

No. 801,162.

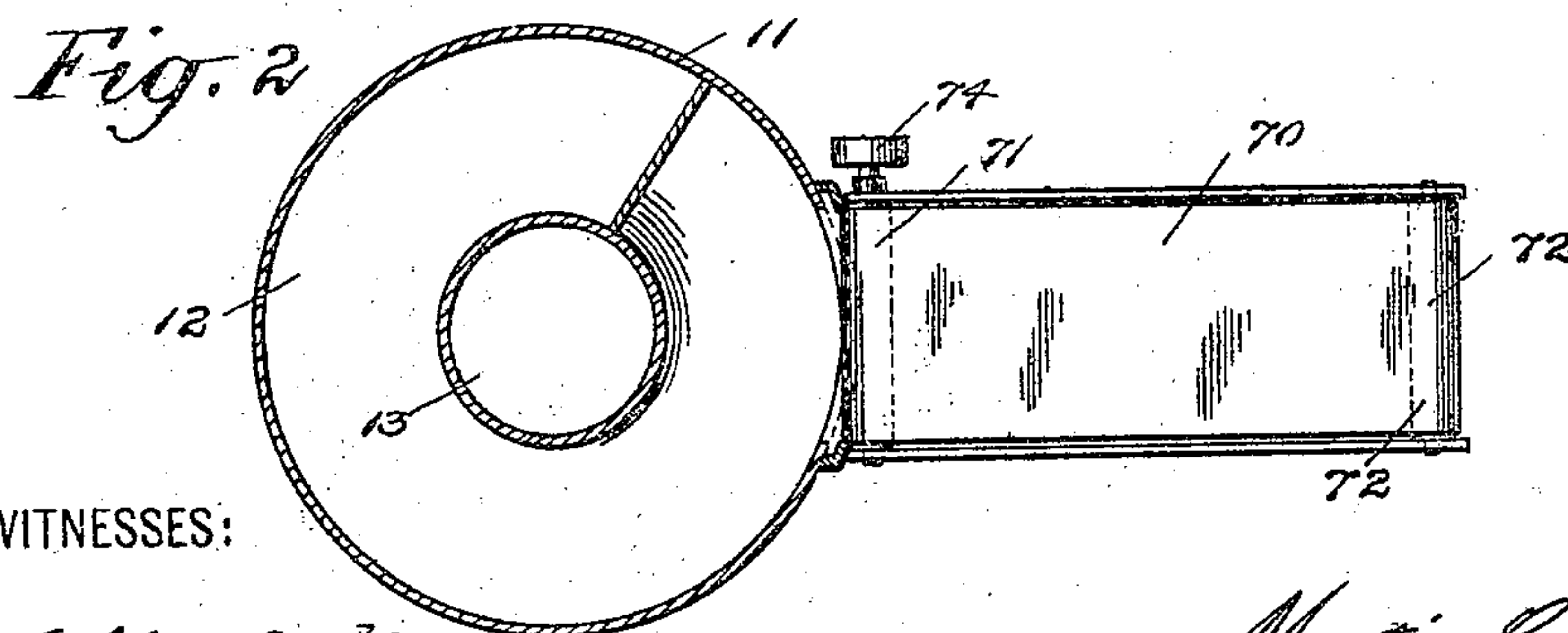
