

P. G. DONALD & M. H. MATTHEWS.

ELEVATOR OR CONVEYER.

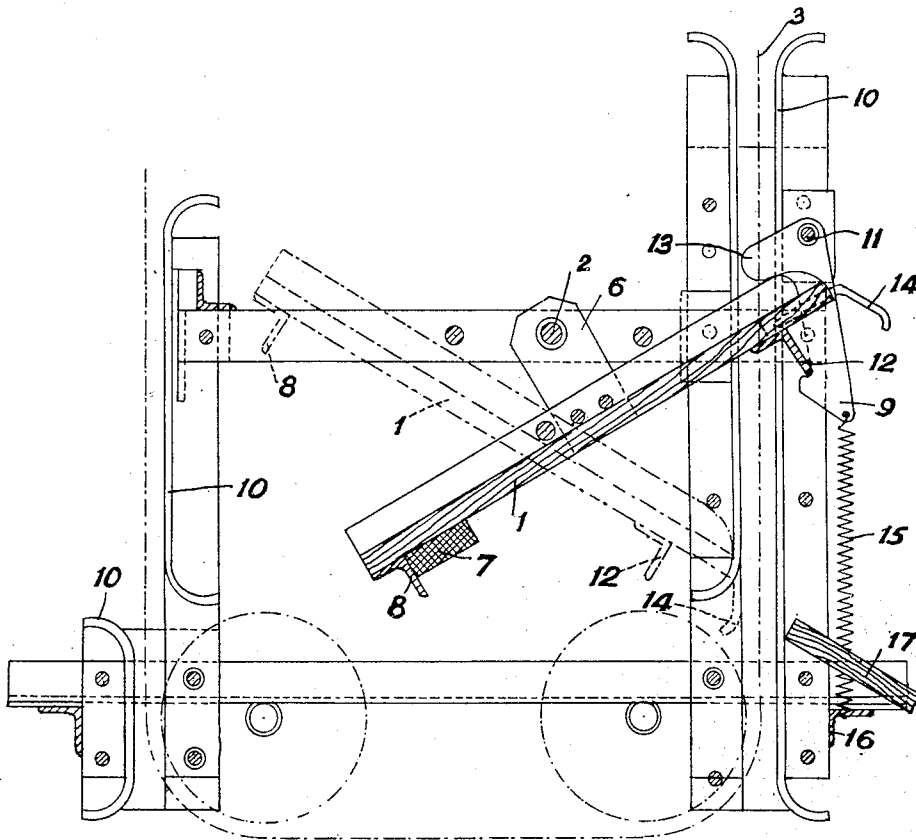
APPLICATION FILED JULY 25, 1912.

1,039,499.

Patented Sept. 24, 1912.

3 SHEETS—SHEET 1.

FIG. 1.



Witnesses:

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Inventors,

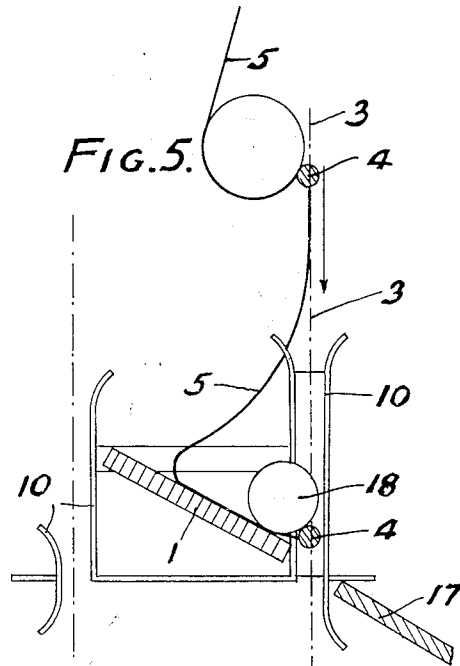
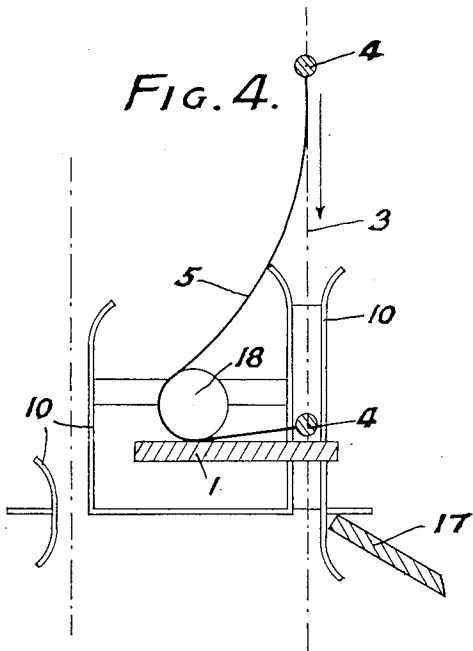
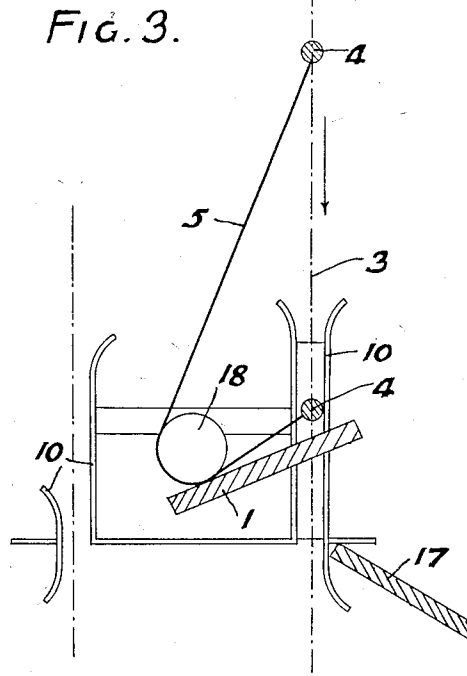
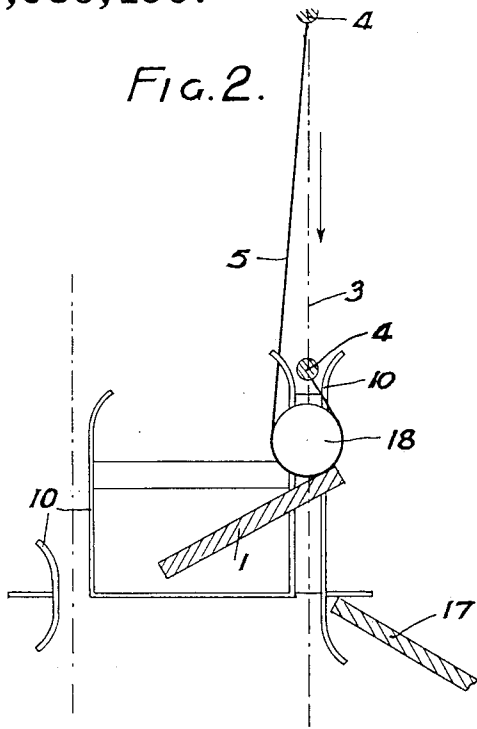
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 6.

