No. 833,249. PATENTED OCT. 16, 1906.

M. C. SCHWAB.

CONVEYER.

APPLICATION FILED FEB. 10, 1904.

Fig. 1

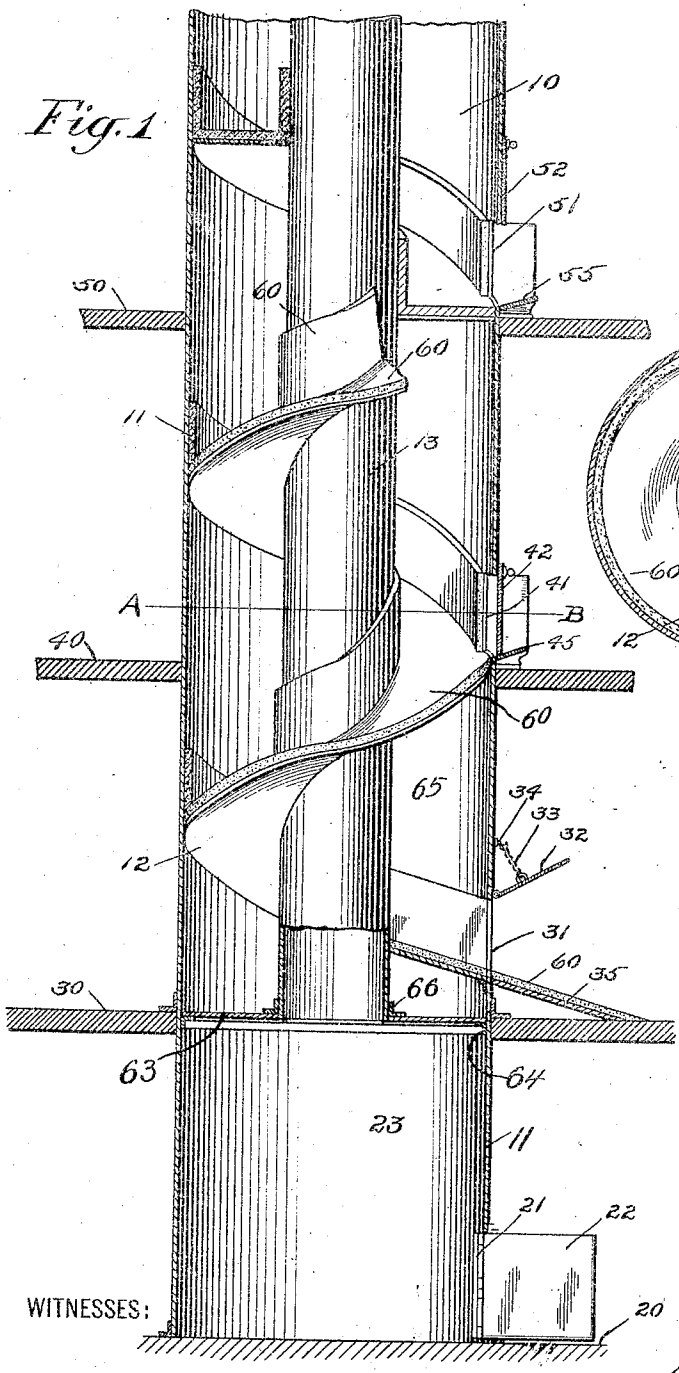


Fig. 2

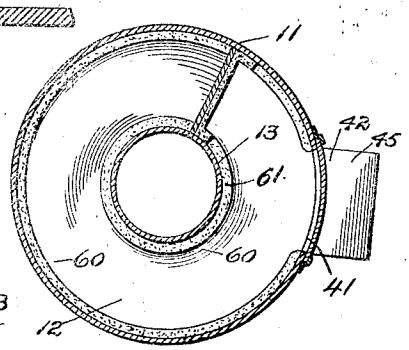
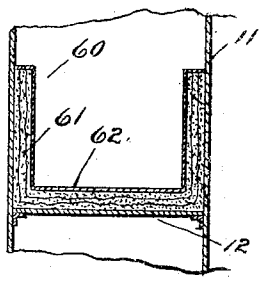


Fig. 3



WITNESSES:

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CONVEYER.

