Aug. 25, 1931. C. M. WILKINSON 1,820,262

CHUTE

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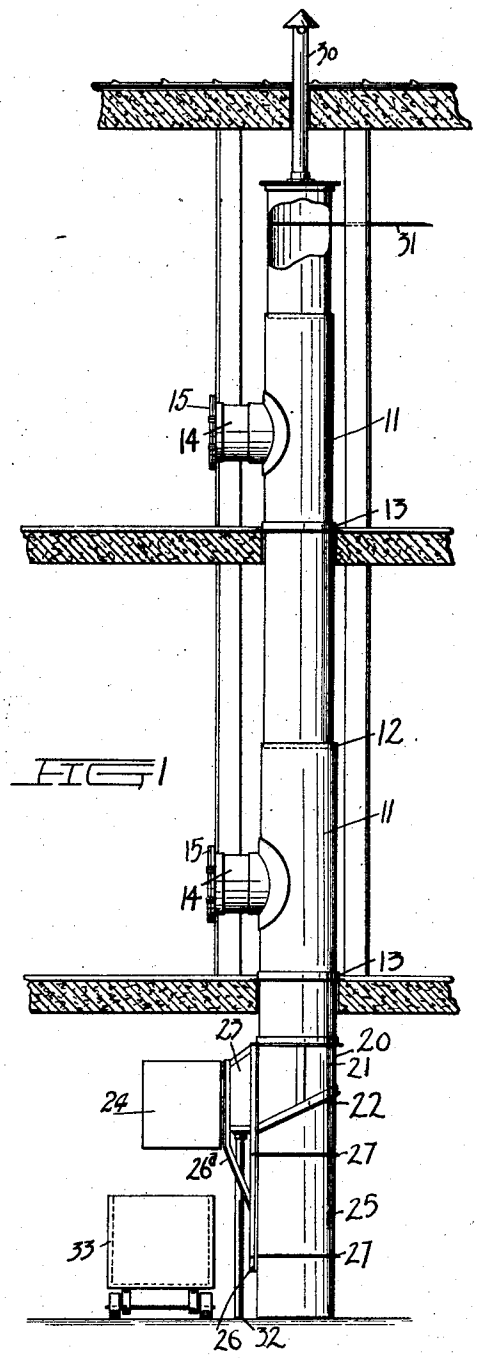


