

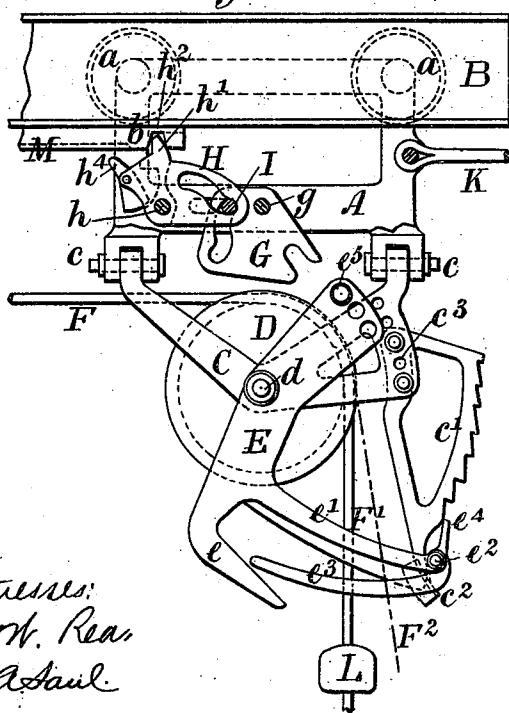
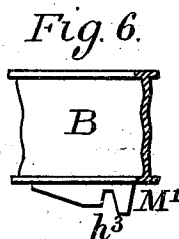
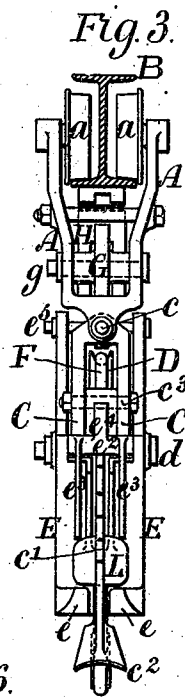
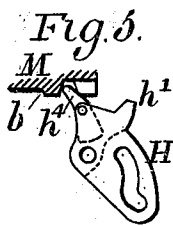
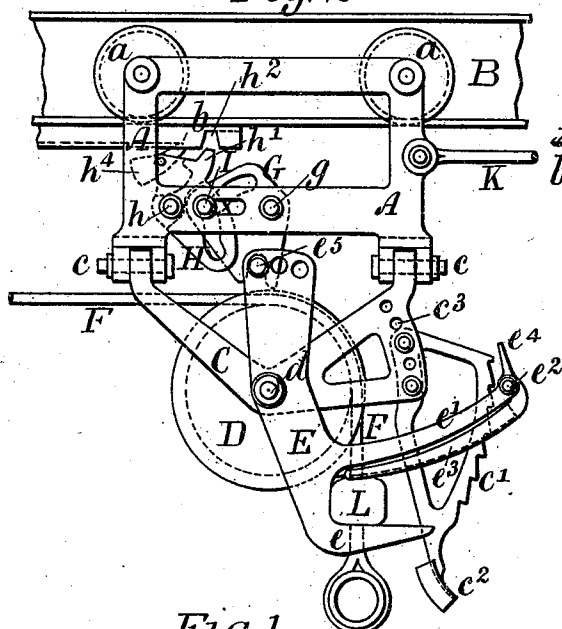
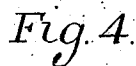
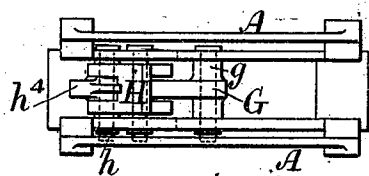
(No Model.)

2 Sheets—Sheet 1.

J. TEMPERLEY.
ELEVATED CARRIER.

No. 504,257.

Patented Aug. 29, 1893.



Witnesses:
G. W. Rea.
J. A. Saul.

Inventor:
Joseph Temperley
By James L. Norris
att'y.

(No Model.)

