

No. 611,820.

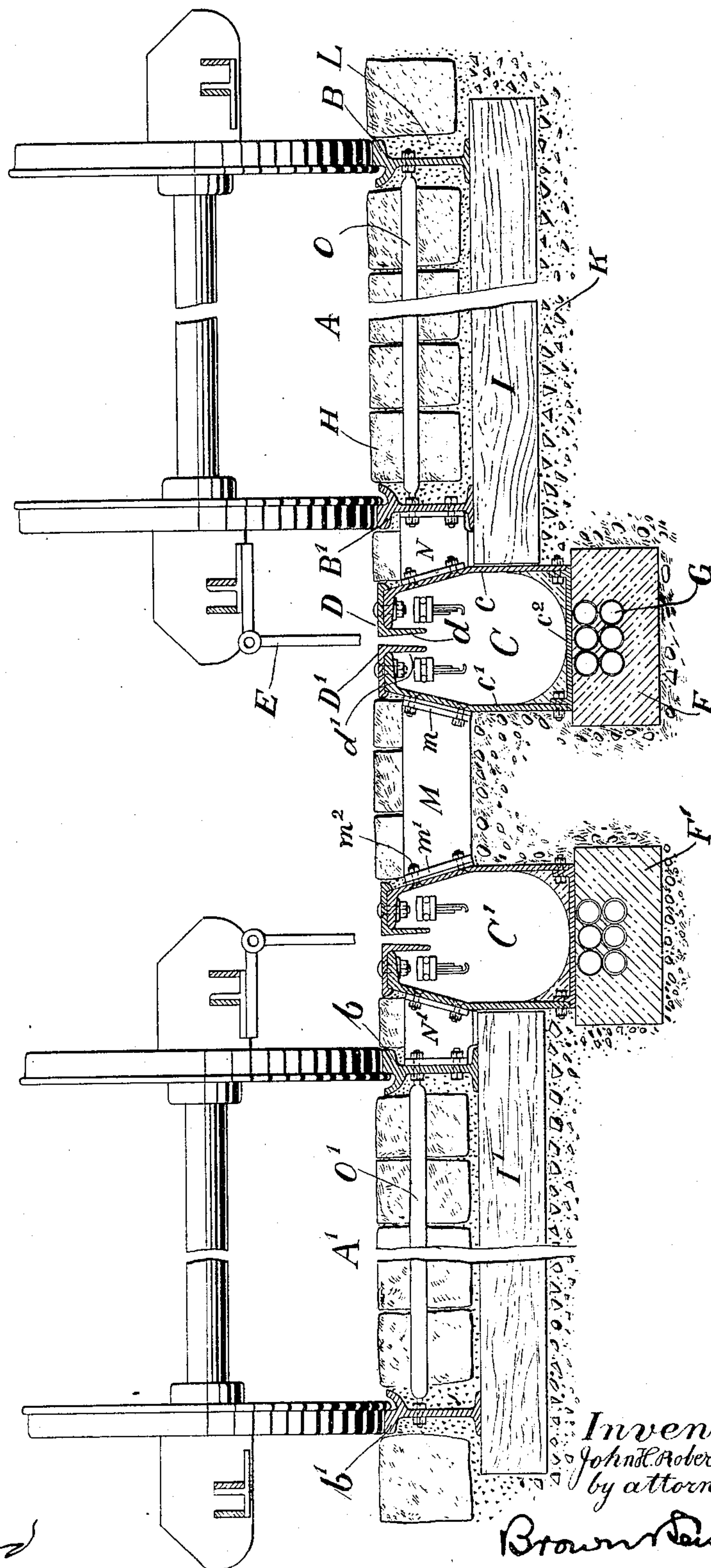
Patented Oct. 4, 1898.

J. H. ROBERTSON.
ROAD BED CONSTRUCTION.

(Application filed Mar. 30, 1898.)

2 Sheets—Sheet 1.

(No Model.)



