

No. 779,506.

H. C. STIFF.

PATENTED JAN. 10, 1905.

SLOT SWITCH TONGUE AND SLOT SWITCH BOX MECHANISM FOR CONDUIT
RAILWAY CONSTRUCTION.

APPLICATION FILED DEC. 24, 1902.

2 SHEETS—SHEET 1.

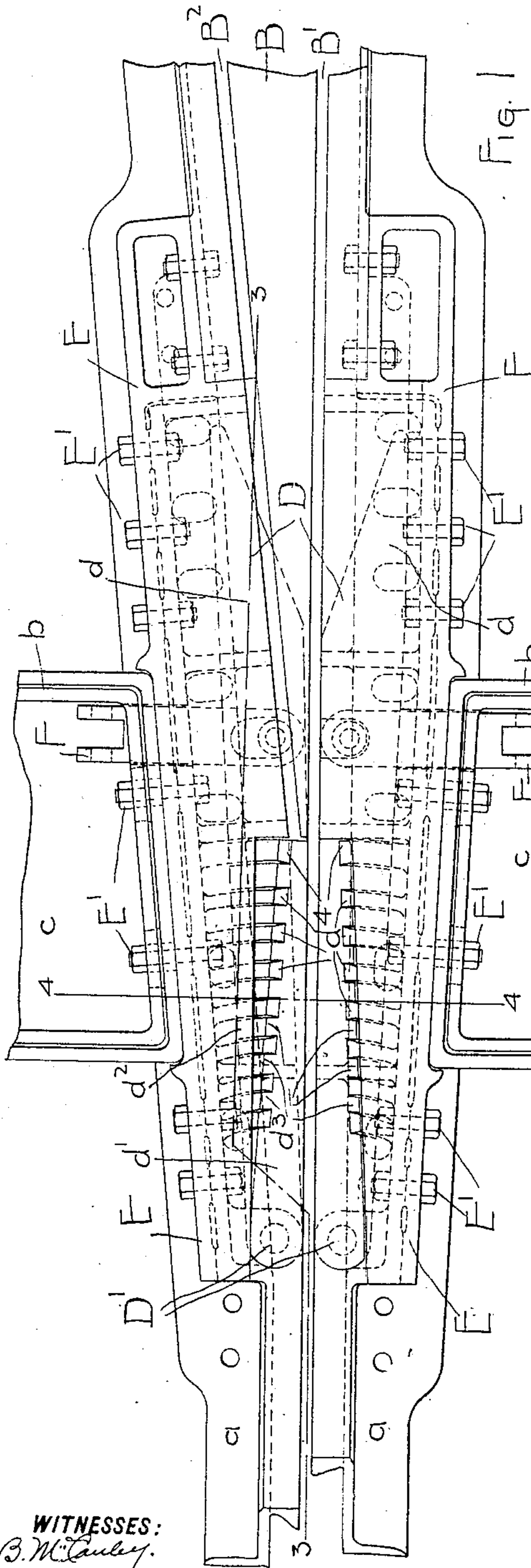


Fig. 1

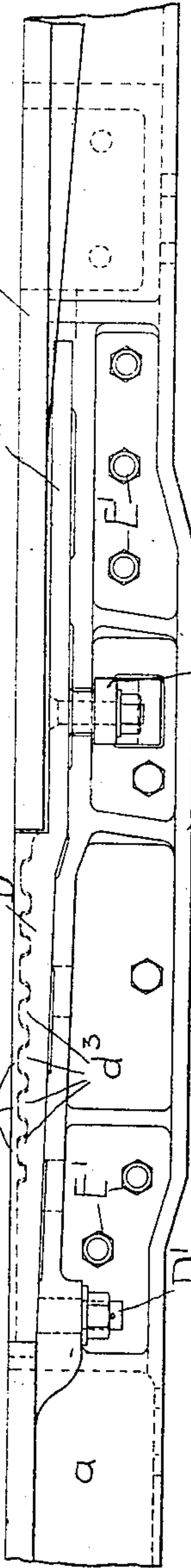


Fig. 2

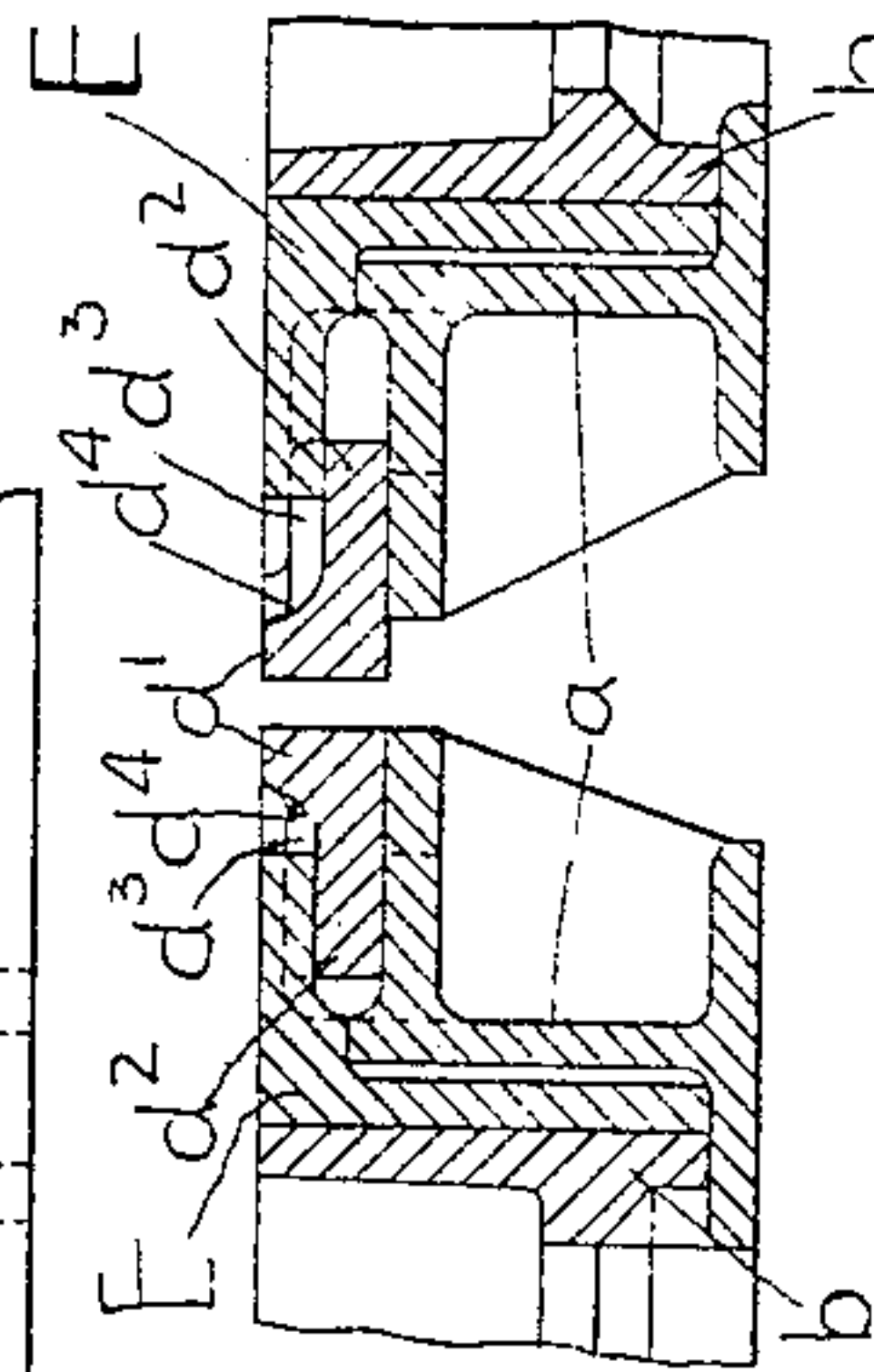


Fig. 4

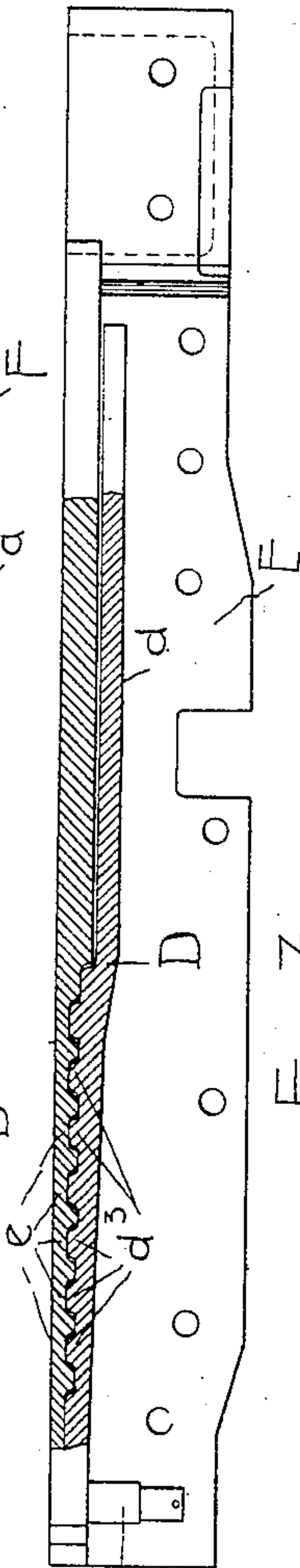


Fig. 3

