M. C. SCHWAB.

DEFLECTOR FOR GRAVITY CONVEYERS.

APPLICATION FILED APR. 23, 1908.

1,069,036.

Patented July 29, 1913.

2 SHEETS—SHEET 1.

Fig. 2.

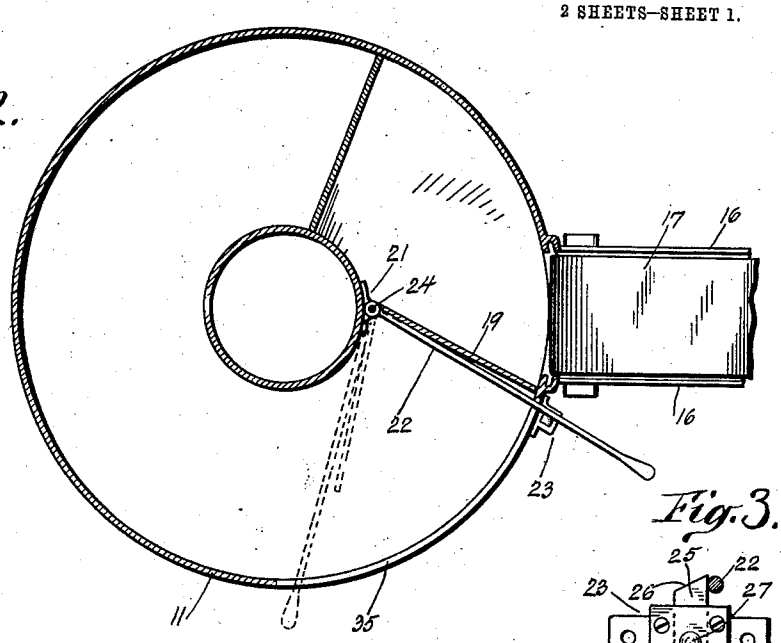


Fig. 3.

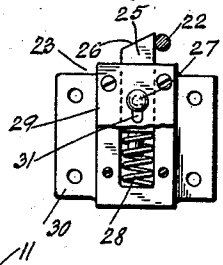
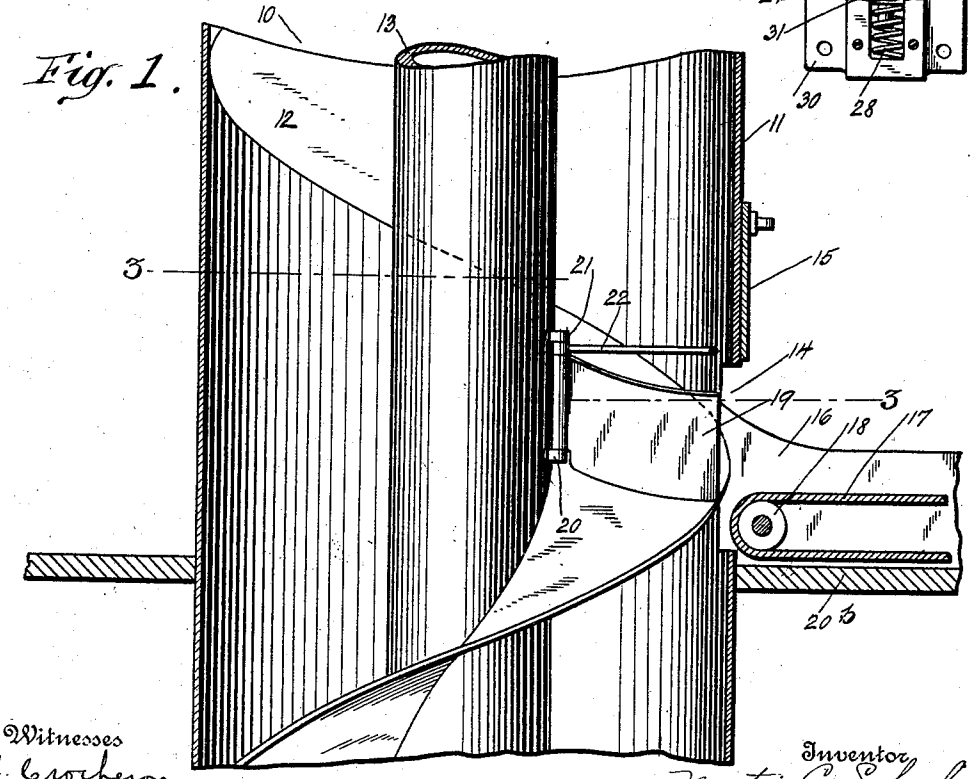


Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 5.

