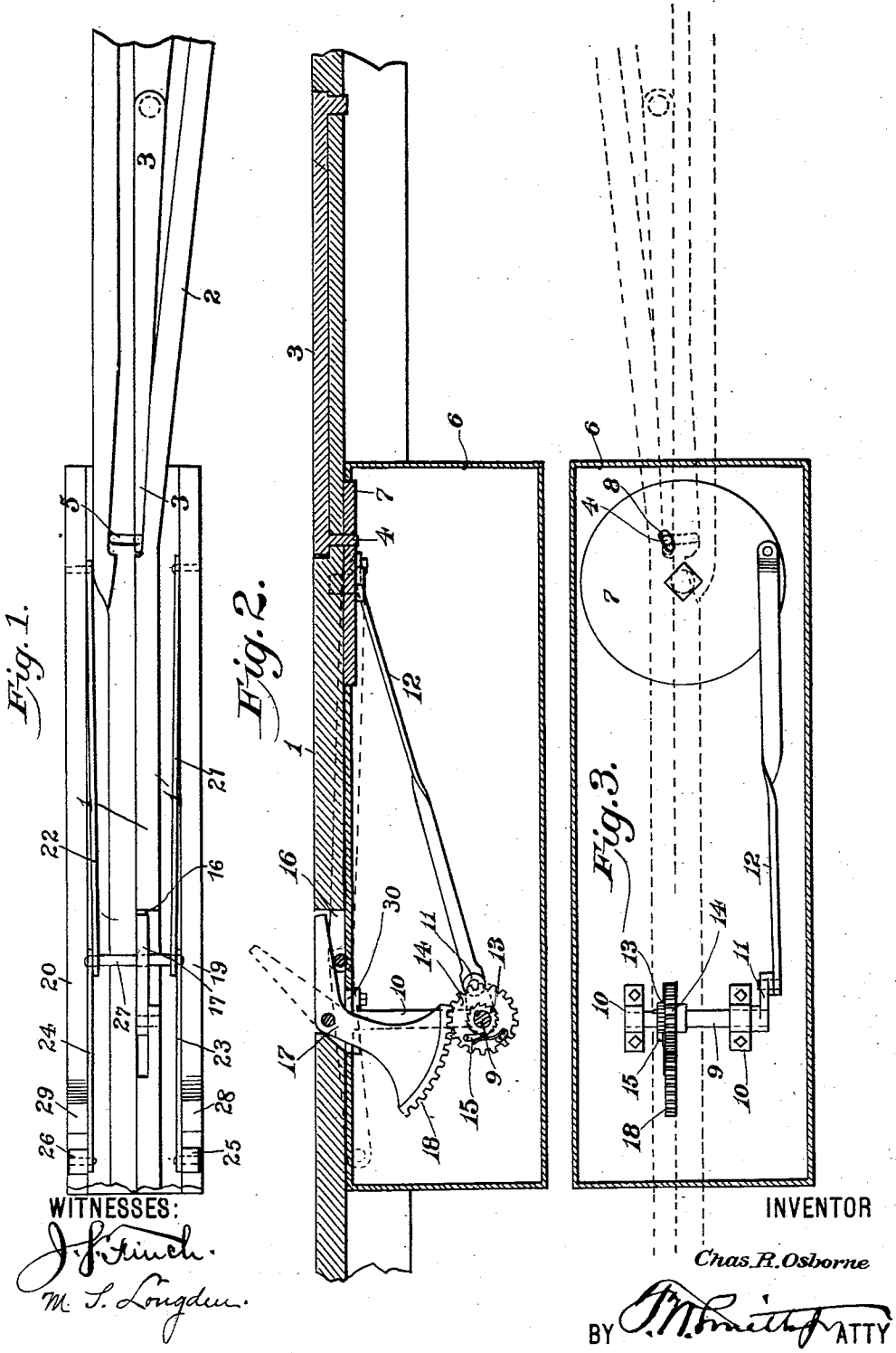
(No Model.) 2 Sheets—Sheet 1.

