(No Model.)

3 Sheets—Sheet 1.

R. P. WALSH.

CABLE RAILWAY.

No. 394,040. Patented Dec. 4, 1888.

Fig. I.

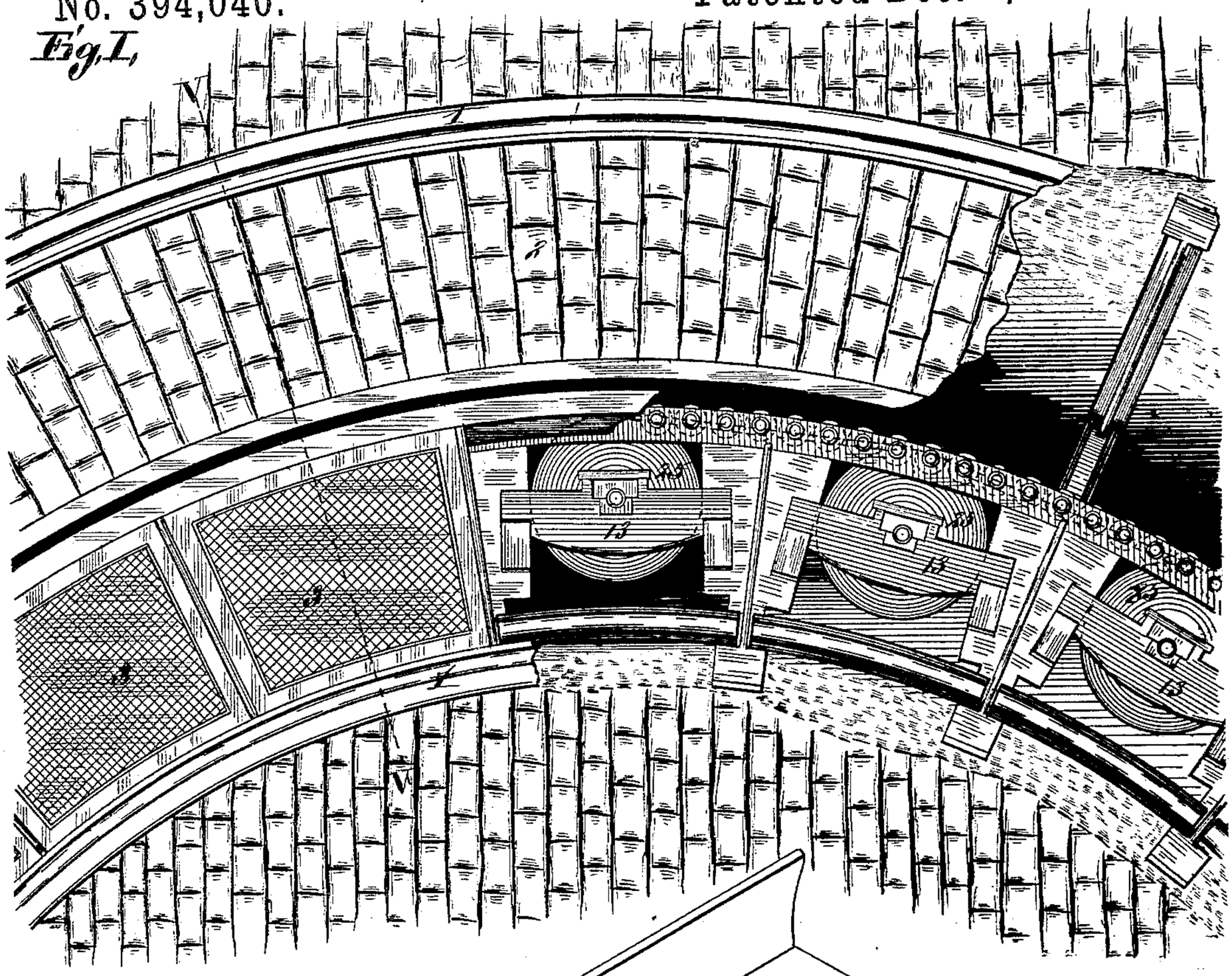


Fig. II.

Attest:
E. Arthur.
E. Knight.

Inventor:
Richard P. Walsh.
By Knight Bros.
Atty's.