FIG 1

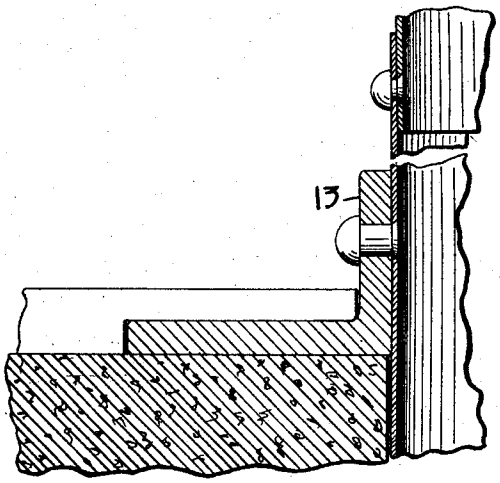


FIG 2

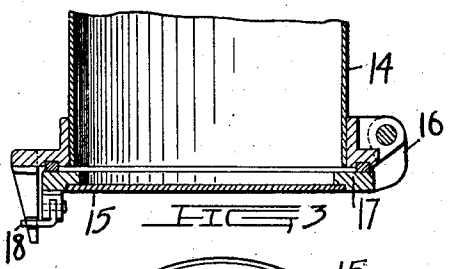


FIG 3

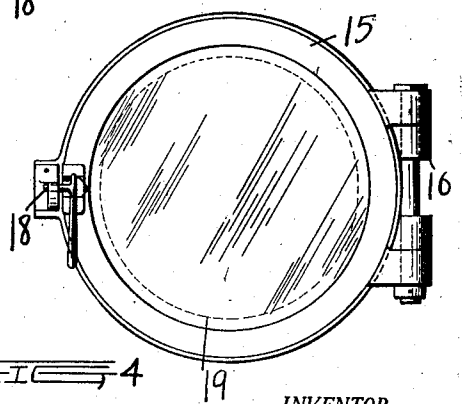


FIG 4

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FIG 5