No. 833,249. Specification of Letters Patent. Patented Oct. 16, 1906.

Application filed February 10, 1904. Serial No. 192,895.

To all whom it may concern:

Be it known that I, MARTIN C. SCHWAB, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

This invention relates to package conveyers or chutes, and especially those which are built in the form of an inclosed spiral, through which the packages are descended by their own weight. Its purpose is to increase the efficiency of such conveyers; and to this end it consists in the novel construction and arrangement of parts herein described, and specifically pointed out in claims.

Referring to the drawings, Figure 1 is a side elevation, certain parts of which are in section, of a spiral chute comprising my invention. Fig. 2 is a sectional plan view with the guides for the inclined shelf 45 removed, the section being taken through the line A B of Fig. 1. Fig. 3 is a vertical section through the spiral, showing a detail of its construction.

Like figures of reference indicate corresponding parts in all of the figures.

10 is a spiral chute or package-conveyer, consisting of an outer shell 11, a spiral 12 inside of and attached to this shell and surrounding an inner core 13, to which it is also secured.

20, 30, 40, and 50 represent different floors of a building which are connected by the conveyer.

31, 41, and 51 are openings in the outer shell 11, which afford communication between the floors and the chute. 32, 42, and 52 are doors arranged to cover these openings when they are not in use. The doors 42 and 52 are so arranged that they may be slid up and down to open or close the chute. The door 42, as shown in Figs. 1 and 2, is in its closed position. The door 52 is raised, so that the opening 51 is ready for use. The door 32, which is adapted to close the opening 31 at the lower end of the spiral, is a hinged door, and, as shown, is held up in its "open" position by means of a chain 33 and a hook 34.

At 45 and 55 I have shown inclined shelves leading to the openings 41 and 51. These are for the purpose of facilitating putting packages into the conveyer. By placing them on an inclined plane packages which are slid over them have motion imparted to them before they reach the spiral. When they have been put into the conveyer, they will descend by gravity until they reach the lower end of the spiral, at which is the opening 31.

35 is an inclined platform, which conveys the packages from the spiral to the floor 30.

Preferably the outer shell 11 extends downwardly through the floor 30 to the floor 20. In such case a horizontal partition 63 is supported on a circular angle-strip 64, which is secured to such outer shell. The inner core may be supported by means of the spiral blade and its connections with the outer shell 11, or inner core may be supported by said partition 63, being secured thereto by the circular angle-collar 66. The partition divides the interior of the outer shell into an upper chamber 65 and a lower chamber 23. The partition has a circular opening in its center, which opening registers with the lower open end of the inner core 13. An opening 21 is provided in the outer shell 11 for communication with the lower chamber 23. A door 22 is shown for closing the opening 21. The chamber 23 and the interior of the core 13 may be used for various purposes—as, for example, in a ventilating system, or for containing certain pipes of an automatic fire-extinguishing system, or as conduit for electric wires, &c. In the event that the core 13 is used as a wire-conduit the chamber 23 may serve well as a switch-room and for safely inclosing the fuses and junction-boxes of an electric-lighting system, for instance.

Gravity-conveyers of this kind are in common use. The purpose of this invention is to improve such conveyers, so that they may be used for transmitting parcels of a more delicate and fragile nature than has hitherto been possible with this kind of conveyers. This end I accomplish by lining the parts of the conveyer with which the parcels come in contact—*i. e.*, the spiral 12, the inner side of the shell 11, and the outer side of the central core 11—with a soft resilient material having a smooth surface. The inclined platform 35 may also be provided with a covering 60, and, if desired, the part of the floor 30, onto which the packages will slide, may

also be covered with a soft material. In Fig. 3 I have shown in detail a section of a spiral, with its outer shell and inside core so covered. 60 represents the covering or lining. I have shown a preferred construction, which consists of several thicknesses of felt, to make a cushion or soft pad (shown at 61) covered with leather 62 to prevent undue wear. This lining is so attached to the spiral, its shell, and inner core as to present a smooth surface to packages which are transmitted through the conveyer. By lining the conveyer in this manner it is possible to use it for packages of a delicate and fragile nature without danger of breakage, abrasure, scratching, or other injury which might otherwise occur. It is also possible by using a lining of the nature described to build the spiral with a steeper pitch and to safely convey packages through the conveyer at a greater rate of speed.

