

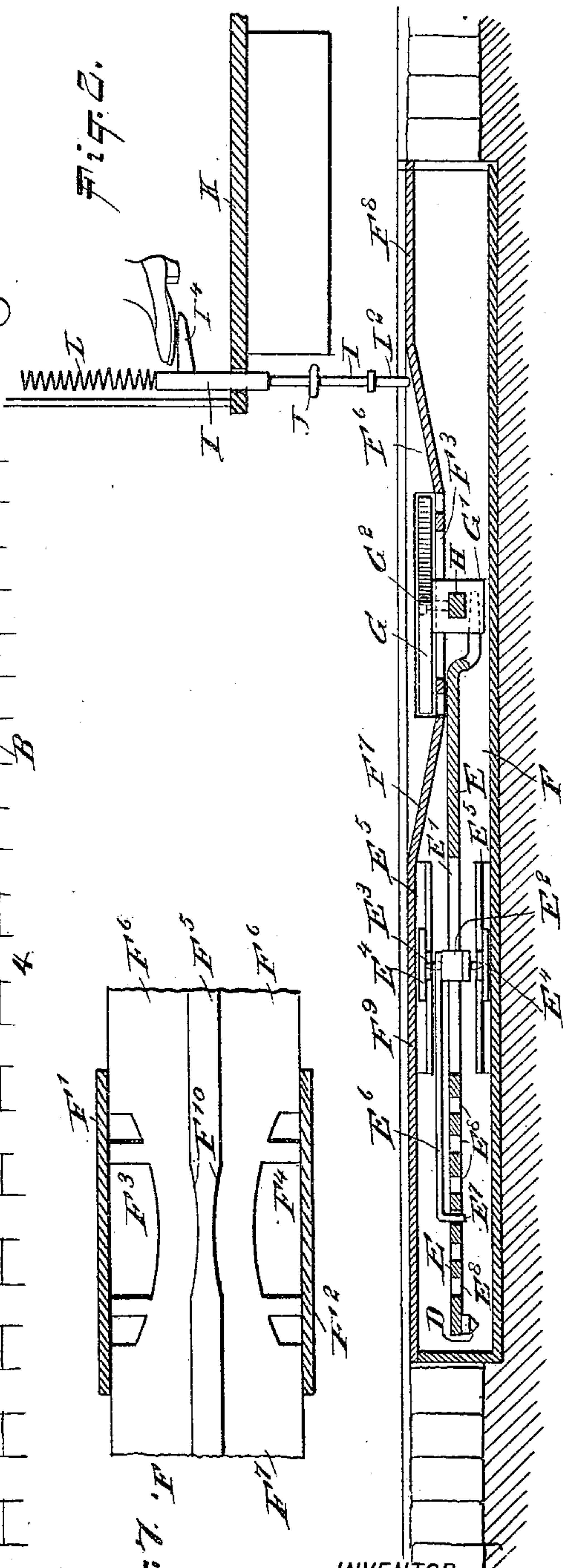
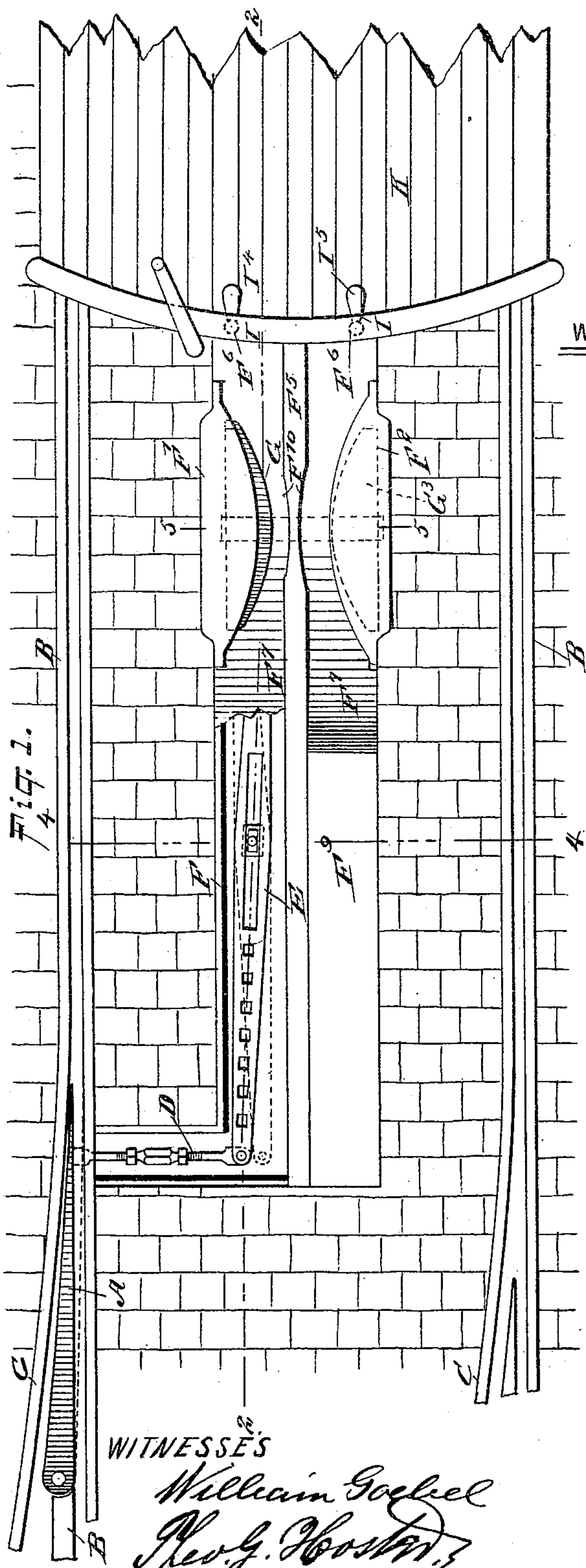
(No Model.)