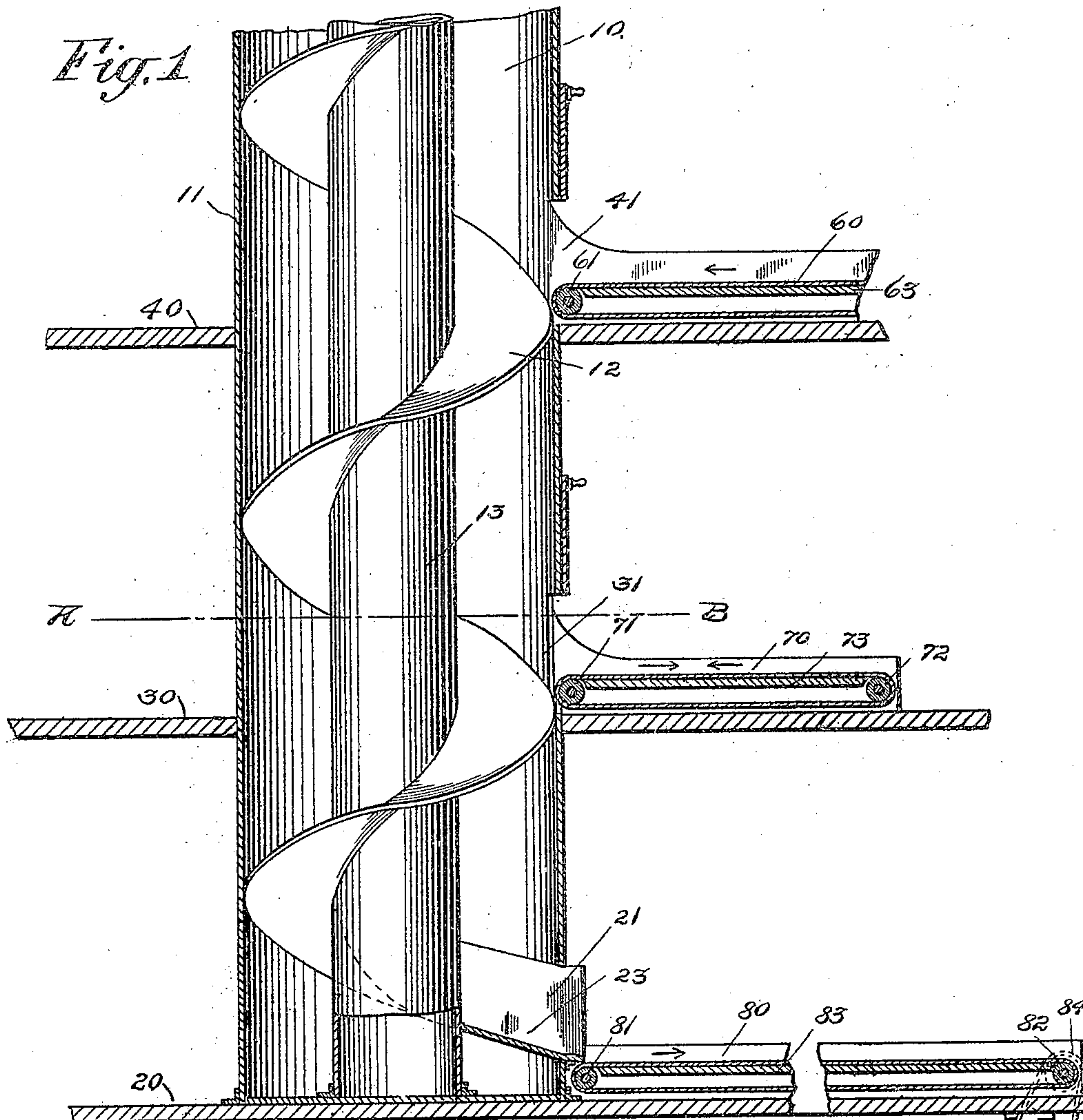
PATENTED OCT. 3, 1905.