(No Model.) 3 Sheets—Sheet 2.

R. P. WALSH.

CABLE RAILWAY.

No. 394,040. Patented Dec. 4, 1888.

Fig. III,

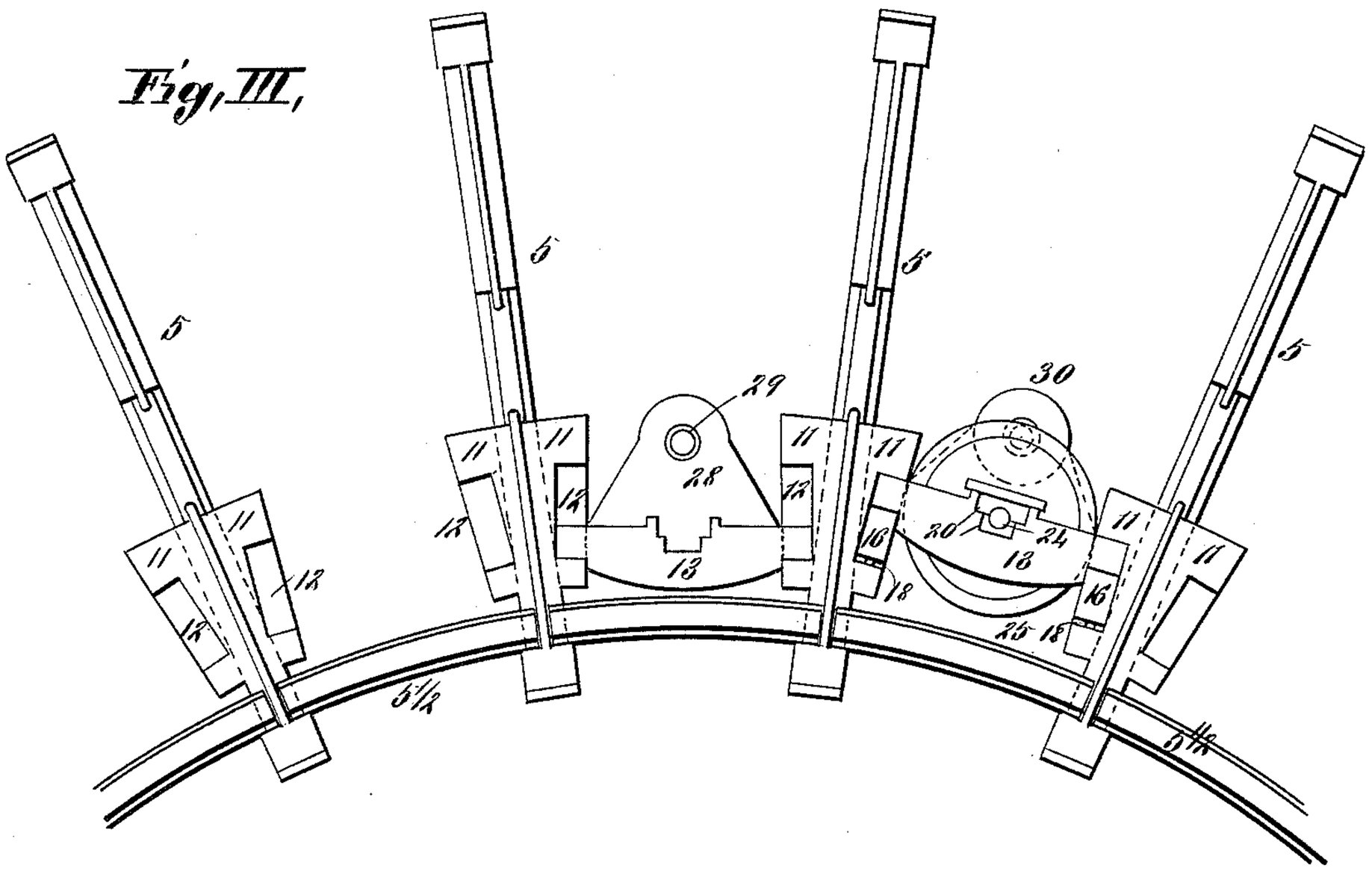
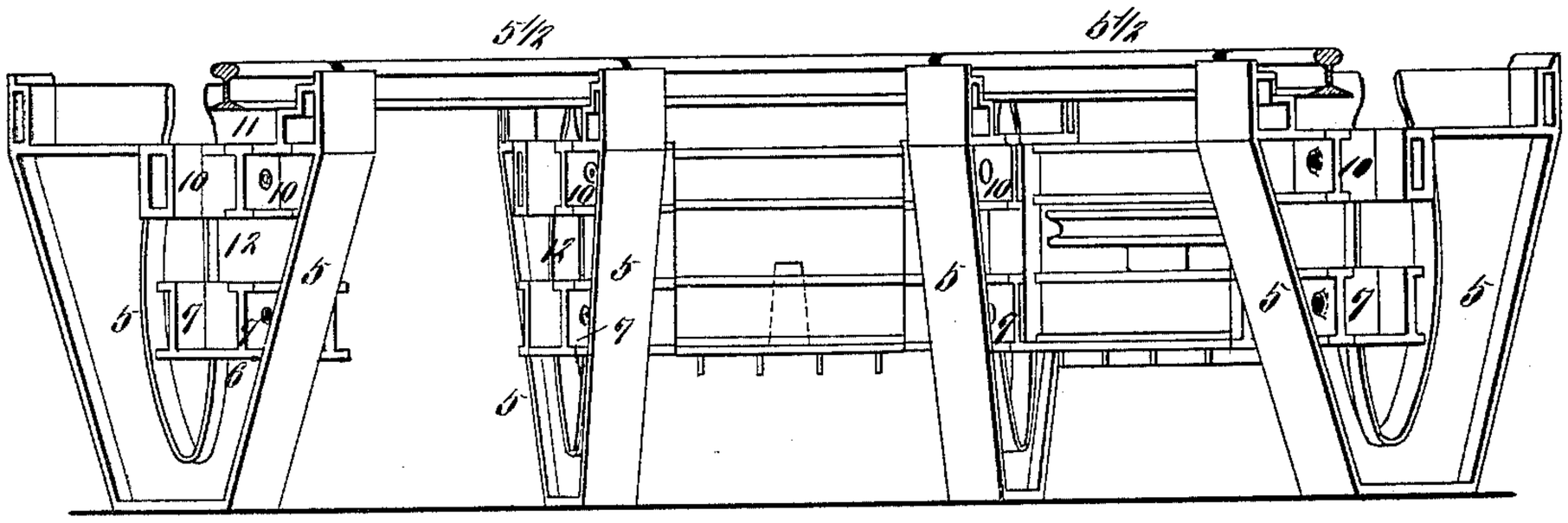


