

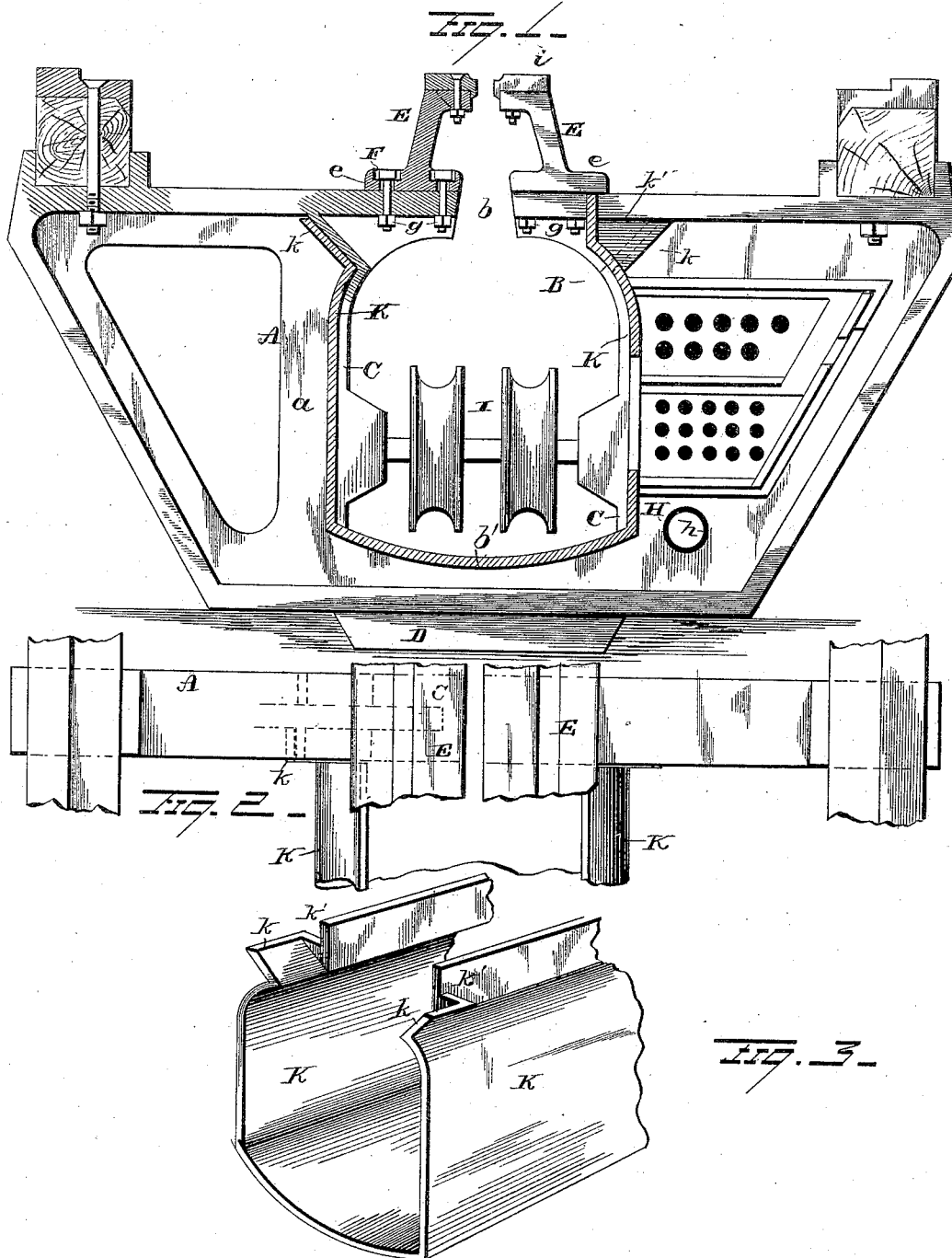
(No Model.)

E. D. DOUGHERTY.

TRACTION UNDERGROUND RAILWAY.

No. 341,892.

Patented May 18, 1886.



WITNESSES

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TRACTION UNDERGROUND RAILWAY.

SPECIFICATION forming part of Letters Patent No. 341,892, dated May 18, 1886.

Application filed February 3, 1886. Serial No. 190,713. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. DOUGHERTY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Traction Underground Railways; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in traction underground railways, and more particularly to the construction of the supporting-brackets and conduit-tube.

The object is to provide a bracket in which the base of the conduit-aperture shall be concave to afford, in connection with a tube having a concave base, an efficient drain, and in which the tube-retaining flange shall be flared at its upper ends to afford free access from within the conduit to the bolts which retain the slot-irons in position.