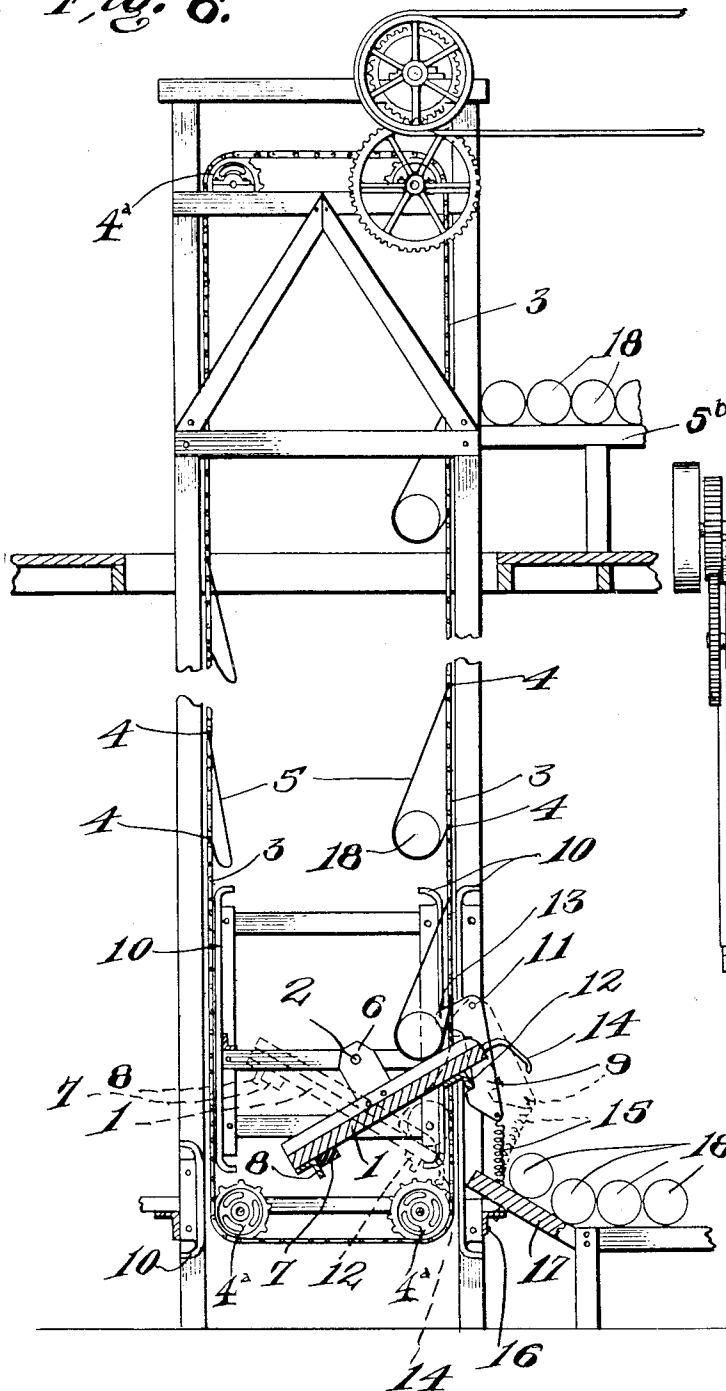
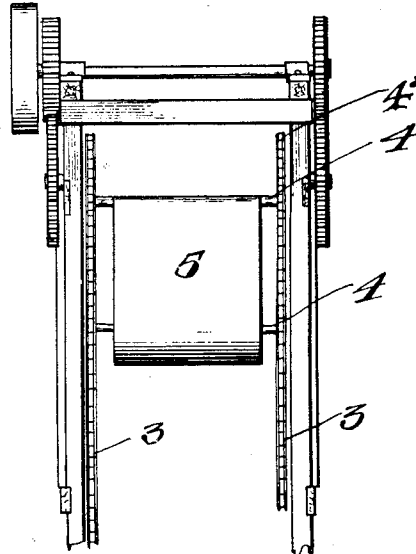


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

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ELEVATOR OR CONVEYER.

1,039,499.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed July 25, 1912. Serial No. 711,496.

To all whom it may concern:

Be it known that we, PERCY GEIKIE DONALD, director of ROWNSON, Drew & Clydesdale, Limited, and MATTHEW HENRY MATTHEWS, engineer, both of 225 Upper Thames street, in the city of London, England, have invented new and useful Improvements Connected with Elevators or Conveyers, of which the following is a specification.

