

(No Model.)

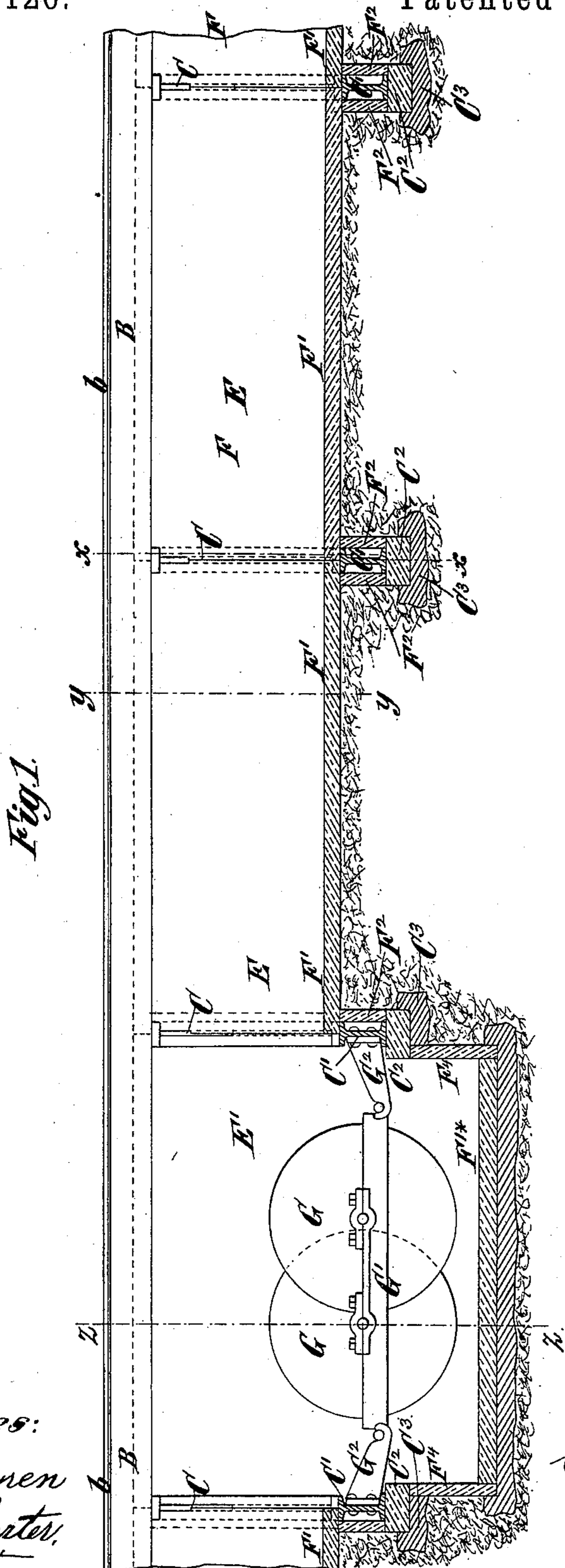
2 Sheets—Sheet 1.

C. H. PLATT.

# CABLE RAILWAY STRUCTURE.

No. 358,126.

Patented Feb. 22, 1887.



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*Inventor:*

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Fig. 3.

