

(No Model.)

W. H. WRIGHT.

RAIL FOR STREET RAILWAY SERVICE AND CHAIR FOR THE SAME.

No. 446,589.

Patented Feb. 17, 1891.

FIG. 1.

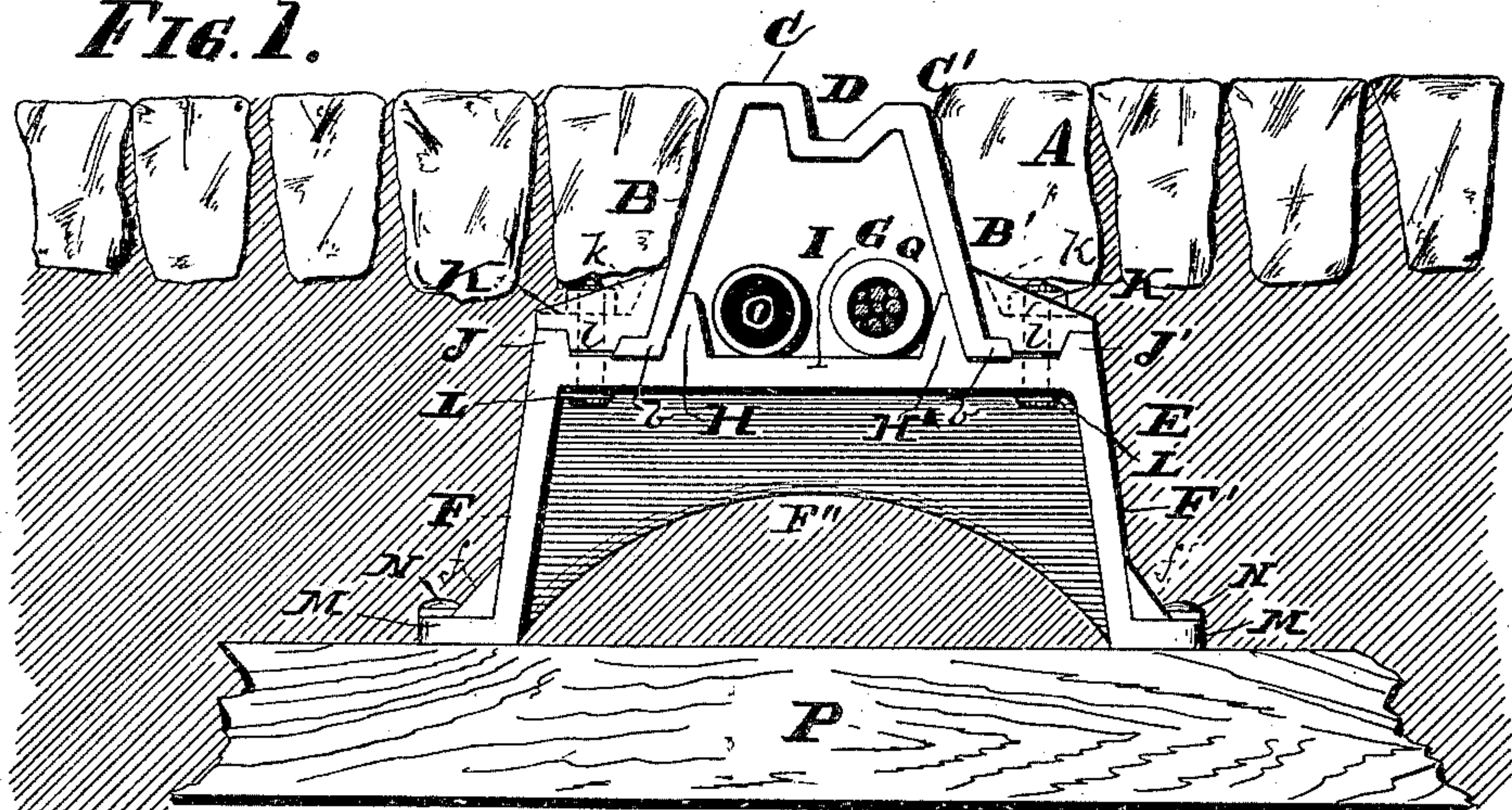


FIG. 2.