Some elevators or conveyers, referred to herein simply as elevators, have flexible pockets or slings in which the goods are carried. These slings, which may be of canvas, are suspended upon cross-rails arranged at equidistant intervals between the two elevator chains, every two successive cross-rails having a sling suspended from one rail to the other. When the delivery is being made downward in conjunction with a discharge rail or platform, the slings sometimes get foul of the latter, owing to their hanging too much underneath the cross-rails. The reason for this is obvious, because when the elevator is vertical the goods or material contained in the slings will naturally tend to hang centrally in the path of the cross-rails and directly they come on to the stationary discharge rail or platform they will interfere with the downward travel of the lower rail of the sling containing such goods or material. This may not only interrupt the working of the elevator and possibly break the machinery, but may also damage the goods.

The present invention is designed to prevent the above drawback.

It consists of an automatically operated device for compelling the bottoms of the slings as they descend upon the discharge platform to swing inward or backward so that their contents become freely discharged from their mouths which continue to move downward vertically, being fastened to the cross-rails, the ends of which are joined into the links of the chains which travel down between vertical guides at the place of discharge.

Reference will hereinafter be made to the accompanying drawings and to the reference numerals thereon.

In these drawings, Figure 1 is a vertical section through the center of a discharge platform gear. Figs. 2, 3, 4 and 5 are similar views on a smaller scale, showing diagrammatically successive positions at four different stages of the operation, including

the first and the last. Fig. 6 is a side elevation of the conveying device embodying our invention. Fig. 7 is a fragmental view disclosing the relation between the cross rails and chains.

According to our said improvements, the discharge platform 1 (or that portion of the same upon which the slings bear when they have descended to the discharge level) is hinged upon a horizontally transverse axis and so balanced that it is normally inclined from the rear upwardly its fore edge extending across the downward vertical path 3 of the cross-rails 4 (Figs. 2, &c.,) bearing the slings 5. The effect of this is to cause the bottoms of the descending slings, as each one reaches the hinged platform 1, to slide down upon the sloping surface of the latter, thus throwing the line of gravity well behind the cross-rails, which therefore do not become obstructed by the slings. A convenient manner of hinging the platform 1 is to suspend it by two arms 6 at its two sides from pins 2 situated away from its upper surface, so that it may have a raking rearward movement when swung upon the pins, which will enable it to clear the cross-rail and chain path 3 without swinging through a large angle, at which point it will have assumed a downward inclination adapted to help the goods to roll out of the sling. A weight 7 may be attached to the platform to return it to its upward position shown in Figs. 1 and 2 directly the sling has discharged its contents, and such upward movement may be restrained when the desired position has been reached by the rear crossbar 8 of the platform coming to rest upon a suitable buffer or support, or in any other desired manner.

The platform may be prevented from descending too easily or prematurely by holding it up with a catch which becomes released by the downward pressure of a cross-rail. Such a catch is shown in the form of a small lever or catch 9 hinged upon the chain guide 10 at 11 and having a hook at one end engaging with the front cross-bar 12 of the platform, a heel or extension 13 on the other end of the lever 9 lying within the path of the endless chain 3 so that the crossrails carried thereby striking upon the extension cause the hook to swing free from the platform. To prevent premature ascent of the latter, a special strip 14 may be added to it in front, making

an angle therewith, such strip being parallel with the chain guide 10 only when the platform has reached its discharging position.

The endless chains 3 which support the cross rails 4 move over the sprockets 4^a, which are operated in any suitable member, whereby the empty slings carried by the cross rails are being continually carried to the loading platform 5^b, to be reloaded. The position the strip 14 then takes is shown in the dotted lines; and it is obvious that it will be impinged upon, by the cross-rail 4 that has deflected the platform 1, with the result that the latter is prevented from swinging back to its original position as soon as it otherwise would.

The lever 9 may be controlled by a spring 15 fastened to an angle 16.

