(No Model.)

D. I. CALHOUN.

CAR FOR HOISTING AND CONVEYING MACHINES.

No. 283,964. Patented Aug. 28, 1883.

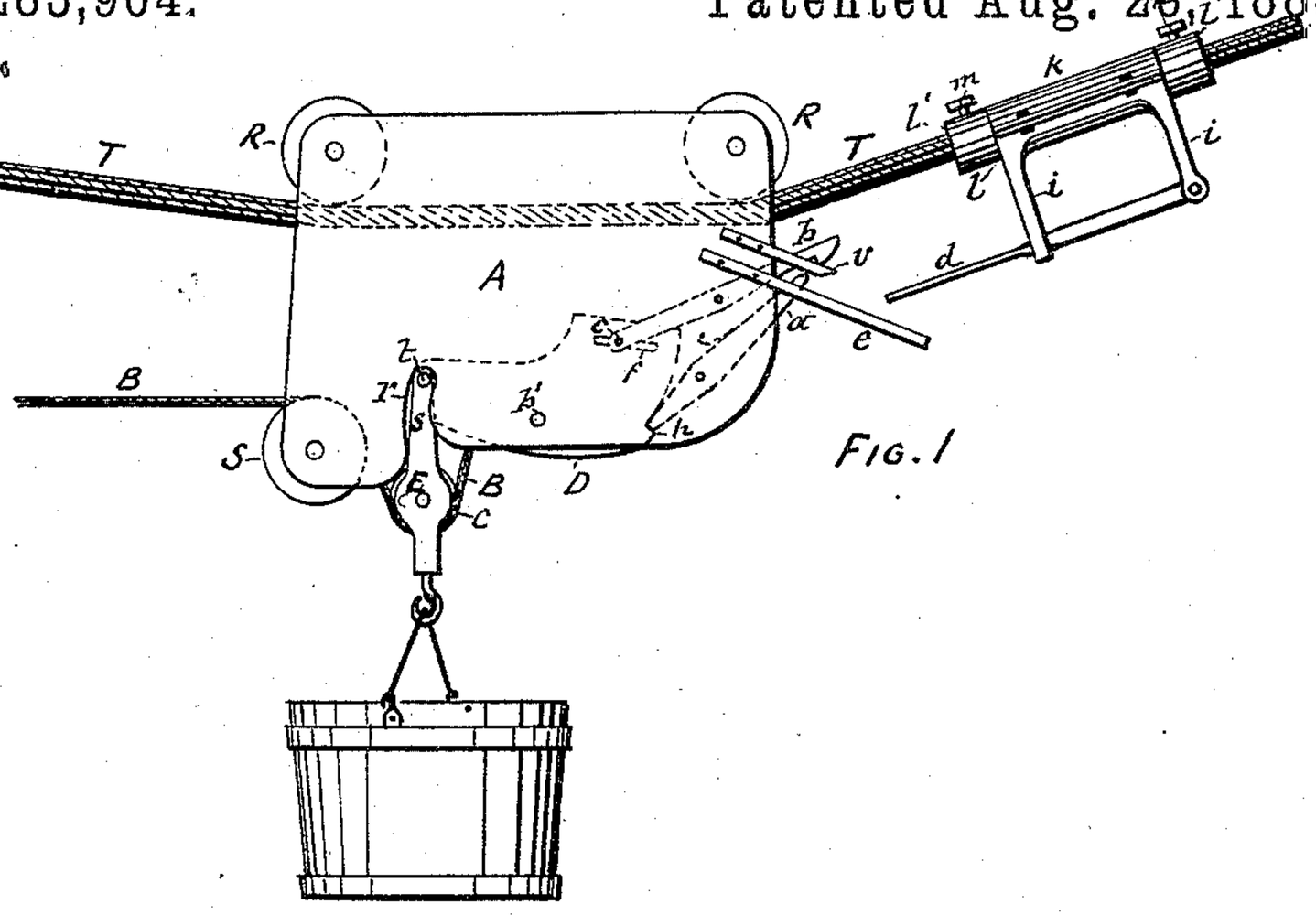

FIG. 1

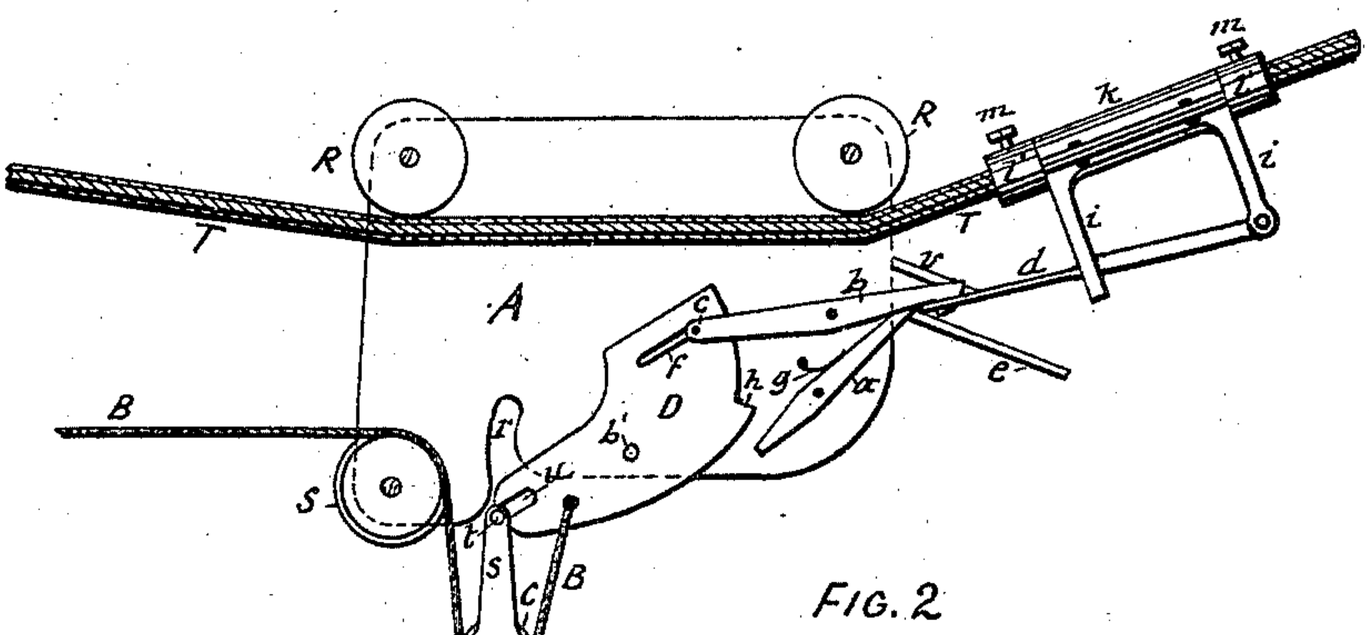

FIG. 2