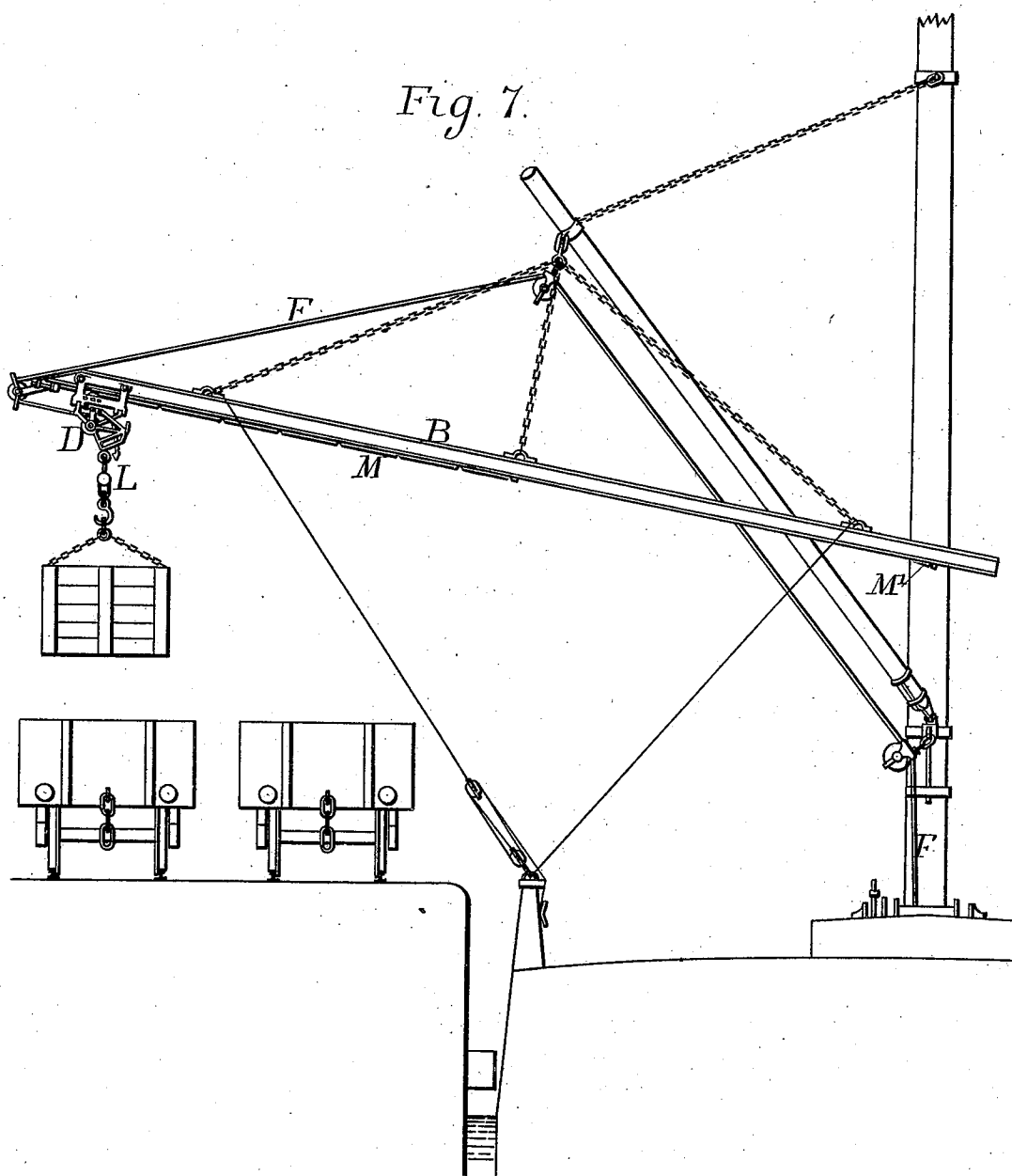
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Fig. 7.



Witnesses;
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UNITED STATES PATENT OFFICE.

JOSEPH TEMPERLEY, OF REIGATE, ENGLAND.

ELEVATED CARRIER.

SPECIFICATION forming part of Letters Patent No. 504,257, dated August 29, 1893.

Application filed March 28, 1893. Serial No. 468,009. (No model.) Patented in France March 17, 1893, No. 228,713; in Belgium March 18, 1893, No. 103,897, and in Italy June 23, 1893, LXVII, 118.

To all whom it may concern:

Be it known that I, JOSEPH TEMPERLEY, ship-owner, a citizen of England, residing at Wray Lodge, Reigate, in the county of Surrey, England, have invented a certain new and useful Traveling Pulley-Carriage for Raising, Lowering, and Traversing Loads, (for which I have obtained Letters Patent in France, dated March 17, 1893, No. 228,713; in 10 Belgium, dated March 18, 1893, No. 103,897, and in Italy, dated June 23, 1893, Vol. LXVII, 118,) of which the following is a specification.

For the purpose of raising, lowering and traversing loads as from the hold of a vessel 15 to a quay or barge or conversely, or from one part to another of a warehouse, factory, wharf, railway or other yard, an overhead track is often provided, having a winch, or crab arranged to travel along it. Certain inconveniences attend this arrangement, resulting from the necessary weight of the winch and the difficulty of applying power to it.