M. C. SCHWAB.

CONVEYER.

APPLICATION FILED NOV. 2, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

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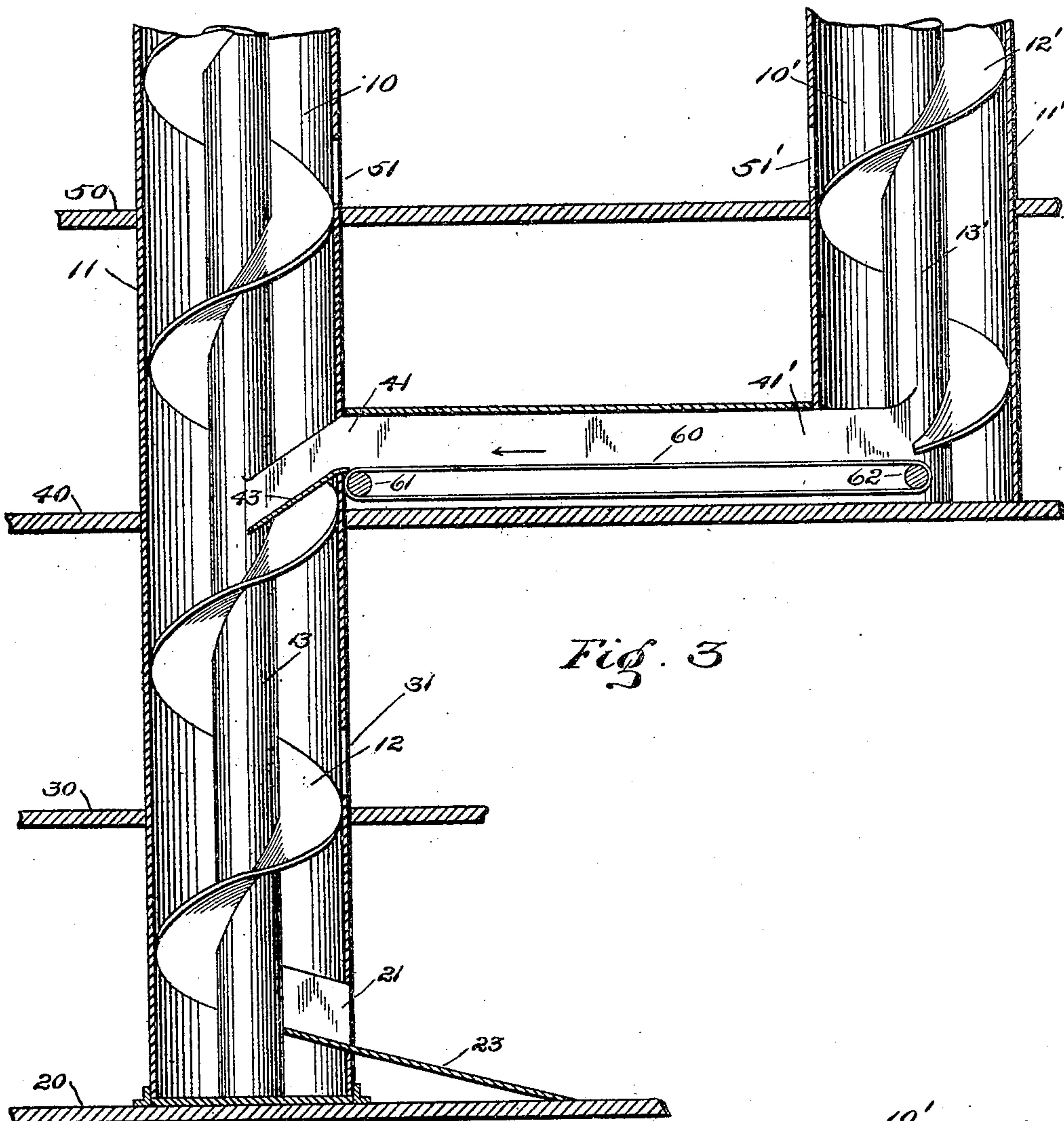


