No. 843,896. PATENTED FEB. 12, 1907.

C. C. KORNS.

SLOT SWITCH.

APPLICATION FILED APR. 11, 1906.

3 SHEETS—SHEET 1.

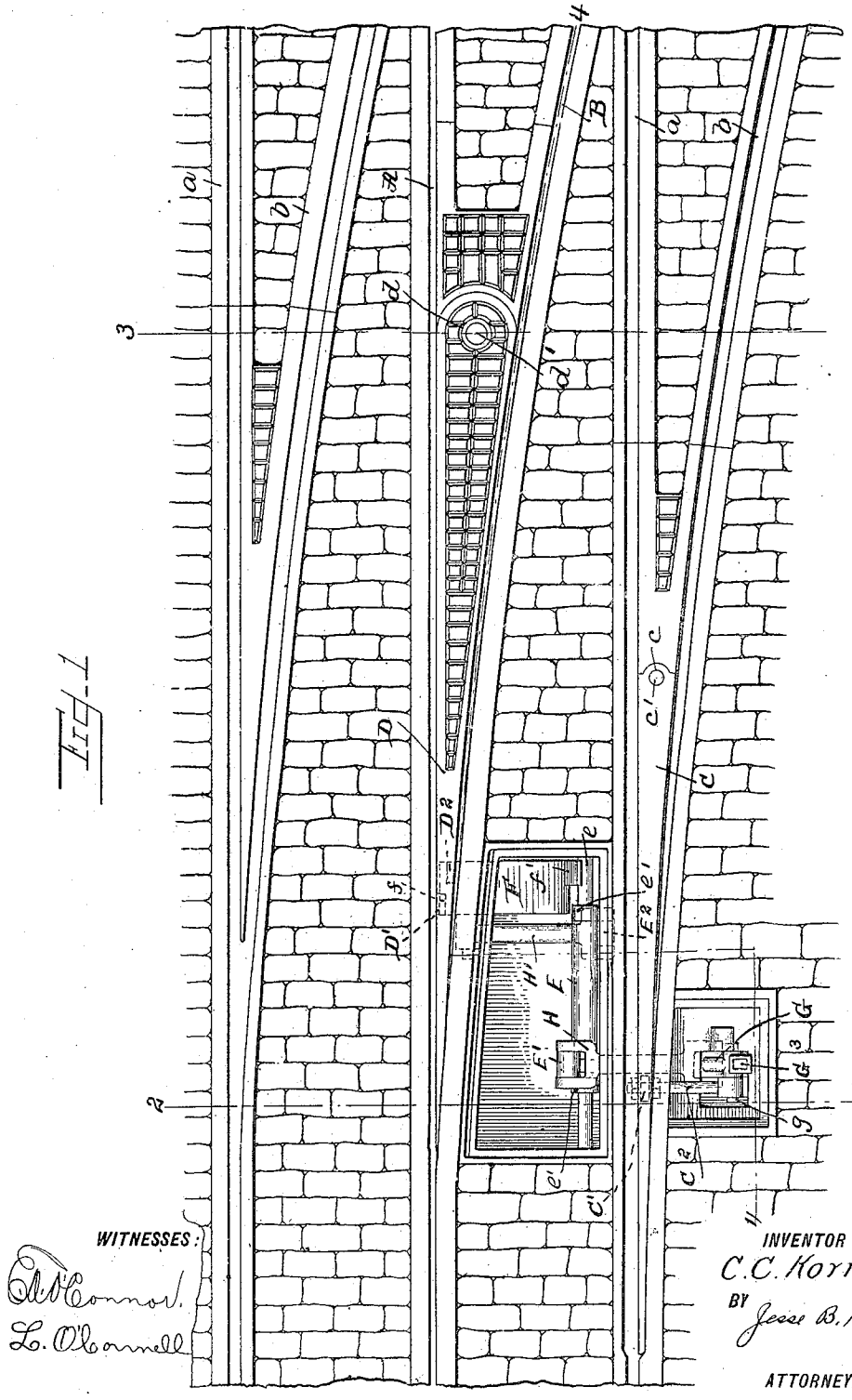


Fig. 1.

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3 SHEETS—SHEET 2.

Fig. 2.

