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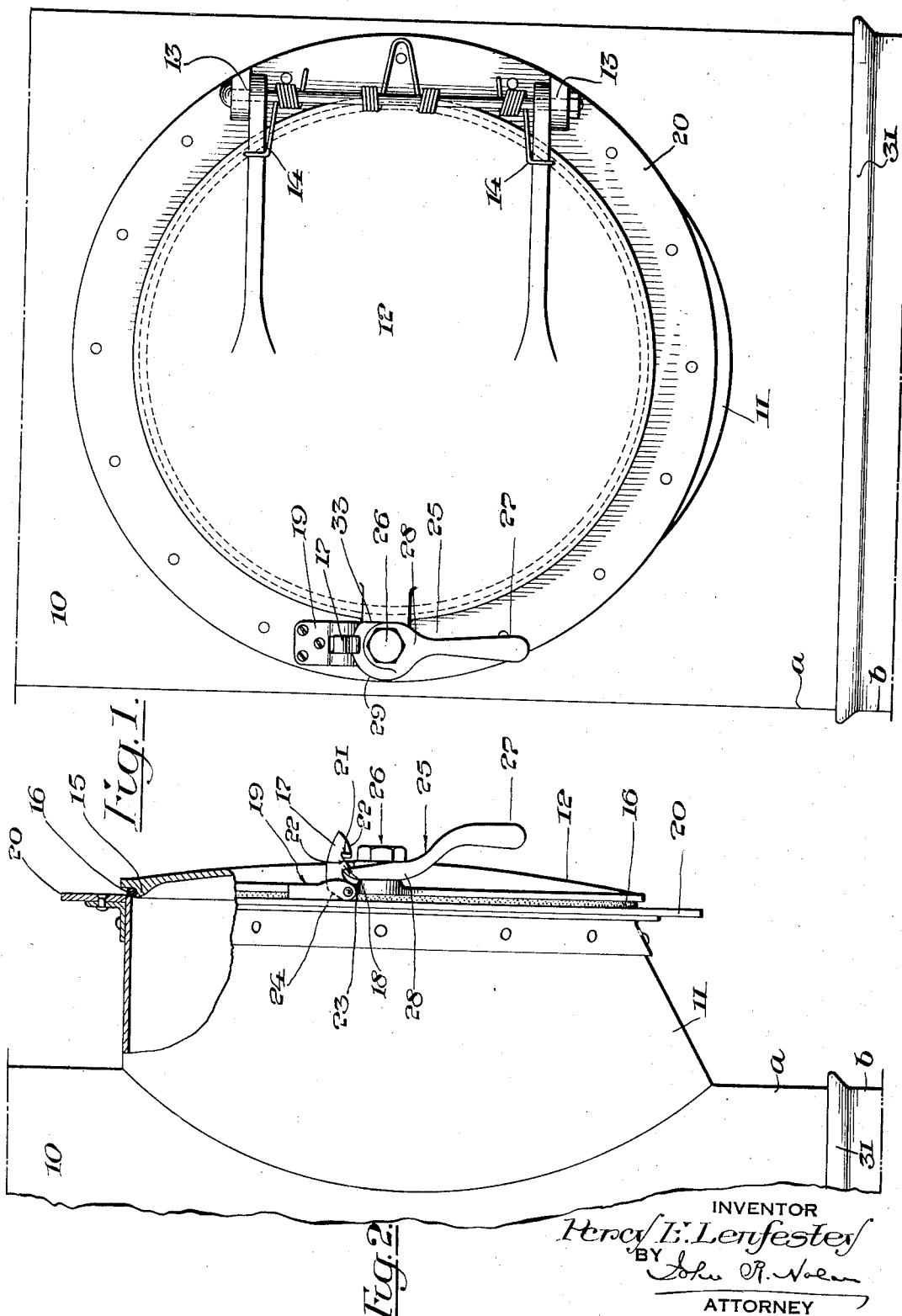
P. E. LENFESTEY