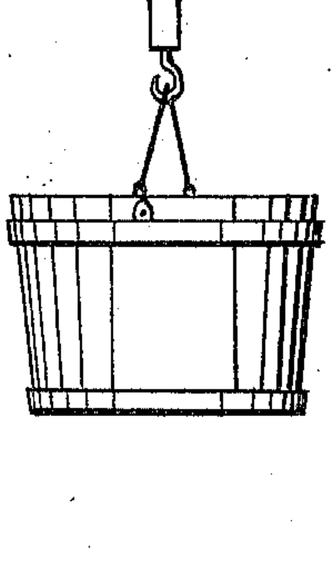

FIG. 4

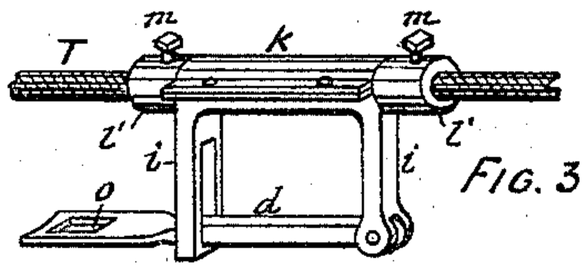

FIG. 3

WITNESSES:

E. Bendixon

Wm. C. Raymond

INVENTOR:

D. Irving Calhoun

per Duell, Lacey & Hay

Attys

UNITED STATES PATENT OFFICE.