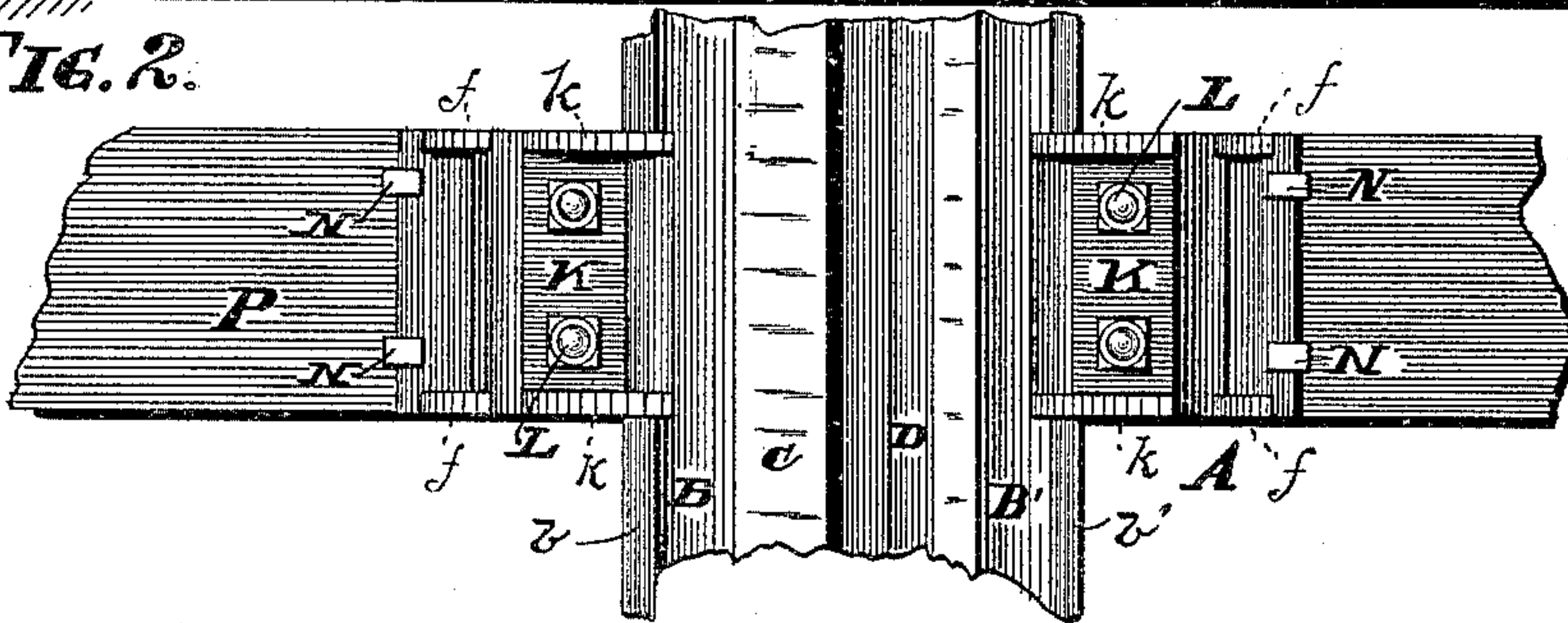
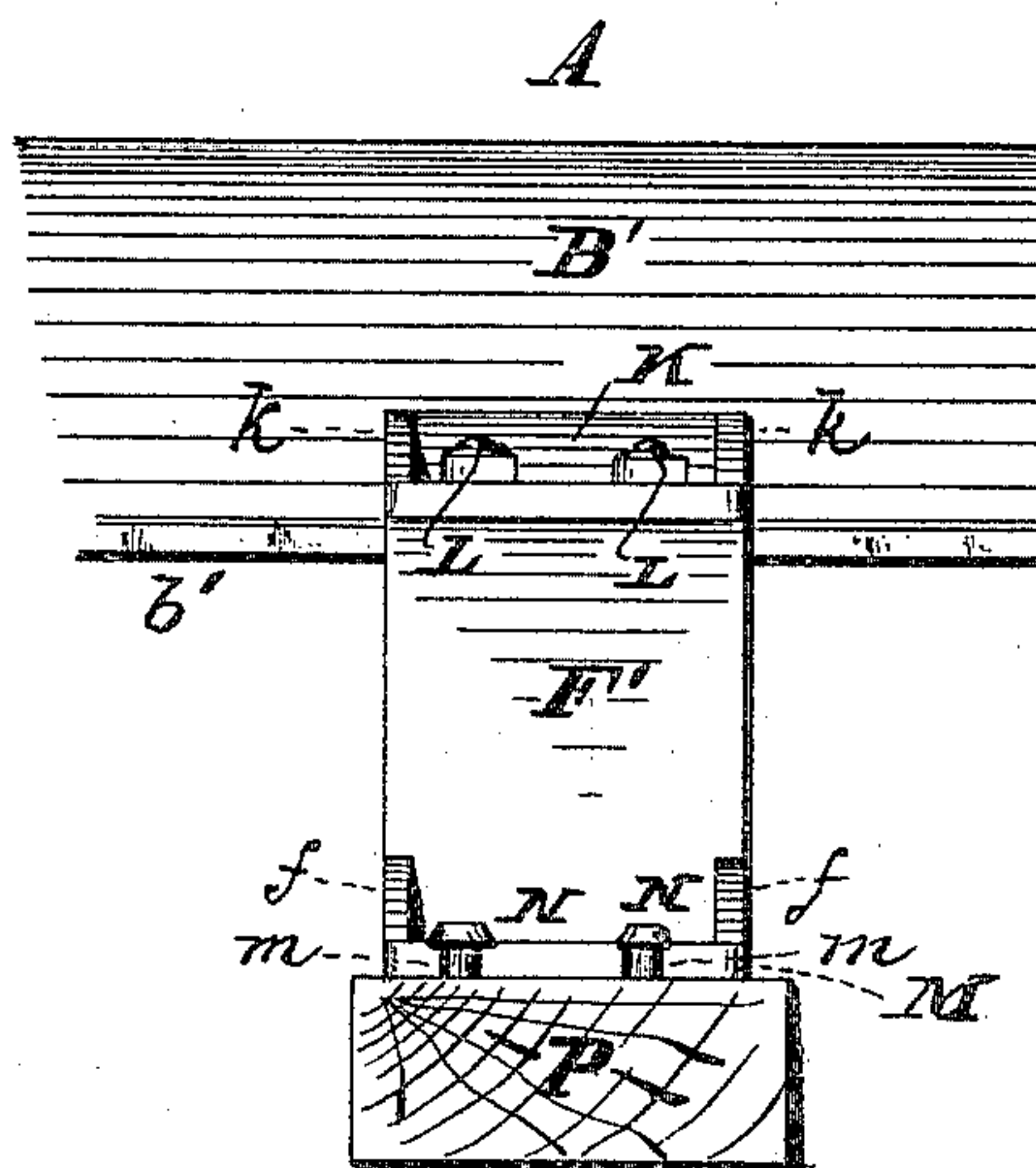


