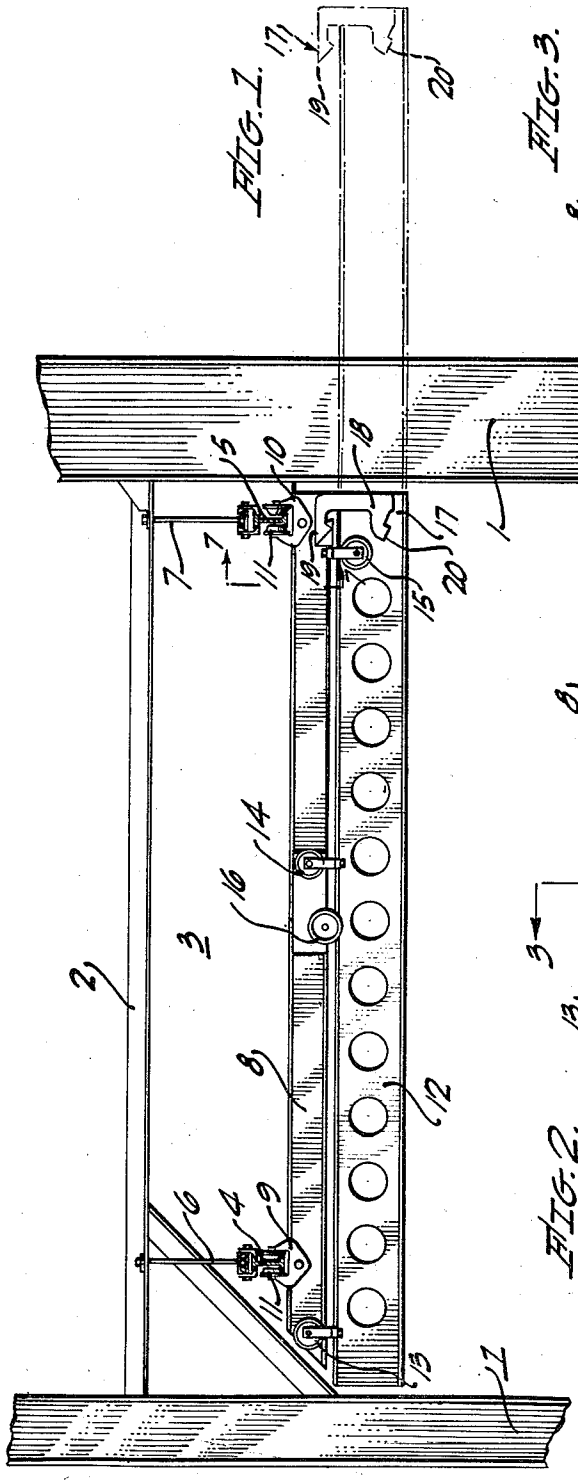
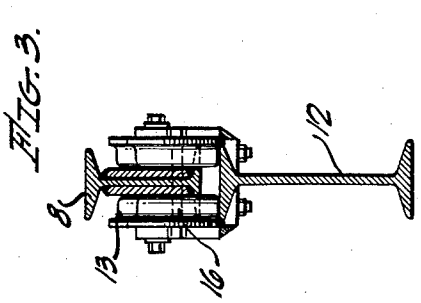
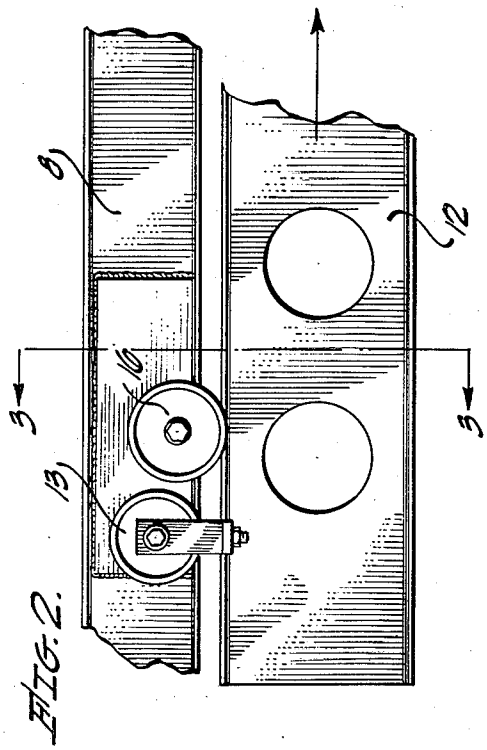
March 15, 1955 L. L. BABCOCK ET AL 2,704,037

