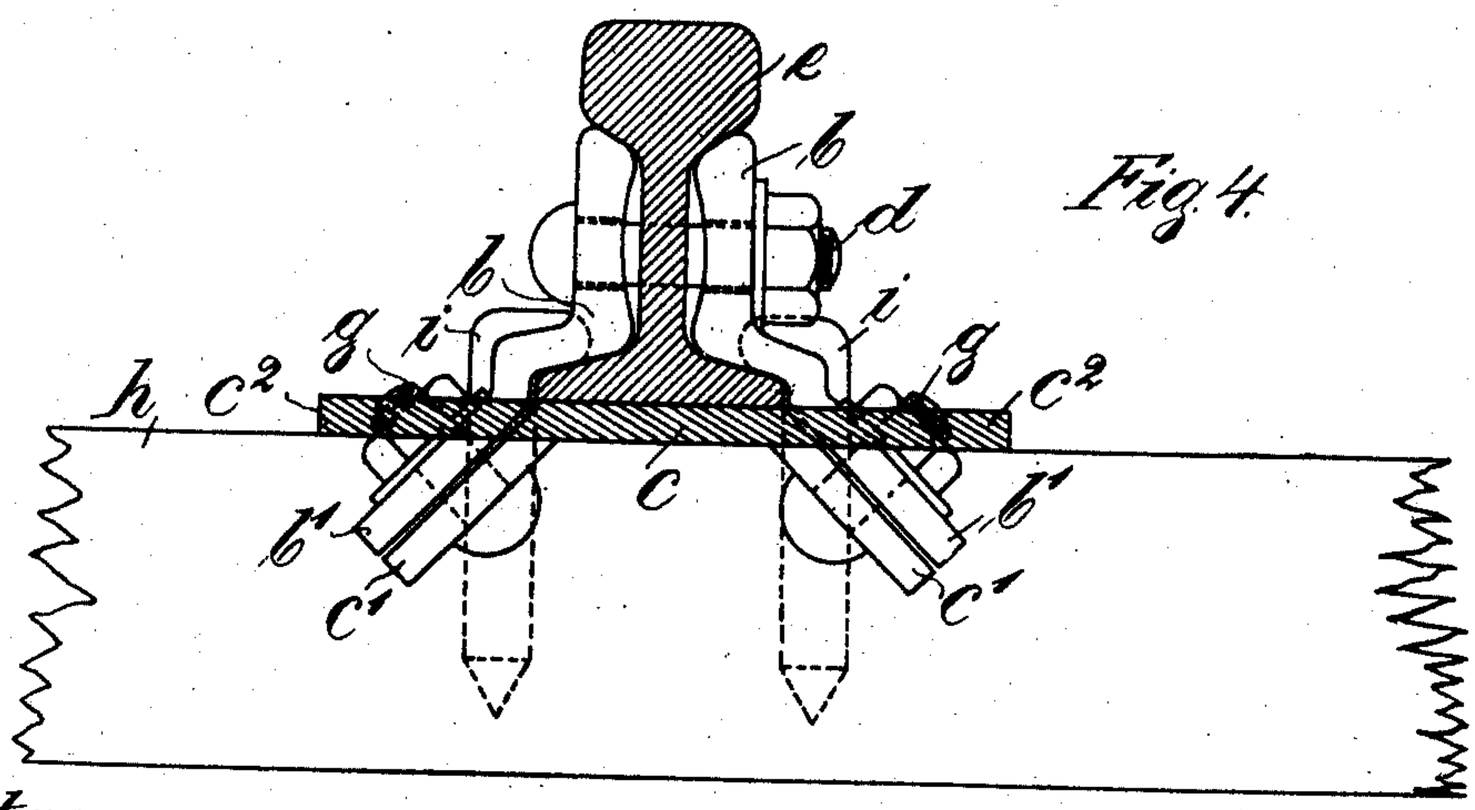


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

CARL FREDERIK VALDEMAR HANSEN, OF BUENOS AYRES, ARGENTINA.

RAIL-JOINT.

No. 864,300. Specification of Letters Patent. Patented Aug. 27, 1907.

Application filed November 26, 1906. Serial No. 345,563.

To all whom it may concern:

Be it known that I, CARL FREDERIK VALDEMAR HANSEN, a citizen of Denmark, and a resident of Buenos Ayres, in Argentina, South America, have invented certain new and useful Improvements in Rail-Joints, of which the following is an exact specification.

This invention relates to a rail joint and has for its object to provide a rigid joint at the rail ends in such manner that the rails are forced jointly downward when a load is traveling along or resting upon the joint that is to say one end of the rail joint is prevented from moving downwards and then the other end, as hitherto has been the case, but both rails which are joined together by my improved rail joint behave as if they form a continuous rail.