C. R. OSBORNE.

SWITCH FOR STREET CAR TRACKS.

No. 564,837. Patented July 28, 1896.



WITNESSES:

J. F. Finch.

M. L. Longden.

INVENTOR

Chas. R. Osborne

BY F. M. Smith ATTY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

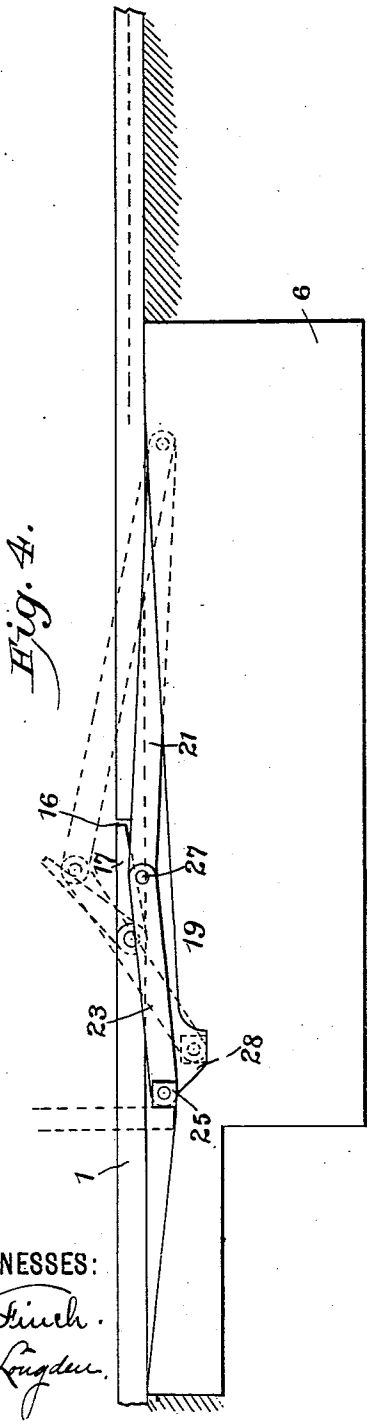
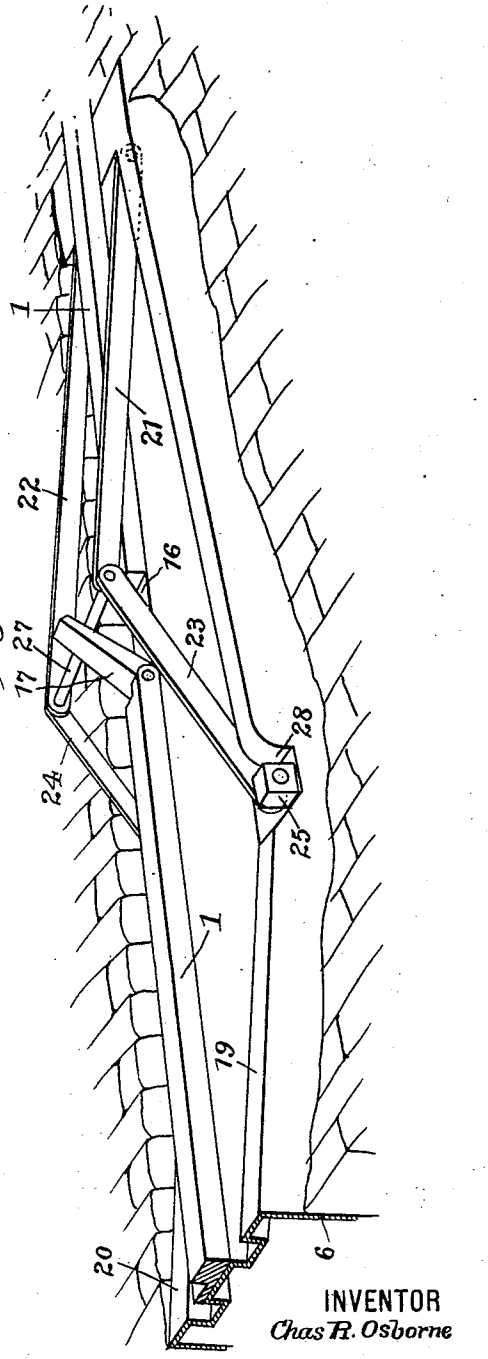


