

C. T. HARVEY, DEC'D.
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ELEVATED RAILWAY.

APPLICATION FILED JULY 22, 1911. RENEWED MAR. 10, 1913.

1,060,566.

Patented Apr. 29, 1913.

3 SHEETS—SHEET 1.

Fig. 1.

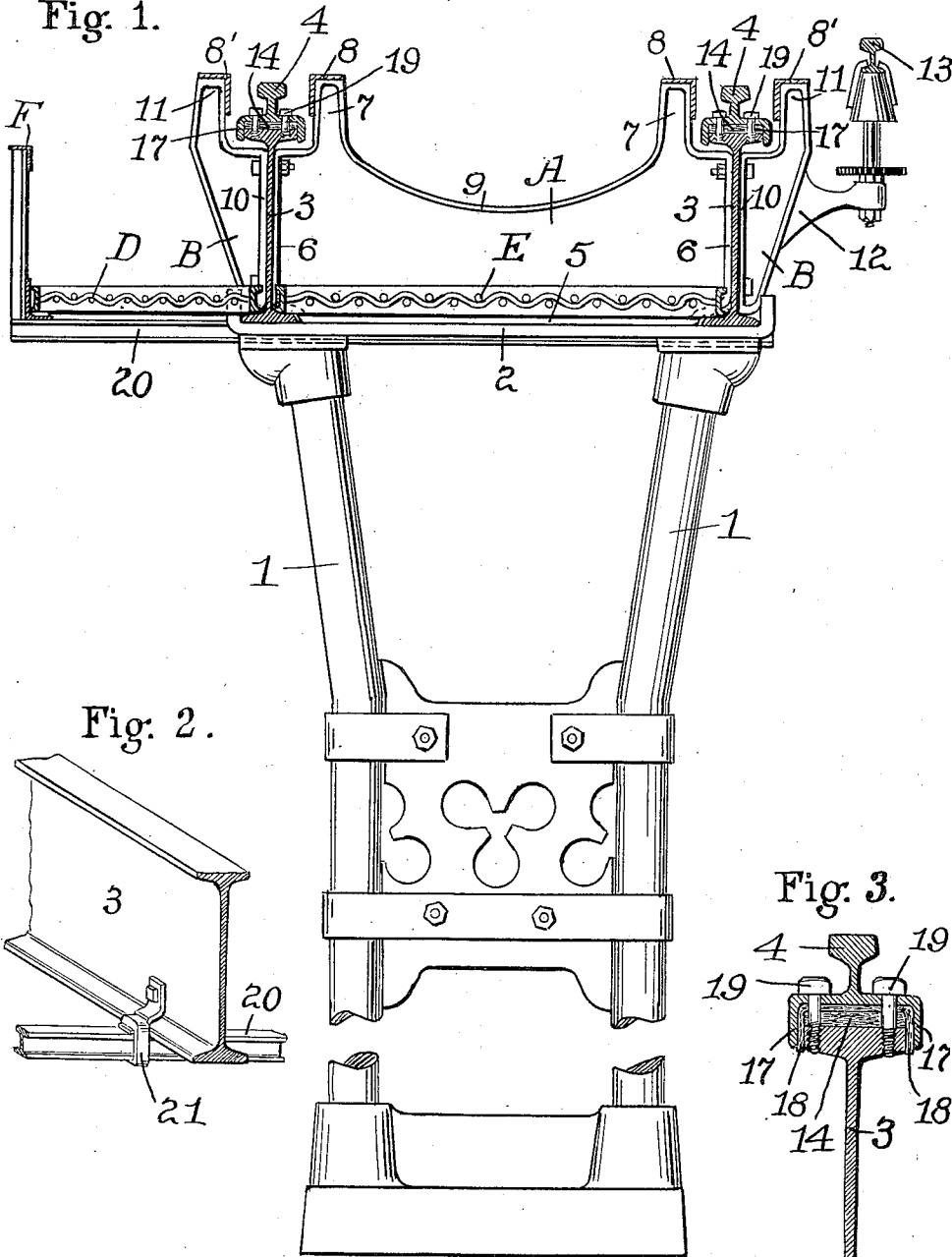


Fig. 2.

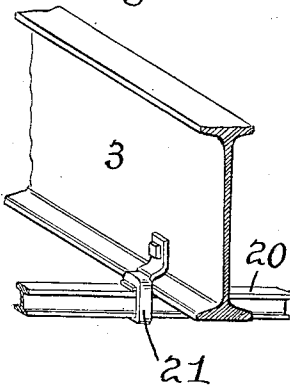
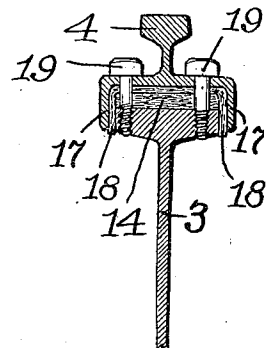


Fig. 3.



