No. 694,836. Patented Mar. 4, 1902.

J. H. COOK.

TROLLEY HOISTING BLOCK.

(Application filed June 15, 1901.)

(No Model.)

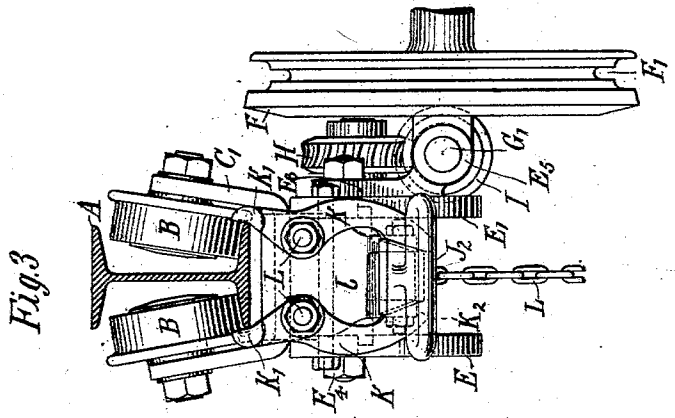


Fig. 3

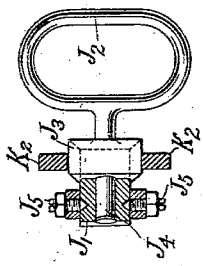


Fig. 4

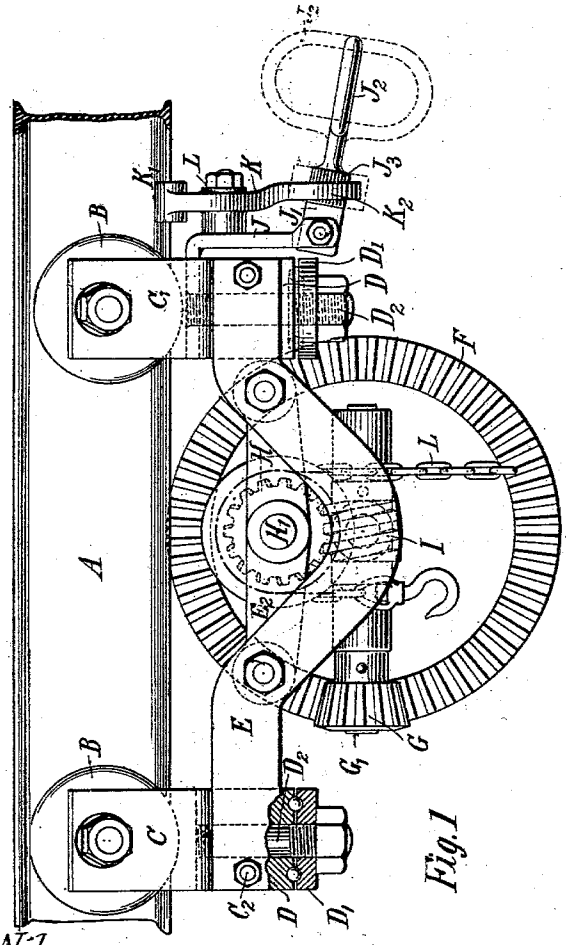


Fig. 1

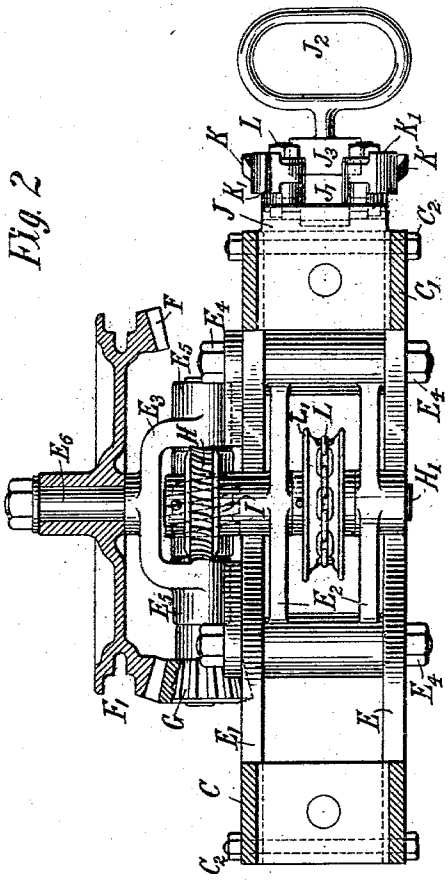


Fig. 2

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UNITED STATES PATENT OFFICE.

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TROLLEY-HOISTING BLOCK.

SPECIFICATION forming part of Letters Patent No. 694,836, dated March 4, 1902.

Application filed June 15, 1901. Serial No. 64,653. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. COOK, a citizen of the United States, and a resident of New York, in the county of Kings, borough of Brooklyn, and State of New York, have invented a new and useful Improvement in Trolley-Hoisting Blocks, of which the following is a specification, taken in connection with the accompanying drawings, in which the same reference characters are used to designate similar parts in the various figures.