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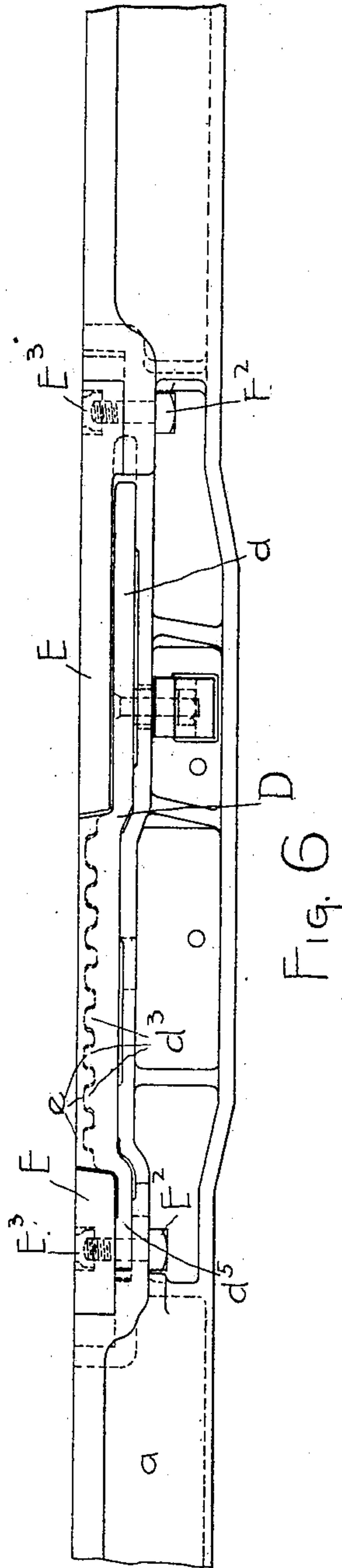
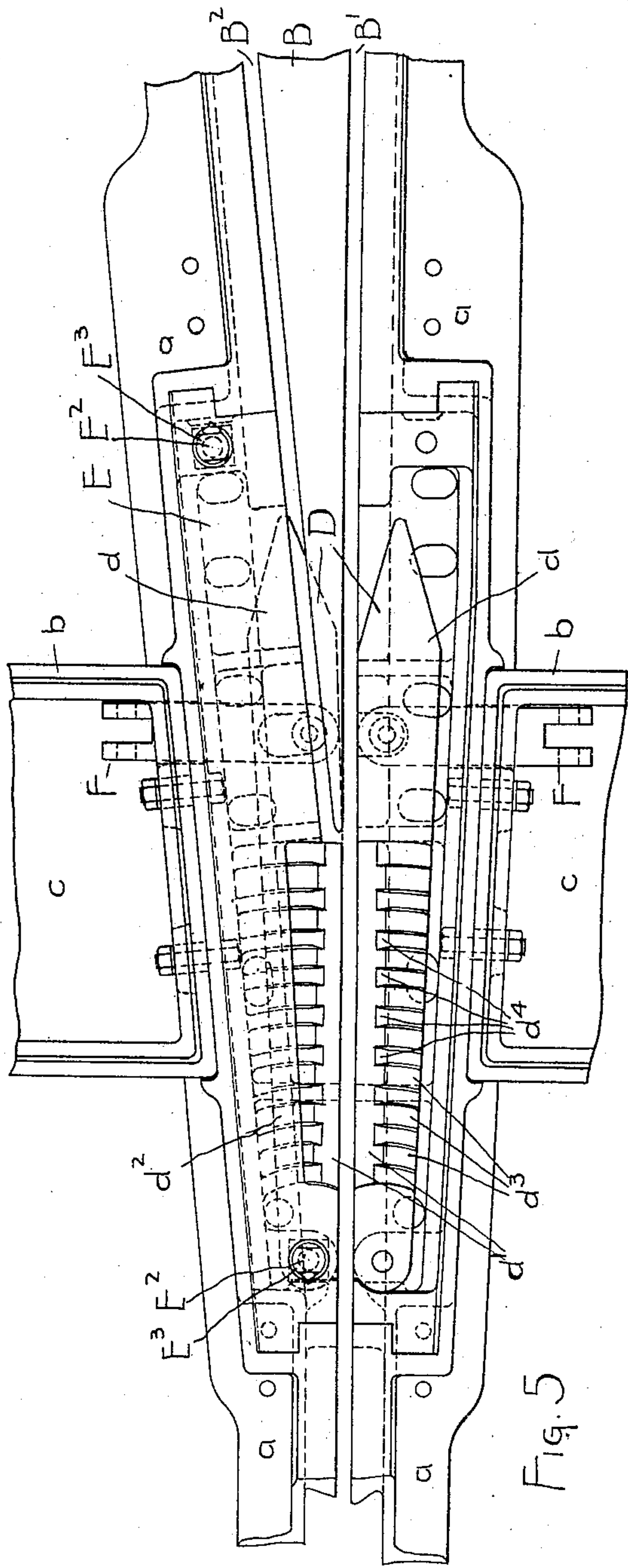
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UNITED STATES PATENT OFFICE.

