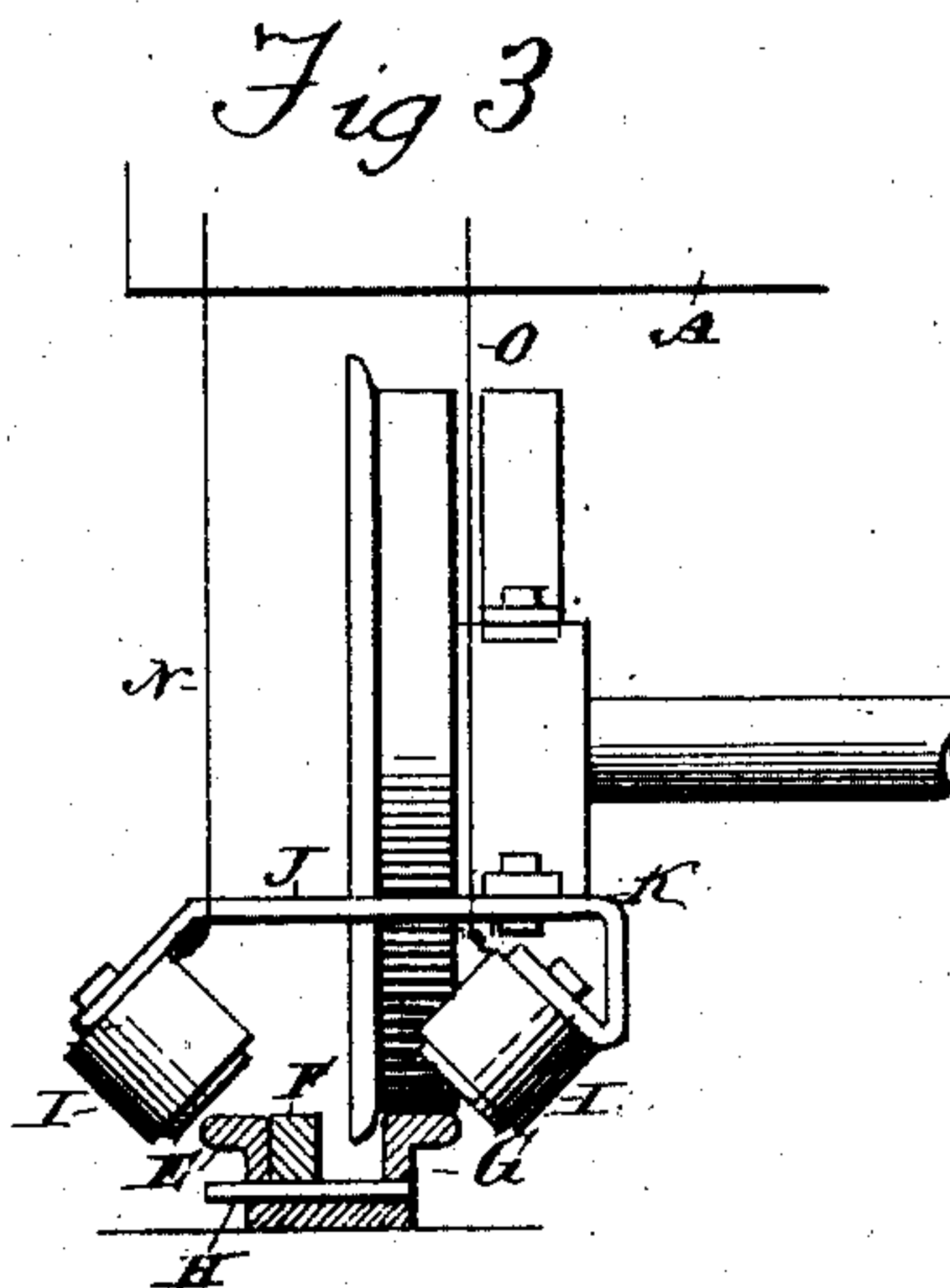
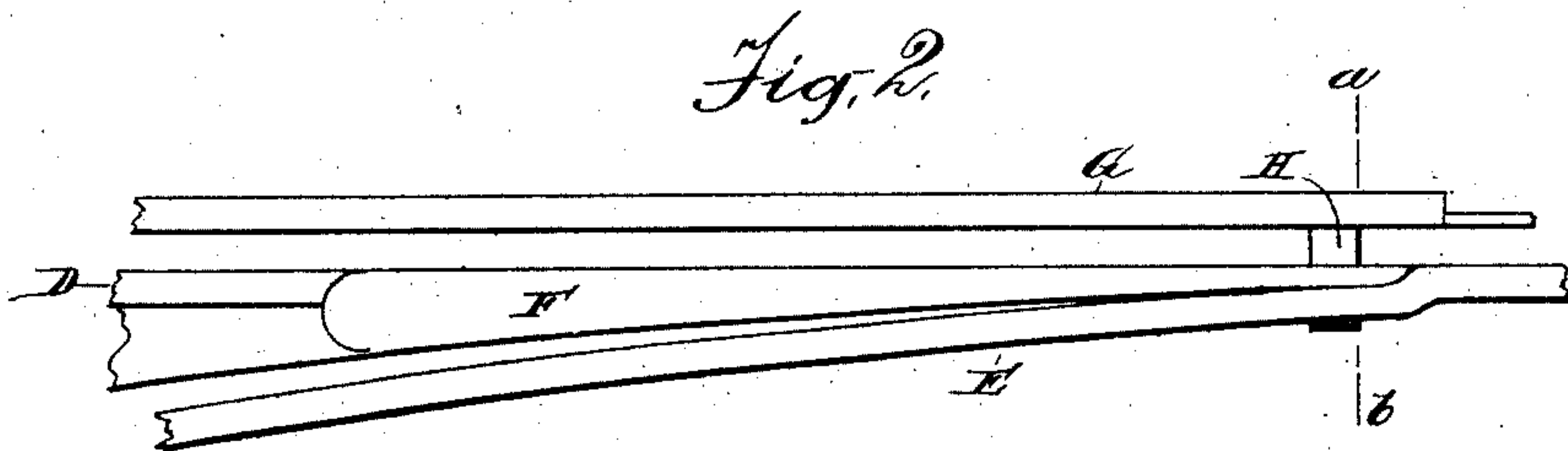