Fig. IV,



Attest:
E. Arthur.
E. Knight.

Inventor;
Richard. P. Walsh,
By Knight Bros.
attys

(No Model.) 3 Sheets—Sheet 3.

R. P. WALSH.

CABLE RAILWAY.

No. 394,040. Patented Dec. 4, 1888.

Fig. V.

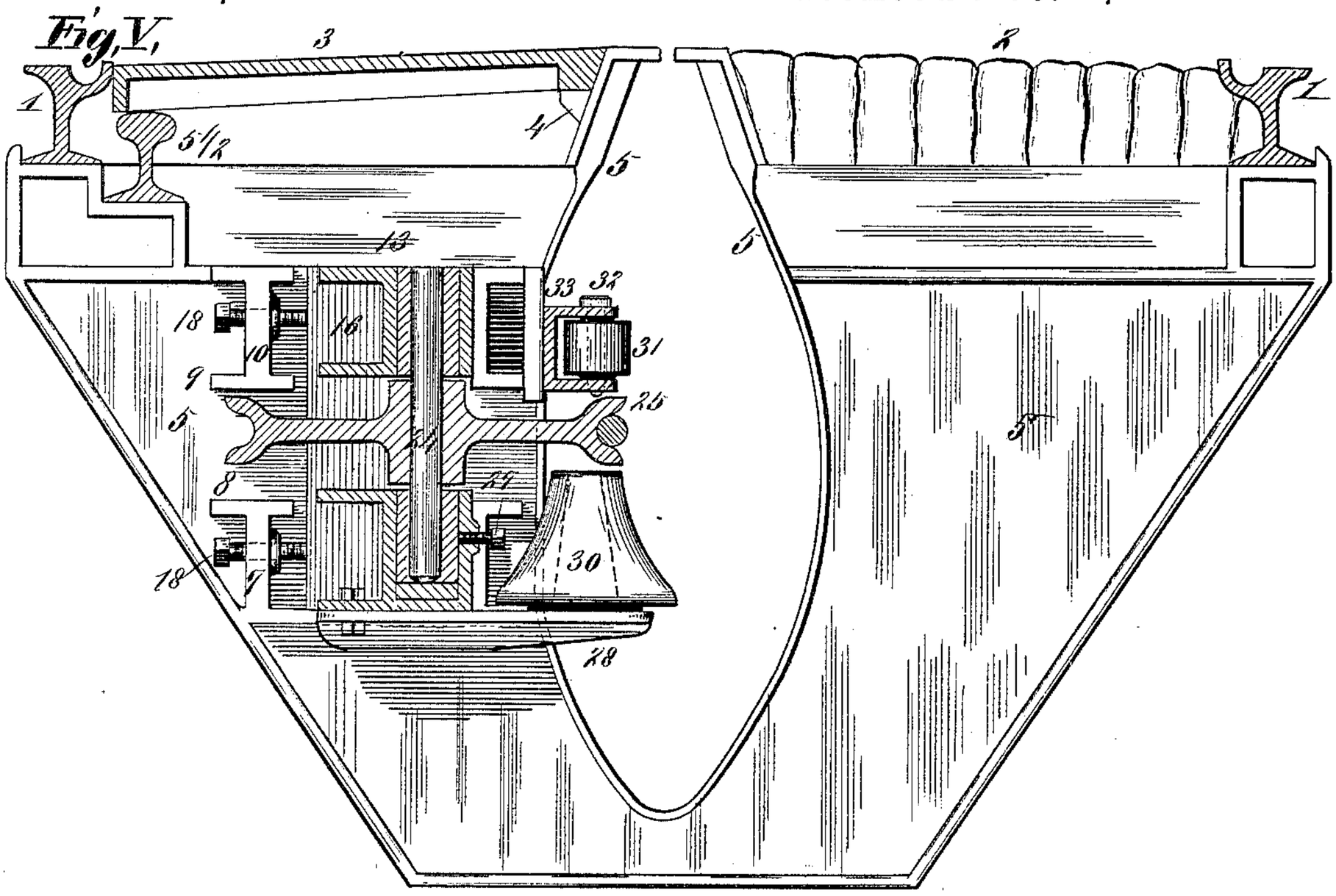


Fig. VI.

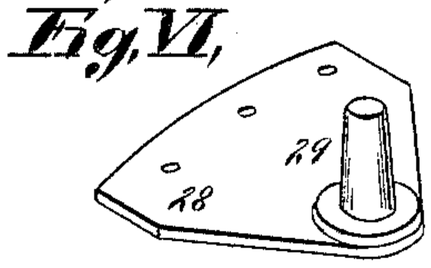


Fig. VII.