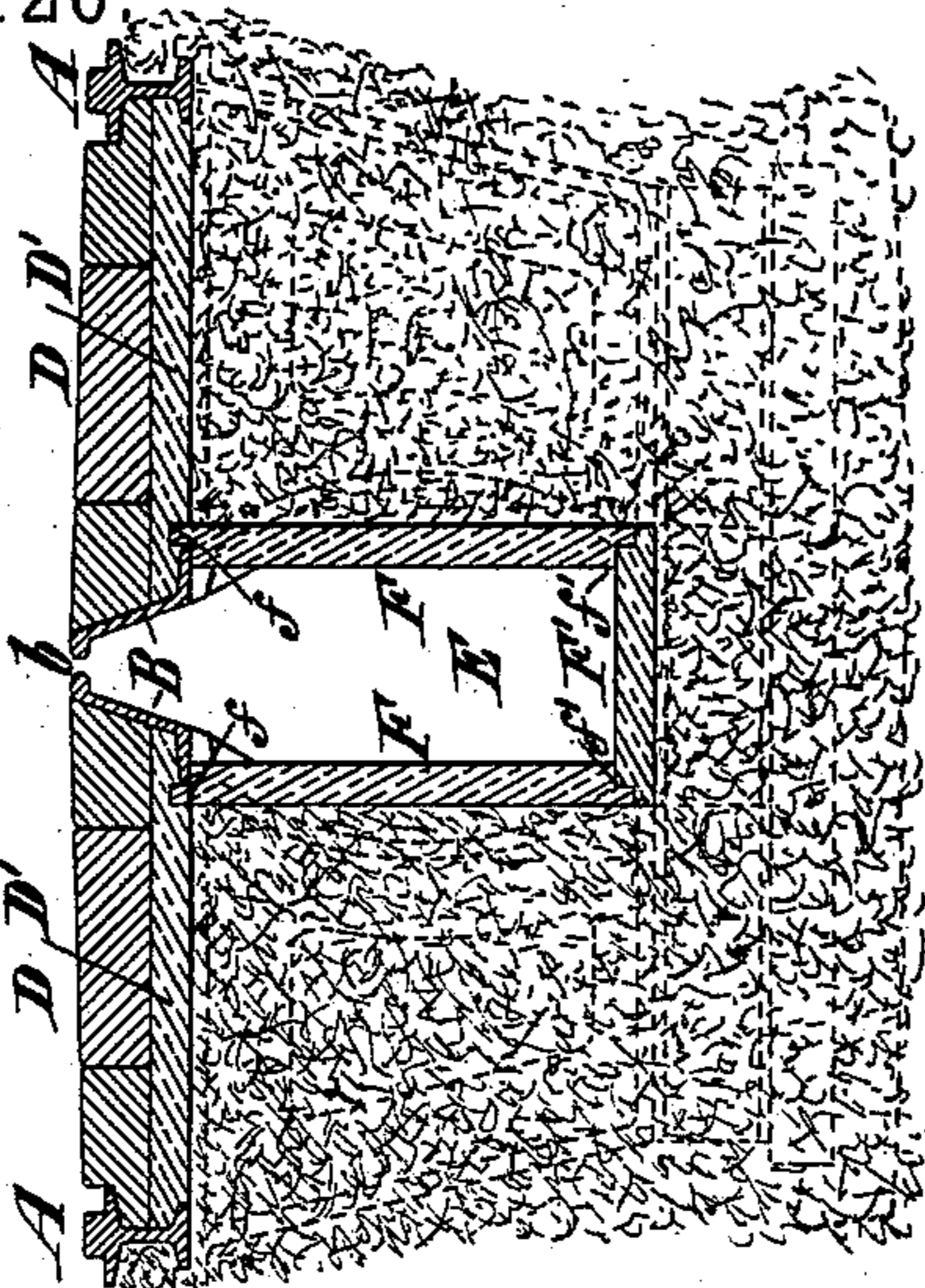


Fig. 1.