2 Sheets—Sheet 1.

S. B. BATTEY.
SWITCH MECHANISM.

No. 546,990.

Patented Oct. 1, 1895.



WITNESSES

William Goebel
Geo. G. Hooper

INVENTOR

S. B. Battey

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ATTORNEYS.

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Fig. 3.

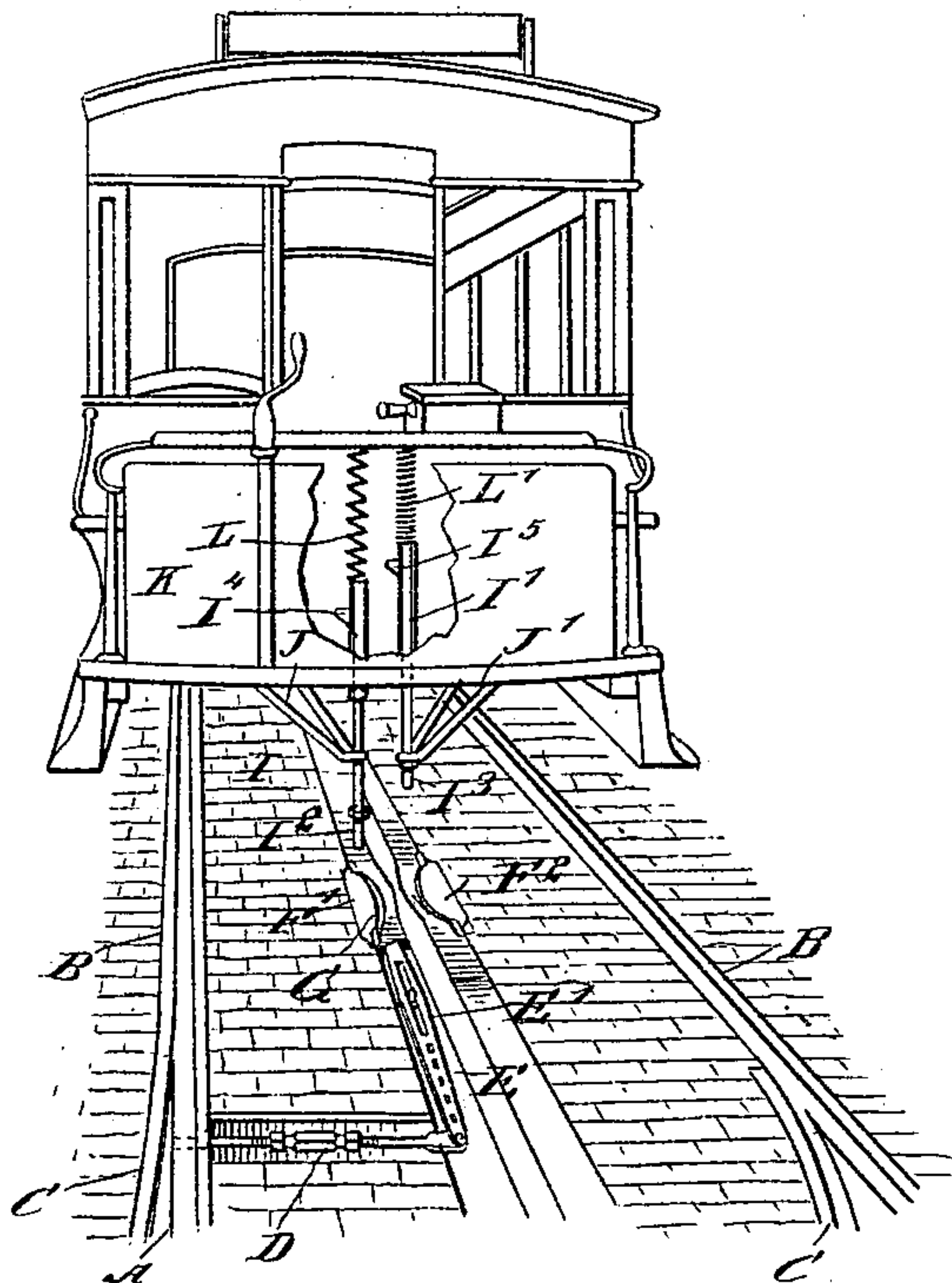


Fig. 4.

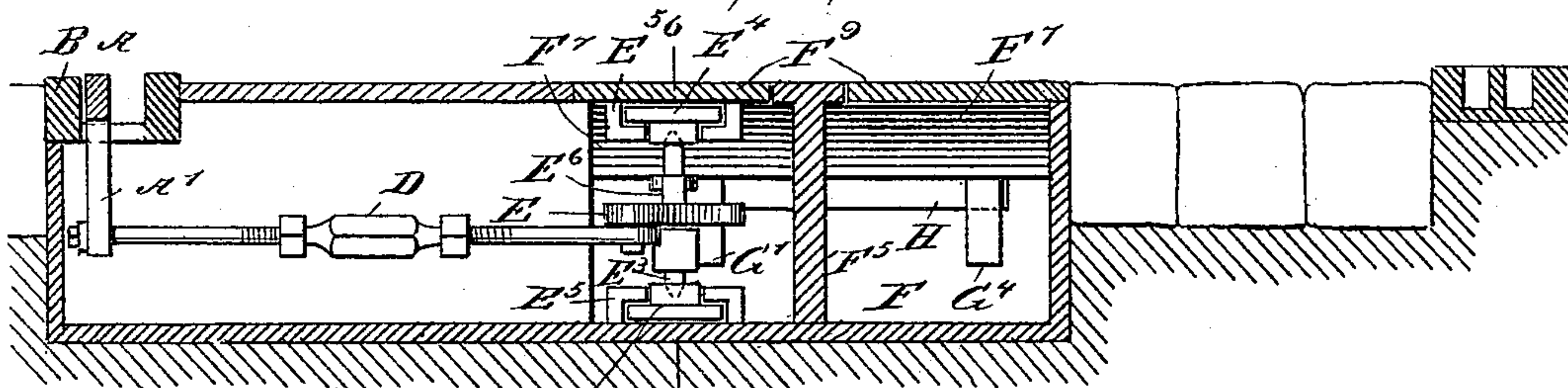


Fig. 5.