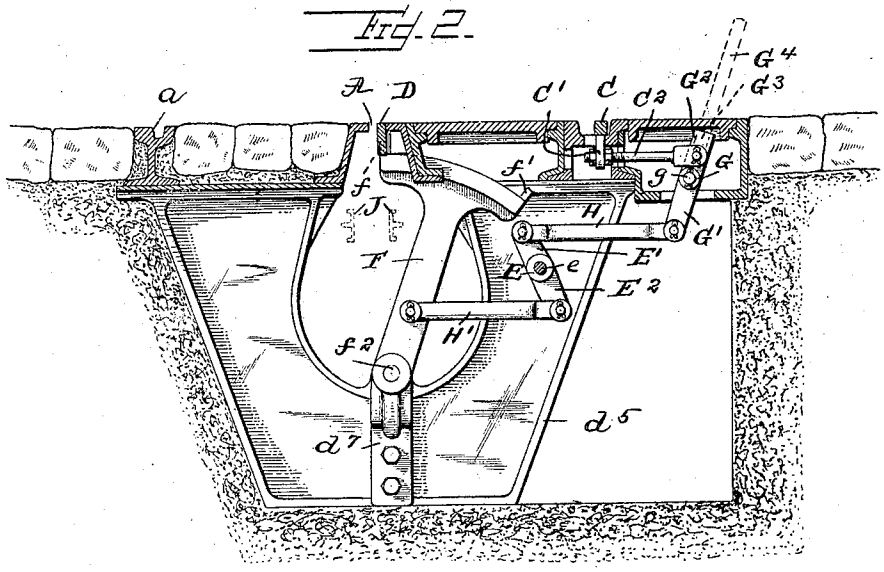
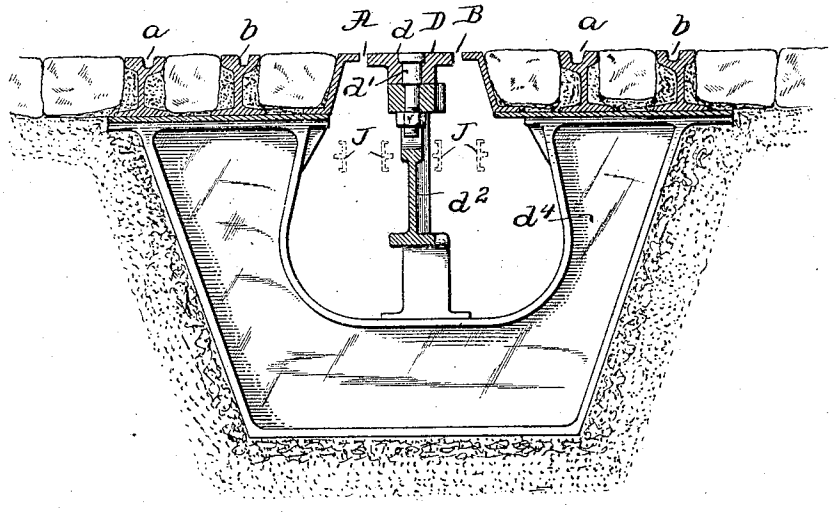


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

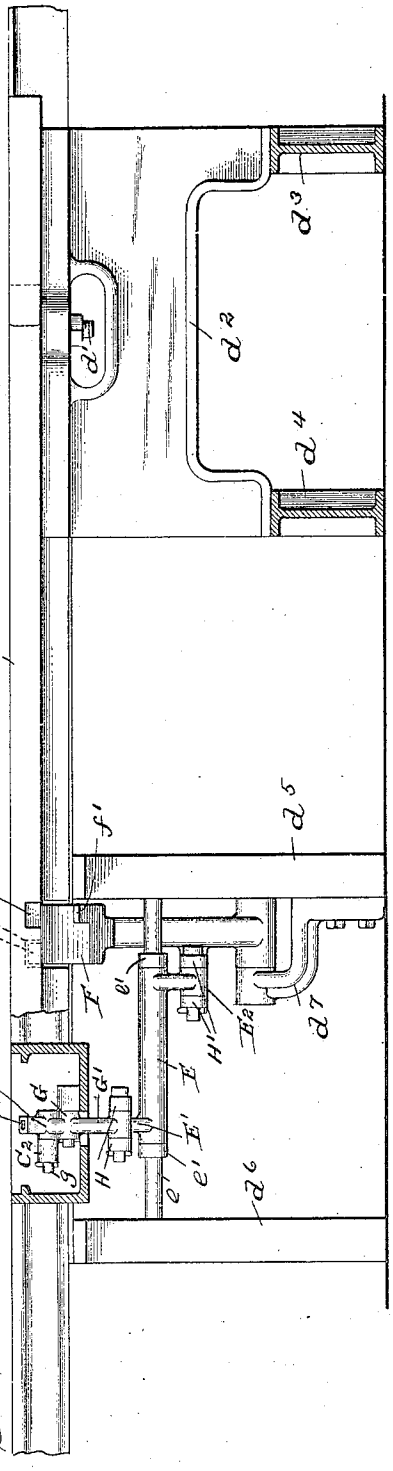
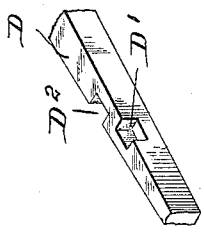