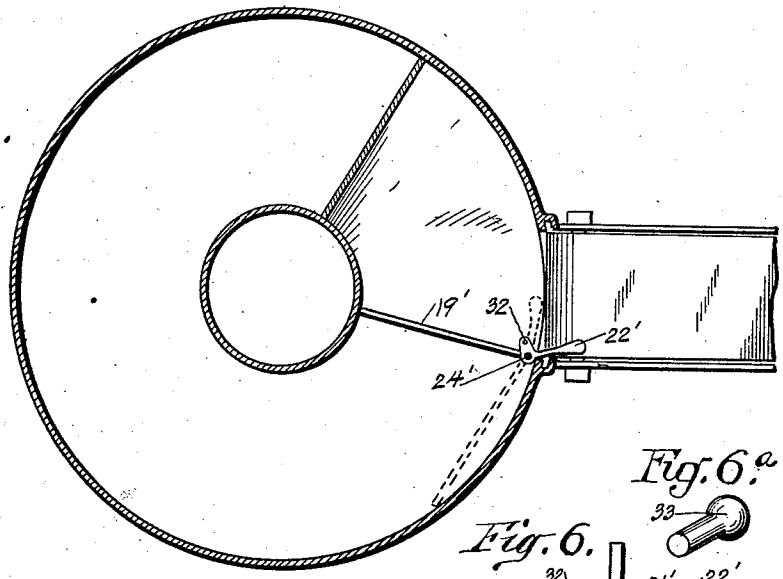


Fig. 6.a

Fig. 6.

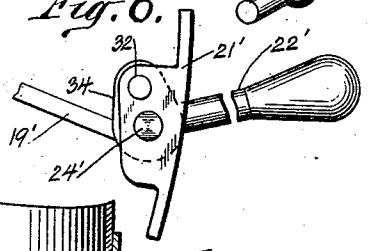
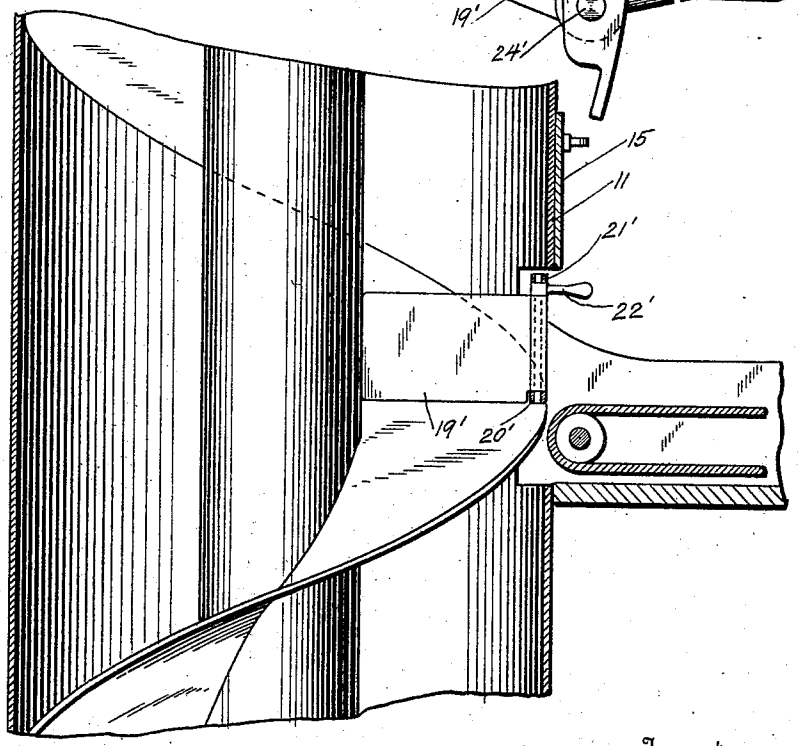


Fig. 7.



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MARTIN C. SCHWAB, OF CHICAGO, ILLINOIS, ASSIGNOR TO GRAVITY CONVEYOR COMPANY, A CORPORATION OF NEW YORK.

DEFLECTOR FOR GRAVITY-CONVEYERS.

1,069,036. Specification of Letters Patent. Patented July 29, 1913.

Application filed April 23, 1908. Serial No. 428,798.

To all whom it may concern:

Be it known that I, MARTIN C. SCHWAB, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Deflectors for Gravity-Conveyers, of which the following is a specification.

My invention relates to improvements in gravity conveyers.

One of its objects is the provision of improved deflecting means whereby descending articles may be discharged at any desired floor.

Another object is the provision of means for operating said deflecting means.

A further object of my invention is the provision of means for locking said deflecting means in certain predetermined positions.

Other objects of the invention will appear hereinafter, the novel combinations of elements being set forth in the appended claims.

In the accompanying drawings Figure 1 is a sectional elevation of a portion of a gravity conveyer having my invention applied thereto; Fig. 2 is a plan view; Fig. 3 is a detail view of a latch; Figs. 4 and 5, are sectional and plan views, respectively, of a modification; Figs. 6 and 6ª are detail view of certain parts of the apparatus shown in Figs. 4 and 5.

Similar characters of reference denote similar parts throughout the various views.

