H. J. FERRIS.

OVERHEAD SWITCH.

APPLICATION FILED JAN. 22, 1921.

1,403,853

Patented Jan. 17, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

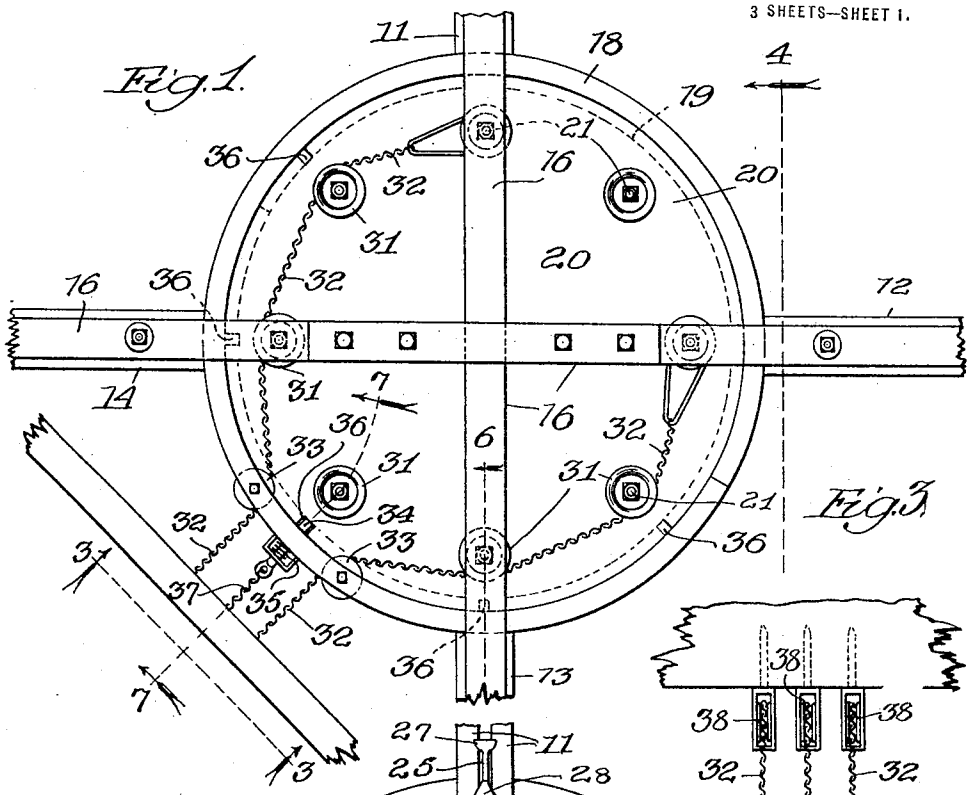

Fig. 3.

Fig. 2.

Inventor:
Howard J. Ferris,
By Dyrenforth, Lee, Chritton & Wiles
Attys.

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3 SHEETS—SHEET 2.

Fig. 4.

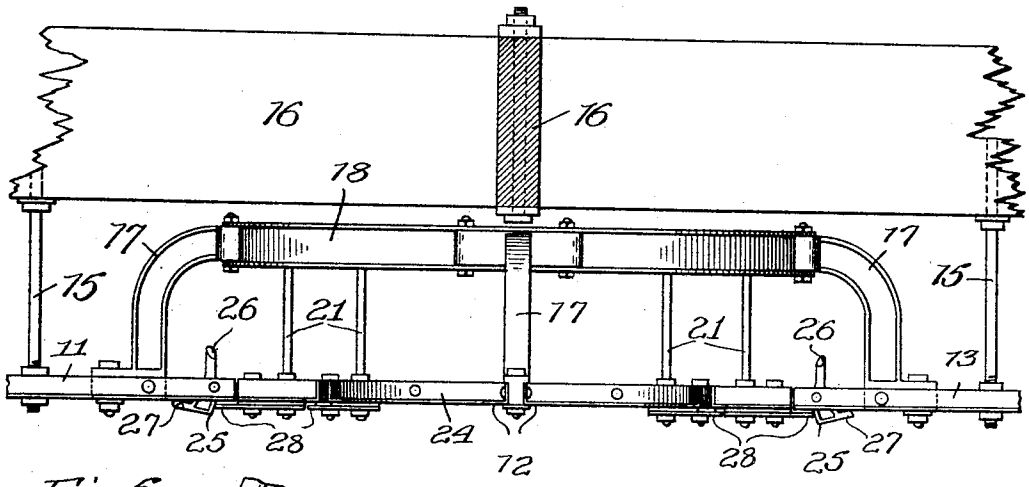

Fig. 5.

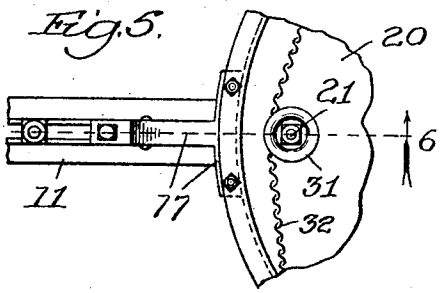

Fig. 6.