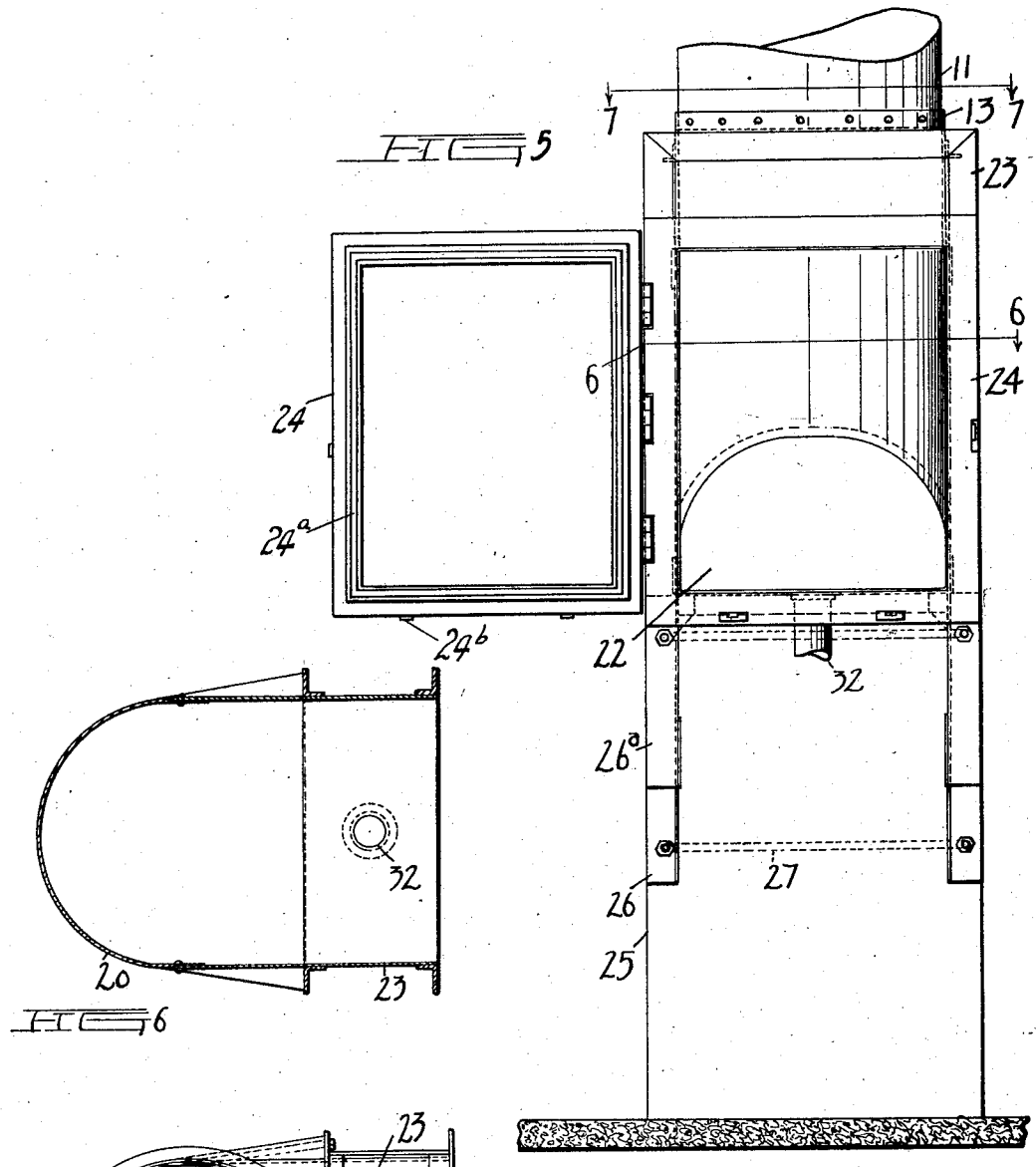


FIG 6

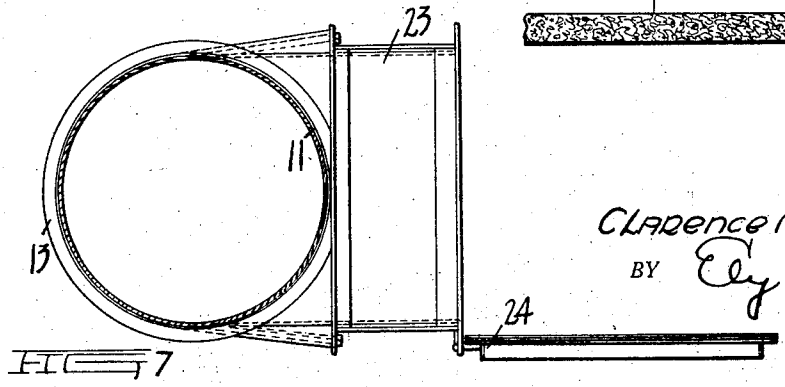


FIG 7

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CHUTE

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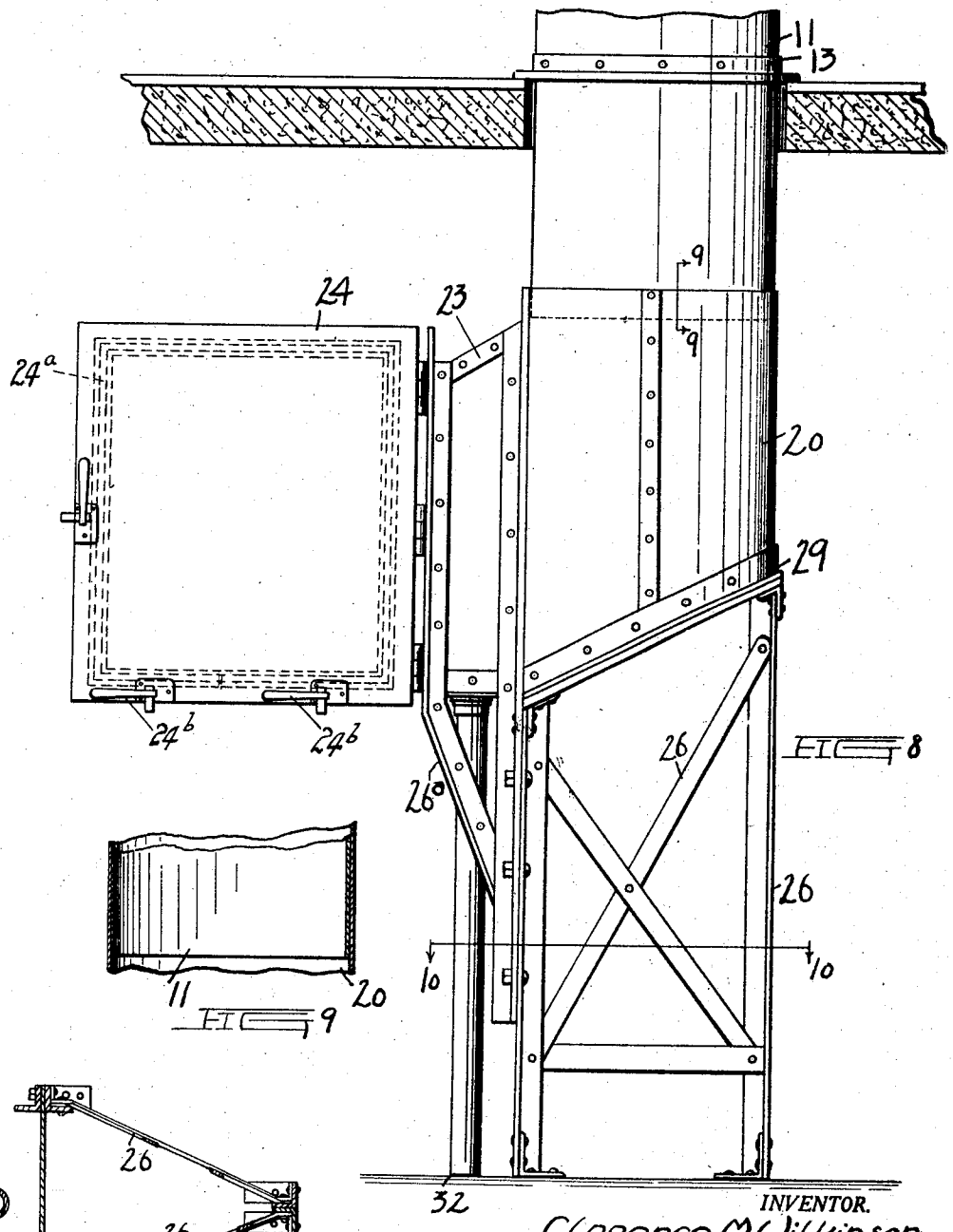