1,940,685

LATCH

Filed July 17, 1930

2 Sheets-Sheet 1



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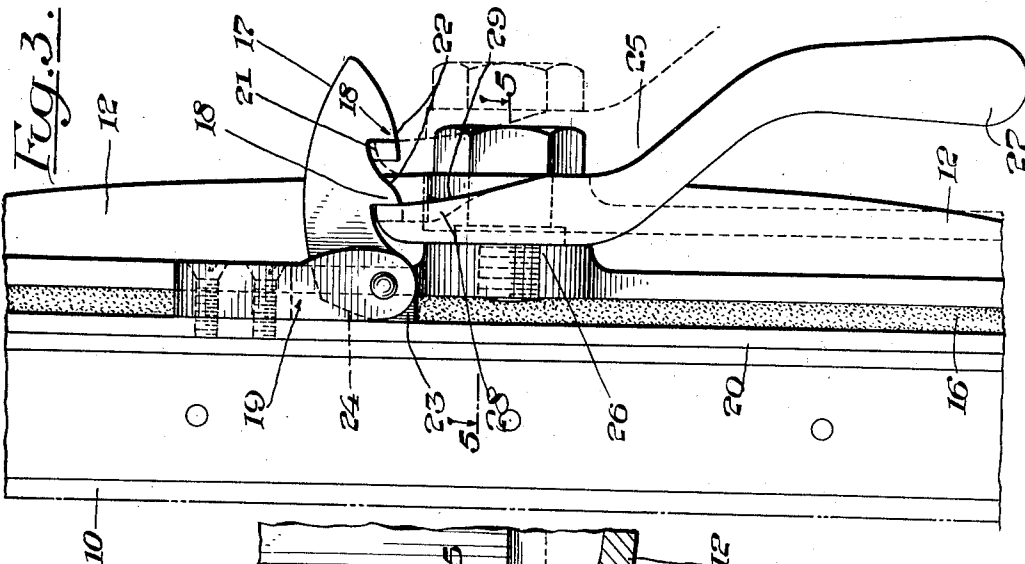
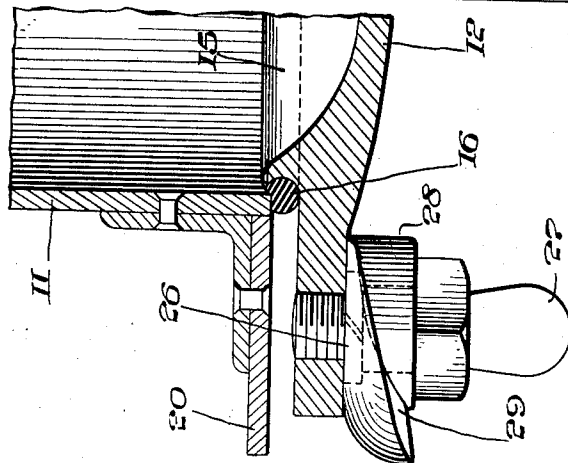
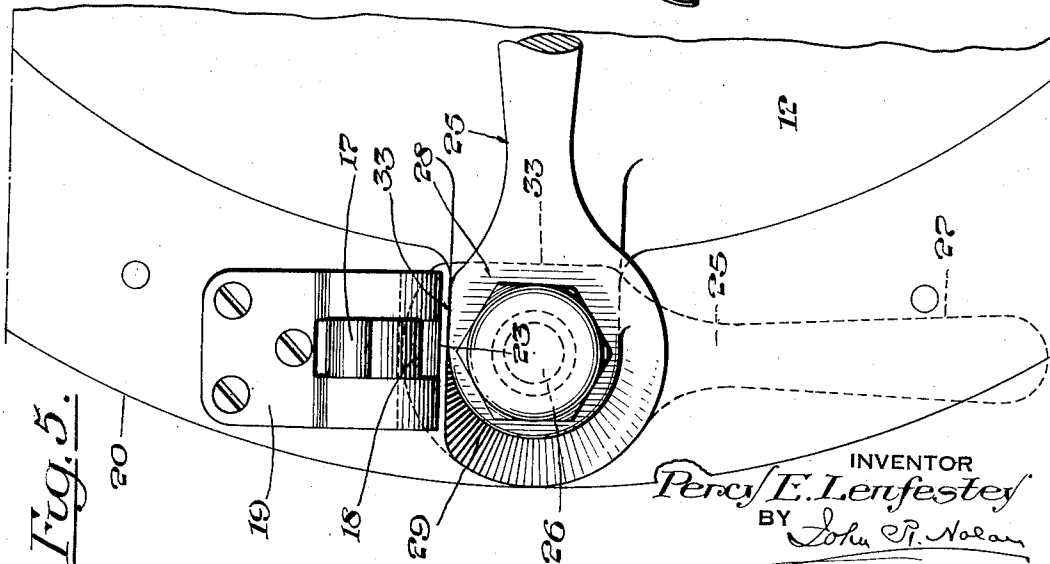