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES R. OSBORNE, OF DANBURY, CONNECTICUT.

SWITCH FOR STREET-CAR TRACKS.

SPECIFICATION forming part of Letters Patent No. 564,837, dated July 28, 1896.

Application filed November 21, 1895. Serial No. 569,707. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. OSBORNE, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Switches for Street-Car Tracks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in switches for street-railway tracks, and has for its object to provide such a switch as shall be very positive in its operation and not likely to get out of order, while at the same time the construction is quite simple.

In the accompanying drawings, which form a part of this application, Figure 1 is a plan of a short section of a track equipped with my improvement; Fig. 2, a vertical sectional elevation of the same; Fig. 3, an interior bottom view; Fig. 4, a side elevation of a section of track, illustrating the device for raising the bell-crank; and Fig. 5, a perspective of such device in elevated position.

Similar numerals of reference denote like parts in the several figures of the drawings.

1 represents the main line of track, and 2 is the track diverging therefrom in connection with which my improvement is to be used. At the junction of these two main tracks is the usual pivoted frog 3, the free or apex end whereof has depending therefrom a pin 4, which passes through a slot 5, cut or otherwise formed in the track at that point.

In order to properly protect the various parts of my improvement, I provide a box 6, which is properly sunken beneath the ground under the track, and within this box I confine certain operative parts of my improvement, which I will now describe.

7 is a disk which is journaled in any suitable and ordinary manner at the top of the box 6 so as to be capable of revolution in a horizontal plane, and this disk is provided with a slot 8, the plane of which crosses the plane of the slot 5, within which slot 8 the pin 4 extends. It will thus be clearly seen that connection is thereby established between the disk and the frog 3, so that when said disk is reciprocated to and fro the frog will likewise be reciprocated.

9 is a shaft which is journaled in any suitable manner in brackets 10, secured to the box 6, and from one extremity of this shaft extends a crank 11.

12 is a pitman whose extremities are pivoted, respectively, to the crank 11 and the disk 7, whereby when the shaft 9 is rocked said disk will likewise be rocked.

13 is a ratchet-wheel rigid on the shaft 9, and 14 is a pinion loose on said shaft but carrying a spring-actuated pawl 15, which normally engages with the teeth on said ratchet, so that it will be clear that when the pinion is revolved in one direction there will be no movement of the shaft, since the pawl will ride freely over the ratchet, but when the reverse movement of the pinion takes place the engagement of the pawl and ratchet will of course be such as to lock the pinion and shaft together, whereby the latter will be revolved.

The main track is cut away, as seen at 16, and within this particular portion is pivoted a bell-crank lever 17, the upper end whereof when depressed to a level with the track is of such a width as to leave a space beneath the same in the cut-away portion 16, while the lower end of this lever is shaped into a segment-gear 18, which normally engages with the pinion 14.

The means which I employ for raising the bell-crank I will now describe.

19 20 are two auxiliary inclined tracks formed on the upper part of the box 6, and pivoted one each side of the track at one end of the box 6 are levers 21 22.

23 24 are levers the upper ends of which are pivoted to the ends of the levers 21 22, respectively.

25 26 are rectangular-shaped blocks pivoted to the free ends of the levers 23 24, and normally resting on the auxiliary tracks 19 20.