Inventor:
Howard J. Ferris,
By Dyrenforth, Lee, Chrisman & Wiles,
Attys.

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3 SHEETS—SHEET 3.

Fig. 7.

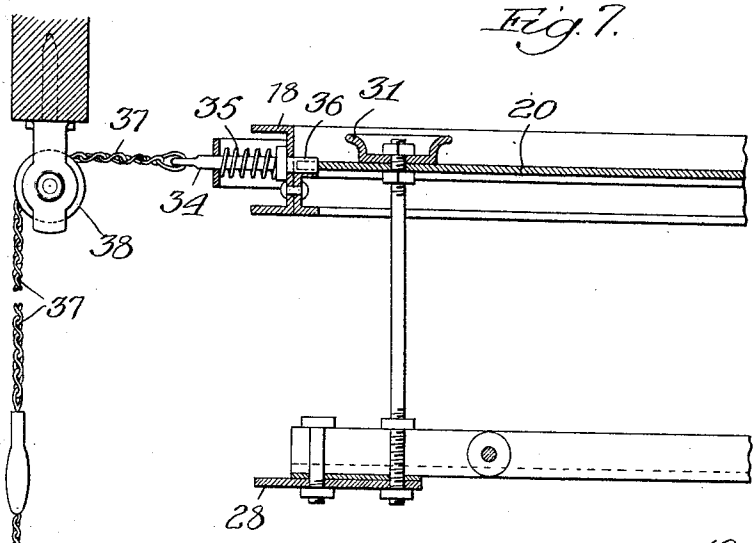
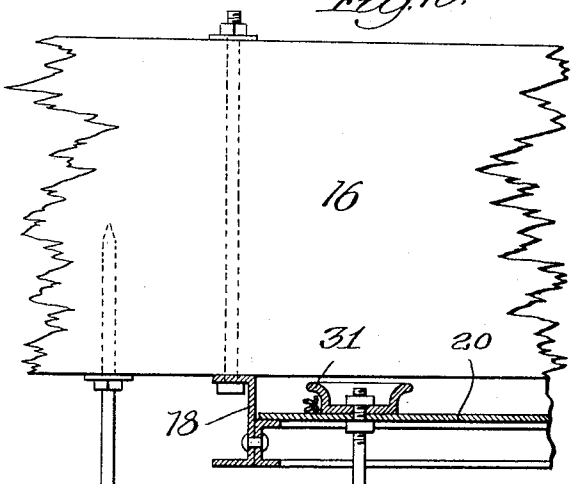


Fig. 10.



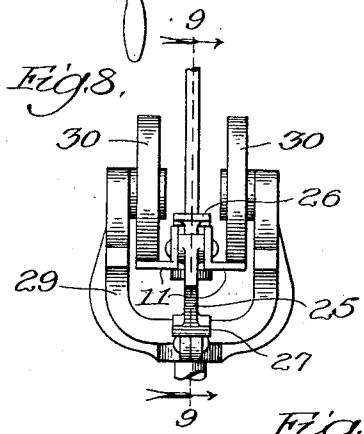
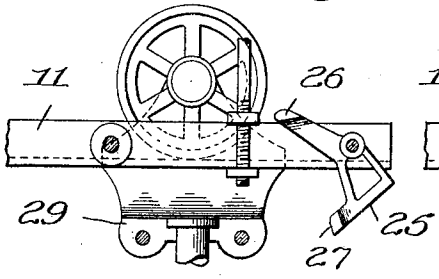


Fig. 8.

Fig. 9.



Inventor:
Howard J. Ferris,
By Dyrenforth, Lee, Christy & Wiles,
Attys.

UNITED STATES PATENT OFFICE.

HOWARD J. FERRIS, OF HARVARD, ILLINOIS, ASSIGNOR TO HUNT, HELM, FERRIS & COMPANY, OF HARVARD, ILLINOIS, A CORPORATION OF ILLINOIS.

OVERHEAD SWITCH.

1,403,853. Specification of Letters Patent. Patented Jan. 17, 1922.

Application filed January 22, 1921. Serial No. 439,061.

To all whom it may concern:

Be it known that I, HOWARD J. FERRIS, a citizen of the United States, residing at Harvard, in the county of McHenry and State of Illinois, have invented a new and useful Overhead Switch, of which the following is a specification.

This invention relates to overhead switches and is particularly adapted to be used on monorail tracks. It is fully described in the following specification and shown in the accompanying drawings, in which Figure 1 is a top plan view of an embodiment of my invention;

Fig. 2 is a bottom plan view of the same;

Fig. 3 is a partial side elevation viewed from the line 3—3 of Fig. 1;

Fig. 4 is a side elevation of the switch looking in the direction of the arrows 4—4 of Fig. 1;

Fig. 5 is a detail in plan view of a supporting bracket;

Fig. 6 is a partial section on the line 6 of Fig. 5;

Fig. 7 is a partial sectional view on the line 7—7 of Fig. 1 through the switch showing the shifting and locking mechanisms;

Fig. 8 is a partial end elevation of a carrier hanger on a track;

Fig. 9 is a section and elevation on the line 9—9 of Fig. 8, and

Fig. 10 is a vertical section showing a modified form of switch and support therefor.