FIG. 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

WILLIAM H. WRIGHT, OF BUFFALO, NEW YORK.

RAIL FOR STREET-RAILWAY SERVICE AND CHAIR FOR THE SAME.

SPECIFICATION forming part of Letters Patent No. 446,589, dated February 17, 1891.

Application filed October 27, 1890. Serial No. 369,421. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. WRIGHT, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Rails for Street-Railway Service and Chairs for Same; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to improvements on rails for street-railways, and in chairs for the same; and it consists, essentially, in the novel and peculiar combinations of parts and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already mentioned, which serve to illustrate my said invention more fully, Figure 1 is an end elevation of my improved rail and chair. Fig. 2 is a plan of the same; and Fig. 3 a side elevation, like parts being designated by corresponding letters of reference in all the figures.

The object of this invention is the production of a more efficient and serviceable rail and chair for street-car service, and especially for use in connection with electric systems of propulsion of cars and engines. To attain this result I construct this rail A of substantially U shape, inverted, B B' being the webs, C the head, D the channel, and C' the tram of the rail. The webs are outwardly inclined and have on their lower longitudinal edge projecting flanges b b', by means of which the rail is secured upon its chair E or directly upon the ties P, as hereinafter to be referred to. The webs are outwardly inclined and spread to widen the base of the rail and thereby increase its stability and resistance to sidewise-acting forces tending to spread the same—as, for instance, heavy trucks and wagons trying to run into or leaving the rails—while the channel D affords ample space for the flanges of the car-wheels and is easily cleaned from snow in winter-time, and allows light vehicles to run in the same, whereas heavy trucks and wagons, carriages, &c., may ride upon the tram C', which tram is some-

what lower than the head of the rail to form a guide for the heavier class of vehicles.

The rail, as described, may be readily formed from flat bars tapering toward their longitudinal edges and formed into shape between suitable rolls, or it may be rolled in the usual manner or in any special manner, its process of manufacture presenting no difficulty whatever to any one skilled in the branch of the art to which it appertains. It may be made of various thicknesses, the parts mostly subjected to wear being made proportionately heavier than others and need not weigh more to the yard than any other approved rail for street-railway service, so that it will not cost more to manufacture than any other rail of the same weight, and may be less for the reason that it can be more easily produced.

