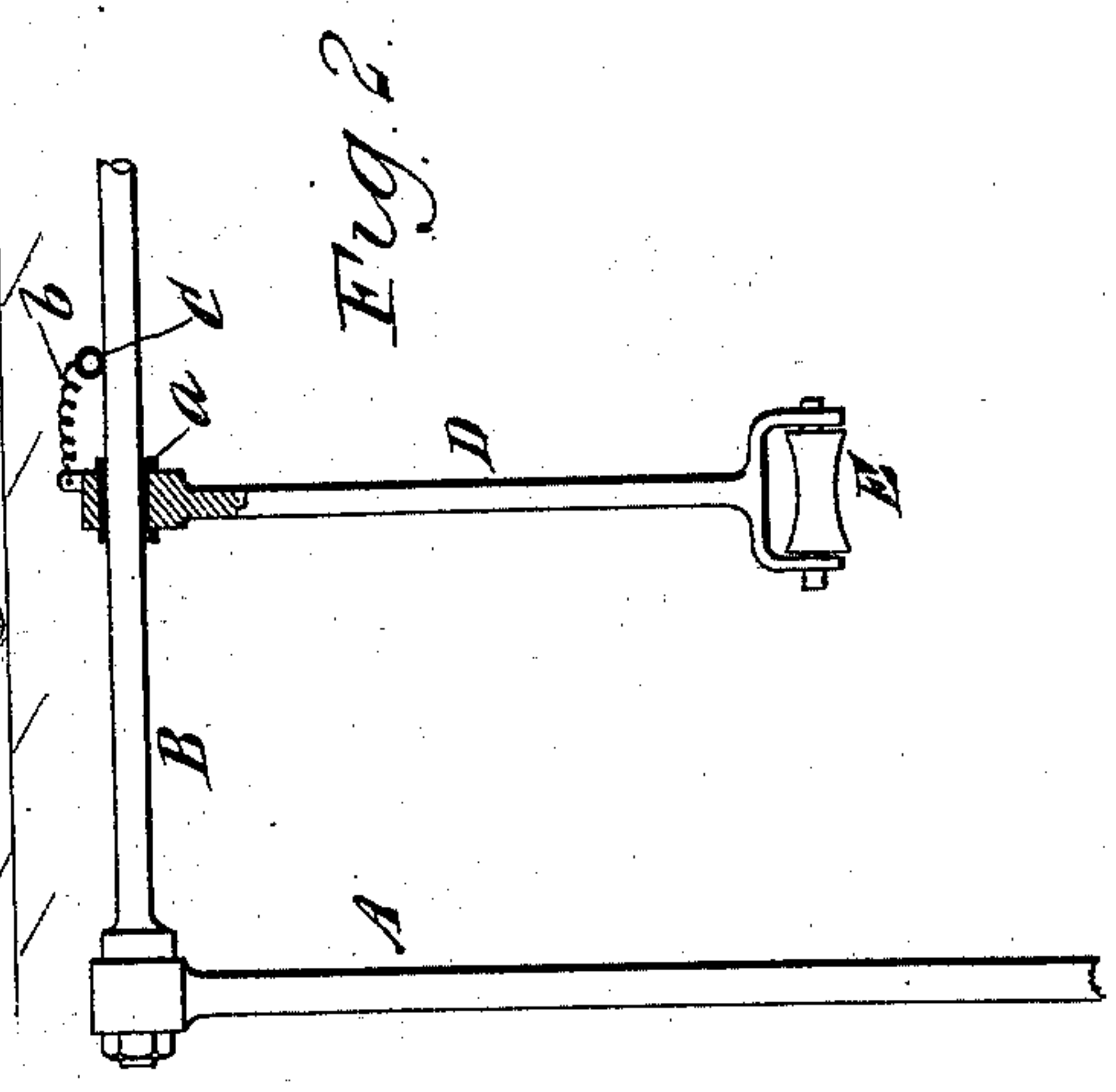
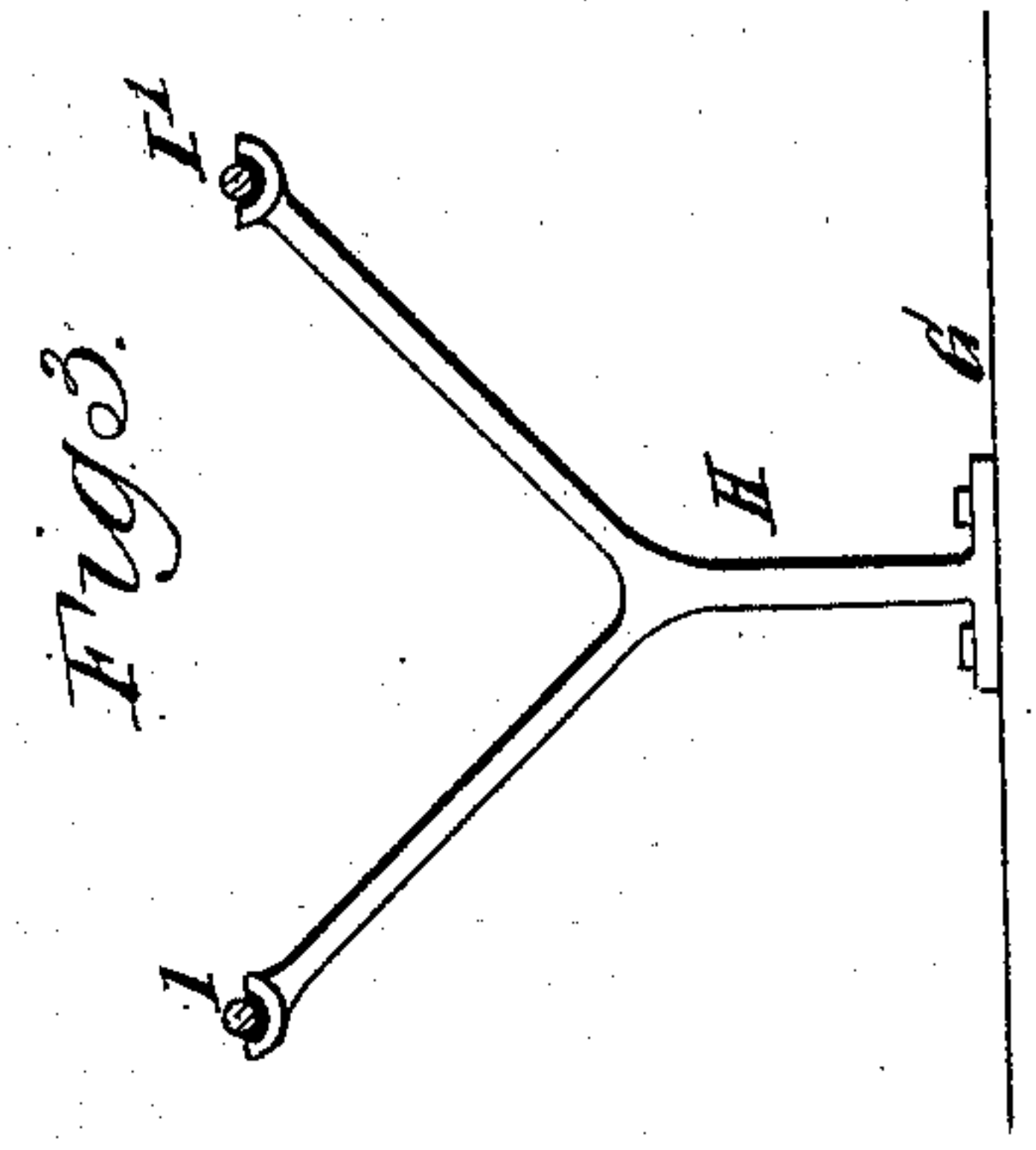