Fig. 5.



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UNITED STATES PATENT OFFICE.

CLARENCE C. KORNS, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

SLOT-SWITCH.

No. 843,896. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed April 11, 1906. Serial No. 311,044.

To all whom it may concern:

Be it known that I, CLARENCE C. KORNS, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Slot-Switches, 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-tongue supporting, operating, and retaining mechanism.

The object of this invention is to so arrange the slot-tongue, its supporting and operating mechanism, so as to avoid any opening in the street-surface of the structure of a greater width than the width of the slot and also to support the tongue in close proximity to the point, thereby relieving the strain from the heel of the tongue. It also prevents the pounding of the point below the surface of the street by the street traffic.

Another object of this invention is that the plow of each car will remove the dirt from the point of the switch, thereby preventing any accumulation of dirt which would prevent the operation of the tongue.

Other features of my invention will hereinafter appear.

Referring to the accompanying drawings, in which—

Figure 1 is a plan view with the manhole-covers removed. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a similar view on the line 3 3. Fig. 4 is a longitudinal section of the bare structure on the line 4 4 of Fig. 1. Fig. 5 is a detail perspective view of the point of the slot-tongue.

a a are the main or through rails; *b b*, the branch rails.

A is the main or through slot, and B the branch slot.

C is the rail-switch tongue, pivoted at *c* by means of the pin *c'*. This switch may be of any desirable construction. D is the slot-switch tongue, pivoted at *d* by means of the pin *d'*, which passes through the tongue and the gusset-post d^2, which is in turn supported on the yokes d^3 and d^4. The gusset-post d^2 acts as a bed or bearing for the heel of the slot-tongue D. On the bottom of the tongue D and near the point thereof are the indents D' and D^2 for the purpose hereinafter specified.

F is a sector the periphery of which is machined concentric with the center thereof. Projecting from each end of the face of this sector F and out of vertical alinement with each other are lugs *f* and *f'*. Driven into the hub of the sector F or otherwise secured thereto is the shaft f^2. The ends of this shaft are journaled in the yoke d^5 and the bracket d^7, which is secured to the yoke d^5.

Loosely mounted on the shaft *e* is a lever E, having the arms E' and E^2. The shaft *e* is secured to the yokes d^5 and d^6, and the lever E is held in its proper alinement on the shaft *e* by means of the collars *e' e'*.

g is a pin which projects from a boss on the framework of the structure. Loosely mounted on this pin *g* is the lever G, having the arms G' and G^2.

G^3 is a socket in the end of the arm G^2, in which is inserted the end of a lever G^4 for the purpose hereinafter specified.

Projecting from the rail-switch tongue C is a lug C'. Secured to this lug is the rod C^2. The other end of this rod is pivotally connected to the arm G^2 of the lever G. Pivotally connected to the arm G' of the lever G and the arm E' of the lever E are the ends of the link H, and pivotally connected to the arm E^2 of the lever E and the sector F are the ends of the link H'.

Resting on the periphery of the sector F is the point of the slot-switch tongue D, the indents D' and D^2 being in line of movemnt with the respective projection *f* and *f'* on the ends of the face of the sector F. The width of these projections *f f'* is slightly less than the width of the indents D' and D^2, so that the outer edge of the sector is beyond the outer line of the tongue D.