27 is a cross-bar which connects the levers 21 22 together and rests beneath and supports the bell-crank 17. The auxiliary tracks 19 20 are provided with notches or depres-

sions 28 29, within which the blocks 25 26 are adapted to enter when the bell-crank lever 17 is in raised position, as shown in Fig. 5.

In operating my improvement the motorman or driver depresses a lever or other device carried by the car (as shown in dotted lines at Fig. 4) in such manner as to cause the blocks 25 26 to be pushed within the notches in the auxiliary tracks 19 20, and said notches are made of a sufficient depth to permit the said blocks 25 26 to drop beneath the field of travel of the device carried by the car. This operation will cause the upper end of the bell-crank lever to be raised to an elevated position, as shown in Fig. 5, thereby causing the lower end of said bell-crank to effect the rotation of the pinion 14. As the pinion thus rotates, the pawl will run over the ratchet-teeth, so that there will be no movement of the shaft 9, but as the car advances the wheels will strike against the upper or raised end of the lever and will force the latter down to a horizontal position, thereby effecting the reverse movement of the segment and causing the pinion and shaft to revolve in harmony, whereby the disk 7 will be turned to operate the frog. The movement of the car in depressing the upper end of the bell-crank will, as is obvious, simultaneously return the parts for elevating said bell-crank to normal position.

30 is an opening in the top of the box 6 through which the lower part of the bell-crank extends.

The motorman or driver can tell at a glance whether the switch is properly set, and the elevation of the upper end of the bell-crank is accomplished with great facility.

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

1. In a switch for street-car tracks, the combination of the horizontally-disposed disk journaled beneath the track and having therein a slot, the pivoted frog having at its free end a pin which depends through an opening in the track into said slot, the box beneath the track, the shaft journaled within said box and having rigidly mounted thereon a ratchet, the pinion loose on said shaft and carrying a spring-actuated pawl which normally engages with said ratchet, the crank extending from said shaft, the pitman having its extremities pivoted respectively to said crank and disk, and the bell-crank pivoted within an opening in the track and having its upper end capable of being elevated and lowered while its lower extremity is formed into a segment-gear which normally engages said pinion, substantially as set forth.

2. In a switch for street-car tracks, the combination of the box, the shaft journaled therein and carrying a ratchet, the pinion loose on said shaft and carrying a spring-actuated pawl which normally engages with said ratchet, the horizontally-disposed disk journaled below the track, the pivoted frog having at its free end a pin which depends through an opening in the track and loosely engages with said disk at a point eccentric to its axis of rotation, the crank extending from said shaft, the pitman having one end pivoted to said crank while the other end is pivoted to the bottom of said disk at or near its periphery, and the pivoted lever carrying a segment-gear which engages with said pinion by the elevation and depression of which lever said pinion is operated to effect the turning of the frog, substantially as set forth.

3. In a switch for street-car tracks, the combination of a bell-crank lever pivoted to the track and adapted to actuate instrumentalities contained within a box beneath the track for operating the switch, the auxiliary tracks 19, 20, the levers 21, 22, pivoted to said tracks, the cross-bar 27 which connects said levers and rests normally beneath the upper end of the bell-crank 17, the levers 23, 24, pivoted to the levers 21, 22, and carrying blocks 25, 26, which normally rest upon said auxiliary tracks, for the purpose set forth.

4. In a switch for street-car tracks, the combination of a bell-crank lever pivoted to the track and adapted to actuate instrumentalities for operating the switch, the auxiliary tracks at either side of the car-track, the levers 21, 22, pivoted in close proximity to the car-track and connected by a cross-bar which rests normally beneath the upper end of said bell-crank, the levers 23, 24, pivoted at one end to said levers 21, 22, and carrying at their free ends blocks 25, 26, which normally rest upon said auxiliary tracks, and are adapted to enter recesses 28, 29, in said tracks when the upper end of said bell-crank is elevated, substantially as and for the purpose set forth.

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

CHAS. R. OSBORNE.

Witnesses:
JOHN R. BOOTH,
ALMOND D. POWERS.