

No. 685,822.

Patented Nov. 5, 1901.

J. H. COOK.

SWITCH FOR OVERHEAD TROLLEYS.

(Application filed June 13, 1901.)

(No Model.)

Fig. 1

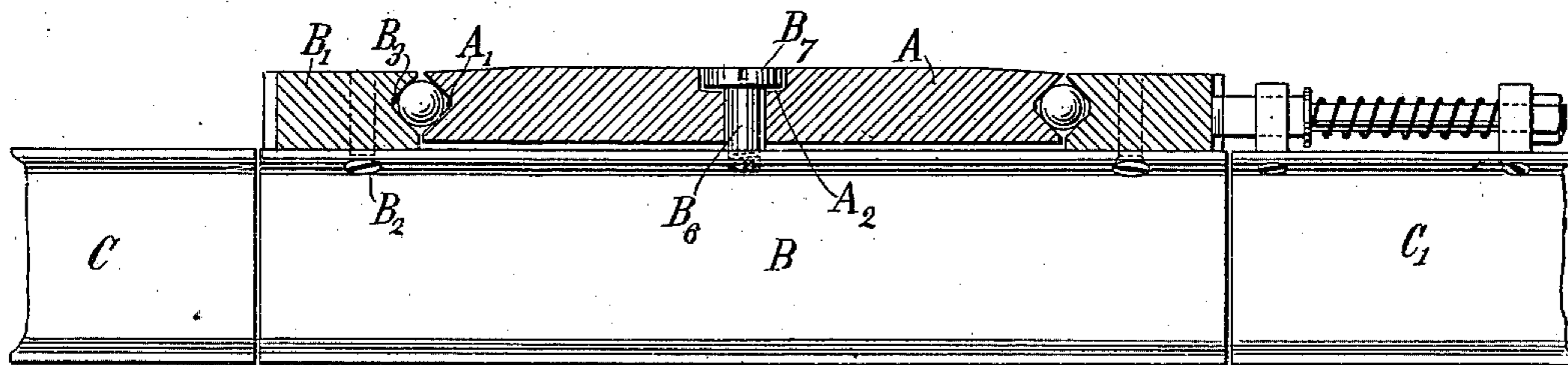


Fig. 2

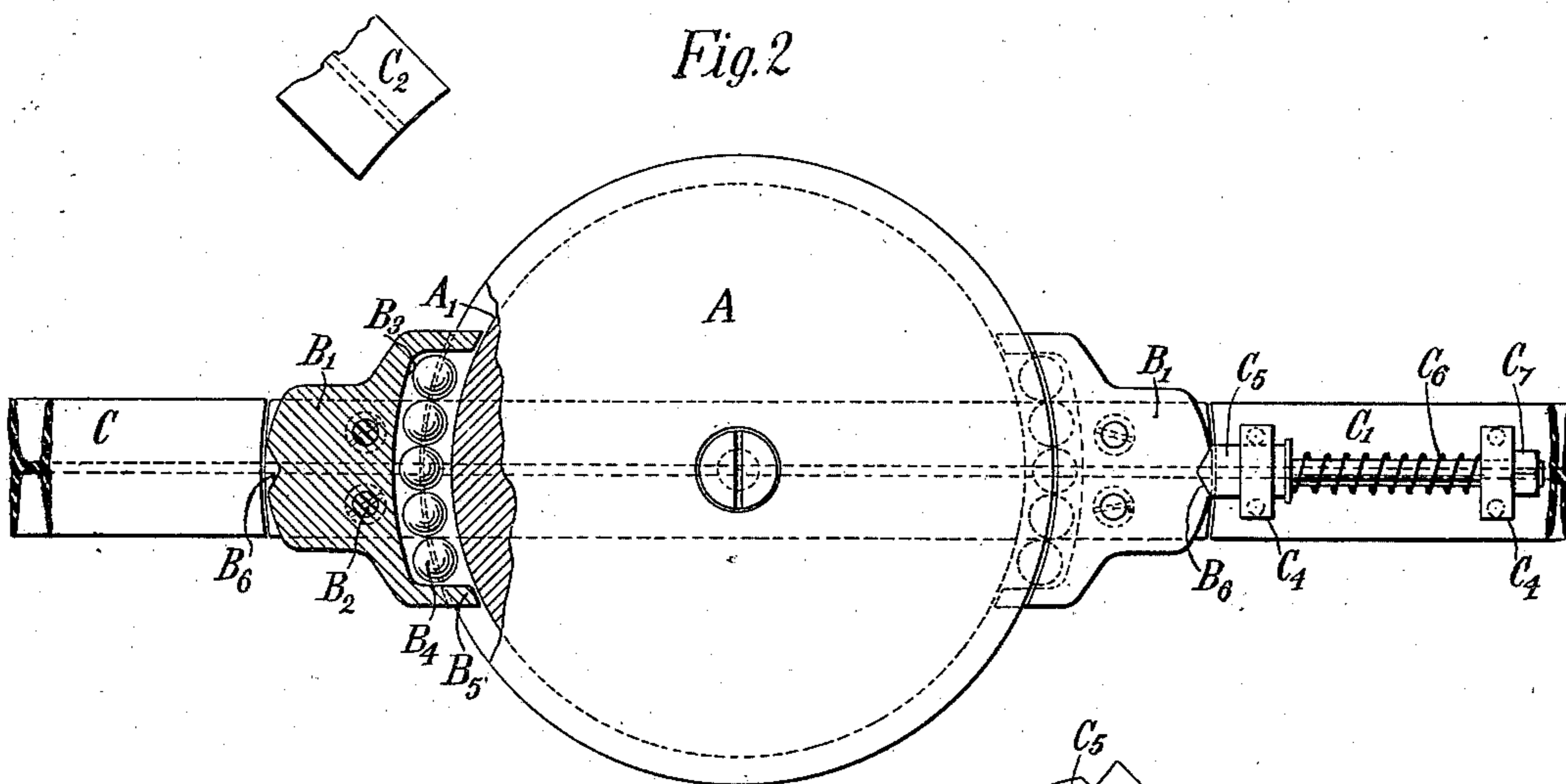
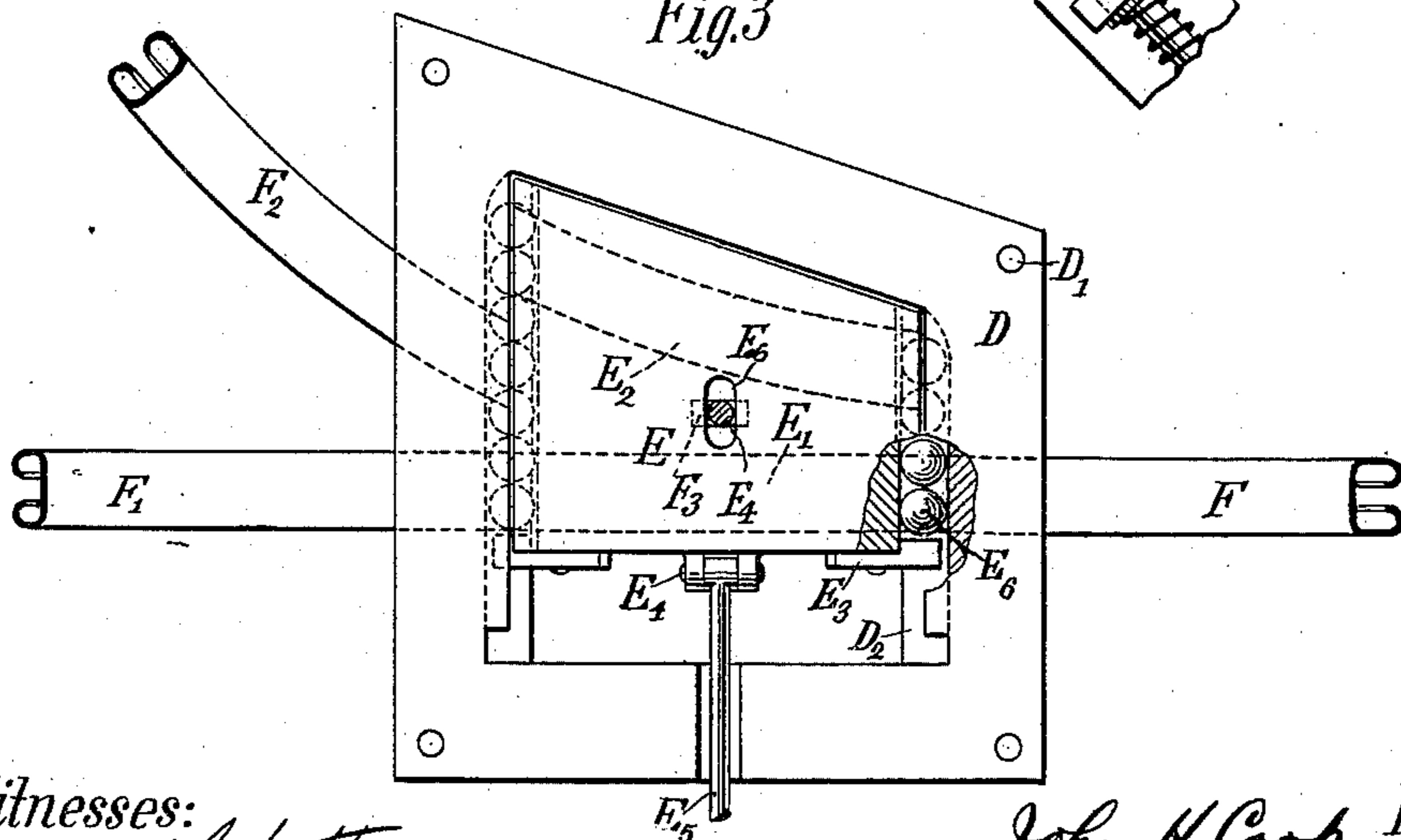


