

J. NEY.  
Elevator

No. 222,638.

Patented Dec. 16, 1879.

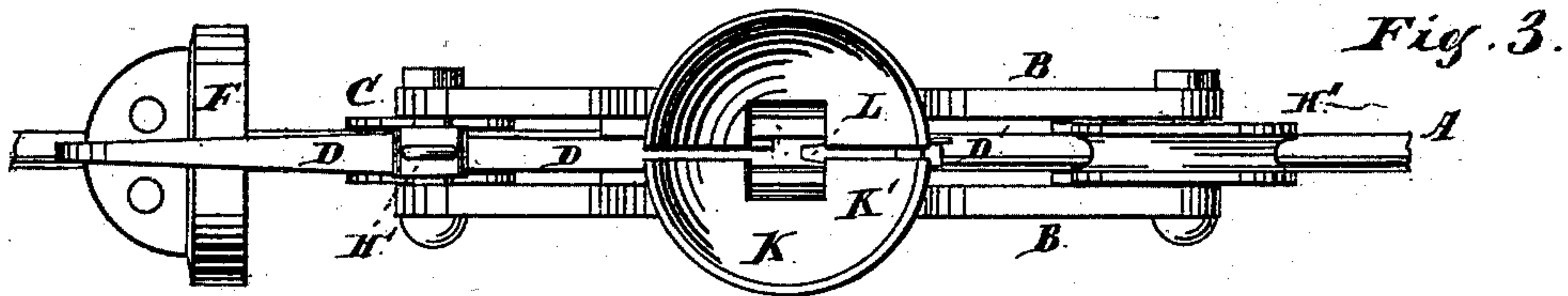
