To all whom it may concern:

Be it known that I, Ernest P. Dargin, a citizen of the United States, residing at Los Angeles, county of Los Angeles, and State of California, have invented certain new and useful Improvements in Sanitary Garbage-Chutes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in sanitary garbage chutes adapted for use in apartment houses, hotels, etc., where a single chute may extend the entire height of the building, making it practicable for use by the occupants of each floor thereof. This chute is of the class in which the chute is equipped with a door at each floor, which door may be opened whenever it is desired to introduce garbage. As the door is opened, a valve connected with a water supply pipe is automatically opened, whereby water is discharged into the chute for flushing purposes, the water discharge continuing only as long as the door is open. The closing of the door also closes the valve which shuts off the water.

My present invention relates more particularly to the lower portion of the chute, or that immediately adjacent the garbage can or receptacle which is located at the bottom and is removable.

Upon the lower end of the chute adjacent the garbage can is slidably mounted a hood equipped interiorly with a frusto-conical member which normally directly engages the top of the can. This hood may be lifted bodily from the top of the can when for any reason it may be necessary to gain access to the chute, as in the case of a possible stoppage of the chute above. The lower portion of this hood is cut away on one side to the extent of half of its circumference, and this opening is normally closed by a slidable door which is connected with a valve which is adapted to close the bottom of the chute proper within the hood when the door is lifted. The opening of this door permits the removal of the garbage can below.

The upper extremity of this chute is exposed at the top of the building for purposes of ventilation. Below the garbage can at the bottom of the building, as in the basement, a cavity is formed with which communicates an air inlet pipe, affording means for the entrance of air at the bottom for ventilating or aerating the chute. By virtue of this construction, there will be an upward draft of air through the garbage can and through the chute, and thence out of the top thereof.

Having briefly outlined my improvement, I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a side elevation of my improved sanitary garbage chute, the same being illustrated as installed in a building and partly broken away. Fig. 2 is a sectional view of the lower portion of the chute, including the vertically movable hood and the garbage can or receptacle over which it fits, shown on a larger scale. Fig. 3 is a fragmentary view similar to Fig. 2, but showing the valve at the bottom of the chute closed, due to the opening of the door, which is mounted upon the hood. Fig. 4 is a horizontal section cutting the hood and the corresponding part of the chute. This section is taken on the line 4–4, Fig. 3, looking downward. Fig. 5 is a horizontal section of the garbage can shown in detail. This view may be obtained by cutting the chute on the line 5–5, Fig. 2, looking downward. Fig. 6 is a section of the upper part of the chute where a door is located for the introduction of the garbage, as at any floor of the building.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the main conduit of the chute. This conduit terminates at its upper extremity above the roof of the building in a reduced neck 6 which is provided with a cap 7, but has free communicat-
tion with the atmosphere as shown at 8, for ventilating purposes.

At each floor 9, this chute is provided with a door 10 intended to be opened for the introduction of garbage, the opening of the door serving to automatically open a valve 12 through the medium of a handle or crank arm 13, which connects, as shown at 15, with the upper extremity of a link or rod 14. The lower extremity of the latter being pivotally connected as shown at 18 with a crank arm 17 secured to the lower end of the door adjacent the hinge 18 of the latter. The valve 12 is connected with a water supply pipe 19 which has an outlet nozzle 20 located immediately below each opening for the introduction of garbage. The valve 12 as well as the water pipe 19 and the devices for opening and closing the valve, are located in a casing offset from the body of the chute and beyond the path of the falling garbage introduced from the upper floors.

The lower extremity of the chute adjacent to the garbage can or receptacle 21 is beveled and normally open as shown at 22, for the downward passage of the garbage into the can 21. Surrounding this lower open extremity of the chute is a hood 23 whose outer portion is considerably larger than the chute. The upper end of this hood, however, is reduced to form a neck 24 which is connected with the body of the chute by an inclined portion 25. This neck is slidable on the chute to permit the lifting of the hood from the top of the can or receptacle 21 when for any reason it may be necessary or desirable so to do. The lifting of the hood may be accomplished through the medium of a lever 26 which is hinged as shown at 27, on a bracket 28 which is secured to the body of the chute as shown at 29. This lever has an exposed operating arm 30. The opposite arm is forked or bifurcated to partly encircle the body of the hood by two arms 31, whose extremities are movably connected with the head extremities 32 of bolts or pins 33 whose lower extremities are connected as shown at 34, with metal straps 35 which are secured as shown at 36, to the neck 33 of the hood on opposite sides. It is evident that by the downward movement of the arm 30 of this lever 26, the hood may be bodily lifted from the top of the can or receptacle 21. In other words, when the lever 30 is in the position shown by dotted lines in Fig. 1, the hood will be raised from the top of the garbage can or receptacle to permit access to the body of the chute, as for the purpose of removing an obstruction above which has served to clog the chute. When the lever 30 is in the dotted line position as fragmentarily disclosed in Fig. 1, the arm 30 will be engaged by a retaining device 37, whose outer extremity is equipped with a pair of spring jaws 3 between which the lever arm 30 is inserted, the tension of the spring being sufficient to retain this lever arm in the adjusted position, and consequently support the hood above the top of the can or receptacle 21 for the required period.