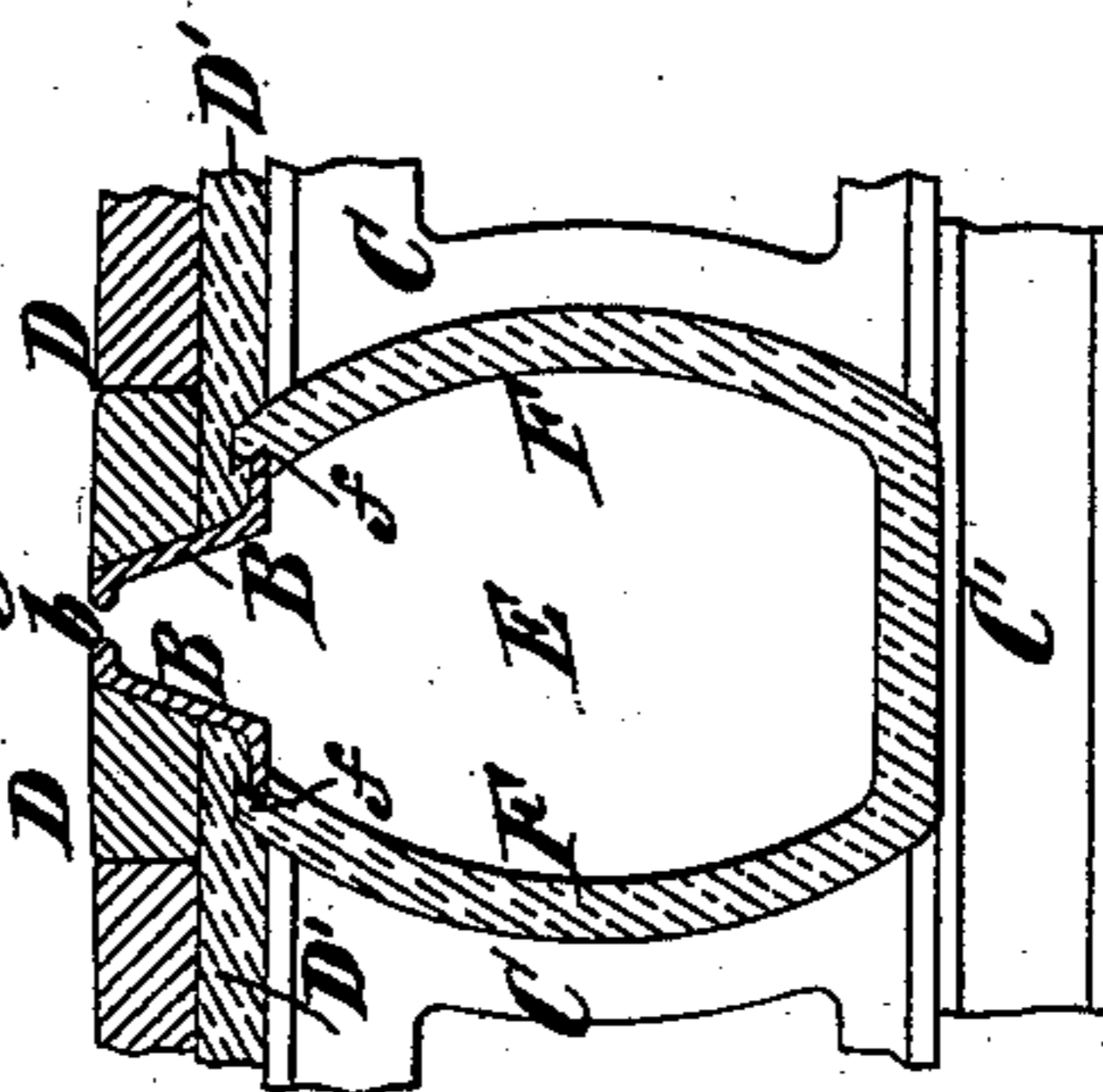


Fig. 2.