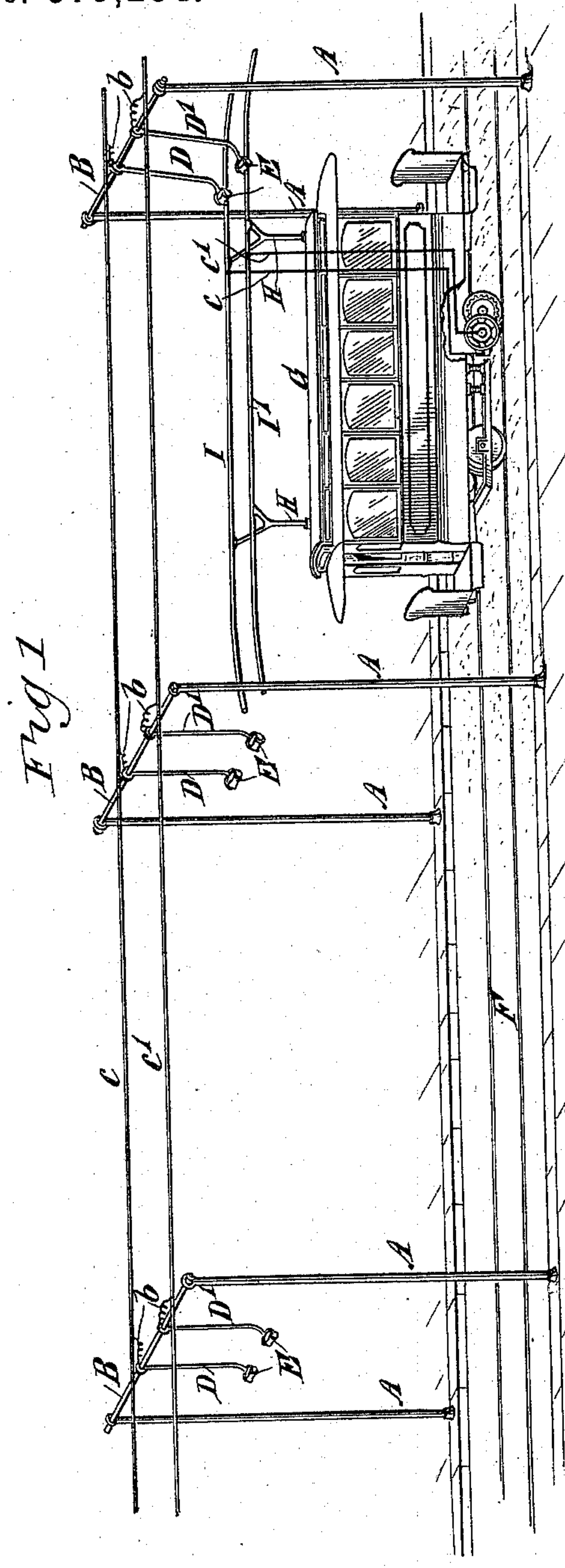