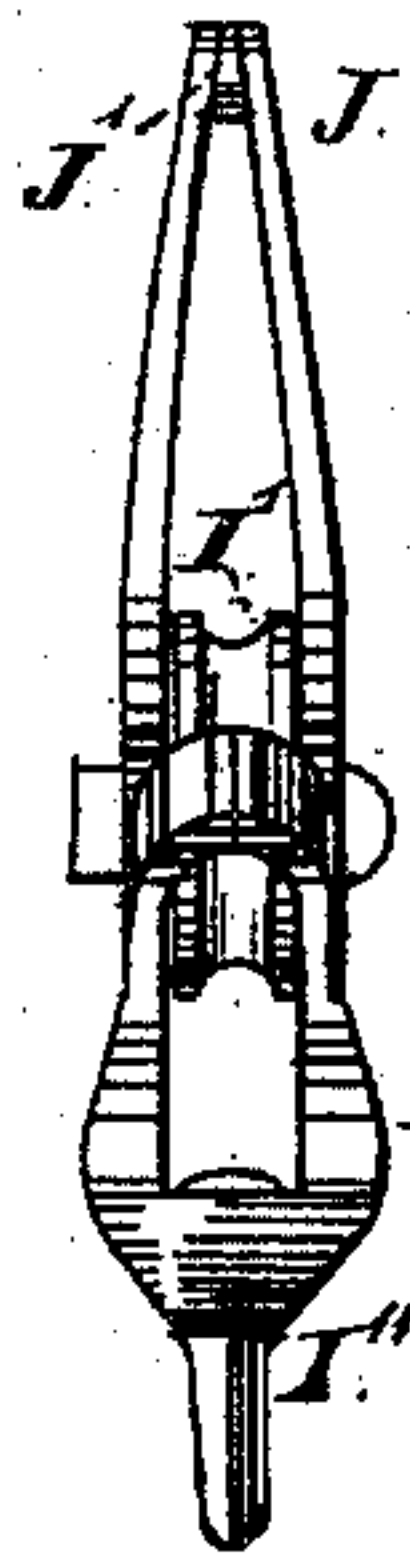
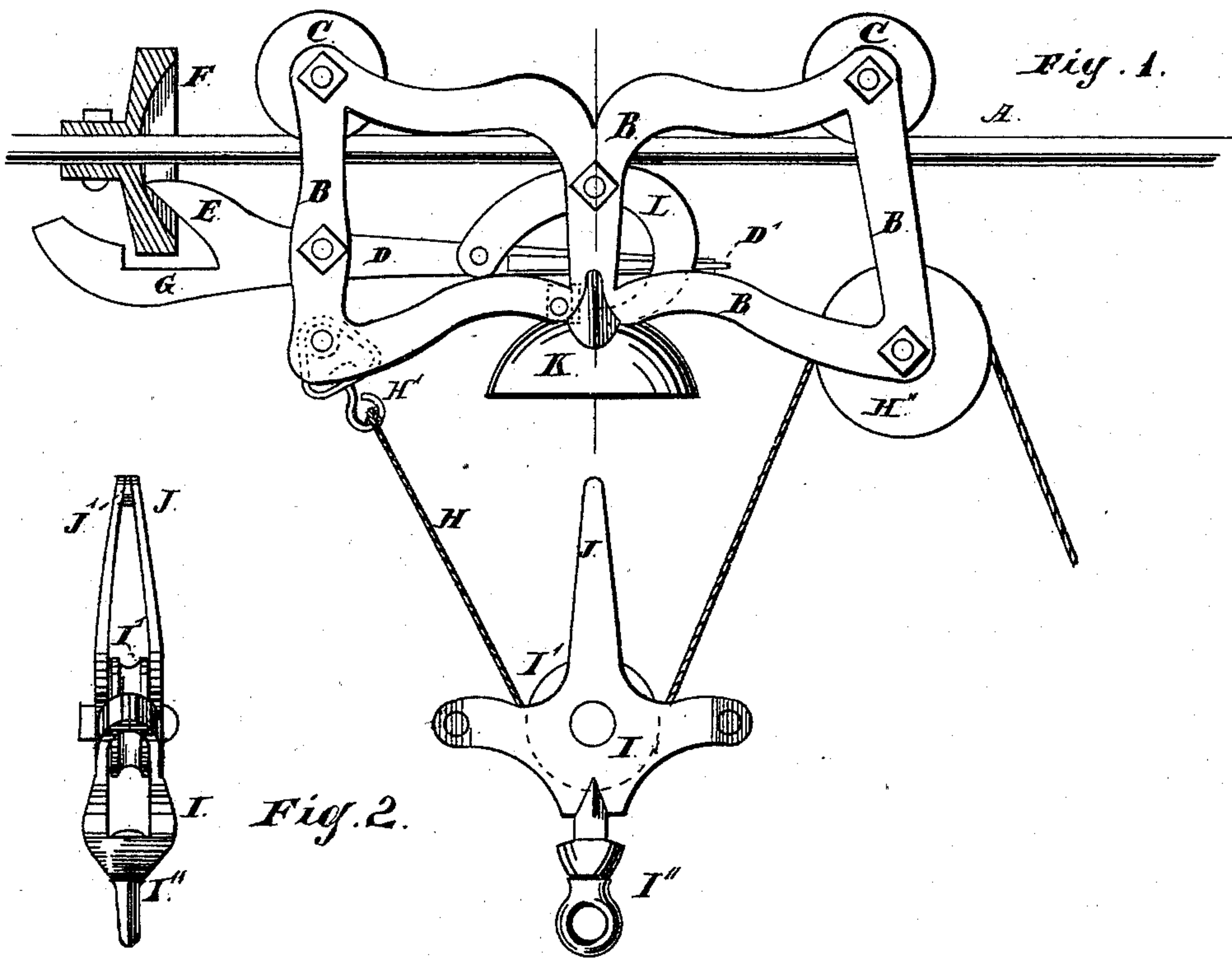