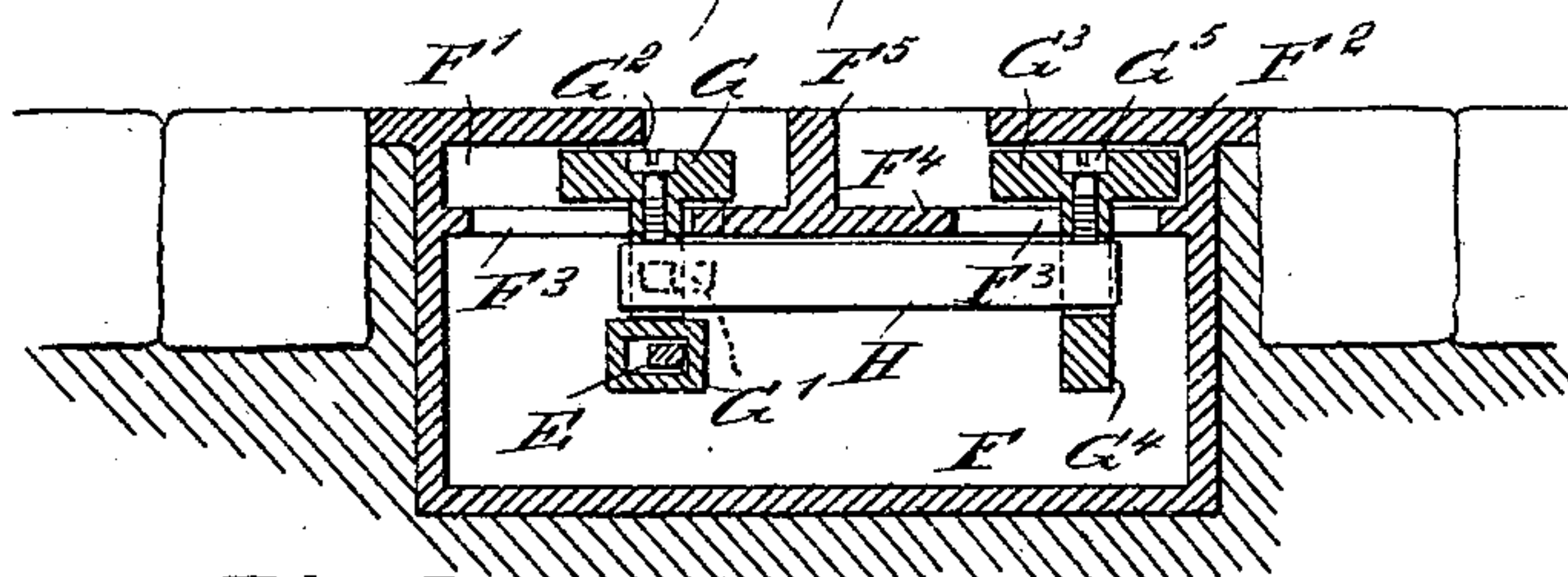