When packages are sent down through a spiral conveyer, they not only slide on the spiral itself, which bears their weight, but they also rub along the outside shell on account of centrifugal force. This is what prevents them from traveling too rapidly and what makes conveyers of this type desirable. It is evident that a lining of the kind herein described is particularly adapted for use in conjunction with these spiral gravity-conveyers.

I have described a specific kind of lining, but do not wish to confine myself to this construction, as any lining of a soft or resilient nature and with a smooth surface will answer the same purpose.

Having described my invention, what I claim is—

1. In a spiral conveyer, the combination of a spiral, an outer shell and an inner core, and a resilient lining on the upper surface of the spiral and the inner surface of the shell and the outer surface of the core.

2. In a spiral conveyer, the combination of a spiral, an outer shell and an inner core, and a resilient lining on the conveying-surfaces, the lining consisting of one or more layers of felt covered with leather.

3. In a gravity-conveyer, the combination with a tubular shaft and an inner core, of a spiral between the same, and a resilient covering for the spiral conveying-surfaces.

4. In a gravity-conveyer, the combination with a tubular shaft and an inner core, of a spiral between the same, and a resilient covering for the spiral conveying-surface and for a portion of said tubular shaft above the conveying-surface.

5. In a gravity-conveyer, the combination with a tubular shaft and an inner core, of a spiral between the same, and a resilient lining covering the spiral conveying-surface and portions of said tubular shaft and inner core to form a trough-shaped spiral.

6. In a gravity-conveyer, the combination with a tubular shaft and a core, of a spiral between the same, a trough-shaped resilient covering for said spiral, a landing and an inclined shelf at said landing before an opening in said tubular shaft and outer wall of said resilient covering.

7. In a gravity-conveyer, the combination with an outer casing and an inner core, of a spiral therebetween, and a leather covering for said spiral.

8. In a gravity-conveyer, the combination with an outer casing and an inner core, of a spiral therebetween, and a covering of smooth leather for the conveying-surfaces.

9. In a gravity-conveyer, the combination with an outer casing and an inner core, of a spiral therebetween and a resilient trough-shaped covering for said spiral and spiral portions of the interior of said casing and the exterior of said inner core, said lining comprising a plurality of layers of felt covered with leather having a smooth surface.

10. In a gravity-conveyer, the combination with a tubular shaft and an inner core, of a spiral between the same, a landing, an inclined shalf adjacent said landing and an intake-opening in the tubular shaft, a lower landing, a platform connecting said lower landing with a discharge-opening in said shaft, and a resilient covering for said spiral and platform.

11. In a gravity-conveyer, the combination with an outer casing and an inner core, of a spiral, a plurality of landings, inclined shelves at the upper landings for intake-openings of the conveyer, an inclined platform for a discharge-opening at the lowermost landing, sliding doors for said intake-openings, and a swinging door for the discharge-opening pivoted about the same.

12. In a gravity-conveyer, the combination with a tubular shaft, of a partition in said shaft to form upper and lower chambers, a tubular core in the upper chamber communicating with said lower chamber, and a spiral in the upper chamber leading from an intake-opening to a discharge-opening of the conveyer.

13. In a gravity-conveyer, the combination with a tubular shaft, of a partition in said shaft to form upper and lower chambers, a door for said lower chamber, a tubular core in the upper chamber communicating with said lower chamber, and a spiral in the upper chamber leading from an intake-opening to a discharge-opening of the conveyer.

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

MARTIN C. SCHWAB.

Witnesses:
HENRY E. KIRBY.
ERNEST W. MARSHALL.