D. IRVING CALHOUN, OF WEEDSPORT, NEW YORK.

CAR FOR HOISTING AND CONVEYING MACHINES.

SPECIFICATION forming part of Letters Patent No. 283,964, dated August 28, 1883.

Application filed May 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, D. IRVING CALHOUN, of Weedsport, in the county of Cayuga, in the State of New York, have invented new and useful Improvements in Cars for Hoisting and Conveying Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in carriages designed for traveling on a single elevated track and for carrying loads in a suspended position.

My invention consists in the combination, with said carriages, of certain novel, simple, and effective devices for automatically restraining the carriage from movement on the track while loading the suspended implement or receptacle and raising the load to the carriage, and then automatically releasing the carriage to allow it to travel to the desired destination, said automatic carriage-restraining devices being so constructed and arranged as to adapt the apparatus to operate on a rope or cable track as well as on a rigid track, all as hereinafter more fully described, and specifically set forth in the claims.

In the accompanying drawings, Figure 1 is a side view of my invention, showing the carriage in its approach to the catch which retains it in position. Fig. 2 is a view of the same, with one of the side plates of the carriage removed, and showing it in engagement with the aforesaid catch. Fig. 3 is an enlarged isometric detail view of that part of my invention which is arranged stationary on the track.

Similar letters of reference indicate corresponding parts.

A denotes the carriage-frame, having pivoted therein two carrying-rollers, R R, by which it travels on the elevated track T, which in this case is represented in the form of a taut rope. To the forward end of the suspended part of the carriage is journaled a sheave, S, over which the draft or hoisting rope B passes from the carriage to the horse, said rope being extended around the under side of a tackle-block sheave, C, and having its end attached to a tumbler, D, at a point slightly forward of the pivot b', by which said tumbler is connected to the carriage-frame A. Between the tumbler D and sheave S the bottom of the carriage-frame is formed with an upward deflection or recess, r, to allow an upward extension, s, of the tackle-block case to enter when the tackle-block is drawn up, said extension s having a pin, t, passing transversely through it and projecting at opposite sides thereof. In drawing up the tackle-block the central portion of the pin t becomes interlocked with a notch, u, in the forward end of the tumbler D, and causes the same to turn on its pivot and follow the pin t in its ascent until the projecting portions of the pin encounter the side plates of the carriage at the end of the recess r, which arrests the further ascent of the tackle-block. The tumbler having in the meantime become engaged with a stop-lever, a, hereinafter described, retains the aforesaid parts in their raised position.

b is a latch, in the form of a bar, pivoted to the rear portion of the carriage-frame, and having a hook-shaped end projecting from the rear end of said frame. The opposite end of the latch b has a pin, c, projecting laterally therefrom, and this pin projects through a slot, f, in the tumbler D, and which is so arranged in relation to the pivots of the latch b and tumbler D that the oscillation of the latter will impart a vertical oscillation to the latch b. It is obvious that the same effect can be produced by making the slot f in the end of the bar b and attaching the pin c to the tumbler; hence I do not limit myself to any specific arrangement in that respect.

a is another bar pivoted to the rear portion of the carriage-frame, and held yieldingly in a rearwardly-inclined position by its gravity, or by a spring, g. Said bar is so arranged as to engage by its lower end with a shoulder, h, on the tumbler D, and at the same time project with its upper end from the rear of the carriage-frame A.

e is a guide-bar fixed to the carriage-frame, and projecting in an inclined position from the rear end thereof, for the purpose of guiding the combined tripping-lever and catch d, so as to insure its operation on the lever a and latch b, as will be hereinafter described.

The combined catch and tripping-lever d consists of a bar which is sustained yieldingly in a horizontal position below the track T, and in range with the guide e, by the following instrumentalities: A prolonged sleeve, l, surrounding the track T, is provided at each

end with a rigid collar, *l'*, and with set-screws *m* through said collars, by means of which set-screws the sleeve *l* is clamped in the desired position on the track. On the sleeve *l*, between the two collars thereof, is swiveled another sleeve or tubular arm, K, which is composed of two longitudinal sections, to admit of its application to the sleeve *l*, and are bolted together, as shown. From the end of the sleeve K depend two hanger-arms, *i*, and on the end of that arm which is farthest from the carriage A is hinged the combined catch and tripping-lever *d*, the free end of which projects through a vertical slot in the other arm, *i*, and is thus supported yieldingly in a horizontal position, the free end of the catch *d* being provided either with a hook or with an aperture, *o*, as shown, for engaging with the hook of the pivoted latch *b* of the carriage.