Secured within the lower portion of the hood is a half frusto-conical member 38, whose larger portion is lowermost, whereby its wall is inwardly flared from the bottom of the hood. This inwardly flared part is adapted to fit the top of the garbage can or receptacle 21 closely. Connected with the upper extremity of this element 38 is a similarly constructed but reversely arranged part 39, which is outwardly flared from the top of the member 38 to the inner surface of the wall of the hood, whereby the lodging of any fallen garbage is prevented, due to the arrangement of the element 38.

The lower portion of the hood 28 is half cut away circumferentially for a height equal to about half of the body of the hood, forming an opening 40 which is normally closed by a vertically slidable door 41, which has the general shape of the cut away part of the hood, but is large enough to slide upon the outer surface of the upper portion of the hood when it is necessary to open or close the door. Secured to the lower part of this door is a half frusto-conical member 42 which is substantially of the same construction as the member 38 of the hood and in conjunction with the member 38, forms a substantially complete frusto-conical member adapted to fit closely over the top of the garbage receptacle 21. Also mounted on the door is a reversly arranged frusto-conical member 43 which is substantially of the construction of the corresponding member 39 of the hood, and in conjunction therewith, completes an upper frasto-conical member reversly arranged with reference to the member composed of the two parts 38 and 42.

The door 41 is liftably slidable upon the hood by means of a bifurcated lever 44 comprising a bail or handle member 45 curved in front of the door and merging at opposite sides into lever members 46 which are pivotally connected as shown at 47 with the upper extremities of short links 48, whose lower extremities are connected with the door as shown at 49. The extremities of the lever members 46 are fulfilled as shown at 50, on brackets 51 secured to the hood on opposite sides. The vertical edges of the door 41 are folded or bent to form grooves 52 which interlock with flanges 53 formed on the adjacent edges of the cut-away portion of the hood. By virtue of this construction, the door is freely slidable upon the hood, but nevertheless, forms a relatively tight joint. By lifting on the curved portion 45 of the bifurcated lever 44, it is evident that the 130
hood may be raised to leave an opening of any desired size between the door and the top of the receptacle, whereby it becomes practicable to remove the receptacle when for any reason it may become necessary to do so, as for the purpose of removing the collected garbage.

When the door is in the lifted position, it may be supported by means of a chain having a hook at its lower extremity, its upper extremity being connected with the upper part of the hood as shown at 57.

As the door is opened or moved to the position shown in Figs. 1, 3 and 4, a valve 65 which normally occupies a vertical position (see Fig. 2), is automatically moved to the closed position or to a position to close the lower open extremity of the body of the chute at 22. This function is accomplished by virtue of the fact that the valve 58, by means of a double lever 59 which extends transversely of the valve plate, merges at its opposite extremities into lever members 60, which are fulcrumed between the valve plate and their outer extremities on the body of the hood, as shown at 61. Their outer extremities, or their extremities nearer the door of the surrounding hood, are pivotally connected as shown at 62, with the upper extremities of two links 63, whose lower extremities are pivotally connected as shown at 64, with the half frusto-conical member 43 mounted on the door 41. Hence, as the door is lifted, these links 63 are carried upwardly and the action of the lever members 60 connected with the valve plate 58 as aforesaid, serves to throw this valve plate into position to tightly close the normally open lower beveled extremity of the chute (see Fig. 3). Hence, when the door 41 is opened to permit the removal of the garbage can or receptacle, the bottom or lower open extremity of the chute proper, is closed to prevent any garbage from falling downwardly. As soon, however, as the garbage receptacle is returned to its normal position, and the door closed, by releasing the supporting chain 55, the valve plate 58 will be returned to its normal position (see Fig. 2).

The bottom of the garbage can is provided with a mesh closure 65 which is properly secured in place at a short distance above the extreme lower edge of the receptacle. The inner surface of the wall of this receptacle is provided with a number of longitudinal passages 66, which as illustrated in the drawing, are formed by applying inwardly curved plates 67 to the receptacle on the inside, these plates being secured by rivets 68 or other suitable fastening devices. These plates 67 are perforated and the passages 66 form conduits for air, which enters a cavity 69 below the lower extremity of the garbage receptacle, by way of an elbow shaped pipe 70, which is open at both extremities, its outer extremity being covered by a cap 71, supported, however, in such a manner as to permit the free entrance of air (see Fig. 2).