Fig. 4.



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1,940,685

LATCH

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Application July 17, 1930. Serial No. 468,648

3 Claims. (Cl. 292—241)

This invention relates to latch means for the hinged doors of linen and other discharge chutes for hospitals, hotels, &c., which chutes extend from the upper floors to the basement of the building and are provided at the several floors with openings having hinged doors, whereby soiled linen, waste, dressings, etc., may be introduced in the chute at any floor and directed thence to the basement or other collection point. These doors are equipped with fasteners, and also with springs which are intended normally to close the doors and maintain them in closed and latching position against rubber sealing gaskets.

As heretofore constructed the fastener for the self-closing intake door of the chute is effective when and only when the door is fully closed against the action of the gasket, and hence unless the door is in that condition it is liable to be forced open by air pressure thereagainst incident to the introduction of a large quantity of linen in the chute at an upper floor, thus permitting the ingress of the air and foreign matter to the corridor or room in which the partially closed and unlatched intake is situated. The rubber gasket acts as a spring cushion against the action of which it is difficult to make the door latch shut automatically, as the closing spring for the door exercises varying degrees of pressure according to the position of the open door when it is released by the user. Hence the door is frequently left partially closed and unlatched. Slamming the door to effect its closure and latching is not infrequently resorted to, thus producing noise and jar which are objectionable especially in hospitals and similar institutions.

The object of my invention is to provide for chute-intake doors a simple and efficient latching device whereby the door if it should fail to become completely closed and latched when it is released by the user, is nevertheless latched in a nearly closed condition, thus avoiding the premature opening of the door by internal pressure in the chute as hereinbefore mentioned, which door may be subsequently fully closed and latched against the action of the gasket without recourse to the objectionable slamming of the door.

With this object in view my invention comprises novel features of construction and combinations of parts which will be hereinafter described and claimed.

In the drawings—

Figure 1 is a front elevation of a portion of a chute equipped with a door embodying my improved fastener.

Fig. 2 is a side elevation, partly in section, of the structure shown in Fig. 1.

Fig. 3 is a side elevation, enlarged, of the door and its fastener, showing the door in its fully and partially closed positions.

Fig. 4 is a transverse horizontal section, as on the line 4—4 of Fig. 3.

Fig. 5 is a front elevation of a portion of the door and its fastener, the latter being shown in its locking and unlocking positions.

Referring to the drawings, 10 designates a vertical chute; 11 a laterally projecting cylindrical intake therefor, and 12 an outwardly-swinging hinged door on the intake. The door is equipped adjacent the hinge 13 with a suitable spring 14 which tends normally to close the door, and the door is also provided with a peripheral seat 15 for a rubber gasket 16. When the door is fully closed and latched the gasket presses against the opposing edge of the intake, thus ensuring an efficient closure seal.