A further improvement consists therein that provisions are made to permit the rails to expand freely by changes of temperature, so that any breaking of the rails is prevented, which causes frequent and very inconvenient disturbances in ordinary rail-joints.

Furthermore according to my invention I have constructed a jail-joint the moment of resistance of which is much greater than that of the rail itself, so that the elements used for establishing the joint can be employed again when the rails are worn out.

With this object in view I have combined fish plates with a base plate or chair both these elements having downwardly inclined flanges which are secured to each other by bolts.

In order to make my invention clear, I refer to the accompanying drawing, in which:

Figure 1 is a side-view of my improved rail joint, Fig. 2 a plan view, Fig. 3 a vertical cross section on line A—B of Fig. 2. Fig. 4 a vertical cross section on line C—D of Fig. 2, and Fig. 5 illustrates the form of the rail ends which are to be joined together.

The rails *e e* are provided at their adjacent ends with half-circular recesses *a a* formed in the web *e'* of the rails, and are set a short distance apart so that an interstice *f* is left.

b b are two fish-plates which are extended downwardly to form inclined flanges *b' b'* and connecting pieces b^2 b^2 supported on the base of the rail. Below the base of the rail a base plate is arranged formed by the horizontal part *c* and the downwardly inclined flanges or lappets *c'* the latter having an inclination in conformity with the flanges *b'* of the fish-plates *b b*.

g are bolts for connecting rigidly the flanges *b' b'* and the lappets *c' c'*. In the form shown four bolts are provided, *d* being a fish-plate bolt passing freely through the half circular recesses *a a* of the rails.

The base plate is in the form shown extended at both ends so as to form horizontal plates c^2 resting on the sleepers *h*.

i are hooked spikes two of which project through the plates c^2 whereas the other two are arranged closely alongside the plates c^2.

The mode of operation of the hereinbefore described rail joint will be readily understood. Owing to the bolt *d* being arranged in the recesses *a a* the rails *e* and the fish-plates *b* are not bolted together, so that the rails are enabled to expand freely or to contract respectively by heat or cold. The rails *e e* are supported by the fish plates at their head and base and owing to the flanges *b' b'* of the fish plates and the lappets *c' c'* being bolted together a rigid joint is formed, which does not permit the ends of the rail to be bent downwardly successively when a load is traveling over them but causes the rail ends to be bent downwards jointly, so as to form as it were a single rail and prevents impact between the wheels of the railway vehicle and the opposite rail end when passing the joint, and in this way the wheels suffer less wear and tear.

It will be observed that the extended horizontal part c^2 of the base plate can be dispensed with. It may preferably be used at places where there is an incline in order to prevent the rails from moving downwards (the so-called traveling or creeping of the rails) and it is furthermore obvious that this rail joint can be used in connection with any other known rail profile, such for instance as channel-rails.

Having thus fully described the nature of my invention, what I desire to secure by Letters Patent of the United States is:—

1. A rail joint comprising in combination: fish-plates having downwardly extending inclined flanges, a base plate having downwardly extending and inclined lappets and fish-plate bolts for bolting together flanges and lappets and the fish plates proper, the adjacent ends of the rails being provided with half circular recesses, through which a fish-plate bolt passes.

2. A rail joint comprising in combination: fish-plates each consisting of a vertical part, and of a downwardly extending inclined flange and a connecting piece between both these parts resting therewith on the base of the rails, a base plate having a horizontal web *c* downwardly extending inclined lappets *c'*, and fish-plate bolts for bolting together the inclined parts of the fish-plates and of the base plate, the adjacent rail ends being provided with half circular recesses so that a fish plate bolt can freely pass through the rail.

3. A rail joint comprising in combination: fish plates having downwardly extending inclined flanges, a base plate having downwardly extending and inclined lappets and horizontal extended parts c^2 resting therewith on the adjacent sleepers of the rail joint, and fish plate bolts for bolting together the flanges and lappets and the fish plates proper, the adjacent ends of the rails being provided with

half circular recesses, through which a fish plate bolt freely passes.

4. A rail-joint comprising in combination, fish-plates, each consisting of a vertical part, of a downwardly extending and inclined flange and a connecting piece between both these parts, resting therewith on the base of the rail, a base-plate having a horizontal web (c), downwardly extending and inclined lappets (c'), and horizontally extended parts (c^2) resting therewith on the adjacent sleepers of the rail-joint, and fish-plate bolts for bolting together the inclined parts of the fish-plates and of the base-plate, the adjacent rails being provided with half circular recesses through which a fish-plate-bolt freely passes.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CARL FREDERIK VALDEMAR HANSEN.

Witnesses:
J. C. FUCHS,
HUGO HAUBT.