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ADJUSTABLE CAM FOR CABLE CARS

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Fig. 1

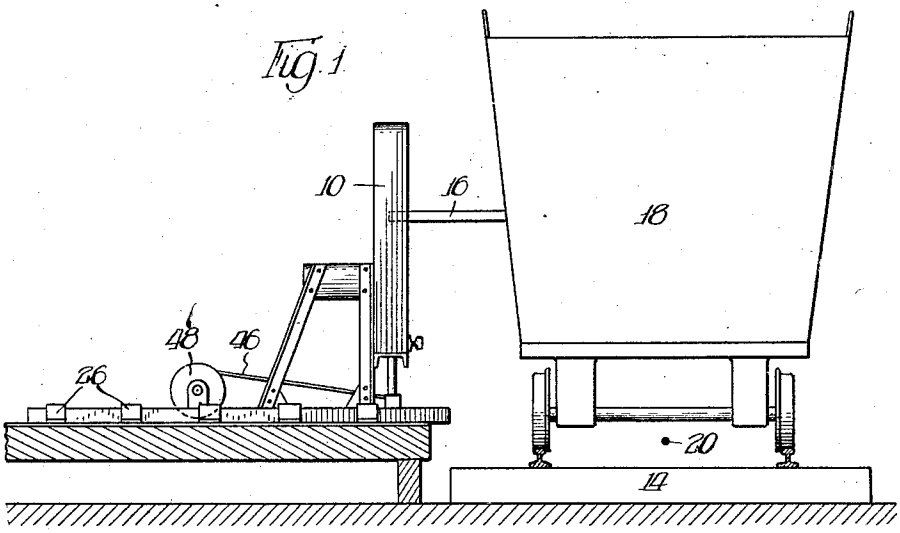


Fig. 2

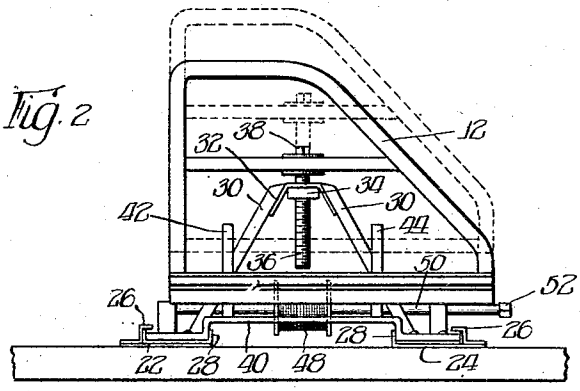
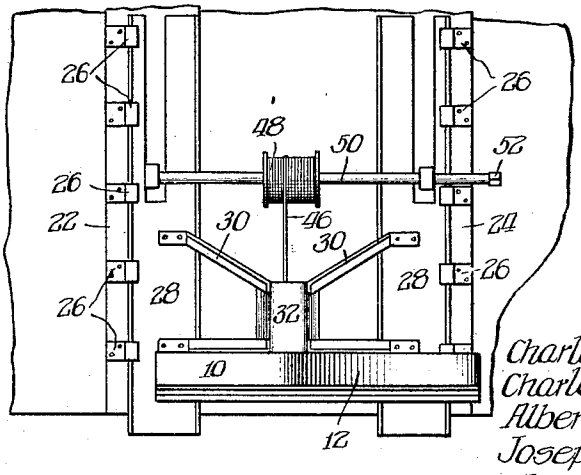


Fig. 3



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ADJUSTABLE CAM FOR CABLE CARS

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This invention relates to cable operated railway cars and is illustrated herein as embodied in an apparatus for use in disengaging from a cable the clamping mechanism carried by a car.

Cable operated railways are employed extensively in connection with loading docks, mines, and the like, and in order to switch cars, or to stop one car on a track without stopping the others, etc., it is customary to provide the cars with a clamp mechanism which can be operated manually to grip tightly or to release the cable.

In practically every cable railway there are stations where the cars are invariably disengaged from the cable for switching purposes, or for other reasons, and it is customary to provide means for effecting automatic disengagement of the car from the cable at such points: a clamp operating lever projecting laterally from the side of the car and a cam positioned adjacent to the track and in the path of the lever at the point of disengagement being a common form of arrangement. As the car approaches the station, the lever strikes the cam and is moved thereby to operate the clamping mechanism and disengage the cable.

Such levers and cams may also be utilized to cause the clamping mechanism to engage the cable at predetermined stations as well. Generally this is accomplished by having the lever and cams for effecting engagement of the clamps located on the side of the car opposite to the levers and cams for effecting disengagement thereof. Also, it is customary for actuation of one of the levers to cause restoration of the other.

As stated, it has been customary heretofore to secure the cams rigidly in position alongside the track at switching points and such other points as engagement or disengagement of the cars may be desired. Owing, however, to the fact that the cars may be of various lengths and widths, and the operating levers may be positioned differently on different cars, a fixed cam of unalterable dimensions is subject to serious objection. Accordingly, it is an object of the present invention to provide an improved cam that is adjustable to accommodate cars of differet sizes regardless of the locality thereon of the laterally projecting operating levers.

A feature of the invention consists in the provision of a cam having associated with it means for imparting vertical movement thereto. As illustrated, the cam is also provided with means for maintaining it in proper alinement relatively to the track during the time it is being moved vertically.

Still another object of the invention consists in providing the cam with means for moving it horizontally toward and away from the side of the track. Here also the cam is equipped with means for maintaining it in proper alinement relatively to the track during the time it is being moved horizontally.

