A. L. PERPIGNAN & G. H. RIEBELMAN.

PACKAGE CHUTE.

APPLICATION FILED FEB. 26, 1908.

934,347.

Patented Sept. 14, 1909.

3 SHEETS—SHEET 1.

Fig. 1.

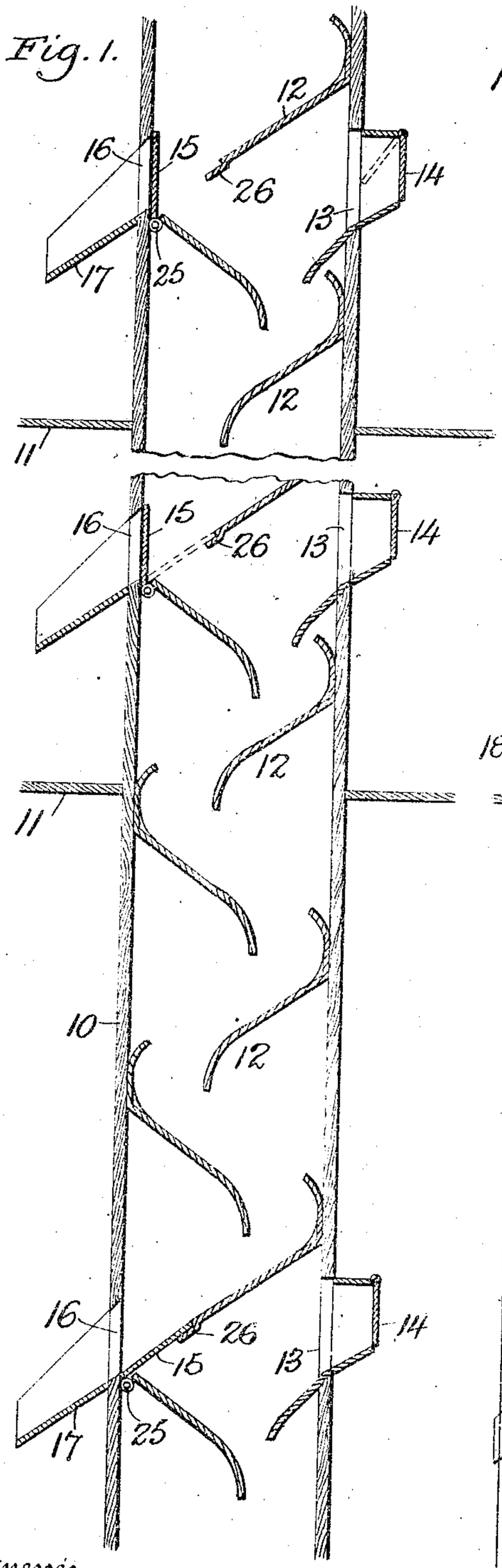
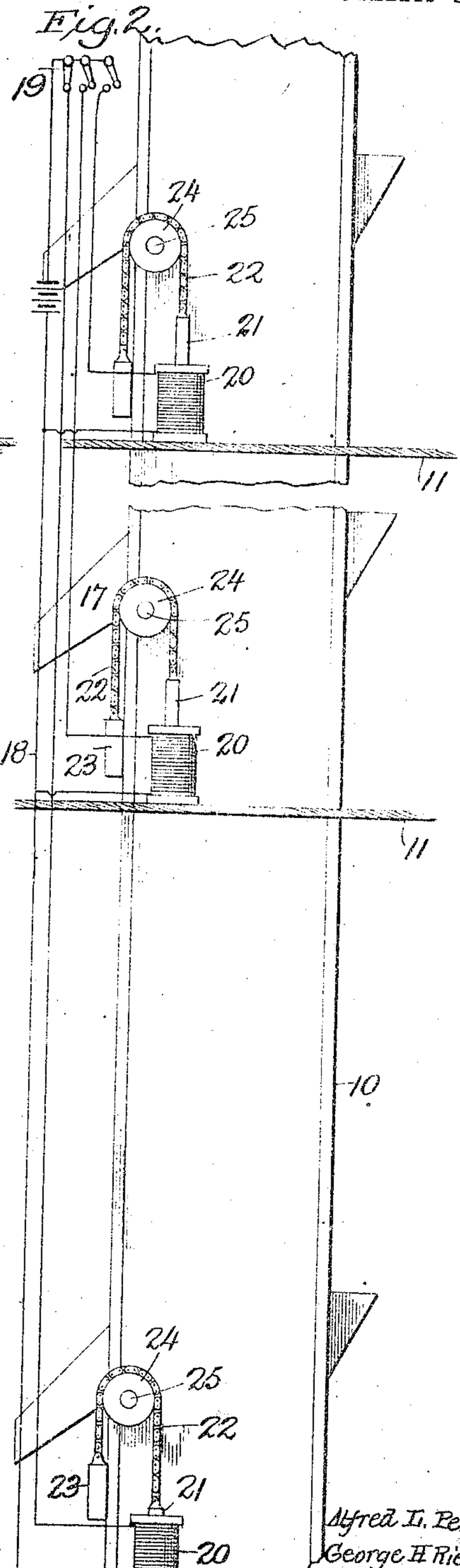