LATERALLY MOVABLE OVERHEAD CRANE

Filed March 27, 1950 2 Sheets-Sheet 1







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LATERALLY MOVABLE OVERHEAD CRANE

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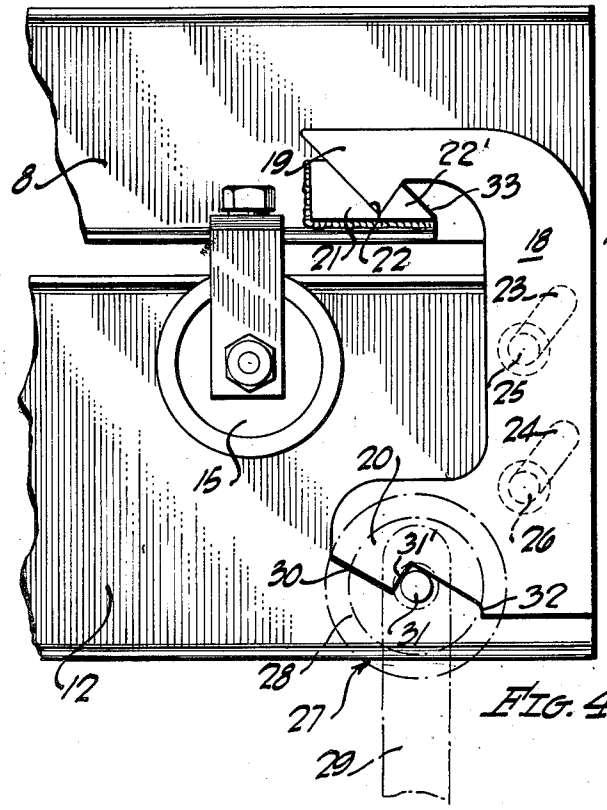


FIG. 4

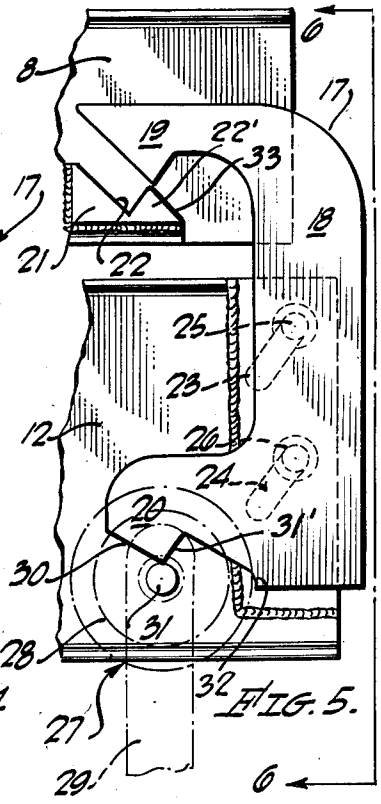


FIG. 5.

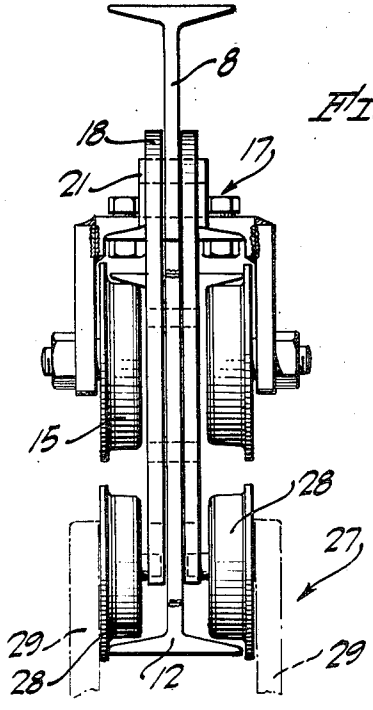
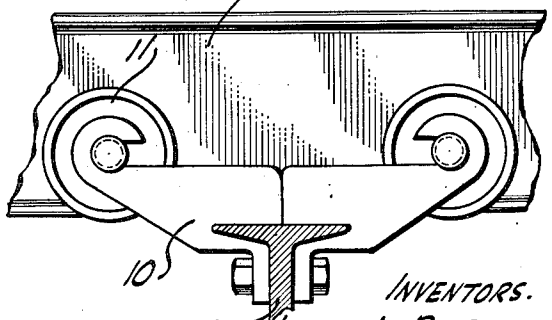


FIG. 6.