Figure 1 is a side view of my device shown in connection with an I-beam trolley-track such as is used for overhead trolleys. Fig. 2 is a sectional top view of the same. Fig. 3 is an end view of my device. Fig. 4 is a detail.

The main frame of my block is formed of two curved side members E E', which are bolted at either end to suitable blocks D, which serve to support swiveling trolley-trucks C C'. These trolley-trucks are formed, as is seen from Figs. 1 and 3, of a U-shaped bracket, in either end of which are mounted the journals of two trolley-wheels B, set so as to engage the track A. These trolley-wheels may be provided with any suitable form of bearing, and it is desirable that they should be formed with roller-bearings to reduce the friction. Each of these U-shaped brackets has journaled in it the short shaft D^2, which can turn readily in the bearing-block D and which has secured to its lower end a bearing-plate D'. This bearing-plate has formed upon its upper surface an annular groove which coacts with a similar groove upon the lower face of the bearing-block D to support bearing-balls to render the turning of these trolley-trucks more easy.

In addition to the features already described it will be noted that the U-shaped bracket C' has rigidly secured to it the angle-bracket J, which serves to support the clamping device by which I secure the block in any desired position upon the track. Two short bearing-pivots L are rigidly secured to the bracket J, and the clamping-levers K are secured in position upon these pivots by nuts, as shown. The clamping-levers are formed with suitable clamping-faces K' to grip the lower edge of the trolley-rail, and the lower ends of these levers K are formed with inclined bearing-faces K^2, which are forced apart by the clamping-wedge J^3, rigidly secured to the wedge-handle J^2 and having a pivot J^4, supported to turn in a block J'. This block can also turn in a vertical plane about the pivots J^5, (shown in Fig. 4,) so that the clamping-wedge can move in a vertical plane and also can rotate about the pin L^4, as indicated in Fig. 1 in dotted lines. The vertical height of the clamping-wedge J^3 as this wedge is shown in Fig. 3 is small enough so that this wedge when it is turned into the dotted position (shown in Fig. 1) can pass freely between the ends of the clamping-levers, so as to be entirely free from these levers. The wedge-handle would then hang vertically downward from the pivots J^5 and the clamp would be inoperative.

The hoisting mechanism proper is formed as follows: The chain-wheel L', which is formed with suitable projections in the groove around its periphery so that it grips a chain L, is rigidly secured to the shaft H', to which the worm-wheel H is also rigidly secured. This shaft H' is mounted in suitable bearings in the two bearing-brackets E^2. Integral sleeves are formed at either end of these brackets, through which the bolts E^4 pass to clamp the whole structure to the side members E E' of the block-frame. These bolts also serve to hold the bearing-bracket E^3 to E'—one of these side members. In the bracket E^3 are formed the two journal-bearings E^5, in which a worm-shaft G' is mounted. Rigidly attached to the worm-shaft are the worm I and the beveled pinion G, with which meshes the beveled gear F upon the actuating-wheel F', which is revolubly mounted on the stud E^6, rigidly secured to the bracket E^3.

The operation of my device is as follows: In hoisting material the hook on the end of chain L is attached to the material to be raised, and then by actuating the wheel F', through a suitable chain or rope passing over this wheel in the usual manner, the worm-shaft is revolved, turning the worm-wheel, and thereby drawing up the chain L, which engages the chain-wheel L'. When a load has been raised to the desired height by this means, it may be carried along on the trolley by throwing the clamping-handle down into

inoperative position to release the clamping-jaws and then by moving the trolley-block bodily along the rail A. The swiveling trolley-trucks at either end of the block allow the more easy movement of the block along the rail, since there is no cramping of the trolley-wheels B at any curves that may be formed in the rail A. When it is desired to hold the trolley-block in position upon the rail, the clamp is brought into action and the clamping-wedge is forced downward between the ends of the clamping-levers, the wedge being in the position shown in Fig. 3, and the clamping-levers are thereupon forced into engagement with the lower edge of the rail to grip the same and hold the block firmly in position with respect to the rail. Since this clamping device is attached to the swiveling trolley-truck, the two clamping-levers engage the two sides of the rail with equal force and there is a perfect clamping action. This clamping device is especially useful on shipboard, where it is desired to hold the trolley-block firmly in place on the track. It is furthermore of great utility where turn-table switches are used for transferring the trolley-block from one rail to another at an angle thereto by moving the block on the turn-table switch, locking it to such switch, and then turning the switch into alinement with another section of rail.

The clamping device can be released by raising the wedge-handle and by turning the handle through an angle of ninety degrees into the position shown in dotted lines in Fig. 1, when the wedge can pass sidewise between the ends of the clamping-levers, so that it moves out of engagement with these levers.

It will be noted that by giving the side frames E the curved form shown that the hoisting mechanism is brought as close as is possible to the rail, and so the trolley-hoisting block occupies the least possible head-room, which is a very desirable feature when it is employed on shipboard.

It will of course be understood that parts of my invention may be employed without using all of the features which I have disclosed in this case and also that parts of my invention may be employed in connection with other devices. Numerous modifications of my device may be made by those skilled in this art without departing from the principles of my invention. I do not therefore wish to be limited to the exact disclosure which I have made in this case.