(No Model.)

A. C. O'CONNOR.
ELECTRIC RAILWAY.

No. 573,234.

Patented Dec. 15, 1896.



WITNESSES:
Paul J. Schott
G. M. Hopkins

INVENTOR
A. C. O'Connor
BY *Munn & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ANDREW CORNELIUS O'CONNOR, OF LYNN, MASSACHUSETTS.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 573,234, dated December 15, 1896.

Application filed October 26, 1895. Serial No. 566,953. (No model.)

To all whom it may concern:

Be it known that I, ANDREW CORNELIUS O'CONNOR, of Lynn, in the county of Essex and State of Massachusetts, have invented a new and Improved Electric Railway, of which the following is a full, clear, and exact description.

The object of my invention is to construct a railway in which the positive and negative conductors are carried overhead on insulated supports and in which the current may be conveyed from the power-station to and from the car-motor without employing the ground as a conductor.

My invention consists in a system in which poles are erected on opposite sides of a track to support cross-bars carrying the positive and negative conductors, also insulated swinging arms carrying rollers at their lower ends and connected at their upper ends with the positive and negative conductors.

It also consists in the combination, with a car, of two conducting-bars carried on supports projecting upward from the car and capable of engaging the rollers carried by the hanging arms, the said bars being insulated from each other and connected with the motor on the car, all as will be hereinafter more fully described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a section of a railway to which my improvement has been applied. Fig. 2 is a detail view of the hanging arm and its support; and Fig. 3 is a side elevation of the support for the bars carried by the car, showing the said bars in section.

The trolley-poles A are erected upon opposite sides of the track, preferably upon opposite sides of the roadway, as shown. The poles are arranged in pairs, and the poles of each pair are directly opposite each other. Each pair of poles supports a cross-bar B, on which are carried the positive and negative conductors C C'.

From the bars B are suspended arms D D',

which are insulated from the cross-bars B by an insulating-sleeve *a*, as shown in Fig. 2. The upper ends of the arms D D' are connected, respectively, with the conductors C C' and connected to the bars by means of flexible electrical connectors *b*. The lower ends of the arms D D' are forked, and each carry a roller E, having wide concave faces, as shown in Fig. 2.

The arms D D' are suspended above the track F, and the car G, running upon the track, is provided with two forked standards H, the arms of which support bars I I' of conducting material, the bars of course being insulated from the standards, as plainly shown in Fig. 3. The distance between the bars I I' corresponds with the distance between the rollers E, so that as a car moves along the track the bars I I' will come in electrical contact with the rollers E, the arms D D' being capable of swinging freely, so as to adapt themselves to the height of the bars I I'. The bars I I' are thus brought into electrical connection with the conductors C C', and the said bars are connected electrically with the motor carried under the car by wires *c c'*, as shown.

The distance between the successive pairs of arms D D' and rollers E is a little less than the length of the bars I I', so that as the car moves along the said bars will make contact with the rollers in advance before dropping the pair already engaged at the rear.

The current from the conductor C passes down the arm D, through the roller E, the bar I, and wire *c* to the motor, and returns through the wire *c'*, bar I', roller E, and arm D' to the conductor C'. It will be seen that by this arrangement the current is carried to the motor and returned to the conductor without going to the ground, the conductors C C' being thoroughly insulated from their supports.

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

In an electric-railway system, the combination of positive and negative wires arranged over a track, rods extended across the track

for supporting the wires, arms mounted to
swing on said rods, but insulated therefrom,
roller-contacts on the free ends of said arms,
permanentelectricalconnections between the
5 rods and wires, forked standards mounted
on a car, bars supported on said standards
but insulated therefrom, and connections be-

tween the bars and a motor on the car, sub-
stantially as specified.

ANDREW CORNELIUS O'CONNOR.

Witnesses:

TIMOTHY O'CONNOR,
JOHN N. O'CONNOR.