FIG. 7.



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LATERALLY MOVABLE OVERHEAD CRANE

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Application March 27, 1950, Serial No. 152,246

4 Claims. (Cl. 104—98)

This invention relates to a laterally movable overhead crane in which this crane, which is normally movable lengthwise in a bay, can be moved laterally out of that bay, this lateral movement being accomplished at any point throughout the length of the bay with the exception of these areas where columns are placed.

An object of our invention is to provide a novel laterally movable overhead crane, which can be used in the normal manner on a tramway and which can also be moved laterally into an adjacent bay when desired.

Another object of our invention is to provide a novel means to latch the extensible rail to the horizontal beam of the tramway, this latch being releasable manually when it is desired to extend the rail into the adjacent bay.

A feature of our invention resides in the novel latch means whereby the rail on which the hoist or crane is mounted is held in retracted position relative to the tramway beam until the hoist or crane is manually moved to engage the latch means and thus manually release the same.

Still another feature of our invention is to provide a novel overhead crane of the character stated, in which the crane or hoist can be moved a considerable distance into the adjacent bay to pick up loads therein when desired.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a front elevation of our overhead crane construction.

Figure 2 is a fragmentary front elevation of the center portion of the supporting beam and extensible rail.

Figure 3 is a sectional view taken on line 3—3 of Figure 2.

Figure 4 is a front elevation of one end of the supporting beam and extensible rail, showing the latch in closed position.

Figure 5 is a view similar to Figure 4, but showing the latch in released position.

Figure 6 is an end view taken on line 6—6 of Figure 5.

Figure 7 is a fragmentary sectional view taken on line 7—7 of Figure 1.

Referring more particularly to the drawing, our overhead crane construction is assembled in an industrial building, which consists of the usual columns 1, and suitable horizontal beams 2, forming long bays 3. In order that heavy objects may be moved throughout the length of the bay 3, an overhead crane structure is provided.

This crane structure consists of a tramway formed of long I beams 4—5, which extend the length of the bay 3. The I beams 4—5 are supported from the beams 2 by suitable rods 6—7, all of which is usual and well known in the art. It is also observed that the supporting beams 4—5 may be suspended or mounted in other ways than as here shown.

The crane beam 8 extends laterally between the beams 4—5 and is held in horizontal position within the bay 3 at all times. The crane beam 8 is supported from the beams 4—5 by means of hangers 9—10, which are bolted to the beam 8, and each hanger carries a pair of rollers 11 which ride on the lower flange of the beams 4 or 5. Again, this method of supporting the crane beam 8 so that it can be moved lengthwise of the bay 3 is usual and well known in the art.

As thus far described, it will be evident that the crane

beam 8 can be moved lengthwise within the bay 3 to any point desired. However, a suspended crane or hoist would normally be limited by the length of the beam 8 and, therefore, could not be moved into an adjacent bay. To accomplish this purpose, I provide a rail 12, which is mounted below the beam 8 and parallel thereto. The rail 12 is slidably supported on the beam 8 by means of three or more rollers 13—14—15, which ride on the flange of the beam 8 if mounted on the rail 12 or ride the flange of the rail 12 if mounted on beam 8. A hold-down roller 16 may also be mounted on the beam 8 and this roller engages the top flange of the rail 12 to provide a rolling contact and hold this rail against tipping when the rail is moved laterally, as will be further described.

It will be evident that since the rail 12 is slidably mounted on the beam 8, that it can move laterally to the dotted line position shown in Figure 1. Furthermore, it will be evident that the rail 12 can be moved laterally at any point throughout the length of the bay 3, except where this movement might be hindered by one of the columns 1.

Since it is desirable to hold the rail 12 against lateral movement, except when expressly desired, we provide a latch 17 on either end of the rail 12. This latch consists of a pair of plates 18, which are arranged on each side of the web of the rail 12. The plates 18 are provided with a finger 19 at the top and a finger 20 at the bottom. The finger 19 enters a latch plate 21, which is fixedly secured to the beam 8, adjacent one end, substantially as shown. The latch plate 21 is notched, as shown at 22, to receive the finger 19 and thus hold the rail 12 against lateral movement relative to the beam 8.