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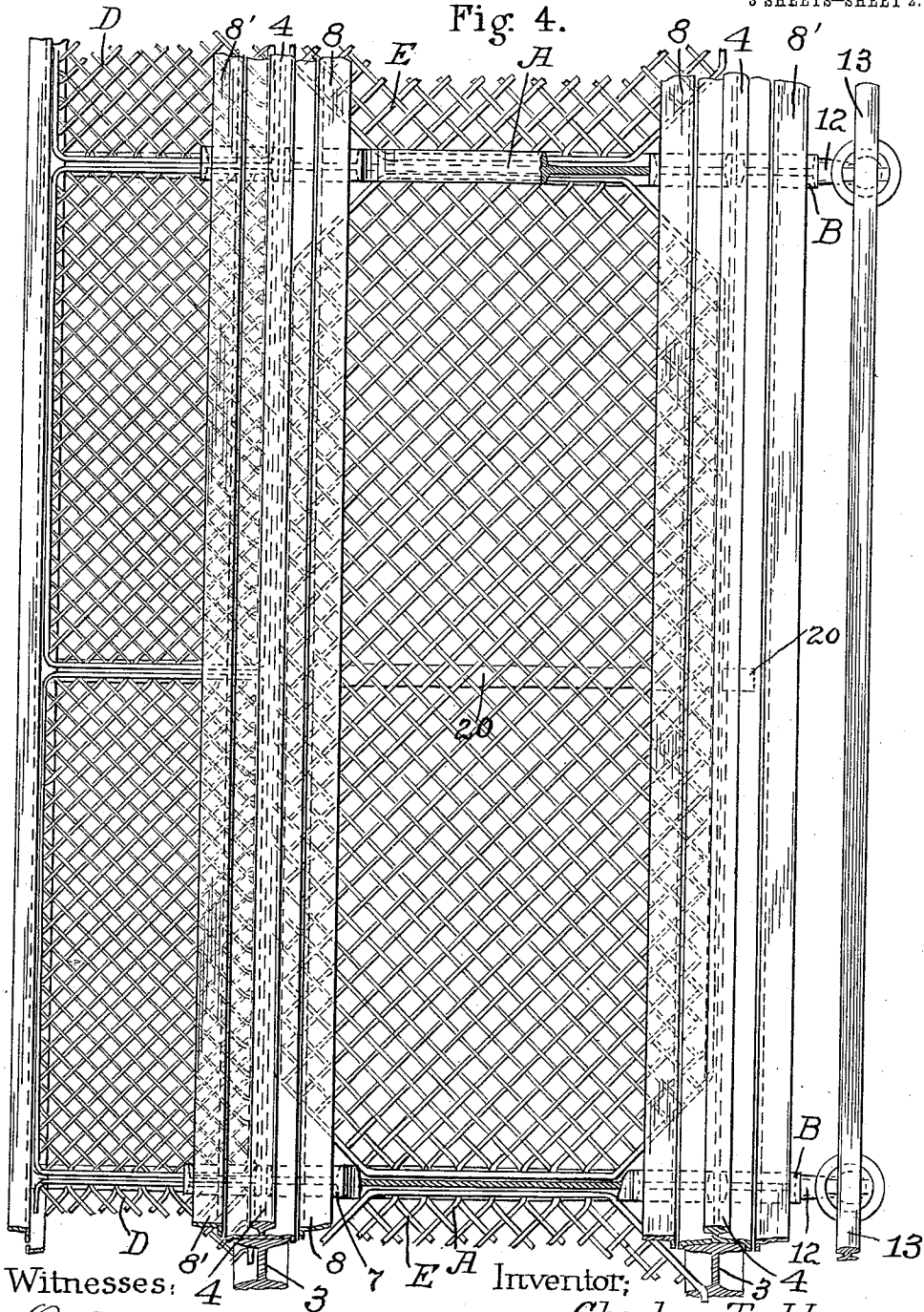
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3 SHEETS-SHEET 2.



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3 SHEETS-SHEET 3.

Fig. 5.

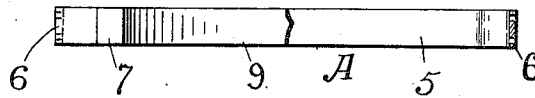


Fig. 6.