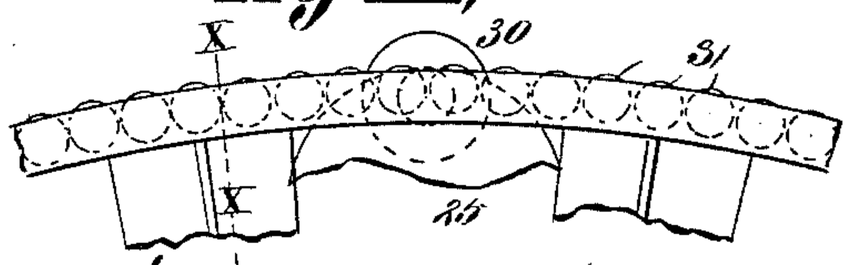


Fig. VIII

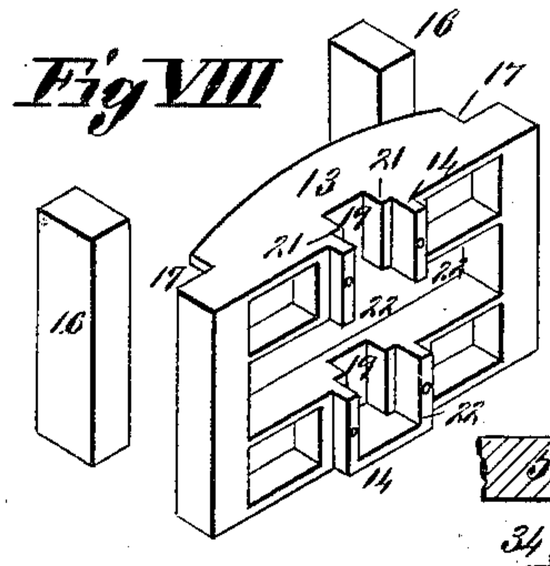


Fig. IX.

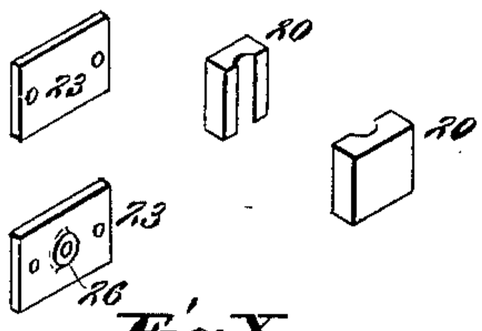
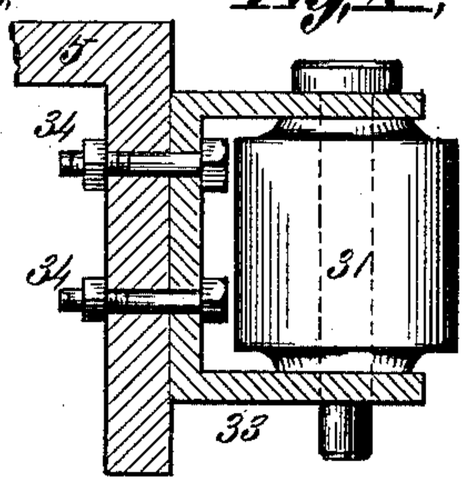


Fig. X.



Attest:
E. Arthur.
E. Knight.

Inventor:
Richard. P. Walsh.
By Knight Bros
Attys.

UNITED STATES PATENT OFFICE.

RICHARD P. WALSH, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-FOURTH TO MIDDLETON D. DEGGE, OF SAME PLACE.

CABLE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 394,040, dated December 4, 1888.

Application filed October 31, 1887. Serial No. 253,907. (No model.)

To all whom it may concern:

Be it known that I, RICHARD P. WALSH, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Cable Railways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a top view with part of the roadbed removed, showing my invention. Fig. II is an enlarged perspective view showing a portion of one of the yokes. Fig. III is a top view showing a number of the yokes and part of the frames. Fig. IV is a side elevation of same. Fig. V is a vertical transverse section taken on line V V, Fig. I. Fig. VI is a perspective view of one of the plates for supporting the cone-pulleys. Fig. VII is a detail view showing part of the fender-rollers. Fig. VIII is a perspective view showing the pulley-supporting frame. Fig. IX is a perspective view of one of the cable-pulley journal-boxes. Fig. X is a section taken on line X X, Fig. VII.