A main object of my invention is to avoid these inconveniences by placing the winch 25 stationary in any convenient position and arranging simply a pulley carriage to travel along the overhead track, this carriage being provided with automatic locking and unlocking mechanism such that it can be stopped 30 at any desired part of its travel and will remain stationary while the load is raised or lowered by the rope or chain passing over the pulley from the winch. This pulley carriage when the pulley is locked is drawn along the 35 track in the one direction by the winch rope or chain; it is drawn in the opposite direction by a counterweight, or, in cases where the track can be conveniently inclined, it may run down by gravity. A convenient form of 40 track for such a pulley carriage is a flanged girder, the carriage having wheels which roll on the flanges of the girder. I shall therefore describe a pulley carriage according to my invention arranged to run along such a 45 girder referring to the accompanying drawings.

Figure 1 is a vertical section of the carriage in condition for raising or lowering, without traveling. Fig. 2 is a side elevation showing

the carriage in condition for traveling along 50 the track without raising or lowering the load. Fig. 3 is a front elevation. Fig. 4 is a plan the girder and wheels being removed to show the cams below. Figs. 5 and 6 show details. Fig. 7 illustrates the application of 55 the apparatus for loading or unloading at a wharf.

In these figures similar letters denote like parts.

The upper part of the carriage consists of a 60 frame having two side cheeks A A with four wheels a , to roll on the flanges of the girder B two on each side of its web.

To the frame A is jointed at c the under 65 frame of the carriage, having two side cheeks C C between which is mounted the pulley D free to turn upon a pin d on which is also mounted, free to turn, a lever frame having two side cheeks E E between which passes 70 the rope F carrying the load. The lower part of the lever frame E E is formed as a fork at e . A pair of arms $e' e'$ projecting from E E have pivoted to them at e^2 a pawl lever having a pair of long arms e^3 between which the rope F passes and a pawl e^4 which can engage 75 with one or other of a set of ratchet teeth on a segment c' which is fixed between the cheeks C C and which forms at its lower end at c^2 a rest for $e' e'$. The cheeks E E are connected by a bolt e^5 in such a position that when the 80 cheeks move round the pin d this bolt can enter the gap of a cam G pivoted on a bolt g between the cheeks A A. Another cam H is in like manner pivoted on a bolt h between the cheeks A A. The cam H is wider than G 85 and has a groove to receive G. Both the cams G and H have curved slots through which passes a bolt I, this bolt also passing through horizontal slots in the side cheeks A A. The cam H has also a projecting horn h' which can 90 engage in a notch h^2 or h^3 in a piece or pieces M M' fixed where desired to the under side of the girder B, and in a groove of H is pivoted a pawl h^4 having a heavy lower arm. The curvatures of the cams G and H have portions 95 at their lower ends radial.

To the cheeks A A is attached a rope or chain K which passes over a pulley at the ex-

treme end of the track and has attached to it
 a weight sufficient to draw the carriage and
 load to the right when the rope F is slacked
 out. On this rope F, at any desired part of it
 5 is fixed a block L. This apparatus works in
 the following manner: When it is in the con-
 dition shown in Fig. 1 the horn h' of the cam
 H being engaged in the notch h^2 or it might
 be in a notch h^3 at another part of the girder,
 10 the carriage cannot move because the bolt I
 is in the radial part of the slot of H prevent-
 ing H from turning in either direction so as
 to disengage itself from the notch h^2 or h^3 .
 The load can then be lowered by slacking out
 15 the rope F or raised by hauling it by a winch
 or otherwise. In raising the load, the rope F
 passes between the cheeks e' and if it should
 rub against either of them it might tend to
 raise them with it. This is prevented by the
 20 pawl e^4 engaging with a tooth of c' . When
 the load is so far raised that the block L on
 the rope F comes up to the lever arms e^3 be-
 tween which the block cannot pass, it raises
 these arms throwing the pawl e^4 away from
 25 the teeth of c' , and the block L still rising
 moves the lever frame E E round to the posi-
 tion shown in Fig. 2. During this movement
 the bolt e^5 entering the gab of G moves G
 partly round causing the bolt I to slide along
 30 the horizontal slots in A A and so far along
 the slot of H that H can be turned by its horn
 h' disengaging itself from the notch h^2 or h^3 ,
 this movement of H moving the bolt I still
 farther along the horizontal slots of A A and
 35 along the slot of G to the terminal part which
 is radial G being thus held stationary and
 holding the lever frame E E in the position
 shown in Fig. 2. In this position the block
 L being over the forks e is held stationary
 40 locking the pulley D, and now h' being dis-
 engaged the whole carriage can be pulled to
 the left by hauling F or allowed to be drawn
 to the right on slacking out F, the load be-
 45 ing thus carried along without being raised
 or lowered. While H moves round as above
 described to the position shown in Fig. 2 its
 pawl h^4 is turned into the notch h^2 as shown
 in Fig. 5, but as that notch has its right side
 50 slotted the pawl can pass through the slot
 when the carriage travels to the right. When
 however the carriage is pulled to the left,
 the pawl h^4 is turned over into the position
 shown in Fig. 2, and then when the car-
 55 riage travels to the right the pawl is stopped
 by a shoulder at b , so that H is again turned
 to the position shown in Fig. 1, turning G
 so as to release e^5 and thus allowing the lever
 frame to be carried down by the block L
 60 when the rope F is slacked out. The carriage
 now being held as before by the engagement
 of h' in the notch, the load can be lowered or
 the end of the rope F can be lowered to
 take up a load which can be raised, the car-
 riage remaining stationary until the block
 65 L again releases it and locks the pulley D.
 Pieces M each having a notch h^2 and a shoul-

