

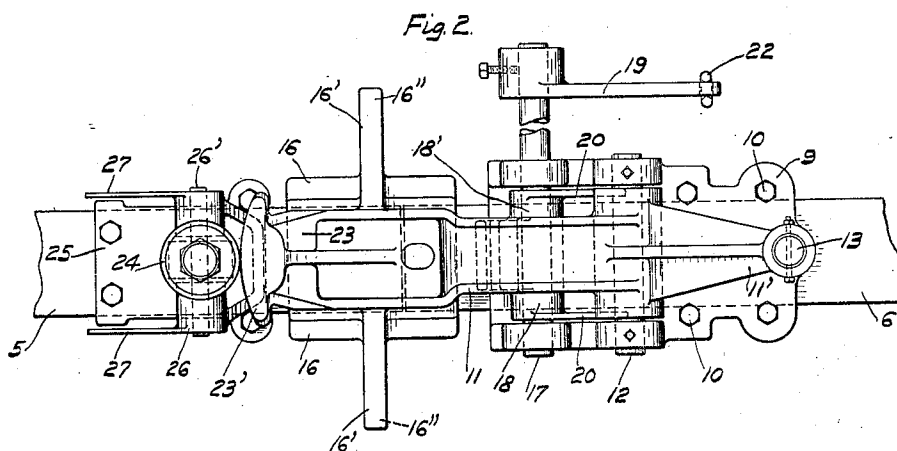
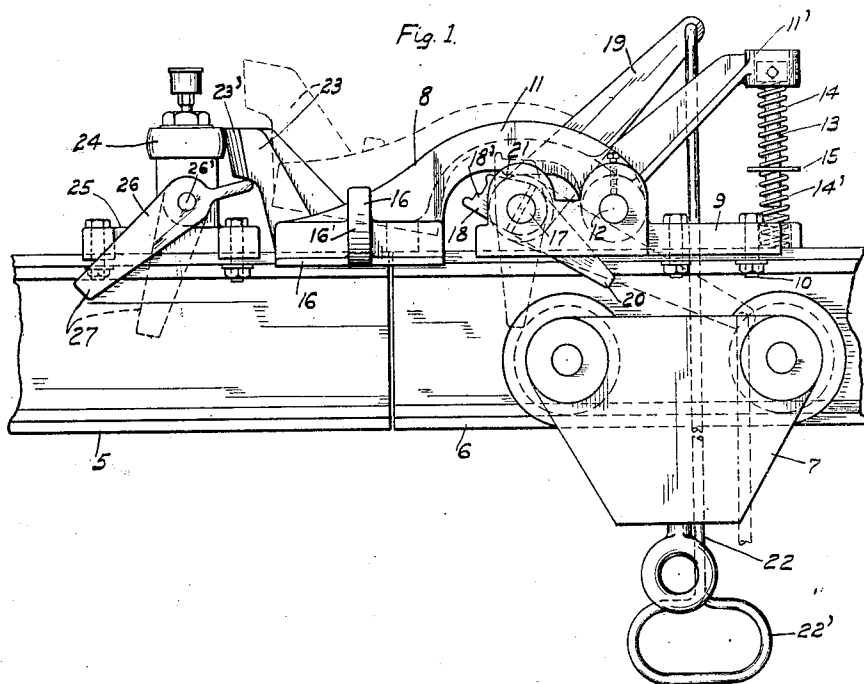
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CRANE RAIL LOCK

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UNITED STATES PATENT OFFICE.

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CRANE-RAIL LOCK.

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To all whom it may concern:

Be it known that I, MAX W. GOLDBERG, a citizen of the United States, and resident of Port Washington, in the county of Ozaukee and State of Wisconsin, have invented new and useful Improvements in Crane-Rail Locks, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to improvements in crane rail locks.

Modern foundries are now usually equipped with overhead cranes for conveying crucibles filled with molten metal to different parts of the foundry to be used in pouring molds in forming castings. Overhead cranes are ordinarily adapted to travel along straight lines and to reach all desirable portions of the building, branch rails of the monorail type are provided, so that the crane rail can be moved to a position in alinement with one of the branch rails and the trolley and its load can be easily transferred from the crane to the branch rail for further movement to its point of discharge. Careless workmen in moving the trolley and its load from place to place do not always see that the crane rail is in register with the branch rail, or even that the crane is near the said rail, with the result that the trolley runs off the end of the rail and falls, causing great injury and possibly loss of life.