Fig. 3

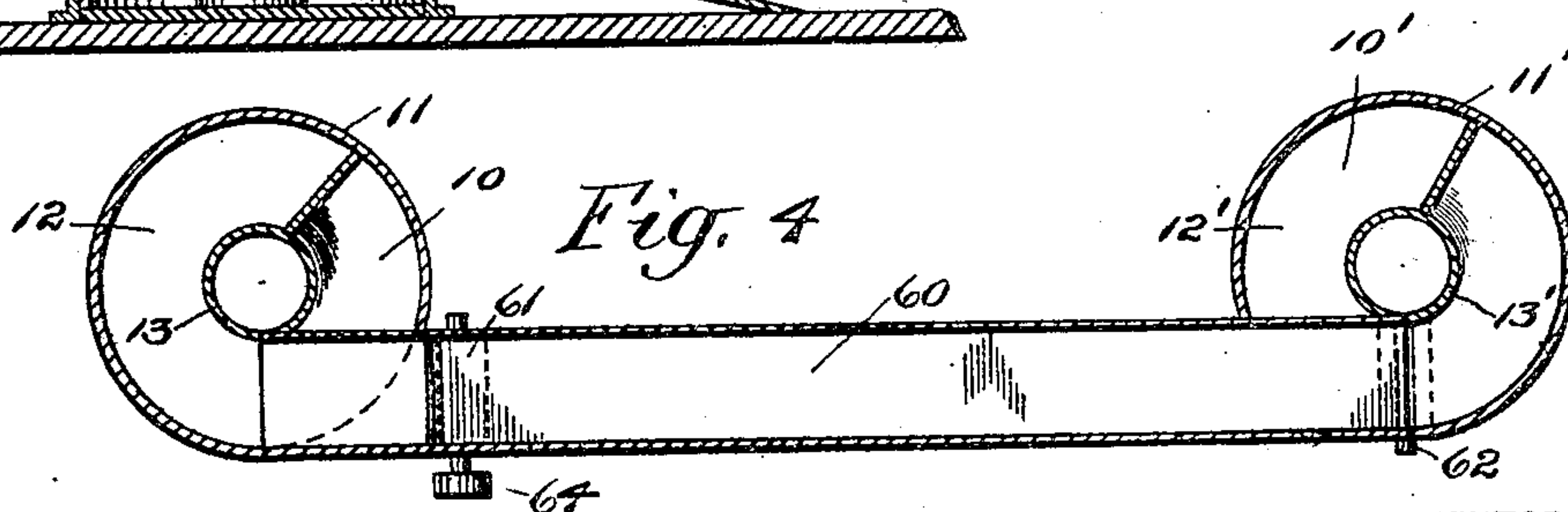


Fig. 4

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MARTIN C. SCHWAB, OF BALTIMORE, MARYLAND.

CONVEYER.

No. 801,162.

Specification of Letters Patent.

Patented Oct. 3, 1905.

Application filed November 2, 1904. Serial No. 231,099.

To all whom it may concern:

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

My invention relates to improvements in conveyers, and especially those of the spiral gravity type. Its object is to provide means for facilitating the handling of packages in putting them into and taking them out of the conveyers. This is done by the arrangement and use of certain apparatus and combination of parts, which I will describe in the following specification and the novel features of which I will point out in claims.

Referring to the drawings, Figure 1 is a sectional elevation of a gravity-conveyer of the spiral type, showing my improvements in conjunction therewith. Fig. 2 is a plan view of a section taken through the line A B of Fig. 1. Fig. 3 shows in side elevation a modification of my invention in which it is applied to more than one gravity-conveyer of the spiral type and arranged to carry packages from one of the conveyers into the other. Fig. 4 is a sectional plan view showing the same modification as is shown in Fig. 3.

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

10 designates a spiral chute or package-conveyer of a well-known type and comprises an outer shell 11, a spiral 12 inside of and attached to this shell, and an inner tube 13, to which the spiral is also attached.

10', 11', 12', and 13' designate similar parts of another conveyer of similar construction.

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

21, 31, 41, 51, 41', and 51' are openings in the outer shells 11 and 11' which afford communication between the floors of the building and the chute. These openings are preferably placed above the levels of the spirals 12 and 12' at the various landings, so that they will not interfere with the passage of parcels which may pass by them when placed in the chute at some point above them. The inclined shelf 23 is provided at the lower end of the spiral for conveying packages off of the spiral when they have reached the lower end of the conveyer.

Gravity-conveyers of this kind are in common use. The purpose of this invention is to

increase their efficiency by providing a novel way for putting packages into and for taking them out of the conveyers. This is done by providing moving conveyers, such as traveling belts, at the points where it is desired to handle packages—as, for example, at the various landings. In Fig. 1 the landings 30 and 40 are provided with such moving belts, and these are designated in the drawings by figures 70 and 60. These pass over rollers 71, 72, and 61. These rollers are attached to mechanism for driving them—such, for example, as a moving sheave or pulley 74, which is shown in Fig. 2. The belts may also be provided with supporting-pieces 63, 73, and 83, so that they may be better able to sustain and carry packages of considerable weight. The moving belts shown at the landings 30 and 40 are preferably arranged so that their upper surface moves toward the conveyer, so that packages placed upon them will be carried along by these belts until they reach the openings 31 and 41, when they will be discharged into the conveyer and will descend over the spiral 12 until they reach the lower portion of the conveyer.