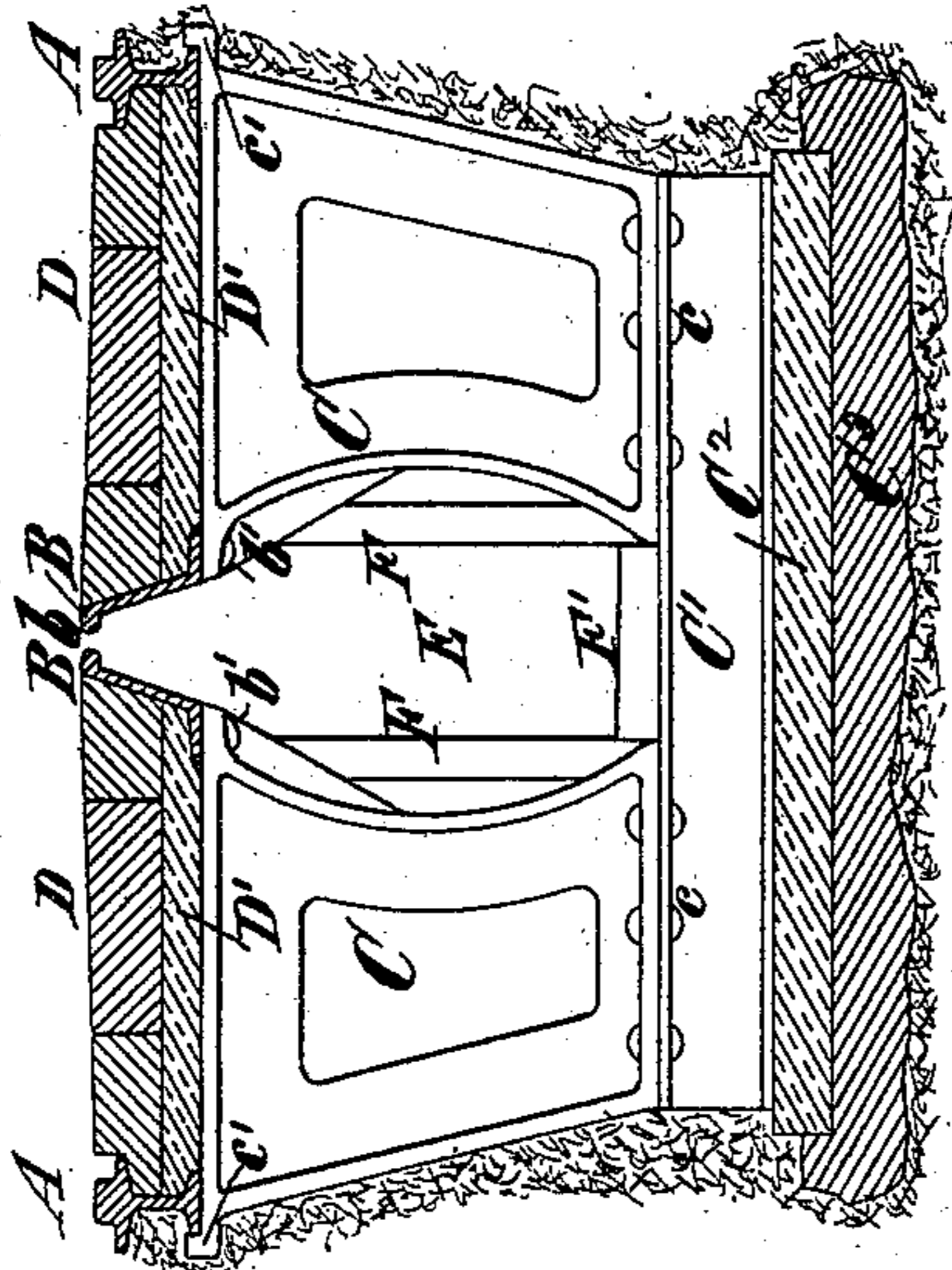


Fig. 5.