Other objects and features of the invention will become apparent from a reading of the specification in the light of the accompanying drawings, in which—

Figure 1 is a view in side elevation of a cam constructed in accordance with the present invention, showing diagrammatically a cable car associated therewith;

Figure 2 is a view in side elevation of the cam shown in Figure 1; and

Figure 3 is a top plan view of the cam illustrated in Figure 1.

As shown in the drawings, the reference numeral 10 indicates a cam or templet composed of a hollow frame of metal having an inclined operating face 12. In use, this cam is operated in near proximity to the track 14 of a cable railway, in which position it lies in the path of a lever 16 projecting laterally from the side of a cable operated car 18, which lever is operative to engage or to disengage clamping mechanism (not shown) carried by the car, from the pulling cable 20 located beneath the car.

It has heretofore been stated that the present invention contemplates the provision of a mounting for the cam which will permit the latter to be adjusted both vertically and horizontally to accommodate cable cars of different dimensions. To this end, the cam is constructed in the following manner: a plurality of spaced apart base members 22 and 24 are provided with upwardly and in-

wardly extending guide members 26 which overlie and hold in place skid members 28 which are disposed upon the base members 22 and 24. A plurality of upwardly and inwardly extending supporting brackets or members 30 extend from the opposite, spaced skid members 28 and are secured at their upper extremities to a saddle member 32. The saddle member extends forwardly, and, as shown in Figure 2, carries at its forward extremity a collar 34 which has screw-threaded engagement with a shaft 36 that loosely carries the cam 10.

Thus, it will be seen that rotation of the shaft 36, which may be accomplished by applying a wrench to the head 38 of the shaft, imparts vertical movement to the cam 10. It is, of course, desirable at all times to maintain the cam frame parallel to the track 14 in order that the operating face 12 of the cam will be properly positioned with respect to the cars 18 and to this end the apparatus is provided with a bridge member 40 which is carried by the skid members 28, 28 and which in turn carries a plurality of vertical guide members 42 and 44 which extend through guideways formed in the lower portion of the fence of the cam 10. By means of such a provision, the cam frame is maintained parallel, in proper alinement to, the track during the period vertical movement is imparted to the frame.

It has already been pointed out that the skid members 28, 28 are mounted upon the upper surfaces of the base members 22 and 24 and are held in position by means of the guide members 26, 26. Such a mounting permits horizontal sliding movement of the skid members toward and away from the railway track 14, whereby movement is permitted of the cam 10 toward or away from the cable operated cars. To the end of causing movement of the cam away from the track there is provided a cable 46 extending rearwardly from the bridge member 40 to a winding reel 48 that is mounted upon a shaft 50 and adapted to be operated by means of a handle or power device connected to the outer extremity 52 of the shaft.

It will accordingly be seen that the cam 10 is mounted for horizontal movement toward and away from the track, and for vertical movement relatively thereto and is constructed in such a manner that it will at all times remain parallel, in proper alinement, with the track during movement or adjustment.

Although the invention has been described herein with particular reference to cable operated cars, it is to be appreciated that the invention may be employed in other rail systems, or analogous arts, in which the use of such a cam is contemplated, and that modifications and changes in design and construction may from time to time be made in the illustrated embodiment of the invention by the exercise of mechanical skill and without constituting a departure from the scope of the invention as set forth in the following claims.

Having thus described our invention, what we claim as new and desire to secure by United States Letters Patent, is:

1. An apparatus for use in connection with cable operated railway cars, said apparatus comprising a cam located adjacent to the track of the railway and means associated with the cam for imparting vertical movement thereto in order that the cam will accommodate cable cars of various dimensions.

2. An apparatus for use in connection with cable operated cars, said apparatus comprising, in combination, a cam located adjacent to a track of the railway, means for varying the vertical position of the cam to accommodate cable cars of various dimensions, and means for maintaining the cam in predetermined alinement with the track during the period the vertical position of the cam is being varied.

3. An apparatus for use in connection with cable operated cars, said apparatus comprising, in combination, a cam located adjacent to a track of the railway, a support for the cam, said cam being mounted upon said support in such a manner that it may be moved horizontally towards and away from the track to accommodate cable cars of different dimensions.

4. An apparatus for use in connection with cable operated cars, comprising, in combination, a cam located adjacent to a track of the railway, a base upon which the cam is slidably mounted for horizontal movement toward and away from the track to accommodate cable cars of different dimensions, and means associated with the base for imparting movement to the cam.

5. An apparatus for use in connection with cable operated cars, comprising, in combination, a cam located at a point adjacent to a track of the railway, a support for the cam, means associated with the support for imparting vertical movement to the cam, means likewise associated with the support for imparting horizontal movement to the cam, and means for maintaining the cam in proper alinement with the track during either vertical or horizontal movement thereof.

6. An apparatus for use in connection with cable operated cars, comprising, in combination, a plurality of spaced apart base members, a plurality of slides mounted in the base members, supporting members extending upwardly and inwardly from the slides and joined at their upper extremities to a saddle block, a cam, and means extending between the cam and the saddle block for effecting vertical adjustment of the former.

7. An apparatus for use in connection with cable operated cars, comprising, in combination, a plurality of spaced apart base members, a plurality of slides mounted in the base members, supporting members extending upwardly and inwardly from the slides and joined at their upper extremities to a saddle block, a cam, means extending between the cam and the saddle block for effecting vertical adjustment of the former, and a plurality of spaced vertical guides arranged to engage the cam to maintain it in a predetermined alinement during adjustment thereof.

Signed at Duluth, Minn., this 15th day of August, 1929.

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