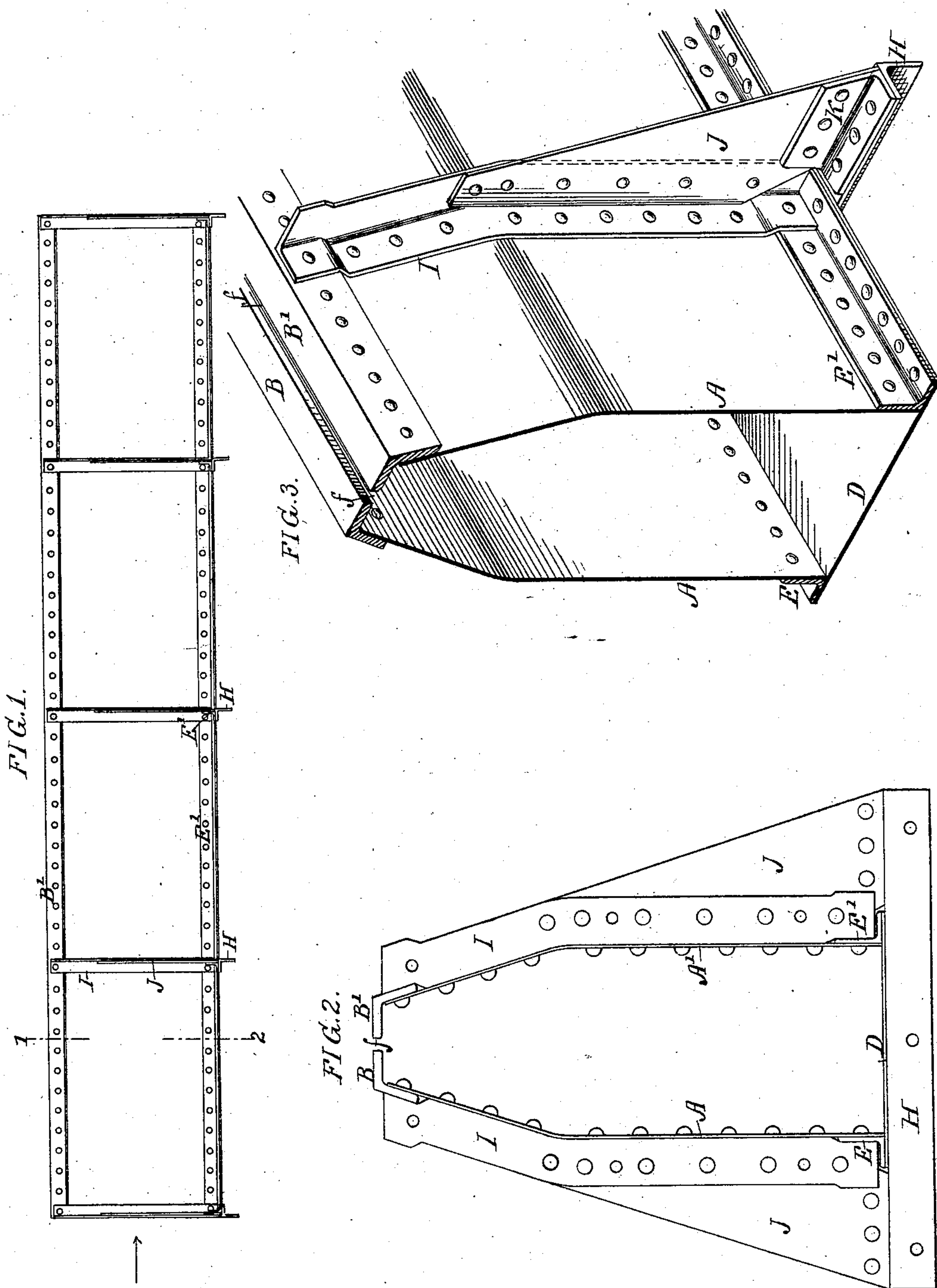


(No Model.)

A. BONZANO.
TRACTION ROPE RAILWAY.

No. 281,440.

Patented July 17, 1883.



WITNESSES:

Harry L. Ashenfelter
Harry Smith

INVENTOR:

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UNITED STATES PATENT OFFICE.

ADOLPHUS BONZANO, OF PHOENIXVILLE, PENNSYLVANIA.

TRACTION-ROPE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 281,440, dated July 17, 1883.

Application filed May 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, ADOLPHUS BONZANO, a citizen of the United States, and a resident of Phoenixville, Pennsylvania, have invented certain Improvements in Conduits for Traction-Rope Railways, of which the following is a specification.

My invention relates to the construction of underground conduits for traction-rope railways, consisting of a series of united sections, each of which is a self-contained girder of wrought-iron, the upper chord of the girder having a continuous slot, all substantially as described hereinafter.

In the accompanying drawings, Figure 1 is a side view of a girder-like section of my improved conduit for traction-rope railways; Fig. 2, an end view drawn to an enlarged scale, and Fig. 3 a sectional perspective view on the line 1 2.

The conduit is made in sections, each section being composed of opposite rolled side plates, A A', the upper portions of which converge toward each other, the angle-iron bars B B' riveted to the plates at the upper edges of the same, and the bottom plate, D, extending throughout the entire length of the section, and secured to the side plates by means of angle-irons E E'.

It will be seen that the above-described parts constitute a self-contained girder, of which the angle-iron bars B B' are the upper chord, and the plate D and angle-irons E E' the lower chord. This girder-like section of a conduit has in the top a continuous slot, f, large enough to admit the arm which extends from the car to the traction-rope within the conduit, the slot being formed by arranging the angle-irons B B' at a suitable distance apart.

As the wheels of ordinary vehicles have frequently to cross the horizontal portions or the angle-irons B B', the opposite sides of the girder will necessarily be subjected to lateral strains by the constant crossing of vehicles, and hence it might be difficult to maintain the slot of a uniform width. For this reason I re-enforce the opposite sides of the girder, so as to impart to them lateral rigidity. While this may be done in different ways, I prefer the plan which I will proceed to describe.

At each end of each section, and at as many intermediate points as may be deemed necessary, I secure to the under side of the bottom plate, D, a transverse bar, H, preferably of angle-iron, which extends beyond each side of the girder, and to each of the side plates, A A', wherever one of these transverse bars H occurs, I secure an angle-iron rib, I, which extends nearly from the bottom to the top of the girder, and is riveted to the upper and lower angle-irons of the same.

A triangular plate, J, is riveted to one of the flanges of the angle-iron rib I, the lower edge of the plate being secured by means of the angle-iron K to the transverse bar-iron H. These plates J form a series of diagonal braces which impart the desired lateral rigidity to the opposite side plates of the girder.

As there is a bar H and angle-iron rib I at each end of each section, on each side of the same, flanges are afforded, by means of which a series of the girder-like sections may be readily bolted together.

It has not been deemed necessary to illustrate or describe the pulleys for the traction-rope or the provision made for gaining access to the interior of the conduit, as these form no part of my present invention.

I claim as my invention—

1. A traction-rope conduit made in sections, each consisting of a self-contained girder in which opposite side plates, A A', are combined with a bottom plate, D, and with two angle-irons, B B', arranged at an appropriate distance apart and forming the upper chord of the girder, all substantially as set forth.

2. The combination of the within-described girder, composed of the sides A A', bottom plate, D, angle-irons E E', and angle-iron bars B B', with transverse bars H, angle-iron ribs I, and brace-plates J, riveted together and to the girder, all substantially as specified.

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

ADOLPHUS BONZANO.

Witnesses:

JOHN SPARHAWK, Jr.,
HUBERT HOWSON.