The support for the lower edge of the garbage receptacle is interrupted at the lower extremities of the passages 66 as shown at 74, to prevent the closure of the lower ends of these passages, whereby the air is allowed to enter the same and pass upward freely outside of the chamber of the receptacle, thus making it practicable to have upward currents of air through the chute and which serve through suction, to draw air out of the garbage receptacle proper, even when the material is packed so tightly in said receptacle that it would be impracticable for the air to pass directly therethrough.

The cavity 69 is open as shown at 72 where it communicates with a conduit 73 which leads to the sewer, whereby all liquids which enter the chute reach the sewer by way of said conduit.

From the foregoing description, the use and operation of my improved sanitary garbage chute will be readily understood, and need not be explained further in detail.

Attention is called to the fact that the passages 66 in the garbage receptacle may be employed or utilized for conducting the flushing water downwardly to the sewer when the body of the can may be so tightly packed with material as to make it impossible for the water to get through. Hence, these passages perform the double function of allowing the air to pass upwardly therethrough for aerating and ventilating purposes, and also for the purpose of allowing water to pass downwardly therethrough, as above stated.

Having thus described my invention, what I claim is:

1. A garbage chute comprising in combination with the body of the chute, a receptacle in the bottom of the chute, a hood connected with the lower extremity of the body of the chute, extending below the same and having an opening extending upwardly from its lower extremity and extending at least half way around the same, a door slidably connected with the hood for closing said opening, the door being adapted by virtue of its slidable connection with the hood to open in an upward direction, whereby the garbage receptacle is released.

2. A garbage chute of the class described comprising in combination with the body of the chute, a receptacle at the bottom of the chute, a hood connected with the lower extremity of the chute body, extending below the same and having an opening extending upwardly from its lower extremity and extending approximately half way around the same, a door slidably connected with the hood at its vertical edges for opening and
3. A garbage chute comprising in combination with the body of the chute, a receptacle at the bottom thereof, a hood connected with the lower extremity of the body of the chute, extending below the same and having an opening extending upwardly from its lower extremity and extending half way around the chute circumferentially, a door vertically slidable on the hood and arranged to normally close the said opening, the lower part of the hood and a corresponding part of the door each having a member fitting closely over the top of the garbage receptacle, and forming in conjunction a complete closure thereof.

4. A garbage chute comprising in combination with the body of the chute, a receptacle at the bottom thereof, a hood connected with the lower extremity of the body of the chute, extending below the same and having an opening extending upwardly from its lower extremity, a door slidably connected with the hood for closing the said opening, the lower extremity of the body of the chute within the hood being normally open, a valve plate adapted to close the same, the said plate being normally in the open position, and an operative connection between said valve plate and the door, whereby as the door is opened, the said plate is thrown to the closed position, the two members in conjunction serving to tightly close the top of the said receptacle.

5. A garbage chute of the class described comprising in combination with the body of the chute, a receptacle at the bottom thereof, a hood connected with the lower extremity of the body of the chute, extending below the same and having an opening extending upwardly from its lower extremity, a door vertically slidable on the hood and normally closing the said opening, the lower extremity of the body of the chute within the hood being normally open, a valve plate adapted to close the same, the said plate being normally in the open position, and an operative connection between said valve plate and the door, whereby as the door is opened, the said plate is thrown to the closed position.

6. A garbage chute of the class described comprising in combination with the body of the chute, a receptacle at the bottom thereof, a hood connected with the lower extremity of the body of the chute, extending below the same and having an opening extending upwardly from its lower extremity, a door vertically slidable on the hood and normally closing the said opening, the lower extremity of the body of the chute within the hood being normally open, a valve plate adapted to close the same, said plate being normally in the open position, an operative connection between said valve plate and the door, whereby as the door is opened, the said plate is thrown to the closed position, and an operative connection between said valve plate and the door, whereby as the door is opened, the said plate is thrown to the closed position.
11. A garbage chute comprising in combination with the body of the chute having an opening at its upper extremity for ventilating purposes, a garbage receptacle at the lower end of the chute; the said receptacle being arranged to cover a cavity, an air inlet conduit in communication with said cavity at one extremity and with the atmosphere at the other extremity, the garbage receptacle having interior passages formed in its walls, said passages communicating at their lower extremities with said cavity and at their upper extremities with the main passage through the chute, the said passages in the garbage receptacle being formed by applying vertically disposed, inwardly bent perforated plates to the inner surface of the wall of the receptacle.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST P. DARGIN.

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