Fig. 2.



Witnesses
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3 SHEETS—SHEET 2.

Fig. 3.

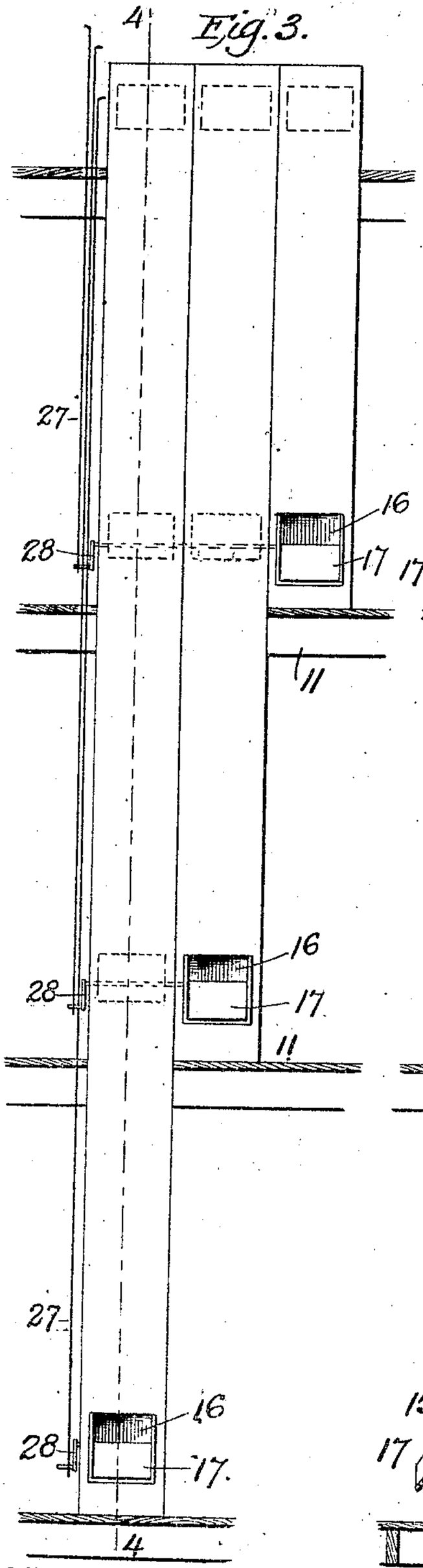


Fig. 4.

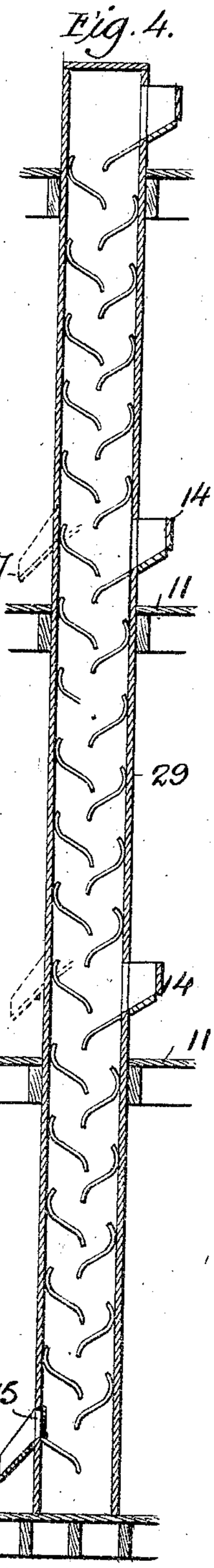


Fig. 5.