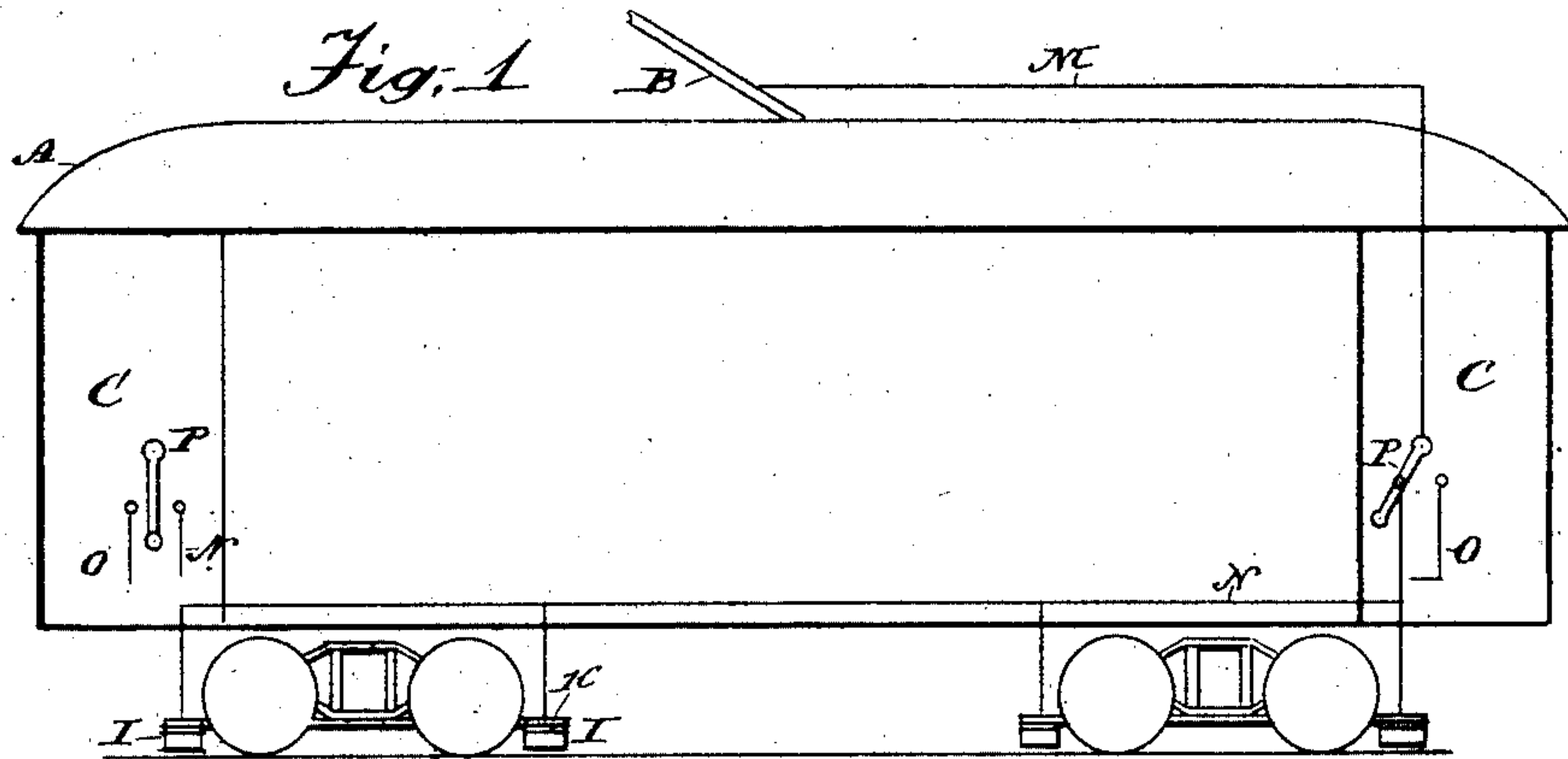