Fig. 5.

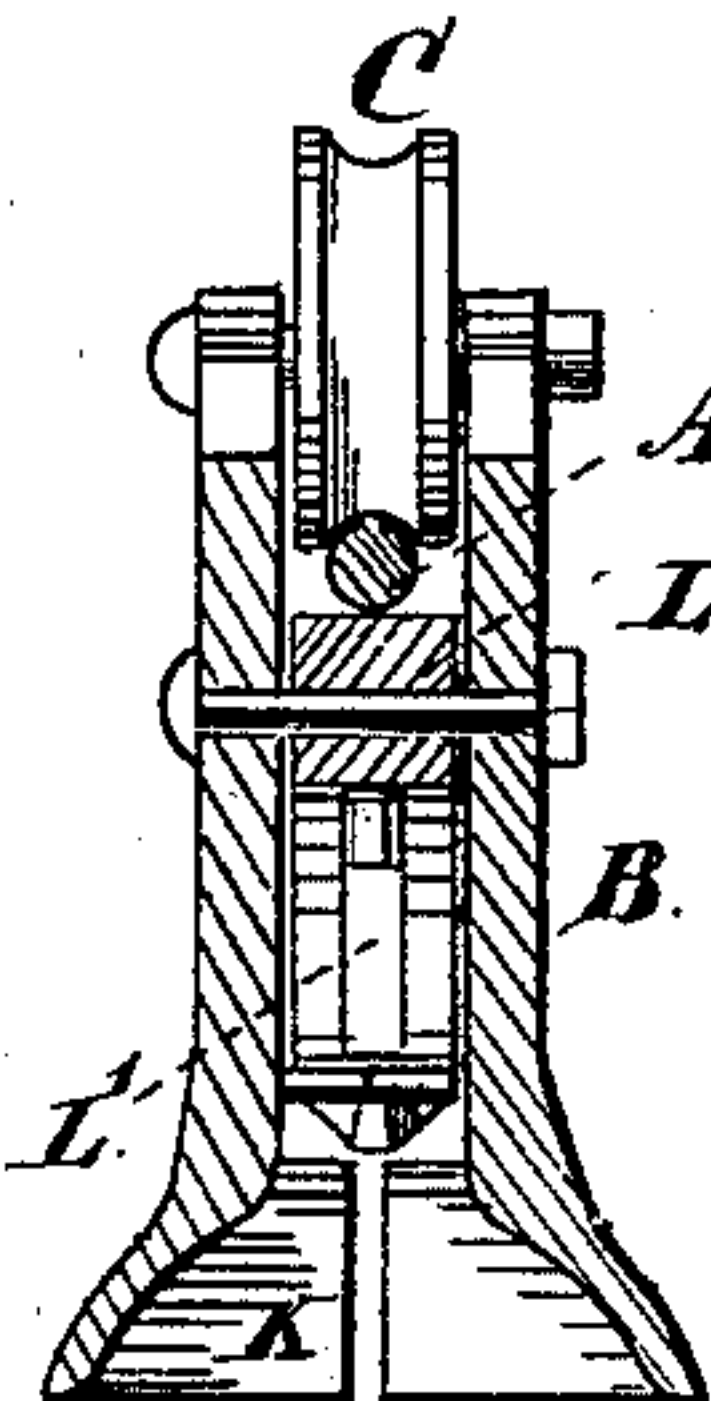
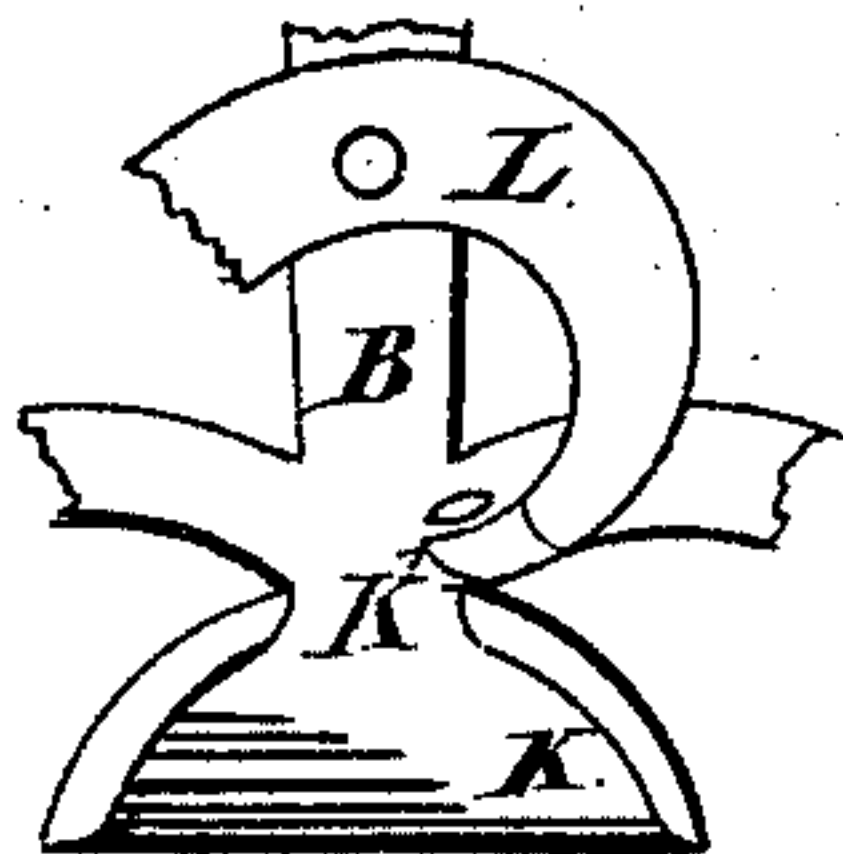


Fig. 4.

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# UNITED STATES PATENT OFFICE.

JACOB NEY, OF NORTH INDUSTRY, OHIO.

## IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **222,638**, dated December 16, 1879; application filed September 2, 1879.

*To all whom it may concern:*

Be it known that I, JACOB NEY, of North Industry, Stark county, State of Ohio, have invented new and useful Improvements in Elevators, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, a detail of the elevating-head or load-carrier; Fig. 3, an under-side view of the track and carriage; Fig. 4, a section on line *xx* of Fig. 1; Fig. 5, a detail of the hook or latch by means of which the elevating-head is attached to the carriage.

This invention relates to the controlling of the carriage and the operating of the elevating-head in that class of elevators in which the load is elevated, by means of a head or block operated by a rope and pulleys, to a carriage or frame which travels back and forth on an elevated track, and carries the load held by the head to any desired point within the limits of the track; and it has for its objects to simultaneously lock the elevating-head and release the carriage when the load has been elevated, and to simultaneously release the elevating-head and lock the carriage when it is returned after the load has been deposited, both of which operations are performed automatically, to prevent any accidental movement of the devices by which the locking and releasing are obtained, and to guide and operate the elevating-head so as to insure its engagement with the locking devices and attachment to the carriage or frame; and its nature consists in providing a stationary disk having a concave face, and located at one end of the track, and arranged to engage with a locking lever or arm and hold the carriage or frame while the load is being elevated, and release the elevating-head when the carriage is returned, for which purpose the lever or arm is provided with a projection which engages the concave face of the disk; in providing a spring located on the locking lever or arm, for preventing any accidental movement of the arm; in providing a hook or latch pivoted or connected to the arm or lever, so that the movement of the arm or lever will operate the hook or latch, as required, for engagement with or disengagement from the elevating-head; in providing a bell-shaped guide located on the

carriage or frame beneath the engaging hook or latch, and having an opening, into which the point of the latch projects, through which opening a slotted point on the elevating-head can pass to engage the locking arm or lever and operate the lever to throw the latch or hook into engagement with the elevating-head; and in the several parts and combination of parts hereinafter set forth as new.

In the drawings, A represents the track; B, the carriage or frame; C, the traveling-wheels; D, the locking and releasing lever; D', the retaining-spring; E, the unlocking-point; F, the disk or circular stop; G, the slot or opening in D; H, the operating-rope; H', the swivel-connection; H'', the rope-pulley on the frame; I, the elevating-head; I', the rope-pulley on the head I; I'', the swivel on the head I; J, the slotted point on the head; K, the bell-shaped guide; K', the opening for the passage of the point J; L, the attaching hook or latch; L', the slot in J.

The track A may be made of round iron or other suitable material, and is supported at the required height by posts, standards, or other frame-work, in the same manner as other tracks for elevators of this description.

The frame B may be of any suitable construction. As shown it consists of two parallel sides or pieces formed of an upper and lower horizontal piece, and three upright or vertical pieces. This frame is suspended from the track A by the wheels C, which travel in the track A, and are journaled or pivoted in the upper corners of the frame. The pieces composing the frame or carriage B may be cast or otherwise formed.

The lever D is pivoted to the forward vertical pieces of the carriage or frame and projects some distance forward and extends back between the sides of the frame or carriage, beyond the center piece, as shown in Fig. 1. The forward end of this lever D is arranged to engage with a stop or disk, F, located around the track A, at the end where the load is elevated. This disk F is attached to the track by a collar and set-screw, or in any other suitable manner, so that it can be adjusted and held in position to engage with and operate the lever D. This disk or stop F is of a circular form, and its inner face is cut out, so



as to leave an inclined surface from its periphery to its center, with which a point or projection, E, located on the outer end of the arm or lever D, is brought in contact, so as to raise the outer end and depress the inner end of said lever. Below the point E is a notch or recess, G, in the arm or lever D, which, when the end of the lever is raised, engages with the disk or stop F, and holds the carriage or frame, and when the end of the lever is depressed will be disengaged from the stop E.

The operating-rope H is attached at one end to a swivel-eye, H', the stirrup of which is loosely attached to the frame or carriage, so that the eye can swing. This rope H passes from the swivel under the pulley I', thence over the pulley H'' on the frame or carriage, to the devices by which it is operated in the usual manner.

The head I is suspended from the rope H by the pulley I', and may be cast or otherwise formed so as to have an opening for the pulley and the passage of the rope H. To the lower side or end of this head I is attached a swivel, I'', for attaching the load to the head, and extending up centrally from the body of the head is a long point or pin, J, which enters the bell-shaped guide K. This guide K may be cast with the carriage, or may be made separate and attached thereto, and its shape is such that the end of the pin or point J will strike it and be guided to its center, so as to pass through the opening K' a sufficient distance to be caught and held by the hook or latch L.