According to one aspect of my invention a forwardly-projecting gravity keeper 17 having a series of spaced depending teeth 18 on its under face, is pivoted at its inner end about a horizontal pivot pin to a stationary bracket 19 on the rim flange 20 of the intake, diametrically opposite to the hinge. The teeth 18, of which in the present instance there are two, have angularly formed vertical faces 21, and forwardly and upwardly inclined bottom faces 22, the inclined bottom face of the outer tooth terminating at the free extremity of and affording a bevelled nose for the keeper.

The pivoted end of the keeper 17 is formed with angularly disposed bearing or stop portions 23, 24 which are arranged and adapted to abut against the opposing vertical surface of the flange 20 in a manner to limit the downward and upward movements of the latch.

A gravity lever 25 is pivoted, as at 26, on the door 12 so as to be swung in the closing movement of the door into co-operative relation with the keeper 17, which lever normally occupies a vertical position. The pendant longer arm 27 of the lever is offset from the outer face of the door to constitute a convenient handle, and the upstanding shorter arm 28 of the lever is formed on its outer face with a worm or cam surface 29, corresponding with the angular contour of the teeth 18, which surface passes under and raises the keeper when the open door 12 is released and swung to its closing position. Depending upon the force of the closing movement of the door and the resulting pressure of the

gasket, one or the other tooth 18 of the latch 17 is positioned to drop into engagement with the opposing cam surface 29, thus in either case latching the door. If the door is fully closed 5 the inner tooth of the keeper will be engaged with the cam surface of the lever, and hence the manual operation of the lever will forcibly cam the door and lock it in fully closed position against the action of the gasket; but if, through 10 carelessness, the door should not be quite closed the outer tooth of the latch will be engaged with the cam surface and the door will be latched sufficiently to prevent the premature opening of the door, as, for example, by air pressure in the 15 chute as hereinbefore mentioned.

Should the door be latched in partially open position it is an easy matter for an attendant, upon his observing such condition of the door, to close the door properly and latch it effectually 20 in that position, by proper manipulation of the handle lever without recourse to the objectionable slamming of the door.

As clearly seen in Fig. 5, one side of the shorter arm 28 of the handle lever is flattened, as at 25 33, to effect the disengagement of the cam surface from the opposing latch tooth when the lever is swung to a horizontal position.

I claim—

1. A latch for hinged doors of the character 30 described comprising a gravity lever fulcrumed on the door and having an upwardly-projecting cam surface, and a forwardly-projecting gravity keeper pivoted adjacent the door and arranged to swing downwardly into latching position, said 35 keeper having a plurality of spaced depending

teeth normally disposed in the path of the said cam surface and adapted to be engaged by the cam after which the door can be cammed to its closed position by the gravity lever.

2. A latch for hinged doors of the character 80 described comprising a gravity lever fulcrumed on the door and having an upwardly-projecting cam surface and a forwardly-projecting gravity keeper pivoted adjacent the door and arranged to swing downwardly into latching position, said 85 teeth having a plurality of spaced depending teeth normally disposed in the path of the said cam surface and adapted to be engaged by the cam after which the door can be cammed to its closed position by the gravity lever, said teeth 90 having inclined vertical faces and forwardly and upwardly inclined bottom faces.

3. A latch for hinged doors of the character described, comprising a gravity lever fulcrumed on the door, having an upwardly projecting 95 cam surface, and a downwardly extending operating handle, a bracket secured to the frame surrounding the door, a gravity keeper pivoted to the bracket on a horizontal pin whose axis extends at right angles to the axis of the pivot pin 100 of the lever when the door is closed, a cam engaging tooth on the keeper, said keeper being arranged to swing downwardly into latching engagement with the cam when the door is moved to its closed position after which the door can 105 be jammed to a sealing position by the cam, and stops for limiting the upward and downward movement of the keeper.

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