FIG 8

FIG 9

FIG 10

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UNITED STATES PATENT OFFICE

CLARENCE M. WILKINSON, OF AKRON, OHIO

CHUTE

Application filed October 29, 1927. Serial No. 229,581.

This invention relates to chutes.

The general purpose of the invention is to provide a chute adapted for the disposal of soiled linen or for similar purposes in hospitals, hotels, etc., which will be of simple, comparatively inexpensive construction, but highly effective in use.

More particularly the invention has for an object the provision of a chute of non-corrosive metal, whereby the use of expensive glazed, tile or similar chutes is avoided, the chute having lateral inlets closed by gasketed doors and being fitted with spray and drain pipes for washing out the chute periodically.

Another object is the provision of a chute constructed in sections and provided with supports for the sections on each floor level, whereby the chute will be effectively supported and, moreover, will adjust itself to settling movement of the building.

Another object of the invention is to provide a self-contained discharge unit adapted to be supported by a pier or post on the basement or other floor in a building without the use of extraneous fastenings, the discharge unit having a full-bearing support for its bottom to prevent puncturing by heavy, hard objects, and capable of adjusting itself upon settling of the building in which the chute is installed to prevent injury to the chute.

The foregoing and other objects are attained by the chute constructions shown in the accompanying drawings and described below. It is to be understood that the invention is not limited to the particular forms thereof illustrated and described.

This application is a continuation in part of each of applications Serial No. 689,893, filed February 1, 1924, and Serial No. 716,908, filed May 31, 1924.

Of the accompanying drawings,

Figure 1 is a sectional elevation of a chute installation embodying the invention shown installed in a building which, as will be understood, may be of any number of floors through which the chute extends;

Figure 2 is a view, partly broken away and partly in section, illustrating in detail the manner of supporting the chute sections on the floors of the building and also the joints between the chute sections;

Figure 3 is a horizontal, diametral section through one of the lateral intakes;

Figure 4 is a front elevation of a lateral intake;

Figure 5 is a front elevation of the discharge unit;

Figure 6 is a section on line 6—6 of Figure 5;

Figure 7 is a section on line 7—7 of Figure 5;

Figure 8 is a side elevation of a chute illustrating a modified discharge unit supporting structure;

Figure 9 is a section on line 9—9 of Figure 8 illustrating a telescopic connection between the lowermost chute section and the discharge unit; and

Figure 10 is a section of the supporting pier structure on line 10—10 of Figure 9.

Referring to the drawings, the chute is shown installed between four walls in a building. The numerals 11, 11 designate chute sections preferably of non-corrosive metal such as aluminum, the sections being jointed as indicated at 12 with downwardly overlapping joints, whereby there will be no tendency for leakage of water through the joints. Each section is supported at each floor level by flanged rings 13, 13 resting on and preferably secured to the floors and riveted or otherwise secured to the chute sections.

Lateral intakes 14, 14 are provided, one for each floor, said intakes having closures 15, 15 hinged thereto at 16 and cooperating with resilient gaskets 17 when closed so as to seal the intakes, cam-type locks 18 being employed to secure the closures shut with gaskets 17 under compression. The closures may include transparent panels 19 through which the interior of the chute may be seen.