The hook or latch is bent or curved, as shown in Figs. 1 and 5, so that its end will project into the opening K'. This latch is pivoted at one end to the arm or lever D, and a secondary pivot is provided for it to the frame, so that when the lever is moved the hook or latch will be operated on its frame-pivot. The curved downward portion of this latch L is provided with a slot or opening, L', through which the end of the arm or lever D passes, and to this end of the lever is attached a spring, D', so arranged as to bear or press against the side of the slot L', which spring, by its pressure, will hold the end of the lever and prevent any slipping, except when required.

The point or pin J passes through the opening K', and comes in contact with the end of the lever D.

In operation, the carriage or frame B is locked by the engagement of the notch G and disk F when the load is to be elevated. The load is attached to the swivel I'' in any suitable manner, and is elevated by means of the head I through the medium of the rope H. As the head I is elevated the point or pin J will enter the mouth of the bell-shaped guide K, and by the sides of such guide will be directed, so as to pass through the opening K', and the end of J will come in contact with the under side of the lever D, and raise that end of the lever, at the same time depressing the forward end, so as to disengage the notch G from the disk F. At the same time the upward movement

of the inner end of the lever will throw the point of the hook L still farther forward through the opening K', and into the slot in the pin or point J, so that it will catch beneath the end J' of the point and hold the head I and load thereto attached suspended, so that it can be carried by the frame or carriage. The frame or carriage is then made to travel on the track A to the desired point, when the load can be discharged in the usual manner.

After the load is discharged the carriage is returned for the next load. As it approaches the stop end of the track the projection E will strike the inclined face of the stop F, raising the outer end of the lever and depressing the inner end, and this downward movement of the inner end will throw up the point of L, disengaging it from the point or pin J, so that the head I can descend for another load, the frame or carriage being locked at the same time by the notch G and disk F, and held for the elevation of the load.

By providing a disk, F, located around the track, it will be seen that, no matter in what direction the frame may be swung when returned, the projection E must engage the disk F so as to perform its function; and by locating this disk with reference to the lever or arm D, and pivoting the latch or hook L to the lever so that the movement of the lever will operate the latch, it will be seen that the same movement of the lever which disengages it from the disk will simultaneously throw the latch or hook L into engagement with the head I, and that the same movement of the lever which engages the notch and disk will simultaneously disengage the hook L from the head I, and that both results will be accomplished automatically as the lever is operated by the disk and the point J, and that, as a necessary consequence, the carriage will be unlocked when the head is attached thereto, and the head will be unlocked when the carriage is in position to receive the load.

By locating the bell-shaped guide K at a point on the frame so that the central opening, K', will be immediately beneath the end of the lever, it will be seen that the point J must be directed so as to come in contact with the lever, because this opening, K', is always in the same position relative to the lever and cannot be changed, so that the point J must, as it passes through the opening, engage with the lever.

By providing the spring D', it will be seen that no action of the lever can take place except by the disk F or the point J, and that when this lever has been moved by the disk or pin it will be held by the spring in the position in which it has been forced.

I do not claim, broadly, the stop on the track for unlocking the lever of the carriage at a certain point; but my stop performs two offices, one of which is new and the other improved; for by making the stop concave or dishing it trips the lever by its direct operation with the introduction of special tripping devices, and,



as the track is frequently a simple rope, and liable to twist or turn the circular form of the track passing through its center, causes the strap to act in its tripping operation with certainty, however the track may turn or twist, so that a common rope may be used with any device to counteract its tendency to turn, twist, or untwist.

What I claim as new, and desire to secure by Letters Patent, is—

1. The circular and dishing disk or stop F, located around the track A, in combination with the lever D, having the notch G and projection E, substantially as and for the purposes specified.

2. The dishing disk or stop F, located around the track A, and lever D, having the notch G and projection E, in combination with the hook or latch L, and pin or point J, for effecting the simultaneous locking and unlocking of

the carriage and elevating-head, substantially as specified.

3. The spring D', in combination with the lever D, for keeping the lever in position and preventing any accidental movement thereof, substantially as and for the purposes specified.

4. The combination of the bell-shaped guide K, having a central opening, K', hook L, lever D, concave stop F, with head I and point J, substantially as specified.

5. The combination of the concave disk F and lever D, having a projecting point, E, with the hook L, pivoted to the main frame, between its ends, and to the lever D, between its pivot and the projection E, substantially as described.

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Witnesses:

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