It is one of the objects of the present invention to overcome the before mentioned objectionable features and provide a crane rail lock which will lock the two rail ends together when in alined position, and when out of alinement, the ends of the rails will be automatically guarded in a manner to prevent the trolley from running off the ends thereof.

A further object of the invention is to provide a crane rail lock which may be easily controlled from a point beneath the crane to unlock the rail sections when it is desired to move the crane to another point.

A further object of the invention is to provide a crane rail lock having means for automatically guiding the locking member to locking position and to automatically move the guard members to positions to permit the free passage of the trolley from one rail end to the other.

A further object of the invention is to

provide a crane rail lock which is of simple construction, is strong and durable, and is well adapted for the purpose described.

With the above and other objects in view, the invention consists of the improved crane rail lock and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawing in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a side view of adjacent rail ends of an overhead crane and a branch track having the improved rail lock mounted thereon; and

Fig. 2 is a top view thereof.

Referring to the drawing, the numeral 5 indicates the end portion of an overhead crane rail which is carried by the crane (not shown). The crane is adapted to travel on its tracks, and usually in a straight line, so that the trolley 7 and its load carried by the crane rail can be transferred to any one of a number of branch rails for further travel thereon. The improved rail lock 8 comprises a grooved bracket 9 which is mounted on top of one end portion of and extends over the side edges of the crane rail connected thereto by means of bolts 10. A locking lever member 11 connected to the bracket 9 by a pivot pin 12 is of the bell crank type and its shorter arm 11' extends upwardly at an angle, and at its end portion is provided with a downwardly extending pin 13 which is surrounded by coiled springs 14 and 14' to yieldingly hold the lever in its locking position. The lower spring engages the bracket and a washer 15 is interposed between the two springs to hold the springs spaced apart. By using two springs in place of one, buckling of the spring is prevented. The outer free end of the lever is flanged on its side edges to form locking shoulders 16 which are adapted to extend downwardly on both sides of the upper portions of the adjacent rail ends 5 and 6 to lock the rail ends together. The free end portion of the lever 11 is also provided with laterally extending cam projections 16' which are adapted to engage the upper side edge portions of the adjacent rail ends when the crane rail end is moving into register with one of the fixed rail ends. The lower end surfaces of the cam projections are beveled, as indicated by the numeral 16'' to

cause said ends to ride upwardly and over the ends of fixed rails to permit the lever to swing downwardly into locking position with the said fixed rail end.

5 The bracket 9 is also provided with another pivot pin 17 upon which is mounted a U-shaped stop guard member 18 and a controlling arm 19. The arms 20 of the member 18 are positioned on opposite sides 10 of the rail 6 and when swung downwardly to raise the lever 11, the said arms will extend downwardly to dotted line position shown in Fig. 1 and serve as stops to prevent the trolley 7 from running off the end of the crane rail. The upper portion of the U-shaped guard member is provided with a 15 recess and shouldered portion 18' which is adapted to engage a shouldered portion 21 formed on the lower side of the lever 11 to raise and hold said lever in open position 20 when it is desired to unlock the track ends. An operating means in the form of a rod 22 connected at its upper end to the free end of the controlling arm and depending 25 downwardly therefrom and is provided with a handle 22' at its lower end for convenience in handling.

The lever is also formed with an angular extension 23 having a rounded end 23' 30 adapted to engage a roller 24 journaled on a bracket 25 which is bolted to the upper portion of the fixed rail end 5. Said bracket is also provided with a U-shaped stop guard member 26 which is pivotally connected to 35 the bracket 25 by a transversely extending pivot pin 26'. The arms 27 of this guard member are positioned on opposite sides of the fixed rail and are adapted to drop downwardly to the dotted line position to prevent trolleys travelling on said rail from 40 running off the end of the fixed rail when the crane rail is not in register with said fixed rail. The rounded end and inclined face of the extension 23, when the crane 45 track is moved into register with the fixed track, will engage the upper portion 26' of the guard member 26 and force said portion downwardly and the guard arms 27 upwardly, as indicated in Fig. 1, and thus permit the travel of the trolley when the rails 50 are in register.

The roller 24 provides for the parts being the proper distance apart when the extension engages the guard member 26.