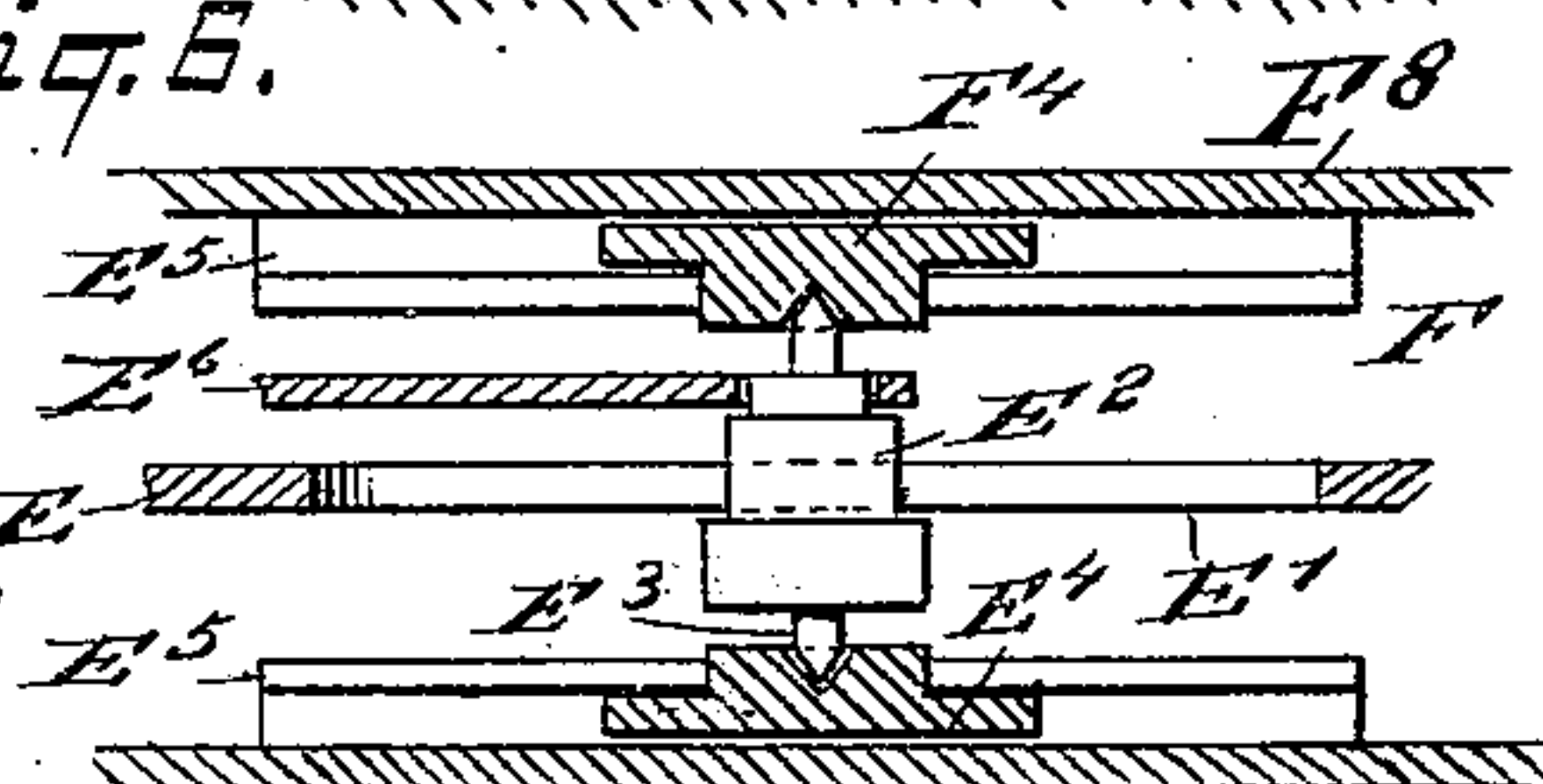