der b being fixed to the girder B at various
 places, the operator can at any of these places
 lock or release the carriage releasing or lock-
 ing the pulley; he has only to haul the car-
 70 riage by F to the left until the end of the pawl
 h^4 passes the shoulder b . Then on slacking out
 F, when h^4 meets b the carriage will become
 locked and the pulley released as in Fig. 1,
 and will so remain until the ascent of the
 75 block L again releases the carriage and locks
 the pulley. The cheeks C C of the lower part
 of the carriage might be fixed to the cheeks
 A A of the upper part. I prefer however to
 joint the two parts together by pivots $c c$ so
 80 that there may be freedom to swing without
 throwing the wheels a off the track.

As shown in Fig. 7, the girder B is inclined
 so that when the rope F is slacked out, it can
 run by gravity to the right. A number of the
 85 pieces M are shown on the under side of the
 girder to allow of locking and unlocking as
 above described in a number of different
 places. When an inclined girder is employed
 as shown in Fig. 7, the vertical line of rope
 90 below the pulley, instead of being in the di-
 rection shown at F' in Fig. 1, will take a di-
 rection relatively inclined as indicated by the
 dotted line F², the angle made by F² with F'
 being equal to the inclination of the girder.
 95 It is therefore necessary to adjust the seg-
 ment c' and with it the lever frame E E to
 this condition. This is done by providing
 several holes at c^3 to receive the bolts by
 which the segment c' is fixed to the cheeks C
 100 C. Also to allow for the consequent change
 of position of E E, several holes are provided
 to receive the bolt e^5 according as the girder
 is less or more inclined to the horizontal.

Having thus described the nature of my said
 105 invention and the best means I know for car-
 rying the same into practical effect, I claim—

1. In a pulley carriage traveling along an
 overhead track for the raising, lowering and
 traversing of loads, the combination of a block
 110 fixed on the hauling rope a double lever frame
 pivoted on the pulley axis and carrying a
 cross bolt, a cam having a gab to receive the
 said bolt and a curved slot, a second cam hav-
 ing also a curved slot, a bolt engaged in both
 115 curved slots and in horizontal slots of the car-
 riage frame, a horn on the second cam and a
 pawl pivoted thereon and a stationary notched
 and shouldered piece presented to the horn
 and pawl, arranged and operating substan-
 120 tially as and for the purpose set forth.

2. In a traveling pulley carriage, in combi-
 nation with a pair of cheeks between which
 the pulley is mounted, a toothed segment
 fixed to the said cheeks and terminating in a
 125 rest for a lever frame pivoted on the pulley
 axis, a double pawl lever pivoted on the said
 frame, and ends of the frame shaped as a fork
 engaging over them a block on the hauling
 rope, substantially as described.

3. The combination with a traveling pulley
 carriage, of pulley-carrying cheeks C, having

a series of holes c^3 , the segment c' having an adjustable bolt connection with any one of the bolt holes in the cheeks, a cam G, a lever frame E having a series of bolt holes for the
5 adjustment of a bolt which engages the cam, and a pawl lever pivoted to the lever frame for engaging the segment, substantially as described.

In testimony whereof I have signed my
10 name to this specification, in the presence of

two subscribing witnesses, this 9th day of March, A. D. 1893.

JOSEPH TEMPERLEY.

Witnesses:

THOMAS LAKE,

JNO. P. M. MILLARD,

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ampton Buildings, London, W. C.*