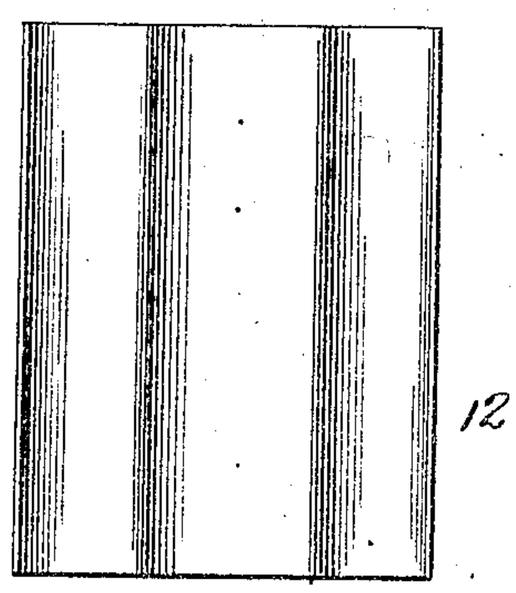


Fig. 6.

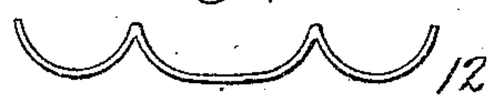
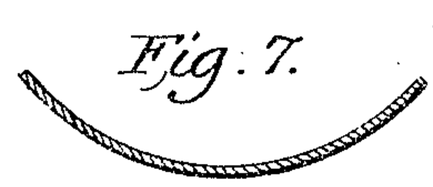


Fig. 7.



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3 SHEETS—SHEET 3.

Fig. 8.

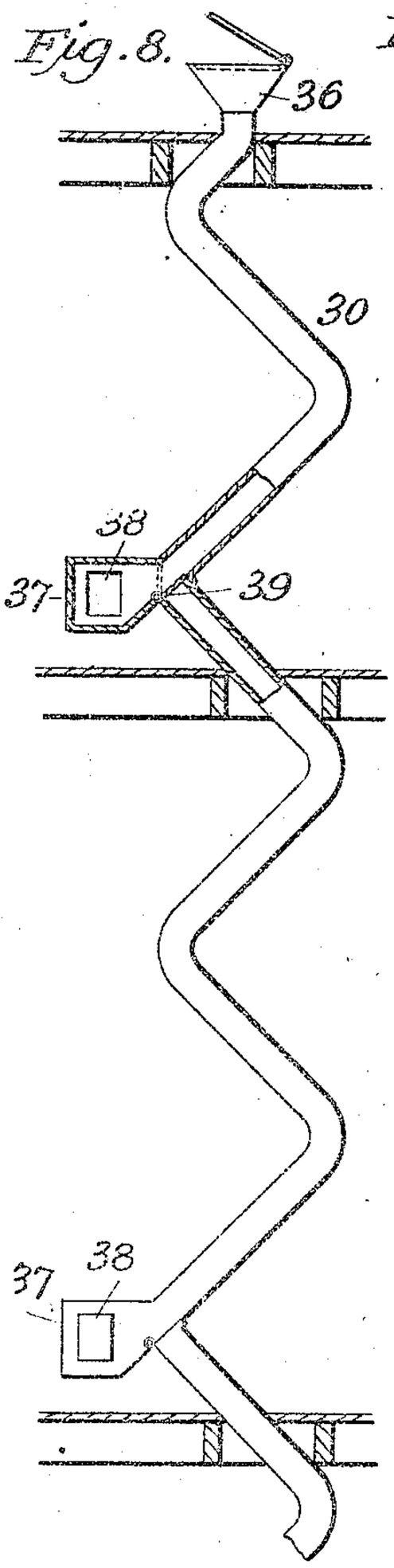


Fig. 9.