What is claimed as new is—

1. In a trolley-block, a block-frame, trolley-trucks secured to said block-frame, a bracket secured to said block-frame, a pair of clamping-levers pivoted to said bracket, a weighted clamping-wedge mounted in a universal joint in said bracket adjacent said levers to engage the ends of said levers to operate the same and to hold said levers in operative position by the weight of said wedge, said wedge being adapted to move between the ends of said levers to hang out of engagement with said levers.

2. In a trolley-block, a block-frame, swiveling trolley-trucks secured to said frame at either end of the same, a bracket secured to one of said trolley-trucks, a clamping-lever pivoted to said bracket, a bearing-sleeve pivoted to said bracket, a manually-operated weighted clamping-wedge mounted to turn in said sleeve, said wedge engaging said lever to operate the same, the weight of said wedge holding said lever in operative position, said wedge being rotatable in said sleeve to move said wedge past said lever into a depending position out of contact with said levers.

3. In a trolley-block, a block-frame, trolley-trucks secured to said block-frame, two levers pivotally mounted and secured to said block-frame and a wedge mounted to engage said levers to force them into engagement with the track upon which said trolley-trucks run to clamp said trolley-block thereto.

4. In a trolley-block, a block-frame, trolley-trucks pivotally attached to said block-frame to engage a trolley-rail, a pair of clamping-levers connected to said trolleys, a wedge mounted adjacent said levers to force said levers into engagement with said rail and means whereby said wedge may be moved out of engagement with said levers.

5. In a trolley-block, a block-frame, a swiveling trolley-truck mounted upon said block-frame, a pair of levers, pivots about which said levers move rigidly connected with said trolley-truck, a wedge mounted upon said trolley-truck, means to move said wedge into engagement with said levers to clamp said levers against the track upon which said trolley-truck runs and means to turn said wedge so that it does not engage said levers.

6. In a trolley-block, a block-frame, a trolley-truck mounted upon one end of said block-frame, another trolley-truck mounted upon the other end of said block-frame to swivel about a vertical axis, said trolley-trucks engaging a trolley-rail, a pair of clamping-levers, pivot-pins for said clamping-levers rigidly secured to said swiveling trolley-truck and a wedge movably mounted upon said swiveling trolley-truck to force said levers into engagement with said rail to clamp said block-frame to said rail.

7. In a trolley-block, a block-frame, trolley-trucks mounted upon either end of said block-frame to swivel about said block-frame, said trolley-trucks being adapted to engage a rail, a pair of clamping-levers pivotally connected with one of said trolley-trucks and means to force said levers into engagement with said rail.

8. In a trolley-block, a block-frame, trolley-trucks mounted at either end of said block-frame having antifriction-bearings for said trolley trucks to allow them to swivel in said block-frame, an angle-bracket secured to one of said trolley-trucks, a pair of clamping-levers pivoted to said bracket, a bearing-

sleeve pivoted to said bracket, a clamping-wedge mounted to turn in said bearing-sleeve and an operating-handle secured to said wedge whereby said wedge may force said levers into engagement with said rail or whereby said wedge may move between the ends of said levers entirely out of engagement with said levers.

9. In a trolley-block, a block-frame having curved side members, the ends of said side members being in the same plane and above the curved central portion of said side members, trolley-trucks mounted on the ends of said block-frame having antifriction-bearings for said trolley-trucks below the ends of said members, a chain-wheel mounted on said trolley-block frame, the axis of said chain-wheel being above the curved central portion of said side members and means to actuate said chain-wheel.

10. In a trolley-block, a block-frame formed with curved side members, trolley-trucks secured to the ends of said block-frame having antifriction-bearings allowing said trolley-trucks to swivel about said block-frame, said bearings extending below the ends of said side members, a chain-wheel mounted to revolve on said block-frame, the shaft of said chain-wheel being above the central curved portion of said side members reducing-gear to actuate said chain-wheel and a clamping device secured to one of said trolley-blocks to clamp said block-frame to the rail upon which said trolley-trucks run.

11. In a trolley-block, a block-frame, trolleys mounted on either end of said block-frame to engage a rail, a chain-wheel rigidly secured to a shaft, a worm-wheel rigidly secured to said shaft, bearings for said shaft above the central portion of said block-frame whereby a chain moving over said wheel is substantially equidistant from said trolleys, a worm-shaft, a worm rigid on said shaft, a beveled pinion rigid on said shaft, suitable bearings for said shaft and an actuating-wheel having a beveled gear formed thereon to engage said beveled pinion.

12. In a trolley-block, a curved block-frame, a pair of trolley-trucks mounted at either end of said block-frame, a shaft revolubly mounted above the central curved portion of said block-frame, a chain-wheel and a worm-wheel rigid on said shaft, a worm-shaft mounted in suitable bearings on said block-frame, a worm, and a pinion fast on said worm-shaft and an actuating-wheel formed with a gear engaging said gear-pinion.

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Witnesses:
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