Fig. 3



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SWITCH FOR OVERHEAD TROLLEYS.

SPECIFICATION forming part of Letters Patent No. 685,822, dated November 5, 1901.

Application filed June 13, 1901. Serial No. 64,351. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. COOK, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Switches for Overhead Trolleys, of which the following is a specification.

My improvement relates to switches for overhead trolleys, and especially to such trolleys as are intended to be used on shipboard, where it is of the utmost importance that the track be supported as near the ceiling as possible.

In the accompanying drawings, in which the same reference characters relate to similar parts in the various views, Figure 1 is a vertical longitudinal section through my improved switch as attached to an I-beam trolley. Fig. 2 is a plan view of the same, partly in section. Fig. 3 is a plan view of a modified construction.

Referring to the circular form of switch disclosed in Figs. 1 and 2, A is a circular disk or supporting-plate, which may be rigidly attached to the ceiling or other support upon which the track is to be mounted in any suitable way. This disk is provided with a circumferential groove, as shown, and supports the swiveling rail section or track B. This section of track is rigidly attached to two guide-pieces or switch-plates B', at either end of the same, by suitable screws or bolts B². Two circular pockets B³ are formed in the inner faces of these guide members adjacent to the groove A' in the central disk. These pockets are, furthermore, of V cross-section, as shown in Fig. 1, and the ends of the pockets are closed by integral end pieces B⁵. A number of steel balls B⁴ are placed in each of the pockets before the guide-pieces B' are attached to the rail B, and when the switch is in operative position these balls are retained in the pockets and are forced into contact with the circular groove in the pocket and with the circular groove in the edge of the central disk, so that they serve to suspend the end pieces and the central rail-section B from the central disk or supporting-plate.