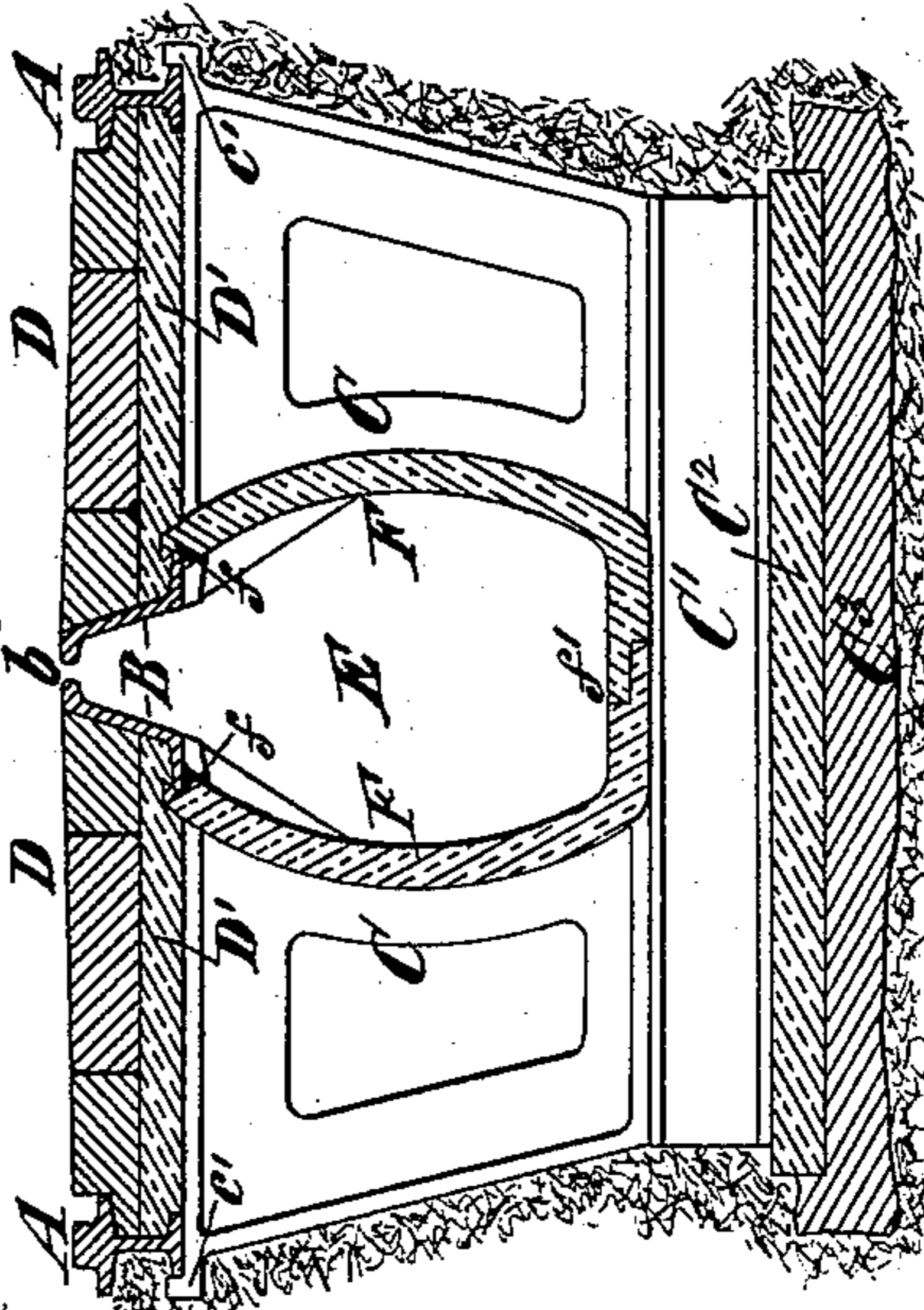
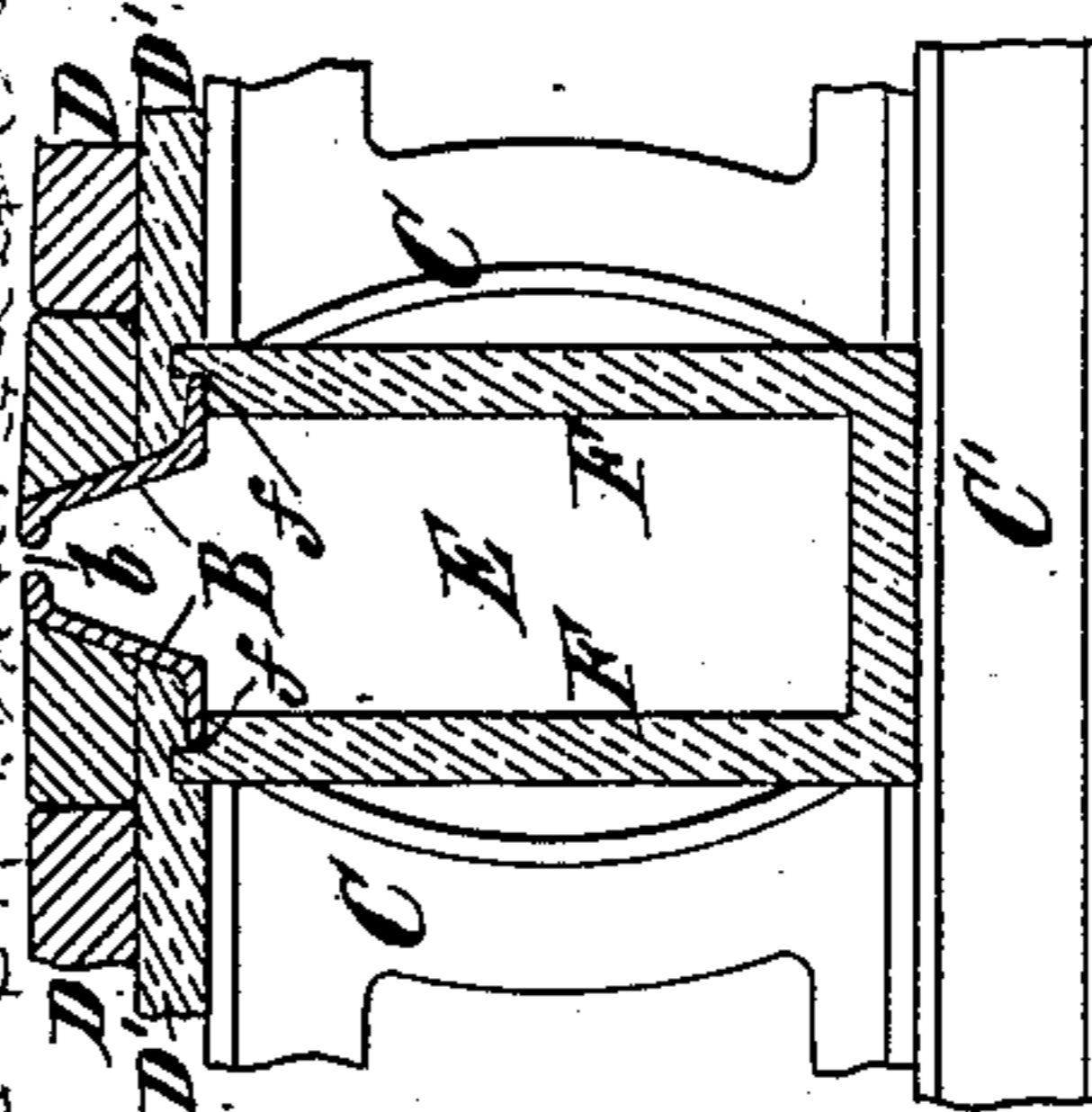