HENRY CHARLES STIFF, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO
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SLOT SWITCH-TONGUE AND SLOT SWITCH-BOX MECHANISM FOR CONDUIT-RAILWAY CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 779,506, dated January 10, 1905.

Application filed December 24, 1902. Serial No. 136,456.

To all whom it may concern:

Be it known that I, HENRY CHARLES STIFF, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Slot Switch-Tongues and Slot Switch-Box Mechanism for Conduit-Railway Construction, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

This invention has relation to improvements in slot-tongues and slot switch-box mechanism for conduit-railway construction.

The object of the invention is to so arrange the slot-tongues and the slot switch-box in which the tongues are supported and operate as to avoid any break or opening in the street-surface of the structure of a character such as might be a source of danger to street traffic; also, to provide means whereby the slot-tongues will tend to keep themselves free from dirt and other obstructions which might otherwise interfere with their operation; also, to provide a strong and durable structure well adapted to the severe usage of street service.

To these ends the invention consists in so constructing the tongues that their slot-edge portions are flush with the surface of the slot-point and with the surface of the slot-switch structure generally, and their opposite edge portions are depressed and are provided with radial ribs or lugs, and also in providing cover-plates which overlie the depressed point and outer edge portions of the tongues and are formed at their under sides with radial grooves which are complementary to the said radial ribs or lugs. These ribs or lugs are so arranged that their upper edges are but slightly below the surface of the structure, and they thus practically close up the breaks or openings between the raised slot-edge portion of the tongues and the edges of the covers, while at the same time the tongues are left free to move from one switching position to another. The slot-edge portions of the tongues being level with the sur-

face of the slot-point are relieved largely from blows caused by vehicle-wheels passing from one surface to the other.

Another feature of the invention consists in forming the bottom of the grooves or spaces between the said radial ribs or lugs with inclined surfaces leading up to the surface-flush slot-edge portions of the tongues, whereby the movement of the tongues will tend to force out of said spaces or grooves dirt and other obstructions which may lodge therein, and thus render the structure in a considerable measure self-cleaning.

In one form of the invention I also so construct and secure the cover-plates that they can be removed for any necessary purpose wholly from the surface of the structure.

Other features of the invention will hereinafter appear.

In the accompanying drawings, Figure 1 is a plan view of a slot-switch structure embodying the invention; Fig. 2, a longitudinal vertical section of the same on the center line of the slot; Fig. 3, a longitudinal section on the line 3 3 of Fig. 1; Fig. 4, a transverse section on the line 4 4 of Fig. 1; Fig. 5, a plan view showing a modification, one of the cover-plates being removed; and Fig. 6, a longitudinal vertical section taken on the center line of the slot, Fig. 5.