Fig. 6.

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Geo. J. Rott.



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UNITED STATES PATENT OFFICE.

SUMTER B. BATTEY, OF NEW YORK, N. Y.

SWITCH MECHANISM.

SPECIFICATION forming part of Letters Patent No. 546,990, dated October 1, 1895.

Application filed December 15, 1894. Serial No. 531,910. (No model.)

To all whom it may concern:

Be it known that I, SUMTER B. BATTEY, of New York city, in the county and State of New York, have invented a new and Improved Switch Mechanism, of which the following is a full, clear, and exact description.

The invention relates to switch mechanism such as shown and described in the Letters Patent of the United States granted to me November 20, 1894.

The object of the present invention is to provide a new and improved switch mechanism more especially designed for use on street-railroads and arranged to enable the operator in charge of the car to conveniently and accurately set the switch according to the direction in which the car should travel.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement as applied and with parts broken out. Fig. 2 is a sectional side elevation of the same on the line 2 2 of Fig. 1. Fig. 3 is a reduced perspective view of the improvement as applied and part of the cover-plate removed. Fig. 4 is an enlarged transverse section of the improvement on the line 4 4 of Fig. 1. Fig. 5 is a similar view of the same on the line 5 5 of Fig. 1. Fig. 6 is a sectional side elevation of the lever and its adjustable fulcrum, and Fig. 7 is a sectional plan view of part of the casing.

