

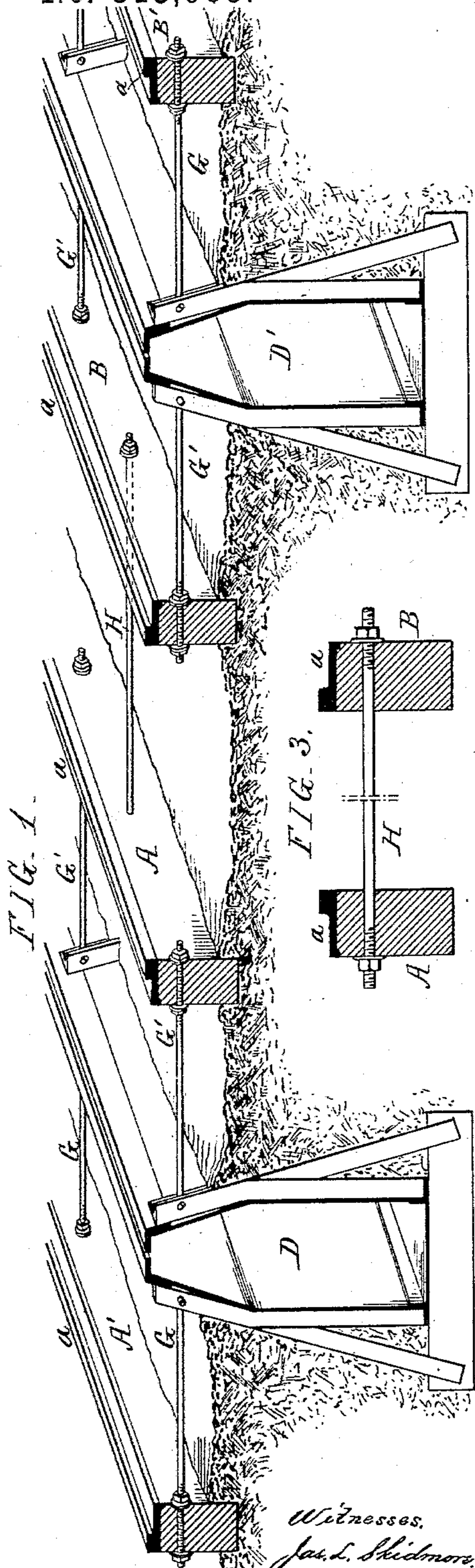
(No Model.)

W. WHARTON, Jr.

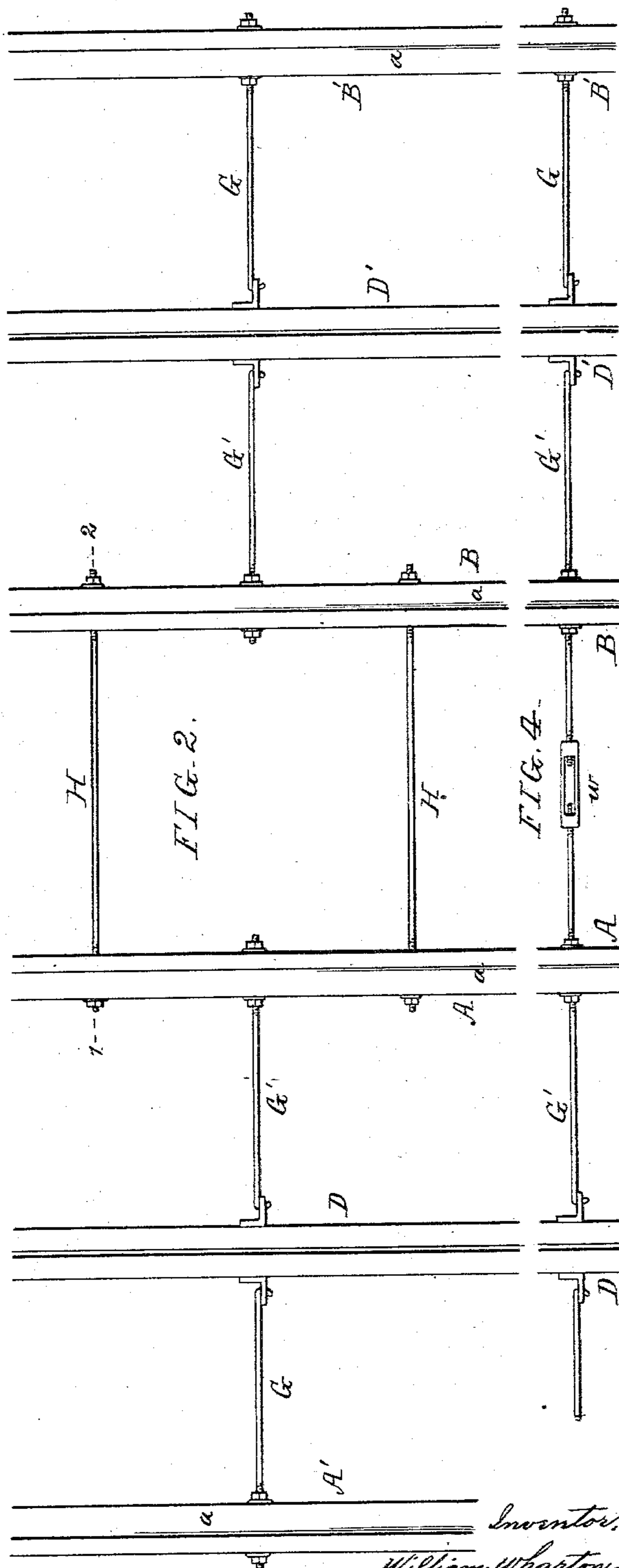
CABLE RAILWAY.