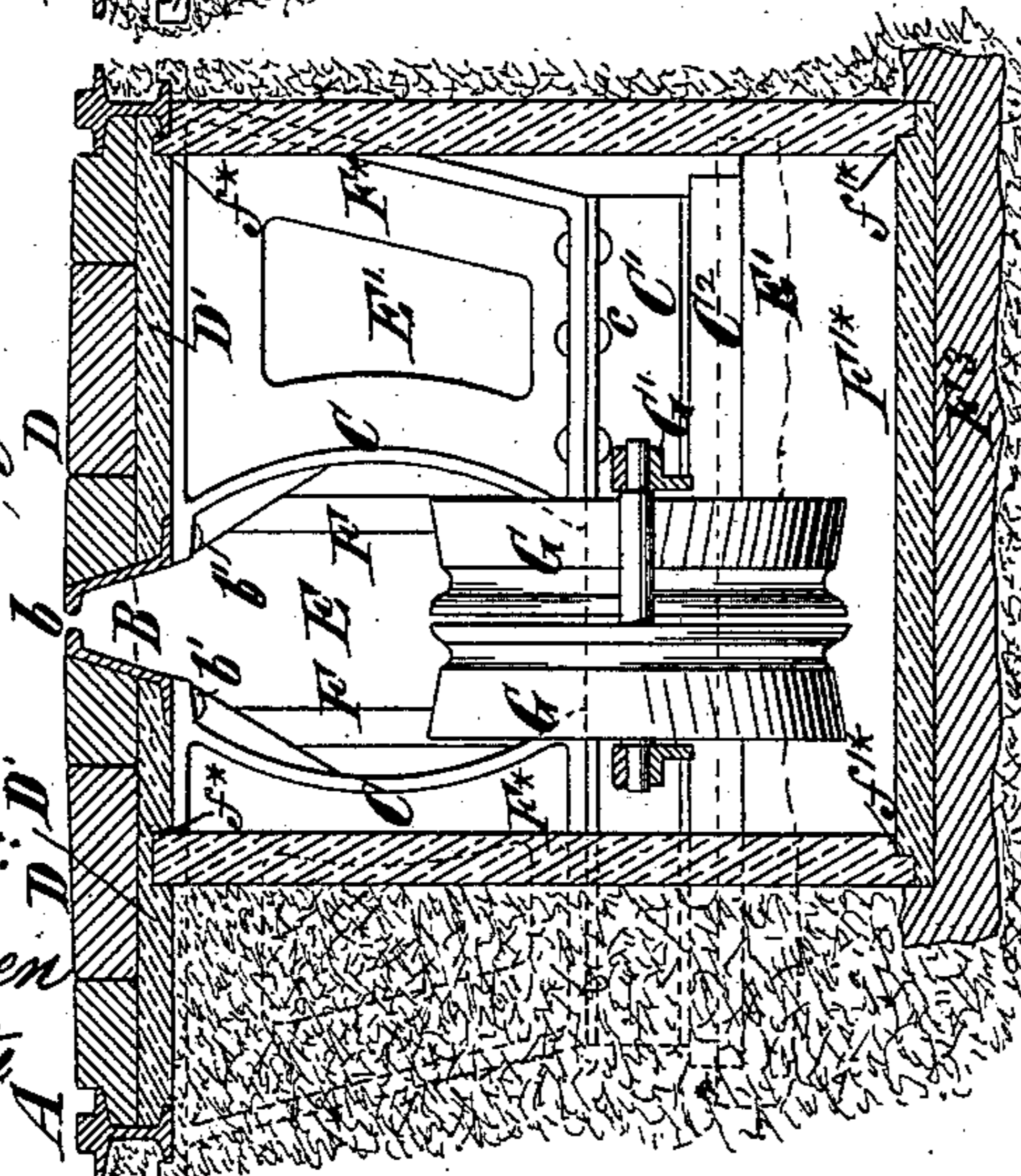