A further object is to provide a strengthening-flange on the base of the bracket to compensate for the loss of metal caused by the dish-ing of the base of the conduit-aperture, which flange shall at the same time afford assistance in securing the bracket in an upright position.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the bracket in side elevation. Fig. 2 is a plan view of the bracket and a portion of the conduit, and Fig. 3 is a detached view of one end of the conduit.

A represents a bracket having flaring ends and horizontal top and base. In its center is an aperture, B, corresponding to a cross-section of the cable-conduit, which has a narrow opening, *b*, through the top of the bracket for the passage of the grip. The base of the aperture B is concave or dished, as shown at *b'*, to conform to the concave base of the conduit-tube and form a smooth channel to serve as a drain.

The concave base of the aperture B tends to weaken the bottom of the bracket at its middle point, the point where it naturally will sustain the greatest strain. To compensate for this weakness, a depending flange, D, is cast on

the lower side of the base of the bracket for a distance equal to the width of the aperture B, more or less. The flange D is made sufficiently deep and thick to sustain the greatest strain which the bracket would have to sustain, and serves a useful purpose in steadying the bracket in an upright position. By strengthening the bracket in this manner the metal is so disposed as to afford maximum strength with a minimum amount of metal.

Around the edge of the aperture B is formed a flange, C, extending laterally from the web *a* of the bracket. On each side of the opening *b*, however, and at equal distances therefrom, the flange C is turned away from the opening *b* and extends diagonally upward to the top of the bracket.

E E represent the slot-irons, adapted to rest on the top of the bracket A, one on each side of the opening *b*. The flanges *e* at the bases of the slot-irons are provided with countersunk bolt-holes F, the said holes being elongated transversely to the length of the slot-irons to admit of the latter being adjusted toward and away from each other, as may be required. The bolt-holes F extend through the top of the bracket A at the side of the web *a*, and the nuts *g* are applied to the bolts G from within the conduit. The turning back of the flange C at its upper ends affords free access to the nuts *g* when the tube and bracket are connected and in position for use.

The top of the bracket is level and free from lugs and projections, with the exception of the pair of lugs on each end between which the stringers are secured.

The bracket on one side of the aperture B is open to allow a workman to pass through, and on the opposite side of the aperture is provided with insulating perforated plates adapted to form supports for electric conductors. The bracket is also provided on one or both sides of the aperture B with an opening or openings, H, through which extends a pneumatic tube, *h*, for the transmission of packages by compressed air, thus economizing space and material by making the railway-supporting bracket serve at the same time as a support for the pneumatic way.

A pair of cable-pulleys, I, are mounted within the aperture B, and removable shoes *i* are

preferably secured to the upper faces of the slot-irons, as shown and described in my former patent.

K represents one of the tube-sections which form the conduit. It is shaped at its ends to conform to the flange C about the aperture B, its flaring lips *k* extending back from its end a distance equal to the width of the flange C. At the edge of the flange C the lips *k* extend for a short distance toward each other transversely to the tube, as shown at *k'*, and from thence extend upwardly to the bases of the slot-irons, forming a close joint therewith between each two adjacent brackets, and thereby preventing the entrance of dirt or trash into the cable-conduit.

The bracket and tube as thus constructed form a simple, neat, and durable combination, convenient to keep in order, and adapted to use in the construction of all ordinary single or double cable roads.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

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

1. In a supporting-bracket for traction underground railways, the combination, with the bolts adapted to secure the slot-irons to the bracket, of the flange surrounding the cable-conduit aperture shaped flaring at its upper ends to give free access to the bolts from within the cable-conduit, substantially as set forth.

2. In a supporting-bracket for traction underground railways, the combination, with the

slot-irons secured to the top of the bracket in lateral adjustment, and the bolts extending through the top of the bracket at the side of the web, of the flange about the cable-conduit aperture turned back from the mouth of the aperture, leaving free access to the said bolts from within the conduit, substantially as set forth.

3. A supporting-bracket for traction underground railways provided with a cable-conduit aperture having a concave or dished base, and with a tube-retaining flange surrounding the aperture excepting at the upper end, and turned back from the mouth of the aperture toward the top of the bracket, substantially as set forth.

4. The supporting-bracket substantially as described having a flat base and provided with a cable-conduit aperture, the latter having a concave bottom or floor, and a strengthening-flange formed on the lower face of the flat base immediately under the concave bottom of the cable-conduit aperture, substantially as set forth.

5. The combination, with the bracket provided with the flaring flange around the margin of the cable-conduit aperture, and the slot-irons resting on the bracket, of the conduit-tube having flaring lips adapted to conform to the said flaring flange, and upright lips adapted to close the opening between the tube and the slot-irons, substantially as set forth.

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

EDWARD D. DOUGHERTY.

Witnesses:

R. PARTENHEIMER,
ELI HESS.