55 It will be noted that the guard arms swing downwardly in a direction towards their respective rail ends so that the upper portions of the guard members will abut against portions of the brackets or levers and thereby 60 hold the arms in guarding positions to stop the travel of the trolleys thereby.

65 From the foregoing description, it will be seen that the crane rail lock is of very simple construction and is well adapted for the purpose described.

What I claim as my invention is:

1. The combination with a fixed and a movable trolley rail, of a means for locking the rails together in alined position, comprising a lever member mounted on one of the rails and movable to lockingly engage the other rail, means controlling the movement of the lever, and means carried by each rail for blocking the travel of a trolley off either rail end when the rails are not in 70 alinement. 75

2. The combination with a fixed and a movable trolley rail, of a means for locking the rails together in alined position, comprising a lever member mounted on one of the rails and movable to lockingly engage the other rail, a rotary member mounted on the movable rail for controlling the movement of the lever member and for blocking the travel of a trolley off the end of the movable rail, and a trolley blocking member 80 carried by the fixed rail and controlled by the movement of the lever member. 85

3. The combination with a fixed and a movable trolley rail, of a means for locking the rails together in alined position, comprising a lever member mounted on the movable rail and movable to lockingly engage the fixed rail, a rotary member mounted on the movable rail for controlling the movement of the lever member and having a portion which swings into the path of trolley movement when the lever member is in its upper position, and a trolley blocking member carried by the fixed rail and controlled by the movement of the lever 90 member. 95 100

4. The combination with a fixed and a movable trolley rail, of a means for locking the rails together in alined position, comprising a lever member mounted on the movable rail and movable to lockingly engage the fixed rail, a rotary member mounted on the movable rail for controlling the movement of the lever member and having a portion which swings into the path of trolley movement when the lever member is in its upper position, and a trolley blocking member carried by the fixed rail and movable downwardly to trolley blocking position when the lever member disengages the fixed 105 rail. 110 115

5. The combination with a fixed and a movable trolley rail, of a means for locking the rails together in alined position, comprising a bracket mounted on the movable rail, a lever member pivoted to the bracket and movable to lockingly engage the fixed rail when both rails are in alined position, a trolley locking member pivoted to the bracket and movable to trolley blocking position and in which position it disengages the lever member from the fixed rail, a bracket mounted on the fixed rail, and a trolley blocking member pivoted to the fixed 120 125 130

rail bracket and engaged by the lever member and movable to blocking position when disengaged by the lever member.

6. The combination with a fixed and a 5 movable trolley rail, of a means for locking the rails together in alined position, comprising a bracket mounted on the movable rail, a lever member pivoted to the bracket and yieldingly movable to locking- 10 ly engage the fixed rail when both rails are in alined position, a trolley locking member pivoted to the bracket and movable to trolley blocking position and in which position it disengages the lever member from the 15 fixed rail, a bracket mounted on the fixed rail, and a trolley blocking member pivoted to the fixed rail bracket and engaged by the lever member and movable by gravity to blocking position when disengaged by the 20 lever member.

7. The combination with a fixed and a movable trolley rail, of a means for locking the rails together in alined position, comprising a bracket mounted on the movable 25 rail, a lever member pivoted to the bracket, a spring for normally holding the lever member in locking position, a trolley locking member pivoted to the bracket and having a locking arm which swings in the trolley path of movement when the member is 30

turned to disengage the lever member from the fixed rail, a bracket mounted on the fixed rail, and a trolley blocking member pivoted to the fixed rail bracket and engaged by the lever member when said lever member is in 35 engagement with the fixed rail but movable to trolley blocking position when the lever member disengages the fixed rail.

8. The combination with a fixed and a movable overhead trolley rail, of a means 40 for locking the rails together in alined position, comprising a bracket mounted on the movable rail, a lever member pivoted to the bracket, a spring for normally and yieldingly holding the lever member in locking po- 45 sition, a U-shaped trolley locking member pivoted to the bracket and having locking arms which swing in the trolley path of movement when the member is turned to dis- 50 engage the lever member from the fixed rail, means for controlling the U-shaped member, a bracket mounted on the fixed rail, and a trolley blocking member pivoted to the fixed rail but movable to trolley blocking position 55 when the lever member disengages the fixed rail.

In testimony whereof, I affix my signature.

MAX W. GOLDBERG.