Fig. 4.



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# UNITED STATES PATENT OFFICE.

CHARLES H. PLATT, OF NEW YORK, N. Y.

## CABLE-RAILWAY STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 358,126, dated February 22, 1887.

Application filed February 19, 1886. Serial No. 192,478. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. PLATT, of the city and county of New York, in the State of New York, have invented a new and useful  
5 Improvement in Cable-Railway Structures, of which the following is a specification.

My invention is applicable to cable-railway structures in which the cable or cables for drawing the cars is or are arranged in a tunnel between the track-rails, and communicating with the surface by a narrow slot which is formed between two parallel bars or irons extending parallel with and between the track-rails. In such a structure the track-rails and  
15 the slot-bars are commonly supported by yokes or upright frames arranged at short distances apart transversely to the line of the track-rails; and my invention relates to such structures in which the tunnel is formed of previously-prepared slabs or sections arranged end to end and supported by the yokes or frames, as hereinafter described.

The invention consists in novel combinations of parts, which will be hereinafter described, and pointed out in the claims.  
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In the accompanying drawings, Figure 1 is a longitudinal section through a portion of a cable-railway structure embodying my invention, including one of the sheave pits or chambers. Fig. 2 is a transverse section on the plane of the dotted line *x x*, Fig. 1. Fig. 3 is a similar section on the plane of the dotted line *y y*, Fig. 1. Fig. 4 is a similar section through the sheave pit or chamber on the plane of the dotted line *z z*, Fig. 1. Fig. 5 is a transverse section similar to Figs. 2 and 3, but illustrating a modification of my invention; and Figs. 6 and 7 are transverse sections of a portion of the structure, illustrating other  
35 slight modifications of the invention.

Similar letters of reference designate corresponding parts in all the figures.

A designates the track-rails, and B the slot bars or irons, which are arranged parallel with the track-rails and form between them a longitudinal slot, *b*. The track-rails and the slot-bars A B are supported at intervals in their length by yokes or frames, which are composed of stands C C, arranged opposite each other  
45 and secured at their base upon a transom or beam, C', which latter may consist of an I-beam, as shown in Fig. 1. The stands C may be se-

cured to the transom or beam C' by rivets *c*, or by bolts or other suitable means.

Each stand C supports a track-rail, A, and one of the slot-bars B. The slot-bar B may be secured to the stand by rivets *b'* or by bolts, and the track-rail A rests within a lip or flange, *c'*, formed at the outer extremity of the stand C, and is thereby prevented from spreading.  
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D designates the paving-blocks which form the surface between the slot-bar B and the track-rail A, and which, as here shown, are supported upon a slab or plate, D', extending from the bar B outward to the track-rail A. These slabs or plates D' may be made of artificial stone, metal, or of any suitable combination of materials, like other elements of the structure, which are hereinafter described, and they are prepared or formed previously to being laid, so that the surface of the road may be completed very rapidly as soon as the lower portion of the structure is completed.  
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E designates the tunnel or channel, which communicates with the surface through the slot *b*, and which is continuous throughout the line, save where it is interrupted by the sheave pits or chambers E', which are of larger transverse area, as shown in Figs. 3 and 4. This tunnel or channel, in lieu of being laid or formed with cement or masonry at the time of building it, is constructed of slabs or sections, which may be of artificial stone, metal, or of any suitable combination of materials, and which are previously prepared, so that when a number of the slabs or sections are at hand, and also a suitable number of the yokes C C', the structure may be completed very rapidly, and without maintaining for any length of time an open excavation which would render the street impassable.  
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As represented in Fig. 3, the tunnel or channel is formed of side slabs or sections, F, and bottom slabs or sections, F'. The side slabs or sections, F, are or may be tongued and grooved at *f* into the slabs or plates D', forming the base for the paving-blocks D, and the side and bottom slabs or sections, F F', may be rabbeted together at their juncture at the bottom of the channel or tunnel, as shown at *f'*. The slabs or sections F and F' are arranged end to end, as shown in Fig. 1, their adjacent ends meeting at about the middle of the width of the  
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90  
95  
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yokes C C', and the bottom slab or section, F', is afforded adequate support on the transoms or beams C' of the yokes, while the side slabs or sections, F, are afforded proper support by the standards C of the yokes. The transoms or beams C' of the yokes are, as here represented, supported upon previously-prepared slabs or plates C<sup>2</sup>, and these slabs or plates are in turn supported upon a prepared foundation, C<sup>3</sup>. In order to afford further support for the bottom slabs or sections, F', of the tunnel, I have represented slabs or plates F<sup>2</sup> as arranged at opposite sides of and parallel with the transoms or beams C', and, as best shown in Fig. 1, these slabs or plates F<sup>2</sup> aid in supporting the bottom slabs or sections F'.

The sheave pits or chambers E' extend below the level of the tunnel or channel E, and their sides, which are parallel with the sides of the tunnel or channel, may be formed of slabs or sections F\*, and their bottoms may be formed by other slabs or sections, F'\*'. The slabs or sections F\* may be tongued and grooved at f\* in the slabs or plates D', which are below the pavement, and they may be rabbeted at f'' into the bottom slab or section, F'\*'. The bottom slab or section, F'\*', may be supported on a prepared foundation, F<sup>3</sup>, which, with the foundation C<sup>3</sup>, is the only part of the structure which is not previously formed.