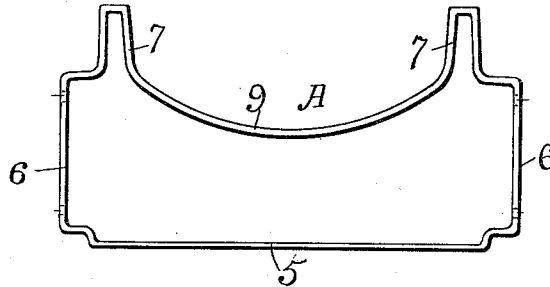


Fig. 7.

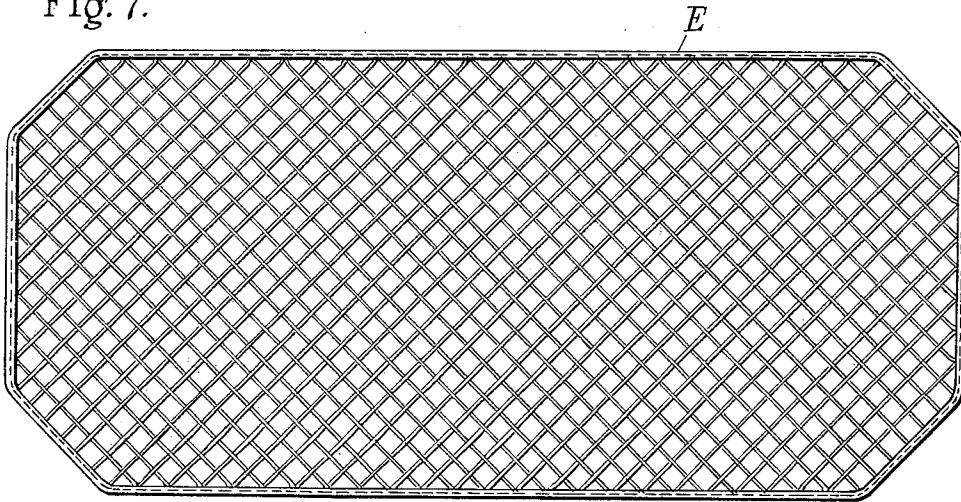


Fig. 8.

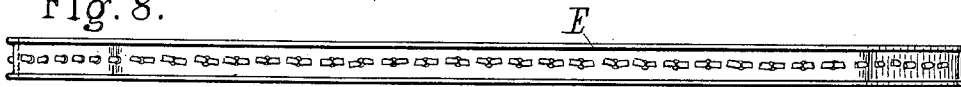
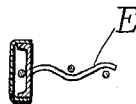


Fig. 9.



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UNITED STATES PATENT OFFICE.

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ELEVATED RAILWAY.

1,060,566.

Specification of Letters Patent.

Patented Apr. 29, 1913.

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To all whom it may concern:

Be it known that I, CHARLES T. HARVEY, citizen of the United States, residing at New York, N. Y., have invented certain new and useful Improvements in Elevated Railways, of which the following is a specification.

My invention, relating to elevated railways, is illustrated in the accompanying drawings, in which—

15 Figure 1 represents a cross section of the track, showing the other parts in side elevation; Figs. 2 and 3 show details hereinafter more fully explained; Fig. 4 shows the portion of the railway in plan or top view, with the upper flanges of the connecting frames broken away. Fig. 5 is a top view, partly in section, of the frame A. Fig. 6 shows a side view of the same. Figs. 7, 8 and 9 are respectively plan, edge, and partial section of the frame of steel with the wire floor.

20 The objects sought in this invention are: first, an ornamental appearance in streets rendered possible by the nearly exclusive use of steel in the component parts of the structure; second, a minimum obstruction to light and air caused by the compactness of the track frame and the use of open meshed metallic decks or foot walks between the supporting beams and flanged ties, and like construction of the continuous foot walk parallel to and connected with the main track frame; with upright open meshed side guards to same with end view F in figure; third, minimizing vibratory noise arising from passage of trains over the metal track frame sections, by the construction and insertion of cushions of fiber or equivalent material between the track rails and beams and tie frame flanges to prevent metallic concussion; fourth, special safeguard for safety of trains by the use of double flanged track rails which exert side as well as top pressure upon the supporting beams, effectually safeguarding against displacement or breaking of the track rails; fifth, by the adding of steel angle guards parallel to the track rails to prevent car trucks from leaving the track in case of a broken wheel or axle, these being sustained by a special bearing upon the flanged cross ties affording ample strength and immovable bearings; sixth, the placing of the third or electricity conducting rail upon brackets in position where least likely to endanger persons using the foot path, or track inspectors

passing over the midway decks before mentioned.