The plates 18 are so mounted on the rail 12 that they can move vertically. This is accomplished by cutting inclined slots 23—24 in the web of the rail 12, and then providing pins 25—26 in the plates 18 which extend through these slots, thus enabling the plates 18 to move vertically a limited amount and also having a limited horizontal movement so as to move into and out of the notch 22 in the latch plate 21.

By pushing upwardly on the plates 18, it will be possible to release the finger 19 from the notch 22 that is, the bottom of the finger 19 will be raised above the top of the tooth 22' of the plate 21, and thus permit the rail 12 to move laterally any desirable amount.

To unlatch the plates 18, we provide the following structure: The crane or hoist 27 includes two or more rollers 28, which roll on the bottom flange or the rail 12. These rollers are carried on the usual arms 29 of the hoist or crane. This crane construction is usual and well known and its specific arrangement forms no part of our invention.

When the crane 29 is moved to the end of the rail 12, the pin 31 engages the inclined face 30 of the finger 20, thus forcing the plates 18 upwardly by the cam action of the face 30, as shown in Figure 5, and releasing the finger 19 from the notch 22. After the finger 19 passes the point 22' the plates drop back to engage the pins 31 and thus the crane or hoist is held against rolling off of the end of the rail 12. In the position shown in Figure 4, the pins 31 fit in a notch 31' in the plate 18, this notch is formed with a shoulder 32 which acts as a stop for the pins 31 if the rollers should move to the right, as viewed in Figures 4 and 5. This rail 12 is now moved outwardly into the adjacent bay the desired distance, the object is lifted by the hoist 27 and the rail 12 is again moved into the bay 3. When the finger 19 again strikes the inclined face 33 of tooth 22', it will lift the plates 18 by the cam action of face 33, thus releasing the pins 31 of crane 27 which is then free to move towards the left on the rail 12 in the usual manner. When the pins 31 have passed the face 30 the finger 19 drops back into the notch 22, and the beam 8 and the rail 12 are again coupled until it is again desired to extend the rail 12, as described above.

Having described our invention, we claim:

1. A laterally movable overhead crane including a tramway, said tramway consisting of a pair of spaced beams, a crane beam, rollers on the crane beam, said rollers riding on said first named beams, a rail below the crane beam and parallel to said crane beam, rollers on said rail riding on the crane beam whereby endwise

movement of said rail relative to the crane beam is provided, a latch plate mounted at one end of said rail for limited vertical movement, a catch on the crane beam engaged by the latch plate, and means on the latch plate engaged by the crane to lift the latch plate and dis-engage the catch.

2. A laterally movable overhead crane including a tramway, said tramway consisting of a pair of spaced beams, a crane beam, rollers on the crane beam, said rollers riding on said first named beams, a rail below the crane beam and parallel to said crane beam, rollers on said rail riding on the crane beam whereby endwise movement of said rail relative to the crane beam is provided, a latch plate mounted at one end of said rail for limited vertical movement, a catch on the crane beam engaged by the latch plate, a cam surface on the latch plate engaged by the crane to lift the latch plate and dis-engage the catch.

3. A laterally movable overhead crane including a tramway, said tramway consisting of a pair of spaced beams, a crane beam, rollers on the crane beam, said rollers riding on said first named beams, a rail below the crane beam and parallel to said crane beam, rollers on said rail riding on the crane beam whereby endwise movement of said rail relative to the crane beam is provided, a latch plate mounted at one end of said rail for limited vertical movement, a catch on the crane beam engaged by the latch plate, said catch having a notch therein, a finger on the latch plate, adapted to fit in said notch, and means on the latch plate engaged by the crane to lift the finger out of said notch and dis-engage the catch.

4. A laterally movable overhead crane including a tramway, said tramway consisting of a pair of spaced beams, a crane beam, rollers on the crane beam, said rollers riding on said first named beams, a rail below the crane beam and parallel to said crane beam, rollers on said rail riding on the crane beam whereby endwise movement of said rail relative to the crane beam is provided, a latch plate mounted at one end of said rail for limited vertical movement, a catch on the crane beam engaged by the latch plate, said catch having a notch therein, a finger on the latch plate adapted to fit in said notch, a cam surface on the latch plate engaged by the crane to lift the latch plate and dis-engage the catch.

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