It is of course manifest that equivalent suspending means might be used in place of the

balls which I prefer to employ. For instance, rolls or wheels might be suitably mounted in the end pieces B', to come into engagement with the central disk, and, furthermore, the balls might be omitted entirely and the end pieces might bear directly in suitable grooves in the central disk or supporting-plate, if desired. It is manifest that the length of the pockets B³ is immaterial and that a single circular member or switch-plate might be formed in place of the two supporting members B' to entirely inclose the central disk. It is also manifest that instead of securing the rail-section rigidly to the switch-plates this rail-section might be rigidly secured to the central disk and that the coacting members might be suspended from the ceiling. In this case the rail-section and central disk would turn together, suspended by the balls from the stationary members adjacent the periphery of the central disk. I also employ a heavy bearing screw or bolt B⁷, which fits in a suitable central aperture A² in the central disk A and which is rigidly connected with the rail-section B, to always keep the rail in proper alinement with the central supporting-disk. Also in case of accident the bolt B⁷ would serve to suspend the rail-section, even though the other supporting means might fail. If desired, this supplemental supporting means for the rail-section might be omitted.

I have shown the switch and rail-section supported thereby as coacting with two tracks, one formed by the rail-sections C C' and the other at an angle to the first formed of the rail-sections C² C³. Upon the rail-section C', I mount a suitable spring-stop C⁵, which is supported in guides C⁴, rigidly secured to the top of the rail. The spring C⁶ serves to hold the stop in proper position and to normally press it inward, while the nut C⁷ on the outer end of the stop serves to retain it in the guides. The supporting-pieces B' are both formed with notches B⁶, with which the spring-stop C⁵ is adapted to coact, so that when the switch is swung into proper alinement with one of the tracks the spring-stop at once engages with the corresponding notch in the adjacent supporting-piece and holds the track in that position as long as required.

The operation of this form of switch is as follows: The central disk A is supported by any suitable means, and the central section of track B is supported thereby and allowed to rotate about the axis of the central disk, so as to come into alinement with either of the two sets of tracks. The balls which support the central section allow it to move with great facility, so that the switch can be readily turned while a carrier is upon the movable switch-section. It will be noted that by my improved construction the movable section of track can be supported very close to the supporting-beams or other supports upon which the track is mounted, so that it is not necessary to have the trolley-track project any great distance from the supporting means by reason of the vertical space required for the switch mechanism.

In my modified construction of switch shown in Fig. 3, D is a supporting-plate suitably attached to the ceiling upon which the track is mounted by securing-bolts passing through bolt-holes D'. This supporting-piece D has a central opening, as shown in the drawings, the sides of this opening D² being formed with V-shaped grooves extending substantially throughout the length of these sides. Within this opening is mounted the sliding piece E, which is supported by a set of steel balls E⁶ or other supporting means, which run in the grooves D² of the supporting-plate and in corresponding V-shaped grooves in the sides of the switch-plate E, these grooves having substantially the same contour in cross-section as the grooves in the switch shown in Fig. 1. The grooves in the sides of the switch-plate E do not extend entirely to the upper end of the same, as seen in Fig. 3, and the balls shown are prevented from escaping from the groove at that end. A suitable retaining-plate E³ is secured by a screw or nut in position at the other end of the grooves in the switch-plate to prevent the balls escaping at that point. The switch-plate is reciprocated by a rod E⁵, pivoted to the switch-plate at the point E⁴. In addition to the suspending means just disclosed I may employ an additional suspending means consisting of a bolt F⁴, having a suitable head F³ on the lower end, passing through an elongated slot E⁶ in the center of the switch-plate. This bolt can be secured to the ceiling and acts as an additional safety supporting means. The sections of track, shown in this case as of closed construction, are secured to the ceiling in any desired usual manner. A straight section F is adapted to be put in communication with the straight section F' on the other side or with the curved section F². These sections can be bolted at their adjacent ends to the supporting-plate D or secured thereto in any desired manner. The switch-sections E' and E² are secured in any desired manner to the switch-plate on its under side, and the straight section E' in the position in which the switch is shown in Fig. 3 connects

the straight sections of track F F', so that a trolley would pass straight across the switch. If, however, the switch-plate is moved downward, as shown in Fig. 3, the curved section E², secured to said plate, comes into alinement with the sections F F² and puts them into communication.

By "edges" as that term is used in the claims I wish to be understood as meaning lateral edges or the peripheral edge in the case of a circle or disk.