Witnesses
John N. Tilly
H. Howard

Inventor:
John H. Robertson
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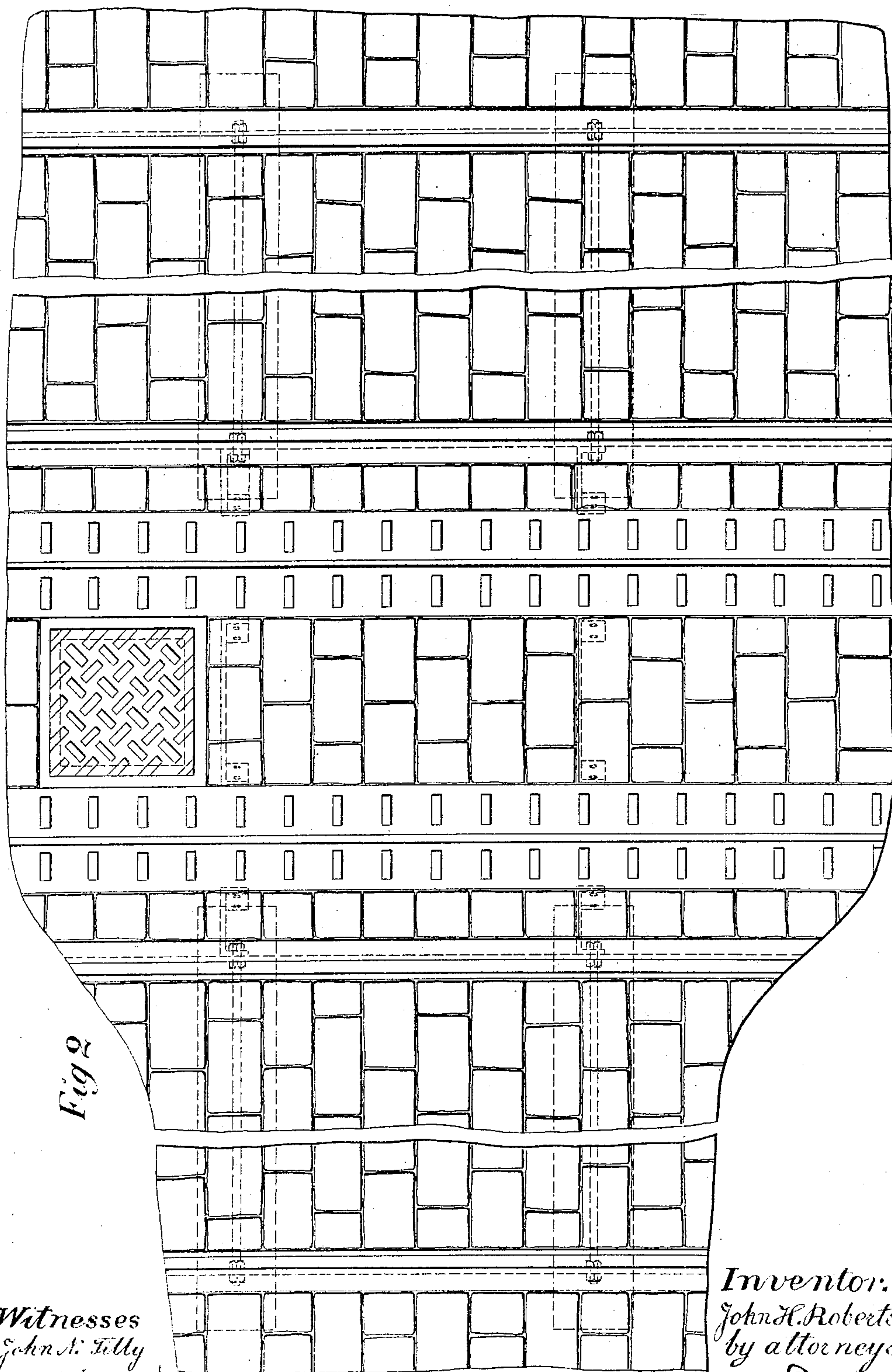
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UNITED STATES PATENT OFFICE.

JOHN H. ROBERTSON, OF NEW YORK, N. Y.

ROAD-BED CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 611,820, dated October 4, 1898.

Application filed March 30, 1896. Serial No. 585,352. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. ROBERTSON, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Road-Bed Construction, of which the following is a specification.

My invention relates to an improvement in road-bed construction, and more particularly to road-bed construction adapted for an underground trolley. In conduits for containing the power-transmitting wires, more particularly in climates where the changes in temperature are considerable and where the road-bed is disturbed by freezing and thawing, great annoyance is caused by the narrowing of the slot through which the trolley-arm extends.

