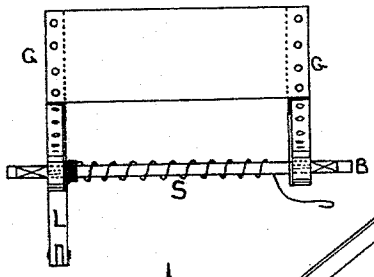
(No Model.)

A. SMITH.

BARREL ELEVATOR.

No. 561,827. Patented June 9, 1896.

FIG. 3



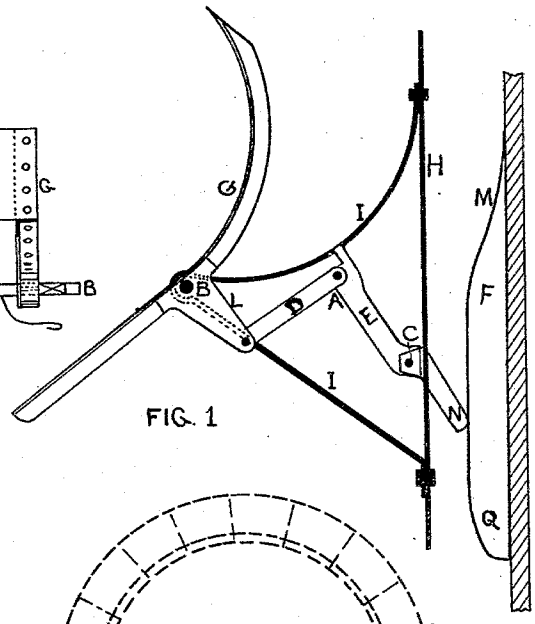


FIG. 1

FIG. 4

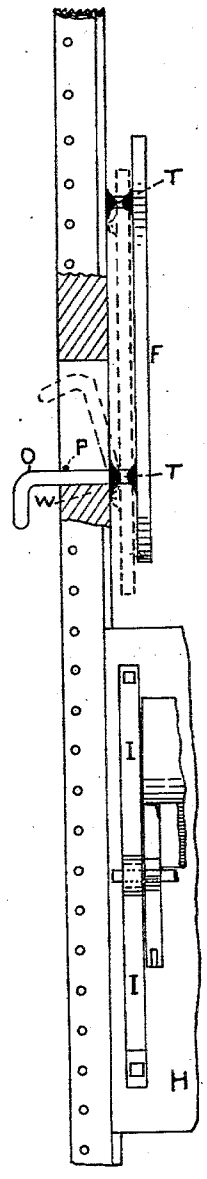
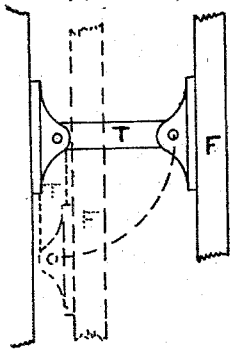
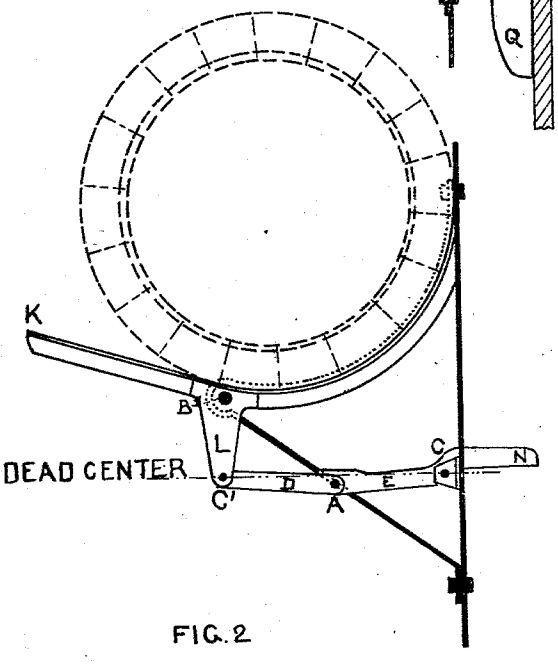


FIG. 5





LINE OF DEAD CENTER

FIG. 2

Witnesses
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UNITED STATES PATENT OFFICE.

AUGUSTUS SMITH, OF NEW YORK, N. Y., ASSIGNOR TO THE LINK-BELT ENGINEERING COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

BARREL-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 561,827, dated June 9, 1896.

Application filed June 25, 1890. Serial No. 356,643. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS SMITH, a citizen of the United States, and a resident of the city of New York, State of New York, have invented a new and useful Improvement in Elevators for Handling Barrels, Sacks, and Similar Articles, of which the following is a specification.

My invention relates to that type of elevators in which the barrels or other packages are to be discharged at various points along the line of the elevator; and its principal objects are to provide suitable means of securing an automatic discharge at the intermediate points and to restore the carriers to operative positions after discharge.

My invention consists in the various features of construction and arrangement of the carriers and the mechanism relating thereto, substantially as more fully hereinafter set forth, reference being made to the accompanying drawings, forming part of this specification, in which—

Figures 1 and 2 show vertical side sections of the carriers. Fig. 3 is a vertical front view of the tray and spring. Fig. 4 is a partial front view of the elevator, showing the manner of mounting the trip; and Fig. 5 is an enlarged detail drawing of the same.