The pivoted switch-rail A is arranged to open and close the main track B to the side track C in the usual manner. The free end of the said switch-rail A is provided with a downwardly-extending arm A', connected by an adjustable link D with one end of a lever E, extending longitudinally in a casing F, set in the track between the track-rails, as is plainly illustrated in the drawings, the top of the said casing being flush with the pavement of the track. The other end of the lever E extends into a socket G', formed on the under side of a block G, secured in place on a transverse bar H by a screw G², as plainly illus-

trated in Fig. 5. The end of the lever E may extend into a recess or opening formed in the bar H instead of engaging the socket G'. The bar H engages a bottom extension G⁴ of a second block G³, likewise secured in place on the bar H by a screw G⁵, the said blocks G and G³ being arranged opposite each other and adapted to slide in and out of housings F' and F², formed in the casing F, near the top thereof, as plainly shown in the drawings. The bottoms F⁴ of the housings F' and F² are preferably slotted, as at F³, to permit any snow, dirt, or other matter passing into the housings in the rear of the blocks G and G³ to drop into the casing F, which latter is provided with a drain-pipe to carry off water, moisture, and other matter.

Between the housings F' and F² is arranged a centrally-extending partition or rail F⁵, forming, with the outer curved faces of the blocks G and G³, guideways or slots for the passage of the lower ends I² and I³ of rods I and I', fitted to slide vertically in suitable bearings J and J', respectively, attached to the under side of the platform of the car K. The rods I and I' extend to the top of the platform and are provided with foot-arms I⁴ and I⁵, respectively, adapted to be engaged by the operator's feet to press the corresponding rod I or I' downward to bring the lower end I² or I³ in contact with the corresponding block G or G³.

The upper ends of the rods I and I' are connected with springs L and L', respectively, held on the dashboard of the car to normally hold the said rods I and I' in an uppermost position—that is, above the track-pavement—to readily pass obstructions in the track. The bottoms F⁴, on which the blocks G and G³ are fitted to slide transversely, are formed at their ends into upwardly-curved extensions F⁶ and F⁷, respectively, of which the continuations F⁸ and F⁹ extend horizontally as the covers for the casing F. It is understood that as the two blocks G and G³ are secured on the same bar H both blocks are moved transversely whenever one is engaged and shifted laterally by the corresponding lower end I² or I³ of either rod I or I'.

The fulcrum for the lever E is preferably made adjustable, as indicated in detail in Fig. 6, and thus for this purpose the lever E is

provided with a longitudinally-extending slot E', engaged by the square block E² of the vertically-disposed pivot E³, having its pointed ends set in steps in guide-blocks E⁴, fitted to slide longitudinally in suitable guideways E⁵, arranged within the casing F and secured to the top and bottom thereof. On the block E² is held a rod E⁶, extending forwardly and adapted to engage with its forward downwardly-bent end E⁷ one of a series of apertures E⁸, formed in the forward end of the lever E. (See Fig. 2.) Now it will be seen that, by lifting the forward end E⁷ of the rod E⁶ out of engagement with the corresponding aperture E⁸, then the fulcrum E³ can be moved forward or backward in the guideways E⁵, the block E² of the said pivot sliding in the slot E' of the lever E. When the desired position is reached, the rod E⁶ is again engaged, with its end E⁷, with one of the apertures E⁸, so as to lock the fulcrum or pivot E³ to the lever. Now in case of wear on the faces of the blocks G and G³ the throw of the said blocks and lever E is considerably diminished, whereby the switch-rail A will not be moved to a full open or shut position, and hence accidents are liable to occur, owing to the imperfect shifting of the said switch-rail. Now by being enabled to shift the fulcrum of the lever E more or less throw can be given to the forward end of the lever E, so as to move the switch-rail a greater or less distance. For instance, if more throw is necessary, owing to wear on the blocks G and G³, then the pivot E³ is shifted rearwardly—that is, toward the blocks G and G³, so that it requires but a slight lateral movement of the said blocks to impart a sufficient throw to the lever E to shift the switch-rail A properly—that is, into a full open or closed position. The link D is made adjustable, so that when the switch is set the operator is enabled to readily adjust the switch-rail A relative to the lever E to cause the proper throwing of the switch-rails when the blocks G and G³ are shifted laterally.