The sides of the sheave chambers or pits E', which are parallel with the base slabs or sections C<sup>2</sup>, may be formed by other slabs or sections, F<sup>1</sup>, extending downward therefrom to the bottom of the chamber. Within the sheave pit or chamber E' are cable-supporting sheaves G, which may be journaled in a suitable frame, G', supported by arms or hangers G<sup>2</sup> from the transoms or beams C'. I do not make any claim to the arrangement or means for supporting these sheaves.

Instead of forming the tunnel or channel E with upright sides which are parallel from top to bottom, I may make the tunnel or channel of a form corresponding to the inner sides of the stands C, or of an oval transverse section, as shown in Fig. 5, and in this case it may be formed of two slabs or sections, F, each constituting a part of the bottom and rabbeted together at the point f' at the bottom of the tunnel or channel. I may, if desired, construct the tunnel or channel of sections, each one of which is constructed to form the two sides and bottom, and such section will resemble a tube complete, save for its upper side. In Fig. 6 I have represented a tunnel so formed and of rectangular transverse section, the upper edges of the section F being tongued and grooved at f into the slabs or plates D', which support the pavement D; and in Fig. 7 I have represented a section of the tunnel or channel which is oval in its transverse section and constructed of a single piece, the upper edges of which are tongued or grooved at f into the slab or plate D'.

It will be seen that by my invention I pro-

vide for constructing the tunnel or channel entirely of slabs or sections of comparatively large size, which are previously prepared, and I so combine such slabs or sections with the transverse yokes or frames as to properly support the slabs or sections against displacement either downward or laterally outward. I also provide for properly locking the slabs or sections to the horizontal slabs or sections D', which form the substructure on which the paving-blocks are supported.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cable-railway structure, the combination, with the rails and transverse yokes or stands therefor, of a tunnel or channel for the cable, constructed of previously-formed slabs or sections arranged end to end lengthwise of the tunnel or channel and at their adjacent ends lapping over the inner sides of the yokes or stands, whereby said slabs or sections are sustained against outward displacement, substantially as herein described.

2. The combination, with the rails and bars forming the longitudinal slot between them, and yokes arranged transversely to the rails, and each consisting of a beam or transom and upright stands secured thereon, of a tunnel or channel constructed of previously-formed slabs or sections arranged end to end with their bottom portions above and lapping upon the beams or transoms of the yokes, whereby said slabs or sections are supported at their adjacent ends by said beams or transoms, substantially as herein described.

3. The combination, with the rails and bars forming the longitudinal slot between them, and yokes arranged transversely to the rails, and each consisting of a beam or transom and upright stands secured thereon, of a tunnel constructed of previously-formed slabs or sections arranged end to end and at their adjacent ends lapping upon the top of the beams or transoms and upon the inner sides of the stands, whereby said slabs or sections are sustained in position against both downward and outward displacement and are made to form a continuous tunnel, substantially as herein described.

4. The combination, with the rails and bars forming the longitudinal slot and yokes supporting the rails and bars, of a tunnel constructed of previously-formed slabs or sections arranged end to end, the bottom of the tunnel being formed integral with the slabs or sections forming the sides thereof, substantially as herein described.

5. The combination, with the rails and the intermediate bars forming the slot and yokes or stands for the rails and bars, of horizontal slabs or plates extending between said bars and rails and supported on the yokes or stands, and a tunnel or channel constructed of previously-formed slabs or sections arranged end to end and locked by tongues and grooves to the horizontal slabs or plates, substantially as herein described.

6. The combination, with the rails and the bars forming the slot, of yokes arranged transversely to the rails and slot-bars, and each consisting of a transom or beam and stands  
5 secured thereto and supporting the rails and slot-bars, slabs or plates arranged at opposite sides of and parallel with the transoms or beams of said yokes, and a tunnel or channel constructed of previously-formed slabs or sections  
10 arranged end to end and supported by said transoms or beams, and the slabs or plates which are arranged at opposite sides thereof, substantially as herein described.

7. The combination, with the rails and the

bars forming the slot, of yokes arranged transversely to the rails for supporting the rails and slot-bars, a tunnel or channel constructed of previously-prepared slabs or sections arranged end to end, and sheave pits or chambers at intervals in the line of the tunnel or  
20 channel, and constructed of previously-formed bottom and side slabs or sections, substantially as herein described.

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