The carriers shown in the drawings each comprise a back plate H, which is of suitable construction to be secured to any ordinary endless carrying band or bands, to which plate are secured the braces or framework I, furnishing bearings for the cross piece or shaft B, to which shaft are pivotally mounted the carrying-arms G G. These carrying-arms G G are shown of a shape suitable to carry barrels and other round packages, and they may be connected by a sheeting between their ends to better handle sacks and other articles, as illustrated in Fig. 3. These carrying-arms G G, secured to the shaft B, practically form a pivoted carrying-tray, which is tiltable by an arm L, connected thereto or formed therewith.

In order to automatically tilt the pivoted carrying-tray, I provide what I have termed a "lever device," which is mounted on the carrier-frame and coöperates with a trip device, and is connected with an arm to tilt the pivoted carrying-tray to discharge its load, and the tray is then restored to its normal position as the lever device passes the trip by a spring or other suitable device. This lever device in the present instance comprises the levers D E, which together form a toggle-joint A, one end of the lever D being connected to the arm L, and the other lever, E, being pivotally connected to the frame, as to the back plate H, at the point C. The lever E has an extension N projecting through the back plate H, which extension coöperates with the trip and controls the operation of the lever device.

The trip F is secured in proper relation to the carrier and is formed with a cam-like surface Q at one end and a gradual incline M at the other end, for a purpose to be explained hereinafter, and the trip is shown mounted or supported by the swinging links T, one of the links, as the lower one, being extended, as at O, to control the position of the trip. In operative position this is held rigid by resting on the ledge W on the main frame of the elevator, and a wooden pin, as P, serves to prevent the weight of the trip from carrying it down into an inoperative position when it is wanted for work, and, further, serves as a breaking-piece for safety in case the trip has been carelessly left in operative position when the motion of the carrier has been reversed for lowering packages.

In the operation of my invention I prefer to arrange the pivotal line of the carrying-tray substantially under the center of gravity of the load or slightly forward of a line dropped vertically from the center of gravity with the rear of the tray resting against the back plate H, which latter is usually held firmly in an upright position by running in guide-grooves in the main elevator-framework at the sides. As a precaution against the possibility of the premature discharge of the load, I prefer to construct the toggle-joint A of the lever device with a limited movement downward in such a manner as to permit it to pass slightly below the "line of dead-center," thus making a self-locking device, as indicated in Fig. 2, which is perfectly safe. One advantage in disposing the pivotal line of the elevator-tray substantially under the center of gravity of the load is that very little force need be expended in tilting the piv-

oted carrying-tray to discharge its load, which saves violence in discharging the load itself and minimizes the strain on the carrying band or bands and driving mechanism therefor. As it is desirable to tilt the carrying-tray quickly and let the package roll or slide down the incline presented by the lowered end K of the carrying-arms G of the carrying-tray before the elevator belting or cables have had time to carry the tray much beyond the discharge-point, I form the end Q of the trip F with a rather abrupt cam-like surface, which engages with the extension N of the lever E in such a manner as to turn the lever E rapidly through its extreme arc of movement, which, operating through the other lever, D, of the toggle and which is connected with the arm L, tilts the carrying-tray to the desired extent and with the desired rapidity.

The spring S is arranged in such manner as to resist the tilting motion of the carrying-tray and to have a constant tendency to return the tray to its carrying position, so that the effect when the extension N reaches the inclined portion M of the trip F is a gradual but sure restoration of the carrying-tray to an operative position, ready to pick up another package at a higher floor.

It is evident that my tray may be used with one or more carrying bands or cables and that the details of construction of the trip and trays and of the lever-device connection between the trip and trays may be varied considerably without departing from the spirit of my invention, and I do not wish to be limited to the precise arrangement set forth; but,

Having thus fully described my invention and illustrated the preferred manner of carrying it out, so that any one skilled in the art to which it relates can understand and practice the same, what I claim as new, and desire to secure by Letters Patent, is—

1. In a package-elevator, the combination with a tiltable carrying-tray carrying a package, the tray being pivoted substantially under the center of gravity of the package, of a trip, and a lever device engaging the trip and connected to positively tilt the carrying-tray to discharge said package, substantially as described.

2. In a package-elevator, the combination with a tiltable carrying-tray and an arm on the tray, of a trip, and a lever device engaging the trip and connected with the arm, substantially as described.

3. In a package-elevator, the combination with a tiltable carrying-tray and a trip, of a lever device including a locking toggle-joint connected to the tray and engaging the trip, substantially as described.

4. In a package-elevator, the combination with a tiltable carrying-tray and an arm on the tray, of toggle-joint levers connected to the arm, and a tripping device by which the toggle-joint levers are operated, substantially as described.

5. In a package-elevator, the combination with a tiltable carrying-tray and an arm on the tray, of a lever device connected to the arm, and a cam-shaped trip engaging the free end of said lever device, substantially as described.

6. In a package-elevator, the combination with a trip, of links supporting the trip one of which links is extended to form a lever to control the said trip, and a breaking-piece applied to said lever, substantially as described.

7. In a package-elevator, the combination with a carrier comprising a back plate, a rigid framework attached to the same, and a carrying-tray pivotally supported in said framework, of an arm on said tray, a lever device connected to said frame and fulcrumed at or near said back plate, and an extension on the lever device projecting through the back plate, and a trip to engage said lever extension, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 24th day of June, 1890.

AUGUSTUS SMITH.

Witnesses:
COLERIDGE A. HART,
BENJAMIN BIRKHOLZ.