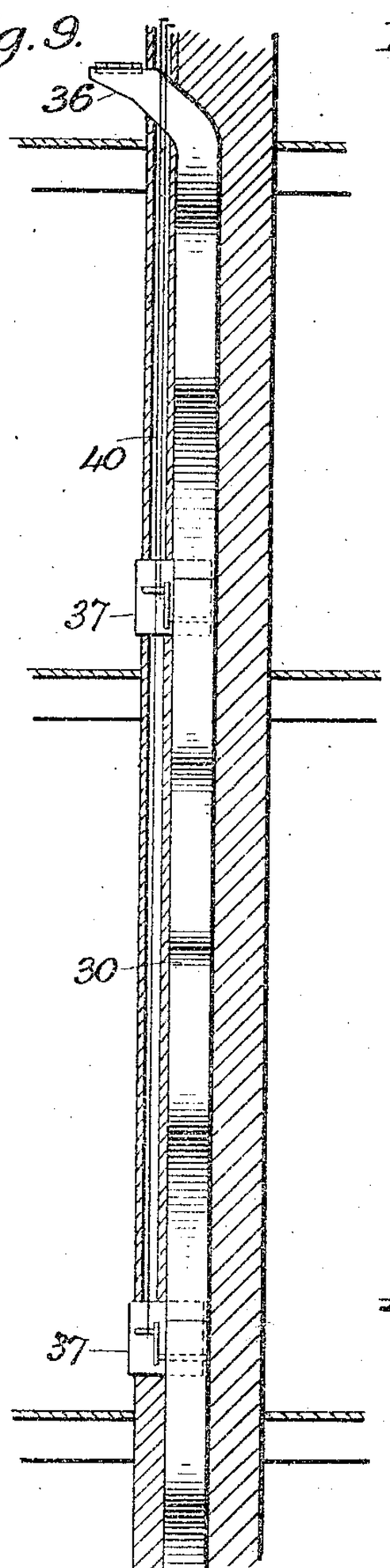


Fig. 11.

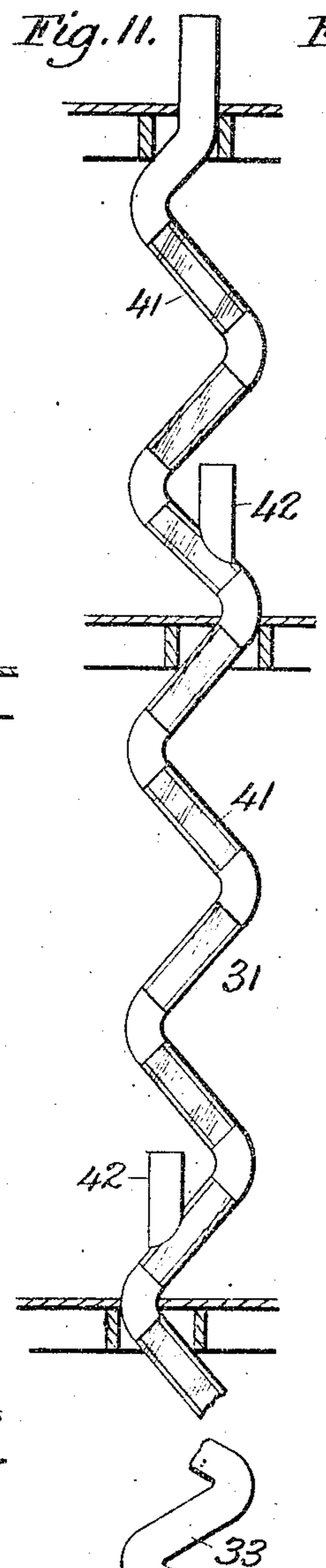


Fig. 12.