The body portion of the slot-switch structure is of the usual built-up type, being composed of the main angle-castings *a* and the brackets *b*, which support the boxes *c*, through which access to the conduit and to the slot-switch-actuating mechanism is provided. My invention, however, is not concerned with any particular construction of the body portion of the structure.

B is the slot-point, *B'* the main or through-slot, and *B²* the branching slot.

D D designate the two slot-tongues which are pivoted at *D'* and are supported by and move on the horizontal bed portions of the castings *a*. Each of these tongues has the depressed point portion *d*, the surface-flush slot-edge portion *d'*, and the depressed outer

edge portion d^2 , having the raised ribs or lugs d^3 , which are radial with respect to the tongue-centers D' . d^4 , Fig. 4, indicates the inclined floors of the grooves or spaces between said lugs or ribs, which give the structure the self-cleaning feature above described.

E E designates the two cover-plates which are fitted in and secured to the body-castings (see Fig. 4) in any suitable manner and which overlie the depressed point and outer edge portions of the tongues.

e designates the radial grooves in the under sides of the cover plates. These grooves are made as deep as safety will permit, so that the surfaces of the lugs or ribs d^3 will be as near the street-level of the structure as possible, and thus practically close the breaks or openings between the cover-plates and the raised portions d' of the tongues.

It will be noted that the bolts E' , which secure the cover-plates to the structure, are so arranged as to be accessible through the boxes c c' and from the sides of the structure. These plates may, however, be so constructed and arranged that the fastening-bolts are accessible from the surface of the structure, as shown in Figs. 5 and 6. In this construction the bolts E^2 are passed vertically through the structure and are secured by nuts E^3 , which lie in countersinks or recesses in the surfaces of the plates. In this construction also the heel-end portions of the tongues are depressed, as shown at d^5 , to underlie the said plates. Of course, if desired, the said plates may be integral portions of the structure-castings, in which case the tongues would be accessible by means of the usual pit. The removable constructions are, however, to be preferred.

F indicates the connections for the tongue-actuating mechanisms. This mechanism, however, forms no part of this invention and may be of any usual or suitable character.

It will be apparent that various mechanical changes may be made in the construction and arrangement of the several parts without affecting or changing the essential features of the invention.

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

1. The slot-tongues having the radial ribs or lugs, in combination with the cover-plates having complementary radial grooves.

2. The slot-tongues having the surface-flush slot portions, and the radial lugs or ribs on their rear edge portions, the bottoms of the spaces or grooves between said lugs or ribs

being inclined upwardly to the surface of the said raised portions.

3. The combination in a slot-switch structure of the radially-ribbed slot-tongues, and the removable cover-plates having the radial grooves in their under side to receive the ribs on the tongues.

4. The slot-tongues having the depressed point portions, the raised slot-edge portions flush with the surface of the slot-point, and the depressed radially-ribbed rear-edge portions, in combination with the cover-plates having radial grooves in their under surfaces.

5. For an electric conduit railway or tramway, a conduit junction-piece having a single slot with two diverging branches extending through its upper part and a lateral cavity or recess formed in each of the two side portions of the conduit at opposite sides of the wide portion of the slot at its junction with the diverging slots, and slides each arranged to work laterally in one of the said upper portions and formed with an upwardly-extending part arranged to work in the corresponding cavity or recess.

6. For an electric conduit railway or tramway, a conduit junction-piece having a single slot with two diverging branches extending through its upper part and a lateral cavity or recess formed in each of the two side portions of the conduit at opposite sides of the wide portion of the slot at its junction with the diverging slots, slides each arranged to work laterally in one of the said upper portions and formed with an upwardly-extending part arranged to work in the corresponding cavity or recess, and means for operating said slides so that one slide will be moved into its inoperative position when the other is moved into its operative position.

7. For an electric conduit railway or tramway, a slotted junction-piece having lateral recesses in the two upper portions of the conduit at opposite sides of the slot at the junction, ribs or bars connecting the upper and lower parts of the recessed portions, two slides with upwardly-extending notched portions arranged to work in said recesses and to extend through the openings between said ribs or bars, and means for operating said slides.

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY CHARLES STIFF.

Witnesses:

LORETTO O'CONNELL,

H. W. SMITH.