The advantages that this improved rail possesses over others now in use are greater rigidity and stability combined with greater durability, while at the same time the cost of repairs to the street-paving is considerably lessened, owing to the fact that paving-stones may be set closely to the web of the rails, which is not the case with the present rails, wherein the head and the tram project from a central web and leave spaces that can only be filled with sand, which is liable to be washed away and cause the pavement to sink and form ruts and gutters which are an objection to the regular street traffic.

The chair E for this rail is of peculiar construction, and consists of an inverted-U-shaped structure having two convergingly-arranged standards F F', jointed by a top plate G, and an arched web F'' centrally underneath said top plate, as illustrated in Fig. 1. The standards have laterally-projecting feet M, which are provided with notches m, Fig. 3, to receive spikes N, by means of which the chairs are secured upon the ties P in the usual manner. To strengthen these feet M, they are connected with the standards by brace-ribs f. Upon the top plate G of the chair, and along the short sides thereof, are formed projections J J', and a certain distance therefrom and parallel thereto are formed further projections H H', the latter having their outer surfaces inwardly and upwardly inclined, so as to fit between the inner sides of the webs B B', thereby prevent-



ing them from closing one upon the other, while to prevent them from spreading, and at the same time to securely fasten the rail to the chair, I locate on the outer sides of the webs B B' clamps K, being substantially L-shaped castings having on their horizontal members and on the under side thereof projections l, which engage the inner sides of the projections J J' of the top plate and bear against the outer side of the webs B B' with their slightly-inclined members, forcing the webs against the projections H H', and thereby supporting the rail and adding to their strength, screw-bolts L being passed through the top plate and the clamps to tighten the latter in position. To strengthen the clamps K, they are provided with ribs k in the angles, as clearly shown in the drawings. It will now be observed that the ends of the horizontal portions of the clamps K, bearing upon the projections J J' of the top plate, form fulcrum for the clamps, so that when the bolts L are tightened they will cause the inclined portions the more tightly to press upon the sides of the webs the more they are tightened up, the shoulders of the projections l on the under side of the clamps bearing against those of the outer projections J J' of the top plate G, preventing the clamps from moving outwardly. By this construction the rail is not only held down by the clamps K bearing against the sides of the webs, but also by bearing upon the feet thereof. It will be further observed that the U-shaped rails form interior spaces I, which, if it be so desired, may be utilized by locating therein pipes O and Q, serving either as conduits for electrical conductors for conveying gas or for containing the return-wires of the trolley system of electrical propulsion of cars and engines, where the return is principally through the rails, but which have to be connected by a continuous wire conductor to insure perfect connection between the rails, and which wires are secured to the rails at proper intervals. These return-wires may be easily reached from the outside pavement without disturbing traffic upon the tracks.

In constructing this chair and its rail it is desirable that the ties be placed about ten inches below the upper surface of the pavement. I have planned the relative proportions between the chair and the rail in such a manner that the latter is about one-half of

the entire height. It is evident that the chair may be made higher and the rail-webs be made correspondingly lower without changing the nature of my invention. It is further evident that the rail may be used without a chair by spiking it directly upon the tie, a matter which is readily understood by the intelligent mechanic.

The chair described is symmetrical, so that either side may be out and will perfectly fit the rail. It can be produced entire in the process of casting without any machine labor, and is, therefore, as cheaply produced as any other desirable chair now in use or on the market.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

1. In a street-car track, a rail consisting of a substantially U-shaped body having a head, a groove, and a tram adjoining said groove, and convergingly-arranged webs B B', provided with feet b b', said rail being supported upon chairs having a top plate G, provided with projections J J' on its outer edge, inclined projections H H' engaging the webs B B' on their inner side, clamps K, bearing with their outer ends upon the projections J J', and with their slightly-inclined portions upon the feet b b' and the outer sides of said webs, and bolts L passing through said top plate and the clamps, as and for the object stated.

2. In a street-car track, a substantially U-shaped rail having laterally-projecting feet, as described, supported upon a chair, consisting of the top plate G, the convergingly-arranged standards F F', the flanges M on said standards, the projections J J', the inclined projections H H', all located on the top surface of the top plate G, the clamps K, bearing with their outer ends upon the projections J J' and with their inner inclined portions upon the feet b b' and the sides of the webs B B', and the bolts L, passing through the said top plate and the clamps, as and for the object set forth.

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

W. H. WRIGHT.

Attest:

MICHAEL J. STARK,  
WM. O. STARK.