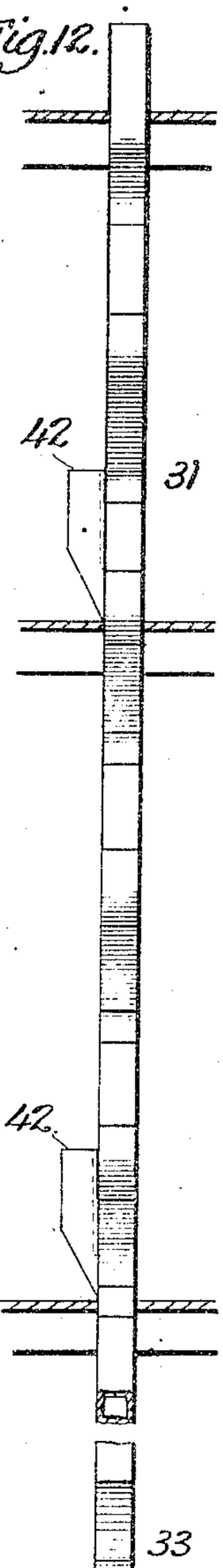
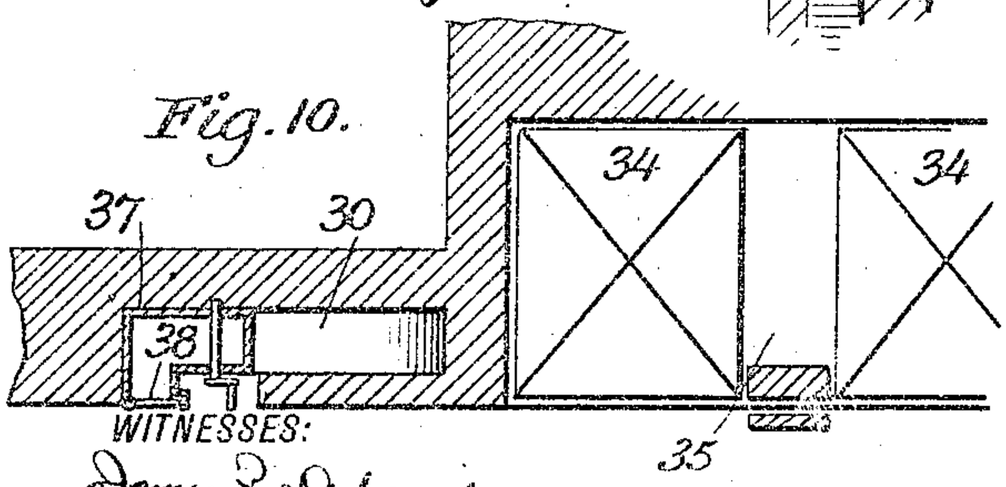


Fig. 10.



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PACKAGE-CHUTE.

934,347. Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed February 26, 1908. Serial No. 417,969.

To all whom it may concern:

Be it known that we, ALFRED L. PERPIGNAN and GEORGE H. RIEBELMAN, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Package-Chutes, of which the following is a specification.

This invention relates to chutes for parcels and packages and has for its object to provide means to break the fall of the article moving down the chute and means for opening one or more gates to deliver the article at a certain point or floor, the gate opening means being controlled at one of the upper floors. These and other objects and novel features are more fully described in the following specification, where:

Figure 1 is a vertical sectional view of the improved chute. Fig. 2 is an elevation of same. Fig. 3 is a modified arrangement of the invention. Fig. 4 is a vertical sectional view on the line 4—4 of Fig. 3. Fig. 5 is a plan view of a preferred form of deflector. Fig. 6 is an end view of same. Fig. 7 is a cross sectional view of a modified form of deflector. Figs. 8, 9, 10, 11 and 12 are views of modified forms.

For the successful use of a chute for packages, especially in tall buildings, it is necessary that means be provided to break the fall of the package in its downward movement if it is an article of any size and weight and for this purpose the chute 10, which passes through the various stories 11 of a building, is provided with deflectors 12 adapted to arrest the vertical movement of the package and pass it from one to the other. The speed of the movement of the package is regulated by the inclination of the deflector and the length of the deflectors must be regulated to provide for packages of the proper size.