The goods are delivered on to a delivery platform 17, and the successive positions assumed by the discharge platform are clearly shown in Figs. 2, 3, 4, and 5. In Fig. 2, a cheese 18 is seen in a sling 5 hanging directly in the chain path 3. It is therefore necessary to cause it to move away clear of the cross-rail 4. The cheese rolls backward down the inclined platform 1, as in Fig. 3, at the end of which stage the cross-rail 4 releases the catch 9 and allows or causes the platform 1 to swing upon its axle pins 2 (Fig. 1) and to assume the position shown in Figs. 4 and 5, but without halting in the former position. Upon reaching the stage shown by Fig. 5, the cross-rail 4 descends clear of the platform 1 and the cheese 18 rolls out of the sling or else is tipped out by the sling following the cross-rail through the slot or gap between the discharge and the delivery platform 1 and 17 respectively. The details of construction will be readily understood on reference to Fig. 1.

What we claim and desire to secure by Letters Patent of the United States is:—

1. A conveying device comprising traveling chains mounted to assume a vertical position during a part of their travel, slings of flexible material carried by the chains, two axes of suspension for each of said slings, means for discharging goods from said slings when their axes of suspension are in a vertical plane, said means comprising a hinged platform, normally intercepting the path of the slings and inclined downward therefrom, means for retaining the platform in its inclined position when the platform is supporting a sling and the goods contained therein, means connected with the traveling chains adapted to release said platform and by their downward movement turn the platform upon its hinge until the same is inclined downward toward the path of the slings, and means for returning the platform to its normal position.

2. A conveying device comprising flexible

chains mounted to assume a vertical position during a portion of their travel, slings of flexible material suspended from said traveling chains, two axes of suspension for each sling, means for discharging goods from said slings when their axes of suspension are in a vertical plane, said means comprising a hinged platform normally intercepting the path of the slings, and inclined downward away therefrom, a hinged catch for retaining the platform in this position, a tail piece on said catch, said tail piece intercepting the path of the chain, a spring attached to said catch, means connected with the traveling chains adapted to release said platform, and by their downward movement turn the platform upon its hinge until the same is inclined downward toward the path of the slings, and means for returning the platform to its normal position.

3. A conveying device comprising traveling chains, said chains being mounted to assume a vertical position during a portion of their travel, slings of flexible material suspended from said chains, two axes of suspension for each sling, means for discharging goods from said slings when their axes of suspension are in a vertical plane, said means comprising a platform suspended from an axis about which it is hinged, said platform adapted to normally intercept the path of the slings, a hinge catch for retaining the platform in this position, a tail piece on said catch intercepting the path of the chain, a spring attached to said catch, means connected with the traveling chains adapted to release said platform and by their downward movement turn the platform upon its hinge, until it is inclined downward toward the path of the slings, and means for returning the platform to its normal position.

4. A conveying device comprising traveling chains mounted to assume a vertical position during a portion of their travel, slings of flexible material suspended from said traveling chains, two axes of suspension for each of the slings, means for discharging goods from said slings when their axes of suspension are in a vertical plane, said means comprising a hinged platform, normally intercepting the path of the slings and inclined downward away therefrom, a hinged catch for retaining the platform in this position, a tail piece on said catch projecting into the path of the chain, a spring attached to said catch, means connected with the traveling chains adapted to release said platform, and by their downward movement turn the platform upon its hinge until it is inclined downward toward the path of the slings, an extension on said platform adapted to engage said means for preventing premature ascent of the platform, and a weight secured to the platform for returning the same to its normal position.

5. A conveying device comprising traveling chains mounted to assume a vertical position during a portion of their travel, slings of flexible material suspended from said
5 traveling chains, two axes of suspension extending the distance between the chains, means for discharging goods from said slings when their axes of suspension are in a vertical plane, said means comprising
10 chain guides, a horizontal member secured to said guides, the arm hinged on said horizontal member, a platform carried by said
arm, a catch hinged to the guides and engaging one end of the platform, the spring attached to the catch and the guides, an
15 extension on one end of the platform, adapted to engage the catch, and a weight at the opposite end of said platform.

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Witnesses:

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