If desired, the intermediate belts may be driven in such direction as to carry packages away from the conveyer. This is designated in Fig. 1 by the left-hand arrow above the belt 70. In this case the parts may be so arranged that when the cover to the opening 31 is raised the centrifugal force of the descending packages will throw them out of the conveyer onto the belt 70.

The belts may be run at about the same speed as the packages will attain in descending through the chute. When they have reached the bottom of the spiral, they will slide off and over the inclined shelf 23 and be deposited upon the landing 20 or upon the moving belt 80, which runs over rollers 81 and 82 if such belt is provided at the lower landing, as shown in Fig. 1. This moving belt 80 is arranged to have its upper surface moving away from the conveyer, so that packages will be carried away from the conveyer as fast as they are discharged from it. This belt may run along beside or between distributing-tables, so that packages which are discharged from the spiral conveyer onto it may be carried along by it to convenient points for assorting and handling them. The roller 82, over which this belt 80 passes, is provided with a sheave or pulley 84, which is belted to another sheave or pulley 85. This pulley is

driven by some suitable means of power. It may, for example, be attached to a moving line of shafting 86. These moving belts may be carried to any desired distance from the
 5 conveyer and may be driven by any suitable means.

In Figs. 3 and 4 are shown two gravity-conveyers 10 and 10'. One of these does not go below the landing 40, but is arranged to
 10 discharge packages which come through it onto a moving belt 60, provided with rollers 61 and 62. This belt may be driven by a pulley 64 in a manner similar to that already described. Packages which are discharged from
 15 the chute 10' onto this belt will be carried over to the opening 41 in the conveyer 10, where they may be discharged onto an inclined shelf 43, which may be provided to lead them into the other conveyer. If the
 20 belt is run at about the same speed as the packages attain in descending through the chutes, they will not interfere with other packages which may be descending from above. It will be seen that packages which are put
 25 into the conveyer 10 will descend by gravity until they reach the bottom, where they will be discharged over an inclined shelf 23 onto the landing 20, which of course may be provided, as shown in Fig. 1, with a moving belt
 30 to receive them. The packages which are put into the conveyer 10' will descend through that by gravity until they reach its lower end, where they will be carried by the belt 60 over into the conveyer 10. They will descend
 35 through the conveyer 10 until they reach the landing 20.

Having described my invention, what I claim is—

40 1. In combination with a gravity-conveyer, a landing, an opening in the conveyer at the landing and a positively-driven belt opposite the opening and communicating with the conveyer.

2. In combination with a gravity-conveyer, an upper landing and a lower landing, openings in the conveyer near the landings, a moving belt on the upper landing adapted to carry parcels into the conveyer and a moving belt on the lower landing adapted to carry parcels from the conveyer. 50

3. In combination with two gravity-conveyers, a moving belt adapted to carry packages from one of the conveyers into the other.

4. In combination with a gravity-conveyer, a landing, an opening in the conveyer at the landing, and a belt opposite the opening and moving toward the conveyer. 55

5. In combination with a gravity-conveyer, a landing, an opening in the conveyer at the landing, and a continuously-driven belt opposite the landing and moving away from the conveyer. 60

6. In combination with a gravity-conveyer, a landing, an opening in the conveyer at the landing, and a belt positively driven at substantially the same rate of speed as that of packages descending through the chute, said belt being opposite the opening and arranged to communicate with the conveyer. 65

7. In combination with a gravity-conveyer, a plurality of openings in the conveyer, and positively-driven belts opposite the openings adapted to carry packages to and from the conveyer. 70

8. In combination with a gravity-conveyer, a plurality of intake-openings in the conveyer, moving belts opposite the openings adapted to carry packages into the conveyer, and an outlet-opening in the conveyer. 75

In witness whereof I have signed my name in the presence of two subscribing witnesses. 80

MARTIN C. SCHWAB.

Witnesses:

J. FARR CRUTAM,
 J. E. GRANBERRY.