My invention relates to an improvement in the construction of cable-ways, and relates particularly to the construction of such ways at curves in the road.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents the track-rails of a cable railway, and 2 the roadbed, having movable plates 3 on one side to give access to the parts beneath. These plates are supported at their inner edges by lugs 4 on the yokes 5 of the conduit and at their outer edges by means of rails 5½ or other suitable supports. Each yoke (or a suitable number of them) is constructed on the short side of the curve, as shown in Fig. II, where 6 represents a horizontal flange having vertical flanges 7, with heads 8 on their upper ends. Above the heads 8 are similar heads, 9, on the lower ends of vertical flanges 10, depending from an upper horizontal flange, 11. Between the two flanges 10 and the two flanges 7 there is a vertical space or opening, 12, into which one end of a frame, 13, fits, the other end of the frame fitting in a like opening on the adjoining face of the next yoke, as shown in Figs. I and III. When the frames 13 are dropped into the openings 12, (see Fig. III,) they first occupy the position shown in the center of Fig. III. They are then moved horizontally to bring the frame 13 against the faces of the inner flanges, 10 and 7, (see Fig. II,) and they are here held by means of blocks 16, (see Figs. III and VIII,) which are dropped in behind them, fitting in notches 17 at the ends of the frames. Behind the blocks 16 I place set-screws 18, (see Fig. V,) which pass through the flanges 7 and 10 and hold the frames in their working position. When thus put in place, the frames, together with the parts they carry, are firmly held in operative position, and they can be quickly removed by turning outward on the screws 18, then removing the blocks 16, then moving the frames back from the position shown on the right-hand side of Fig. III to the position shown in the center of Fig. III, and then lifting them vertically upward.

The construction of the frames 13 is shown in Fig. VIII, each having recesses 19 to receive one half of the box 20, (see Fig. IX,) beyond which are shoulders 21, against which fits the other half of the box 20, and beyond this half of the box extend flanges 22, against which are secured plates 23, which hold the boxes in place. Each frame is provided with a box 20 at top and a box 20 at bottom. Journaled in these boxes is the spindle 24 of the cable-pulley 25. The lower plate, 23, is provided with an opening, 26, to receive a set-screw, 27, for the purpose of setting up the box at this end of the spindle 24 as it becomes worn. The other end of the spindle may be provided with a like set-screw; but it is deemed unnecessary, as this end is in a convenient position to be reached by removing one of the plates 3.

Beneath each frame 13, and secured to it, is a plate, 28, provided with a journal pin or projection, 29, on which fits a cone-pulley, 30. The arc of this cone corresponds with the periphery of the pulley 25, as shown in Fig. V, so that if the cable should drop from the pulley 25 it will be guided back onto the pulley by the cone-pulley.

Above the pulley 25 is a series of plain rollers or fenders, 31, journaled on pins 32, the office of which is to receive the impact of the grip as the car passes around a curve. The rollers 31 are journaled in a channel-bar, 33, (see Fig. X,) which is secured by bolts 34 to the faces 35 of the yokes.

It will be seen that the frames 13 carry the pulleys 25 and 30, and that when the parts need repairing or replacing the frames can be quickly and easily removed through the openings covered by the plates 3, and thus the repairing of the road is greatly facilitated.

The frame, together with all the parts it carries, is shown removed on the left-hand side of Figs. III and IV. The frame itself is shown in the center of Figs. III and IV, and the parts which it carries are shown in the right-hand side of Figs. III and IV.

I claim as my invention—

1. In a cable railway, the combination of the yokes having frame-supporting flanges and the frames, each provided with a main cable-pulley and a cone-pulley, and each removable from its support in the yoke, substantially as and for the purpose set forth.

2. In a cable railway, the combination of the yokes provided with frame-supporting flanges, frames fitting in the flanges and giving support to pulleys, blocks 16, and set-screws 18, substantially as and for the purpose set forth.

3. In a cable railway, the combination of the yokes having flanges 6, 7, 10, and 11, heads 8 and 9 on the flanges 7 and 10, and the frames fitting in said flanges and carrying the pulleys, substantially as and for the purpose set forth.

4. In a cable railway, in combination with the yokes having supporting-flanges, the frames provided with pulleys 25 and 30, boxes 20, set-screw 27, blocks 16, and the set-screws 18, substantially as and for the purpose set forth.

5. In a cable railway, in combination with the cable-pulleys 25, the cone-pulleys 30, arranged beneath the cable-pulleys and in line therewith, substantially as and for the purpose set forth.

6. In a cable railway, the combination of the cable-pulleys 25, cone-pulleys 30, and pulleys 31, substantially as and for the purpose set forth.

7. In a cable railway, in combination with the cable-pulleys mounted in removable frames 13, auxiliary pulleys arranged beneath and in line with the cable-pulleys and mounted on plates 28, secured to said frame, whereby the whole may be removed together, substantially as and for the purpose set forth.

RICHARD P. WALSH.

In presence of—
GEO. H. KNIGHT,
JOS. WAHLE.