The operation of my invention is as follows: To bring the carriage into position for loading and elevating the receptacle or implement suspended from the tackle-block E, the carriage is moved on the track T to bring the tackle-block over the place of loading. In the approach of the carriage to the aforesaid position, the lever *d*, which has previously been secured in the required position by the shifting and clamping of the collar *e*, first encounters the rearward-projecting end of the lever *a*, and by pressing the same toward the carriage throws the lower end of said lever out of engagement with the shoulder *h* on the tumbler D. The latter thus being released, allows the weight suspended from the tackle-block to draw the forward end of the tumbler down. In this movement of the tumbler the end of the latch *b*, which is connected with the tumbler by the pin *c*, passing through the slot *f*, is raised, thereby depressing the outer end of said catch and causing it to engage with the aperture *o* of the lever *d*, which retains the carriage in position while loading and elevating the receptacle or implement hung to the tackle-block E. The aforesaid elevating is effected by the draft on the rope B in the direction indicated by an arrow in the drawings. In elevating the load the upward projection *s* of the tackle-block enters the recess *r* of the carriage-frame, and interlocks with the forward end of the tumbler D and lifts the same, as shown in Fig. 1 of the drawings. The resultant depression of the opposite end of the tumbler depresses the end of the latch connected therewith, and thus raises the hooked end of said latch out of the aperture *o* of the lever *d*, and at the same time allows the lower end of the pivoted bar *a* to drop into the shoulder *h* on the tumbler, and thus retain the latter in its position. The released carriage, with its suspended load, can then travel along the track T to the place where the load is to be discharged.

When the track T consists of a rope or cable, it has been found very difficult to render the stationary catch operative with the catch connected with the carriage, owing to the deflection of the track, produced by the weight suspended from the carriage, said deflection throwing the catches out of line, so as to prevent their engagement. This difficulty I effectually overcome by hinging the lever *d* on the pendent arm *i*, which is maintained in its normal position by its support K being swiveled on the collar *l*, and allowing both the said collar and the rope-track to freely turn or twist thereon, the lever *d* being thus always in range with the latch *b* on the carriage. The hinged connection of the lever *d* with the arm *i* allows the forward end of said lever to rise sufficient to compensate for the deflection of the track T, and the guide *e* conducts the forward end of the lever *d* to the tripping-bar *a* and latch-bar *b*.

In order to insure the release of the latch *b* from the lever *d*, I attach to the carriage-frame a guard, *v*, in the form of a rearward-projecting bar, placed sufficiently above the guide *e* to allow the end of the lever *d* to enter between them, said guard preventing the lever from raising and following the latch *b* in the attempt of drawing the hook of the latter out of the aperture of the former.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the carriage, of the tumbler pivoted thereon, the draft-rope, and a latch connected with the tumbler, respectively, at opposite sides of the pivot thereof, said latch being pivoted intermediately of its length, and having its free end adapted to engage with a catch on the track, as set forth and shown.

2. In combination with the carriage A and rope B, the tumbler D, provided with the shoulder *h*, the latch *b*, connected with the tumbler by a slot, *f*, and pin *c*, the lever *a*, held yieldingly engaged with the shoulder *h*, and the combined catch and tripping-lever *d*, attached to the track, substantially as described and shown.

3. The combination, with the carriage provided with a latch for retaining it in position, of guide-bars projecting from the end thereof, and a catch flexibly connected to a support secured to the track, substantially as and for the purpose set forth.

4. In combination with the carriage provided with the latch *b*, lever *a*, and guide *e*, the collar *l*, swivel K, provided with the pendent arms *i*, and the catch *d*, supported by and adapted to vibrate vertically on said arm, substantially in the manner described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 4th day of May, 1883.

D. IRVING CALHOUN. [L. S.]

Witnesses:

FREDERICK H. GIBBS,

W. C. RAYMOND.