The operation is as follows: When the car is approaching a switch, as illustrated in Figs. 1, 2, and 3, and the switch-rail A is closed, and it is desired that the car should go from the main track to the side track C, the operator in charge of the car and standing on the platform presses the foot-piece I⁴ of the rod I, so as to move the latter downward to bring the lower end I² into contact with the horizontal part F⁸ of the top of the casing leading to the extension F⁶ for the housing F'. The lower end I² of this rod I will on the further forward travel of the car come in contact with the side of the housing F', and finally onto the side face of the block G, so that the latter, owing to its curved face, is shifted laterally—that is, to the right into the housing F. In doing so the bar H, with the block G³, is moved in a like direction, and by the socket G' a swinging motion is given to the lever E, so that the latter moves with its outer end inward to exert a pull on the link D, so that the

switch-rail A is shifted to connect the main track B with the side track C. Now it will be seen that when the next car coming along the track B desires to follow the latter then the operator in charge of the second car presses the rod I' to cause the lower end thereof to finally engage the block G³, extending with its face out of the housing, so that the block is shifted and the bar H, with the block G, is moved laterally to the left, and the lever E is returned to its normal position, so as to close the switch-rail A to disconnect the side track from the main track B. Now it will be seen that by the arrangement described the operator is not liable to make a mistake in pressing the proper rod I or I', as he presses the rod on that side of the platform corresponding to the direction in which he desires the car to travel.

The rail F⁵, directly opposite the innermost faces of the blocks G and G³, is cut out, as at F¹⁰, to correspond to the curvature of the faces of the blocks G and G³. Now by this arrangement it is possible for the lower ends I² and I³ of the rods I and I' to sufficiently yield or bend in case the switch-rail A is locked in place by a stone or other obstruction between the switch-rail, guard-rail, or side-track rail C. The lower ends I² and I³ of the rods, being made of spring-steel, will readily yield sufficiently when traveling along the faces of either block G or G³, so as to spring toward the outer portion F¹⁰ of the rail F⁵ to prevent injury to any part of the mechanism.

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

1. A switch mechanism, comprising a lever, an adjustable link connecting one end of the said lever with the switch rail, a block formed with a socket engaging the other end of the said lever, a cross bar carrying the said block, and a second block similar to the first named block, substantially as shown and described.

2. A switch mechanism, provided with a casing formed with housings on opposite sides of a central rail, the said housings being adapted to receive blocks, the said central rail of the casing being separated from the said housings by spaces adapted to receive the edges of said blocks, substantially as shown and described.

3. A switch mechanism, provided with a lever formed with a series of apertures and a longitudinally extending slot, a pivot for the said lever loosely engaging said longitudinal slot, and having blocks mounted to slide longitudinally in guideways, and engaging the ends of the said pivot, and a rod held on the pivot and extending along the said lever to engage with its outer end one of the said apertures to lock the pivot in place in the slot, substantially as shown and described.

4. In a switch mechanism the combination of a lever extending parallel to the track and having an adjustable fulcrum, the forward end of said lever being connected to the switch

rail, and a slide block connected to the rear end of said lever, substantially as set forth.

5 5. In a switch mechanism the combination of a lever extending parallel to the track and having a sliding pivot, the forward end of said lever being connected to the switch rail and a block connected to the rear end of said lever, substantially as set forth.

10 6. In a switch mechanism, a casing provided with a central rail and recesses on opposite sides thereof said recesses adapted to receive slide blocks, and having their bottoms inclined upward toward their front and rear ends, substantially as set forth.

15 7. In a switch mechanism the combination of a lever, extending parallel to the track and connected at one end to the switch rail, a casing having housings, the bottoms of which are slotted, slide blocks mounted in said hous-

ings and adapted to be struck and moved by 20 a passing car, brackets on said slide blocks extending through said slots in the bottoms of the housings, and having sockets below the same, a tie-bar having its ends engaging said sockets, and a connection between the slide 25 blocks and said lever, substantially as set forth.

8. In a switch mechanism a slotted lever having a series of perforations and a pivot for said lever slidingly engaging said slot and 30 provided with a rod adapted to engage one of the said perforations, whereby said pivot is held in place, substantially as set forth.

SUMTER B. BATTEY.

Witnesses:

THEO. G. HOSTER,
JNO. M. RITTER.