Referring to Figs. 1, 2, and 3, 10 designates a spiral gravity conveyer comprising an outer shell or casing 11 and an inner tube 13 between which is situated a spiral conveying surface or blade 12. The conveyer is usually arranged so as to connect all of the floors of a building, an opening 14 into the conveyer being provided at each floor, through which openings articles may be inserted into or discharged from the spiral conveying surface 12. Each opening may be provided with a door, such as 15, by means of which said opening may be closed when not in use. Positively driven conveyer belts 17 pass over rollers 18, and may be driven in any desired manner so as to convey articles to or from the various conveyer openings. Guides 16, 16 may be arranged on either side of the conveyer belts 17 to prevent articles from falling off while the same are being conveyed thereon.

A package deflecting device may be arranged at each conveyer opening. This device, as shown in Figs. 1 and 2, comprises a deflector plate 19 which is hinged upon a vertical rod 24 carried in brackets 20, 21 secured to the surface of the inner core 13. An operating lever 22 is similarly hinged upon the rod 24 and is operatively connected to the deflector plate 19 and moves therewith. The deflector plate 19 extends all the way across the spiral blade when in operative position, while the lever 22 extends for some distance beyond the outer casing 11 and is provided with a handle at one end. A horizontal slot 35 is provided in the outer casing 11, and is of sufficient length to allow for the full movement of the lever 22.

A latching or locking device 23 is secured to the casing 11 adjacent the floor opening, said latching device in this instance comprising a frame 30 provided with a channel in which is a spring-pressed latch bolt 25 having an inclined face 26 adapted to be engaged by the lever 22. A spring 28 normally holds the latch bolt 25 in its outer position, the extent of such movement being limited by the raised button 27, by means of which the latching bolt may be withdrawn from engagement with the lever 22. A cover plate 29 is screwed to the frame 30 and serves to retain the latching bolt in place. This cover 29 has a slot 31 which allows a limited movement of the button 27.

The operation of the deflecting device is as follows: Normally the lever 22 and connected deflector plate 19 are swung into the dotted line position shown in Fig. 2, and when in such position any articles which may be passing on the spiral surface 12 will continue in their downward movement without being interfered with. As soon, however, as the deflector plate 19 is swung by means of the lever 22 to the operative position shown in full lines in Figs. 1 and 2, the lever 22, together with the deflector plate 19, will be locked in operative position by the locking device 23 and any articles descending on the spiral surface, upon engaging the deflector plate 19, will be shunted out of the conveyer at the opening 14 and onto the belt conveyer 17.

The deflector plate 19 may be straight or

curved in form, as desired, and is preferably of such shape that it will engage the spiral blade when in operative position for substantially its whole length so there can be no possibility of descending articles passing by the deflector when in closed position.

Referring now to the modification shown in Figs. 4, 5, 6 and 6ª, the deflector plate 19′ is shown as hinged upon a rod 24′ which is vertically supported by brackets 21′ and 20′ secured to the inside of the conveyer casing 11 adjacent the opening therein. In the present instance the deflector plate 19′ is arranged to be swung about its pivot rod 24′ by means of the lever 22′ connected therewith so that when in its operative position, that shown in full lines, the same is securely locked in such position. When the deflector plate is rotated into inoperative or broken line position (see Fig. 5), it lies against the conveyer casing so as not to interfere with descending articles. When in this position the lever 22′ lies wholly within the conveyer casing as shown by dotted lines in Fig. 5. The deflector plate may be of any desired shape or form consistent with its proper operation.

Figs. 6 and 6ª illustrate means which may be used for locking the deflector plate in operative position. It comprises the lever 22′ pivoted at 24′ to the bracket 21′, the lever 22′ having an extended portion 34 provided with a hole 32 which is arranged to register with a similar hole in the bracket 21′ when the lever 22′ and connected deflector plate 19′ are in operative position. A plug 33 may be inserted through these holes when the same are in registry, thereby securely locking both the lever 22′ and deflector plate 19′ against movement. In order to swing the deflector plate out of operative position, it is merely necessary to remove the plug 33 and rotate the lever toward the conveyer opening as far as it will go when it will assume the position shown in broken lines in Fig. 5.

Obviously those skilled in the art may make various changes in the details and arrangement of parts without departing from the spirit and scope of the invention as defined by the claims. I wish therefore not to be limited to the precise construction herein disclosed.

What I claim is:—

1. In a conveyer, the combination with a shell or casing, of an inclined conveying surface therein, a deflector within the shell or casing, and connected thereto by a vertical hinge and an operating member connected to the deflector and extending through an opening in the shell or casing.

2. In a conveyer, the combination with a casing, of a core, a spiral conveying surface between the core and casing, a deflector plate hinged to the casing, an operating lever extending through an opening in the casing, and a catch secured to the casing.

3. In a conveyer, the combination with a casing formed with an opening therein, of a conveying surface within the casing, a deflector plate movable into and out of position to guide articles through the opening, and an operating lever connected to said plate and extending through said opening when the deflector plate is in operative position, but located wholly within the casing when the deflector plate is in inoperative position.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

MARTIN C. SCHWAB.

Witnesses:
CARL P. SCHROEDER,
THEODORE VLADIMIROFF.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."