The operation is as follows: Presuming the switch is set for the straight track, as shown in the drawings, and it is desired to shift it in order that the next car will take the branch track, the operator will insert the lever G^4 into the socket G^3 and move the lever G^4 to the left, thereby rocking the lever G, the arm G^2 shifting the rail-switch tongue C through the medium of the rod C^2, while the sector F will be shifted to the extreme left through the following devices: arm G', link H, arms E' and E^2 of the lever E, and link H'. As can be seen from Fig. 2, there is considerable lost motion of the sector F before the projection *f'* strikes the tongue D to shift it to open the slot for the branch track.

This is done in order to get the proper clearance below the point of the slot-switch tongue for the plow carried by the cars. As can be seen in Fig. 2, the conductor-bars J are clear of the tongue-supporting sector F when in either position. Both switch-tongues will be held in their extreme positions by means of the weight of the sector F, as its center of gravity is at a considerable distance from the center of oscillation. Therefore when the track-switch is thrown slightly beyond its central point the weight of the sector will throw and retain the tongues at their extreme positions.

I have illustrated this device in connection with one rail-switch; but, if it is desired, it can be connected to a rail-switch of both rails by merely duplicating the mechanism shown in the drawings.

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

1. In a slot-switch, a tongue having an oscillating supporting and operating member.

2. In a slot-switch, a tongue having a support for its heel, and an oscillating supporting and operating member for its point.

3. In a slot-switch, a tongue having an oscillating supporting and operating member whose movement is greater than the movement of said tongue.

4. In a slot-switch, a tongue having a support for its heel, and an oscillating supporting and operating member for its point whose movement is greater than the movement of the tongue.

5. In a slot-switch, a tongue having an oscillating supporting and operating member, and devices on the oscillating support to move the tongue from one side of the slot to the opposite side of said slot, substantially as set forth.

6. In a slot-switch, a tongue having an oscillating supporting and operating member, devices on the support to move the tongue from one side of the slot to the opposite side of said slot, the oscillating support having a greater movement than the movement of the tongue.

7. In a slot-switch, a tongue having an oscillating supporting and operating member, projections on the oscillating support to move the tongue from one position to the other position, and indents in the tongue to receive the projections on the oscillating support, substantially as set forth.

8. In a slot-switch, a tongue having an oscillating supporting and operating member, projections on the oscillating support to move the tongue from one position to the other position, and indents in the tongue to receive the projections on the oscillating support, the movable support having a greater movement than the movement of the tongue.

9. In a slot-switch, a tongue having a movable support, devices on the movable support to move the tongue from one position to the other position, the center of gravity of the movable support passing beyond the center in each position, for the purpose set forth.

10. In a railway switch mechanism, a slot-switch tongue having a movable support, devices on the movable support to move the slot-switch tongue, in combination with a track-switch, and connections between the movable support and the movable member of the track-switch.

11. In a railway switch mechanism, a slot-switch tongue having a movable support, projections on the movable support to shift the tongue, indents in the tongue to receive the projections on the support in combination with a track-switch and connections between the movable support and the track-switch, for the purpose set forth.

12. In a railway switch mechanism, a slot-switch tongue having a movable support, devices on the movable support to shift the slot-switch tongue, in combination with a track-switch tongue, operative connections between the movable support and the track-switch tongue, the center of gravity of the movable support passing beyond the center in each position, for the purpose set forth.

13. In a railway switch mechanism, a slot-switch tongue, supported on a sector provided with projections to shift the tongue.

14. In a railway switch mechanism, a slot-switch tongue supported on a sector provided with projections to shift the tongue in combination with a track-switch and connections between the sector and the track-switch for the purpose set forth.

15. In a railway switch mechanism, a slot-switch tongue, supported on a sector provided with projections to shift the tongue, the center of gravity of the sector passing beyond the center in each position.

16. In a railway switch mechanism, a slot-switch tongue, supported on a sector provided with projections to shift the tongue in combination with a track-switch and connections between the sector and the track-switch for the purpose set forth.

17. In a railway switch mechanism, a slot-switch tongue, supported on a sector provided with projections to shift the tongue, the center of gravity of the sector passing beyond the center in each position in combination with a track-switch and connections between the sector and the track-switch for the purpose set forth.

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

CLARENCE C. KORNS.

Witnesses:
JESSE B. HELLER,
H. W. SMITH.