A self-contained discharge unit 20 is provided for the chute, this unit including a section 21 formed with a sloping bottom 22 extending to a lateral overhanging outlet extension 23 on the chute which is closed by a hinged closure or door 24 gasketed at 24a

and provided with cam locks 24b in a manner similar to intake closures 15.

The discharge unit 20 is supported on a pier 25 providing a full bearing surface for the sloping bottom of the unit, preventing denting or puncturing thereof by hard objects falling through comparatively great heights thereon, and it is secured on the pier by brackets 26, 26 comprising extensions of the unit which rest against the front of the pier 25 and are secured thereto by tie rods 27, 27 extending about the pier. Braces 26a extend from brackets 26 to support the overhanging outlet extension 23.

In Figures 8 to 10, a modified form of supporting pier is shown which comprises a three-legged supporting structure having an upper sloping member 29 providing a full-bearing support for the bottom of the discharge unit, the brackets 26 extending beneath the discharge unit being bolted or otherwise secured to the pier. It is understood, of course, that the structure of the pier may be varied in numerous ways and this term as used in the claims is intended to cover any pier or post construction which is adapted to provide a suitable support for the discharge section of the chute.

The chute preferably is provided with a vent 30 extending through the roof and with a spray pipe 31 at its top and a drain pipe 32 connected to the lowermost point in the discharge unit.

In use, the soiled linen to be disposed of is inserted into the chute through the lateral intakes, the closures of which will be actuated, as will be understood, the linen collecting in the discharge unit being removed as by opening closure 24 and dumping it into the truck illustrated at 33, or otherwise convenient.

Periodically, for sanitary reasons, the chute will be washed down by spraying water thereon, the gasketed doors for the intakes preventing leakage of the water from the chute and the non-corrosive metal of the chute being unaffected, whereby it will remain in sanitary condition and whereby the linen deposited will not become rust-stained or otherwise injured. The water drains from the chute through pipe 32.

The chute is installed frequently in new buildings or buildings during construction and which subsequently settle. The manner of supporting the chute sections from each floor and the discharge section as a self-contained unit on the pier or post structures shown, permits the chute to adapt itself to this settling movement without harming the chute. As illustrated in Figure 9, the connections between the discharge unit and the next higher section of the chute may be telescopic. Such telescopic connections may be made also at other joints in the chute structure, taking care of settling movement and also of expansion and contraction of the metal of the chute.

It will appear that the supporting of each chute section from each floor level, or at least supporting the chute at several floor levels, is of additional advantage in that the weight of the chute is distributed to the various floors.

It will also be apparent from the foregoing description that a simple, comparatively inexpensive chute has been provided not only for effectively meeting the problems encountered in linen chute installations, but also having features of construction, including the manner of supporting the chute sections, which are capable of general application to various types of chute installations for buildings, such as hotels, apartment houses, hospitals, etc.

Modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:—

1. A chute for soiled linen adapted for installation in a building, comprising a plurality of tubular sections of non-corrosive metal connected by downwardly overlapping joints to form a vertical chute, one or more of said joints permitting telescopic movement of the tubular sections, a flanged supporting ring at each floor level and attached to the chute and an additional support at the base of the chute, an inclined lateral discharge at the bottom of the chute, horizontal lateral passages at each floor, gasketed doors at the discharge and at the lateral passages, clamps for each door, a ventilating passage and a single spray pipe at the upper end of the chute, adapted to clean the entire chute, and a drain pipe at the lower end of the chute.

2. A chute for the disposal of soiled linen arranged to be permanently placed within a building, comprising a plurality of sections of non-corrosive metal connected by downwardly overlapping joints to form a vertical chute, one or more of said joints permitting telescopic movement of the tubular sections, means to support the chute from each floor level, an inclined lateral discharge at the bottom of the chute, horizontal lateral passages at the several floors, doors at the ends of the lateral passages, watertight gaskets at the doors, clamping means for the doors, a single spray pipe at the upper end of the chute, adapted to clean the entire chute, and a drain pipe at the lower end thereof.