The packages are deposited at the inlets 13 which are normally closed by the inwardly moving doors 14 and they move down the inclined deflectors from one to the other but when it is desired to deliver the package at a certain floor, one of the gates 15 is opened, as is seen at the lowest opening in Fig. 1, when said opening is not only cleared but the passage is blocked by the gate 15 and the package passes out of the opening 16 which has a spout 17. The doors 15 are controlled by means of electric circuits 18 closed by the switches 19 at one or all the floors and which cause the energizing of solenoids 20 so that their cores 21 draw down on the chain 22, overcoming the counter weights 23, and turn the sprocket wheels 24 on the outer ends of the shafts 25 of the doors 15. This turning of the wheel 24 causes the door 15 to open and upon the opening of its respective circuit, the core yields to the counter weight which closes the door and permits the passage of packages below that point. The deflectors opposite the doors have their ends offset as at 26 in order to present a flush joint to allow the free movement of the packages to the opening and the corners at which the deflectors are attached are rounded to permit of an easy movement of the package.

In the construction shown in Figs. 3 and 4 several chutes are arranged side by side and each adapted to deliver at a certain floor but to receive packages at any floor. The opening of the outlet door 15 is controlled by rods 27 connected with the crank arm 28 on the shaft of the door and these rods may be operated at any floor. The deflectors 29 run entirely across the several chutes where they occur together and to retain the packages thereon the deflectors may be dished or concaved in cross section as shown in Fig. 7 or constructed as shown in Figs. 5 and 6 where they may consist of separated channels to retain the packages in one or the other channel until they reach the lower floor, so that the chute may be used for different packages at the same time and each delivered at a certain point at the lower end of the chute.

Other modifications may be resorted to in the construction of the device without departing from the essential features above described.

In the modified forms shown in Figs. 8 to 12 the rectangular vertical casing is dispensed with and the chute consists of a zig-zag casing 30 whose inclined sections break the force of the fall of the package passing through same. It is obvious that the angle of the sections may be varied so that the speed of the movement of the package may be varied and as shown in Fig. 11 the speed of a package in this chute 31 is materially diminished before it reaches the letter box 32 on account of the change of the angle of the lower sections 33 of the chute.

These chutes may be built into the wall of the building adjacent to the elevators 34

(Fig. 10) or may be placed in the space 35 between the elevators.

The chute 30 shows how these chutes may be used to distribute mail in a building after same has been made up of small packages intended for the different floors and are deposited separately in the hopper 36 on the top floor. Each floor is provided with a receptacle 37 having an outlet or door 38 and the delivery of the package into this receptacle is controlled by a pivoted door 39 which is swung against the entrance to the receptacle 37 or across the chute by means of the rods 40 similar to the rods 27 already described. By this arrangement a letter carrier, may in a large office building, carry his mail to the top floor and deposit the mail for the respective lower floors in the boxes 37 and remove and distribute the mail for each floor without encumbering himself with the entire load as he proceeds with his work.

An edge view of the chute 30 is shown in Fig. 9 located within the wall of the building and the receptacles projecting beyond the surface of the wall.

The chute 31 in Figs. 11 and 12 is shown as being provided with glass sides 41 and off-set inlets 42 which practically prevent tampering with the packages which pass down the chute.

A chute of this description is also very useful in removing other material such as grain or malt from the upper to the lower stories of a building and at the same time subjecting it to heating drying or cooling means as a draft may be forced up the chute as the material falls. The floors of the inclines may in this case be of perforated material, and the whole structure made of wood or metal as desired.

What we claim as new and desire to secure by Letters Patent is:

1. In a chute provided with inlet openings, the combination with deflectors staggered through the chute, of doors for outlet openings, sprocket wheels on each door pivot, a chain with a weight at one end, the core of a solenoid at the other end, a solenoid and electric circuit, and switches to close the solenoids and swing the doors on their pivots.

2. A package chute provided with inlet openings and outlet openings, deflectors staggered through the chutes, the deflectors adjacent to the outlet openings being provided with transverse offsets, outlet doors pivoted adjacent to the outlet openings and adapted to engage the transverse offsets of the adjacent deflectors to form flush joints, and means for operating the outlet doors.

3. A package chute comprising a zigzag conveyer having oppositely inclined sections, the lower sections being disposed in a position more nearly horizontal than the other sections and thus diminishing the speed of material passing over said sections.

In testimony whereof, we affix our signatures in presence of two witnesses.

ALFRED L. PERPIGNAN.
GEORGE H. RIEBELMAN.

Witnesses:
A. BROWN
JAMES F. DUHAMEL.