No. 883,181.

PATENTED MAR. 31, 1908

J. P. & T. P. DOWD.
ELECTRIC STREET RAILWAY SWITCH.

APPLICATION FILED SEPT. 30, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN P. DOWD AND THOMAS P. DOWD, OF CEDAR RAPIDS, IOWA.

ELECTRIC STREET-RAILWAY SWITCH.

No. 883,181.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed September 30, 1907. Serial No. 395,292.

To all whom it may concern:

Be it known that we, JOHN P. DOWD and THOMAS P. DOWD, citizens of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Electric Street-Railway Switches, of which the following is a specification.

The object of this invention is to provide means by which street railway switches may be thrown by the conductor or motorman, without the necessity of reaching out of the car vestibule with the flat bar commonly used for that purpose, and by the simple shifting of an electrical circuit closing switch.

The nature of the invention is fully disclosed in the description and claims following, reference being had to the accompanying drawing, in which—

Figure 1 is a diagrammatical side elevation of apparatus embodying our invention. Fig. 2 is a plan view of switch-rails and adjacent rails as usually constructed for street railways. Fig. 3 is a section of said rails on the line *a b* of Fig. 2, together with a front (or rear) view of a car-wheel and portion of truck and switching mechanism.

In the drawing, A designates a street car of the double truck type, provided with the usual trolley pole B, and with vestibules C C, in which the motorman is supposed to stand.

In Fig. 2 D is one of the main track rails, E is a side track rail, F is the shifting or switch rail, and G is the guard rail. These may all be of the usual construction, with the following exception. To prevent the point of the switch rail from being lifted, under the influence of the magnets to be hereinafter mentioned, the rail is provided with a guide-plate H, securely attached to the rail, the ends of which pass through slots in the webs of the adjacent track and guard-rails, as shown in Figs. 2 and 3.

The switch rail is shifted by means of powerful magnets I, one of which is placed each side and a little in advance of each truck, and preferably in advance of each wheel under the car. The inner group of magnets shown in Fig. 1 might possibly be dispensed with, but as this rail has nothing but its own gravity to hold it shifted it is a very usual

occurrence for the front wheels of a car to pass safely over the switched rail, but before the rear truck reaches it the rail has shaken out of position, and the car is derailed. It is therefore desirable that there be a magnet near each wheel, so that the possibility of this dislocation of the switch rail be avoided.

The magnets are of a well known type, and need not be described in detail. They are suitably mounted, as by a bar J secured to the truck-frame K, so as to hang quite close to the track, and nearly over the respective rails toward which each is designed to draw the switch rail. Current for the outer and inner series of magnets, respectively, is taken along the trolley-pole through the conductor M and the conductors N and O, which may be closed into the circuit with the conductor M by the shifting of an electric switch P, mounted at some suitable point in the car vestibule.

Supposing now a car to be approaching the switch as shown in Fig. 2 from the right hand side, and that the car is to take the side track. When near the switch the motorman closes the circuit for the inner group of magnets on the left side of the car. As soon as the first magnet reaches a point opposite the point of the switch rail magnetism acting on the rail shifts it instantly, and the following wheel passes over in the proper course. This is also true of all the wheels on that side of the car. When all have passed over the circuit is broken, as indicated at the left end of Fig. 1.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is:—

1. In combination with a movable switch rail and a car substantially as described, electro-magnets mounted immovably each side and in advance of the car-wheel flange, electrical conductors therefor, a conductor leading to the trolley-wire, and an electric switch to close said magnets in circuit, alternately.

2. In combination with a car having electro-magnets mounted each side and a little in advance of the wheel flanges, and near the track, conductors adapted to energize said magnets alternately from the trolley wire, and electrical switches for the re-

spective circuits, the combination of main and side-track rails, a guard rail, and a switch rail pivoted to swing a limited distance between the side and guard rails, the
5 switch rail being provided with a guide-plate coöperating with the rails each side, to prevent its lifting under the influence of magnetism.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN P. DOWD.
THOMAS P. DOWD.

Witnesses:

U. C. BLAKE,
LOUISE HATHAWAY.