3. A chute for the disposal of soiled linen, comprising a vertical pipe of non-corrosive metal, means to support the pipe from the several floors, a lateral discharge opening at the base of the chute, horizontal lateral passages at the several floors, doors at the lat-

eral passages, watertight gaskets around the doors, clamping means for the doors, a spray pipe at the upper end of the chute, adapted to clean the entire chute, and a drain pipe at the lower end thereof.

4. The combination with a pier for supporting a chute discharge unit, of a discharge unit for the chute, comprising a self-contained unit including a chute section having an opening laterally therefrom, an overhanging chute extension leading from said opening to an outlet from said chute, a closure for said outlet, a supporting bracket member extending below the bottom of the chute and adapted to rest against the pier, a brace extending between said extension and said bracket member, and means connected to said bracket member for securing the unit on said pier, said pier providing a full bearing support for the bottom of the chute.

5. The combination with a pier for supporting a chute discharge unit, of a discharge unit for the chute, comprising a self-contained unit including a chute section having an opening laterally therefrom, an overhanging chute extension leading from said opening to a discharge outlet, a closure for said outlet, a pair of bracket members on said chute section extending downwardly below the same and adapted to rest against the pier, braces extending from the lower portion of the extension to the bracket members, and a tie rod for extending about the pier and securing said bracket members thereto.

6. The combination with a pier for supporting a chute discharge unit, of a discharge unit for the chute, comprising a self-contained unit including a chute section having a downwardly sloping bottom plate and a lateral aperture above the plate, an overhanging chute extension leading from said opening to a discharge outlet, a closure for said outlet, a bracket member extending below the chute section and adapted to rest against the pier, and a brace extending between the bottom of the extension and the bracket member, said member being adapted to be secured to the pier, said pier having an upper sloping surface on which the bottom plate is adapted to seat and providing a full bearing for said plate.

7. The combination with a pier for supporting a chute, of a discharge unit for the chute, comprising a self-contained unit including a chute section having a lateral downwardly sloping outlet at its bottom, and bracket members extending below the bottom of the chute section adapted to support the same on said pier, said pier having an upper downwardly sloping surface providing a full bearing for the bottom of the chute.

8. The combination with a pier for supporting a chute, of a discharge unit for the chute, comprising a self-contained unit having a lateral overhanging extension leading to a discharge outlet, a closure for the outlet, bracket members adapted to secure the unit on the pier, and braces between the bracket members and the extension, said pier providing a full bearing support for the bottom of the chute.

9. A chute for installation in a building comprising, in combination, a plurality of chute sections, said sections having lateral intakes, means for supporting each chute section upon a floor level, a discharge section having a sloping bottom leading to a lateral outlet comprising a self-contained unit, a pier on which the discharge section is supported, said pier providing a full bearing support for the bottom of the discharge section, and means connected to and extending below the discharge unit for securing it to said pier.

10. A chute for installation in a building comprising, in combination, a plurality of chute sections, said sections having lateral intakes, means for supporting each chute section upon a floor level, said means comprising a flange ring mounted at each floor level and secured to each chute section, a discharge section having a sloping bottom leading to a lateral outlet comprising a self-contained unit, and a pier on which the discharge section only of the chute is supported, said pier providing a full bearing support for the bottom of the discharge section.

11. A chute for installation in a building comprising, in combination, a plurality of chute sections, means for supporting each chute section upon a floor level, said means comprising a flange ring mounted at each floor level and secured to each chute section, a discharge section comprising a self-contained unit, and a pier on which the discharge section only of the chute is supported, said chute structure being self-adjusting under settling movement of the building in which it is installed.

12. A chute for installation in a building comprising, in combination, a plurality of chute sections, means for supporting each chute section upon a floor level, said means comprising a flange ring mounted at each floor level and secured to each chute section, a discharge section comprising a self-contained unit, and a pier on which the discharge section only of the chute is supported, said pier providing a full bearing support for the bottom of the discharge section.

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