My present invention has for its object a structure which will admit of forming the walls of the conduit of comparatively light material and at the same time provide for holding them so firmly in position as to prevent any liability of the narrowing of the slots under the abnormal conditions of the road-bed and at the same time keep the interior of the conduit free from objectionable obstruction.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents a transverse vertical section through a double-track road-bed and the conduits for carrying the power-transmitting wires, and Fig. 2 is a top plan view of a portion of the road-bed.

The two tracks are denoted, respectively, by A and A', the rails of the track A being denoted by B B' and the rails of the track A' being denoted by b b'.

The conduits containing the underground wires are denoted, respectively, by C and C', the conduit C being located at the side and beyond the confines of the track A and the conduit C' at the side and beyond the confines of the track A'. The conduits C C' are built in the space which is commonly left between the inner rails of the tracks of a double-track road and as near the adjacent or inner rails of the two tracks as is consistent with room for gaining access to the exterior walls of the conduits. The conduits are

formed of side plates *c c'* of suitable lengths to be conveniently handled and having their upper portions slightly inclined toward each other, the bottom plate *c²*, bolted to the lower edges of the side plates, and slot-irons D D', bolted to the top horizontally-turned flanges of the side plates and provided with depending flanges *d d'*, which extend downwardly within the mouth of the conduit and form between them the slot along which the trolley-arm E of the car or other vehicle extends.

The conduits C C' are built upon beds F F', of cement or other suitable substance which is not liable to deteriorate or become broken or otherwise disturbed and which at the same time will form a suitable support for embedding therein a nest of pipes or casings G for carrying the supply-wires to furnish the upper transmitting-wires with the required amount of electricity at suitable intervals. The conduits are placed at such a depth as to bring the upper faces of the slot-irons D D' slightly below the general surface of the road-bed, which is here shown as formed of paving-blocks H.

The rails B B' b b' rest upon ties I I', which are preferably embedded in what is known as "grout," (indicated at K,) and the interstices between the paving-blocks are filled with sand, (indicated by L.)

The walls of the conduits are held in fixed relation to each other by means of tie plates and bars, arranged as follows:

Between the two conduits there is a deep tie-plate M, the ends of which are provided with flanges *m m'*, turned at an angle to the body of the plate and slanted to conform with the inclined position of the upper portions of the side walls of the conduits, to which they are bolted by bolts *m²*. This plate serves to hold the slot-irons on the adjacent walls of the conduits in fixed relation relative to each other. Shorter tie-plates N N', preferably having a depth corresponding to the depth of the tie-plate M and having flanges at their end turned in a manner similar to the flanges on the plate M, are fitted to the spaces intervening between the rails B' b and the walls of the conduits adjacent thereto and are bolted securely to the webs of the rails and to the walls of the conduits. This serves to hold

the opposite walls of the conduits, and hence the slot-irons connected therewith, in fixed relation to the track-rails adjacent thereto, and any movement of the wall of the conduit toward the opposite wall must include a movement of the rail B' or *b* laterally in its bed. The rails, however, are when properly laid substantially immovable in a lateral direction, and hence the walls of the conduit securely supported thereby. In order, however, to add additional security to the permanency of the walls of the conduits, the rails of each of the tracks are tied together by bars O O', which are securely fixed to the webs of the rails and are embedded in the road-bed. This structure renders it necessary to force both the rails laterally in their beds in order to enable the walls of the conduits to close and carry with them the slot-irons to narrow the slot, and as such a movement of the rails is substantially impossible so long as the track is kept in order the permanency of the slot of the desired width is absolutely secured.

By arranging the ends of the ties I I' to abut against the outer walls of the conduits their position is further strengthened.

Access to the interior of the conduit may be had by the removal of the paving-blocks intermediate of the conduits, handholds of any

well-known or approved form being arranged in the walls of the conduits at suitable intervals.

What I claim is—

1. The combination with a railway-track and a conduit at the side and beyond the confines of the track, the said conduit comprising a bottom plate and side plates secured thereto, of tie-plates of substantially the depth of the web of the rail connecting one of the side plates of the conduit with the web of the rail adjacent thereto, whereby an extended connection is formed between the said side plate and rail, substantially as set forth.

2. The combination with a double track and conduits located in the space between the inner rails of the two tracks each of said conduits comprising a bottom plate and side plates secured rigidly thereto, of deep tie-plates connecting the adjacent side plates of the conduits and tie-plates substantially the depth of the webs of the rails connecting the outer side plates of the conduits with the webs of the inner rails of the two tracks, substantially as set forth.

JOHN H. ROBERTSON.

Witnesses:

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