It is of course manifest that many variations from the exact disclosure which I have made may be devised by those familiar with this art. For instance, in my circular form of switch it is manifest that instead of suspending a single rail-section to rotate about the axis of the supporting-plate several rail-sections might be thus rotatably mounted, and they would come into alinement with stationary sections of track in a well-known manner. I do not wish, therefore, to be limited to the exact form of switches which I have shown.

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

1. In a trolley-switch, a supporting-plate having grooved edges, a movable rail-section, means attached to such rail-section, and having grooves formed therein coacting with the grooves in said supporting-plate and balls engaging both grooves.
2. In a trolley-switch, a flat supporting-plate having grooves formed in its edge, a movable rail-section, means attached to said rail-section having grooves formed in the same adjacent the grooves in the edges of the supporting-plate, means coacting therewith to form closed pockets the sides of which are formed by said grooves and balls in said pockets.
3. In a trolley-switch, a supporting-plate a movable rail-section, means secured to said rail-section movably suspended from the edges of said supporting-plate.
4. In a trolley-switch, a thin supporting-plate, a movable rail-section and means secured to said rail-section to movably suspend the same from the edges of said supporting-plate and supplemental supporting means for suspending said rail-section.
5. In a trolley-switch, a supporting-plate, V-shaped grooves formed in the edges of said plate, a movable rail-section and means secured to said rail-section having V-shaped grooves formed in the edges of the same forming closed ended pockets in conjunction with the grooves in the supporting-plate and balls in said pockets to suspend said rail from said supporting-plate.
6. In a trolley-switch, a supporting-plate, a movable rail-section and means to movably support said rail-section from the edges of said supporting-plate.
7. In a trolley-switch, a thin supporting-plate, a movable rail-section, means to mov-

ably support said rail-section from the edges of said supporting-plate and supplemental supporting means for said rail-section.

8. In a trolley-switch, a circular supporting-plate having a groove in its periphery, a rail-section, switch-plates secured to said rail-section, grooved pockets formed in said switch-plates coacting with the groove in said supporting-plate and balls in said pockets.
9. In a trolley-switch, a flat circular supporting-plate, a V-shaped groove in the periphery of said plate, a rail-section, switch-plates secured to said rail-section, V-shaped grooves in said switch-plates forming pockets in conjunction with the groove in said supporting-plate to rotatably support said rail-section from said supporting-plate.
10. In a trolley-switch, a flat circular supporting-plate, a V-shaped groove in the periphery of said plate, a rail-section, switch-plates secured to said rail-section having V-shaped grooved pockets formed therein coacting with the groove in said supporting-plate, balls in said pockets, and an axial supporting-bolt secured to said rail and having bearing in said supporting-plate.
11. In a trolley-switch, a circular supporting-plate, and means to suspend a section of track from the edge of said supporting-plate.
12. In a trolley-switch, a circular supporting-plate, means to suspend a rail-section from the edge of said supporting-plate, and supplemental means to suspend said rail-section from said supporting-plate.
13. In a trolley-switch, a circular support-

ing-plate, a rail-section, switch-plates attached to said rail-section, means to support said switch-plates from the edge of said supporting-plate and a spring-stop engaging said switch-plates.

14. In a trolley-switch, a circular supporting-plate adapted to be secured to the ceiling, a section of track and suspending means engaging the edges of said plate and suspending said track-section therefrom, such suspending means extending substantially in the plane of such plate.

15. In a trolley-switch, a movable rail-section, a member secured thereto having a V-notch therein and a spring-stop having an angular head engaging said notch to hold said rail-section in alinement.

16. In a trolley-switch, a supporting-plate adapted to be secured to the ceiling, a section of track and suspending means engaging the edges of said plate and suspending said track-section therefrom, such suspending means extending substantially in the plane of said plate.

17. In a trolley-switch, a supporting-plate, grooves formed in said plate, a section of track and suspending means therefor having grooves formed therein coacting with the grooves in said plate and antifriction devices engaging both sets of grooves to suspend said track-section from said plate.

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Witnesses:

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