Referring to the drawings, it will be observed that the track is shown as supported by columns 1, 1, in pairs, these being representative of any form of elevated railway support. Across the head of each pair of columns or equivalent support, and at suitable intervals, is a cross tie 2 of steel, on which rest the track beams 3, double flanged on both edges, the outer flange of which at the bottom bears against the upturned ends of the ties. These steel beams 3 are coterminous with, and support the rails 4, 4. They are connected and braced by the tie frames A preferably of one piece, and of the form shown in Figs. 1, 5 and 6. Each has a lower part 5 and an upright part 6 at each end, which latter abuts against the web of the beam 3. The upper part of the frame near each end is extended upwardly at 7, these extensions being located at a distance from the rails, suitable for the holding of a guard-rail 8 in proper relation to the rail. The frames between the extensions 7 have their upper flanges curving downwardly. The vertical parts 6 of the frame are bolted to the web of the track beams 3. Corresponding frames B, B are fixed to the outside of the beam. These frames B have each a vertical part 10 held to the beam by the same bolts which hold the frame A. The outer limit of each frame B is carried up to form an extension 11, corresponding in shape and location to the extensions 7.

Fixed to the outside of the frames B on one side of the track only, are arms 12 carrying posts which sustain the electric conductor rail 13. This construction carries the conductor-rail outside the track and leaves the space between the rails free and safe for inspectors or guards to walk on. The frames B, on both sides, are alike, excepting as to the bracket 12.

The outside and inside extensions 7 and 11 of the frames carry angle irons 8, 8', one of which connects the outside and the other the inside series, and these irons form guards and at the same time strengthen the structure. The frames thus strengthened exert side as well as top resistance, and prevent serious accident from breakage or displacement of the track rails. The guard-rails prevent the car trucks from leaving the track, in case of a broken wheel or axle.

The track rails 4 are supported on the upper flanges of the beams 3, with interposed packings of fiber or other like substance 14. These rails are rolled with the base flanges turned down at the edges, to form a cap, as shown in Fig. 1 at 17. Suitable packing is interposed to deaden the vibration. This may be in one strip as in Fig. 1, or a narrow strip may be laid on the beam, of equal width therewith, and over this a wider strip may be placed, the edges of which are turned down, as shown at 18 (Fig. 3), to afford lateral protection.

Bolts, as 19, connect the rail to the beam. They are vertically arranged to avoid shearing action and to permit vertical vibration on the packing. The packing is continuous with the rail, and takes up the shock caused by the passing of the train, both lateral and downward. The turned down flanges of the rail base protect the packings and hold them in place. I form the walk by the side of the track by frames D and the floor between the rails of stout woven wire or equivalent to metallic surfaces of frames E both holding forming open meshed decks and walks. These are made in sections, the woven wire or equivalent material being carried by the frames of steel, which frames are supported from the structure in suitable manner. To aid in thus supporting, the walk beams 29 are supported from the beams 3 by clips 21, Fig. 2. The side walk is shown at D, side guard at F and the deck or floor at E. These floors prevent the falling of any large bodies, and at the same time do not materially exclude the light.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In combination with a track beam of an elevated railroad, a rail having vertical flanges depending from the edge of the base,

on each side and fitting over the edges of the head of the beam, vertical bolts passing through the flanges of the rail base, and connecting the rail and beam, and packing interposed between the rail and beam, said packing extending over the top of the beam and down over the edges substantially as described.

2. In combination with the track beams of an elevated railroad, the track tie and guard rail holder comprising an inner frame which connects the beam, and an outer frame which supports the guard rail, both frames having vertical parts and loops, the vertical parts being bolted to the track beams, and angle irons on said loops, substantially as described.

3. In an elevated railway and in combination, the columns in pairs and cross-beams thereon, the double flanged main beams, the flanged rails supported on the beams, the inner connecting and outer guard rail frames, both having vertical parts bolted to the beams, the cross beams suspended from the lower flanges of the main beams, and the open meshed deck and foot walks, substantially as described.

4. In an elevated railway and in combination, the double flanged main beams, the inner and outer supporting frames, tie rods engaging the lower flanges of each pair of the main beams, cross beams suspended from the main beams and the open meshed decks and walks formed of frames and wire supported on said cross beams, substantially as described.

In testimony whereof, I affix my signature in presence of two witnesses.

CHARLES T. HARVEY.

Witnesses:

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