I have illustrated as an embodiment of the invention a switch placed at the intersection of the stationary tracks 11, 12, 13 and 14, which are of a common form, consisting of two angle irons placed back to back and supported by means of bolts 15 and joists 16.

In the preferred form the switch is supported from the inner ends of the stationary tracks by means of tracks 17, which are secured at their upper ends to a ring 18, which is preferably made of channel form with the web of the channel on the inside, as shown in Fig. 6. An inner ring 19 is riveted to the ring 18 so as to form a ledge upon which the circular plate or disk 20 rests. Bolts 21 are secured to this disk and serve to support the switch tracks 22, 23 and 24.

The central track 23 in the position shown in Fig. 2 connects tracks 11 and 13.

Between the inner ends of each of the stationary tracks is hingedly mounted a stop 25, each of which has laterally projecting ears 26 and 27, which are adapted to engage the angle irons forming the stationary tracks, so as to limit the movement of the stop.

The switch tracks are formed so that their ends pass in succession before the inner ends of the stationary tracks and have cams 28 secured thereto. These cams engage the stops 25, as shown in Fig. 6, when the end of the switch track is immediately in front of one of the ends of the stationary track, moving the stop 25 to inoperative position.

The action of the stops is illustrated in Figs. 8, 9 and 10. The hanger 29 has rollers 30 journaled thereon, which engage the upper surface of the angle irons. When the switch is so turned that none of the cams 28 engages a pawl 25, it will drop, as shown in Fig. 9, until the ear 26 rests upon the top of the angle iron track. The ear 27 will then descend into the path of the hanger 29 and it will be prevented from running off of the open end of the track.

In the position of the switch shown in Fig. 2 the switch track 23 communicates with stationary tracks 11 and 13. If, however, the disk 20 is rotated counter-clockwise through an angle of 45° the tracks will be brought to the positions shown in dotted lines. The switch track 22 will then connect stationary tracks 12 and 13 while the switch track 24 will connect stationary tracks 11 and 12. A further movement of 45° in a counter-clockwise direction would bring the switch track 23 into alignment with the stationary tracks 12 and 14, permitting communication therebetween, while the ends of the tracks 11 and 13 would be open.

To accomplish the turn of the disk 20, I have provided a series of circular guides 31, which are secured to the upper face of the disk 20, as shown in Fig. 1. Chains 32 are secured to two of these and pass around the outside of the others and around sheaves 33 and through openings in the side of the ring 18. The locking pin 34 is pressed inwardly by means of a spring 35, and is adapted to engage a series of notches 36, which are formed in the periphery of the disk 30. These are so placed that when they are engaged by the pin 34 they will hold the switch in one of its operative positions. A chain 37 is connected to the pin 34 and is carried over a sheave 38 to a point convenient for the operator. The chains 32 are carried

over similar sheaves at the side of the sheave 38 as shown in Figs. 3 and 7.

When it is desired to turn the switch, the chain 37 is pulled so as to retract the pin 34, and one of the chains 32 pulled so as to turn the switch to the desired position. Upon release of chain 37 the switch is again locked. In Fig. 10 is shown a modified form of switch in which the ring 18 is supported directly from the joist 16. It will also be understood that with this method of supporting the rings, a bracket 17 may be used to position the ends of the track relative thereto.

While I have shown and described but two embodiments of my invention, it will be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made which do not deviate from the spirit and scope of my invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in the invention as broadly as possible in view of the prior art.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an overhead switch, a circular plate, a ring loosely surrounding said plate, a circular ledge within said ring on which said plate is supported and means for supporting said ring.

2. In an overhead switch, a circular plate, a ring loosely surrounding said plate, said ring consisting of a channel with the web turned inwardly so as to form a shallow cylinder, an annular member secured to the inside of said ring and forming a ledge on which the plate is supported and means for supporting said ring.

3. In an overhead switch, a circular plate, a ring loosely surrounding said plate, said ring consisting of a channel with the web turned inwardly so as to form a shallow cylinder, an annular member consisting of a structural shape with a flange turned outwardly and secured to the inside of said ring and forming a ledge on which the plate is supported and means for supporting said ring.

4. In an overhead switch, a circular plate, a ring loosely surrounding said plate, said ring consisting of a structural shape with a side turned inwardly so as to form a shallow cylinder, an annular member secured to the inside of said ring and forming a ledge on which the plate is supported and means for supporting said ring.

5. In an overhead switch, a circular plate, a ring loosely surrounding said plate, said ring consisting of a structural shape with a side turned inwardly so as to form a shallow cylinder, an annular member secured to the inside of said ring and forming a ledge on which the plate is supported, track members leading to a point below said ring and brackets carried by said track members and supporting said ring.

HOWARD J. FERRIS.