No. 315,983.

Patented Apr. 14, 1885.



Witnesses,
 Jas. L. Skidmore.
 Albert Popkins.



Inventor,
William Wharton, Jr.
by his Attorneys,
Howson and Sons

UNITED STATES PATENT OFFICE.

WILLIAM WHARTON, JR., OF PHILADELPHIA, PA., ASSIGNOR TO WILLIAM WHARTON, JR., & CO., (LIMITED,) OF SAME PLACE.

CABLE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 315,983, dated April 14, 1885.

Application filed February 3, 1885. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WHARTON, Jr., a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Cable Railways, of which the following is a specification:

My invention relates to double-track cable roads; and it consists in connecting the conduits to the sills of the tracks by adjustable stay-rods, substantially in the manner described and claimed, and for the purpose explained hereinafter.

In the accompanying drawings, Figure 1 is a sectional perspective view of part of a double-track street-railway, with a cable-conduit for each track, no pavement being shown in this view, as it would interfere with the proper exhibition of the longitudinal sills and transverse stay-rods; Fig. 2, a plan view of Fig. 1; Fig. 3, a transverse section, drawn to an enlarged scale, on the line 1 2, Fig. 2; and Fig. 4, a view illustrating a modification of my invention.

A and A' are the longitudinal sills of one track and B and B' the sills of the adjoining track of a double-track cable road, the usual rails, *a*, being secured to these sills. There are two cable-conduits, D D', one being situated midway between the sills of each track, and each conduit is connected to the sills of the track to which it appertains by a succession of adjustable stay-rods, G G'. Thus one side of the conduit D is connected to the sill A' by the adjustable stay-rods G, arranged at suitable intervals, and the opposite side of the conduit is connected by similar rods, G', to the sill A, a similar system of adjustable transverse stay-rods being combined with the sills and conduit of the other track. The inner sill A of one track is connected to the inner sill B of the other track by a succession of adjustable stay-rods, H, which are preferably arranged in respect to the stay-rods G G' in the manner shown in the plan view, Fig. 2. These stay-rods H constitute the important element of the combination forming the subject of my invention.

It will be necessary to refer here to the Letters Patent No. 281,593, granted to me July 17, 1883, in which a cable-conduit is connected by adjustable stay-rods to the sills of a single

track, "so that in laying the conduit it can be easily and permanently adjusted in its proper position, and the parallelism of the slot of the conduit with the rails quickly attained and positively preserved."

Practical experience in the construction and operation of cable roads of the class to which my invention relates has shown that it is more important to maintain a proper opening of the slot of the conduit than to maintain the parallelism of this slot with the rails of the track, for the gripping devices of the cars are permitted to have such lateral play that they readily accommodate themselves to the slot when the latter is out of truth with the rails. Permanent or non-adjustable connections between the sills and conduit have proved to be impracticable, owing to the influence of changes of temperature, many instances having occurred in which there has been such contraction of the slot, owing to the expansion of the soil during a frost, as to prevent the free traversing therein of the gripping devices. By making the transverse tie-rods adjustable, as in my aforesaid patent, this difficulty can be obviated to a certain degree.

The conduits often used for cable roads are those for which Letters Patent No. 287,220 were granted to A. Bonzano, October 23, 1883, and the adjustable tie-rods described in my said patent are especially applicable to these conduits, for, as the latter are made of sheet-iron, the sides are apt to yield during a frost, the slot consequently becoming contracted. The object of my present invention is to render these adjustable tie-rods more available in connection with double tracks, for insuring a proper width of slot in both conduits.

The maintenance of the outer side of the conduit D of one track in its proper position is dependent upon the sill A' and tie-rods G, the outer side of the conduit D' being held in place by the sill B' and similar tie-rods; but, owing to the intermediate tie-rods H, greater stability is imparted to the sills A and B, and they are in the best condition for permitting the rods G' to be used for increasing the width of the slots of both conduits when such increase is demanded.

Instead of intermediate rods, H, the rods G' 100

may extend from conduit to conduit, as shown in the modification Fig. 4; but the rods must in this case be secured to the two sills A and B, and should by preference be made in two sections connected together by right and left screw-coupling *w*.

It will be understood that the adjustment can be effected by taper keys, right and left screw-couplings, or other available adjusting appliances.

The rod G, instead of being connected to the outer sills of the two tracks, may be anchored to the roadway in the manner described in an application filed by myself and Edward Samuel, bearing even date herewith, and designated as application "D."

I claim as my invention—

The combination of the two cable-conduits of a double-track cable road and the sills of the tracks with adjustable stay-rods, whereby the inner sills of the two tracks are connected together and to the inner sides of the two conduits, substantially as set forth.

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

WILLIAM WHARTON, JR.

Witnesses:

HENRY HOWSON, Jr.,
HARRY SMITH.