J. W. FARLEY.

CHUTE AND SHAFT IN BUILDINGS.

APPLICATION FILED APR. 20, 1914.

1,152,309.

Patented Aug. 31, 1915.

2 SHEETS—SHEET 1.

FIG. 1.

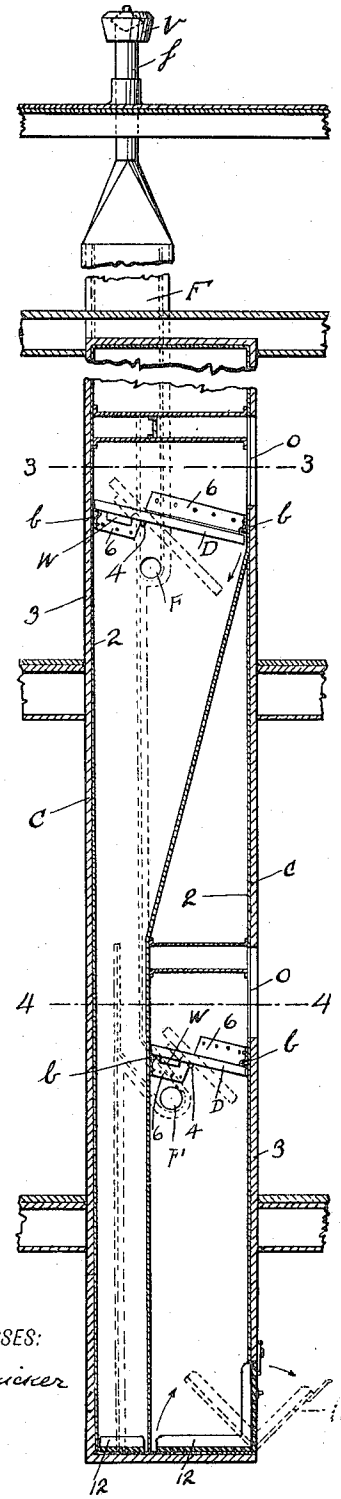
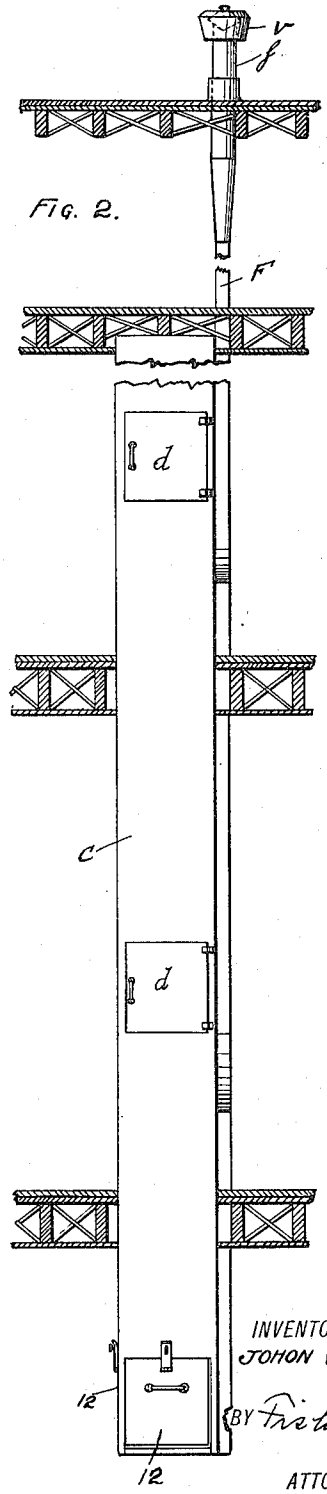


FIG. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

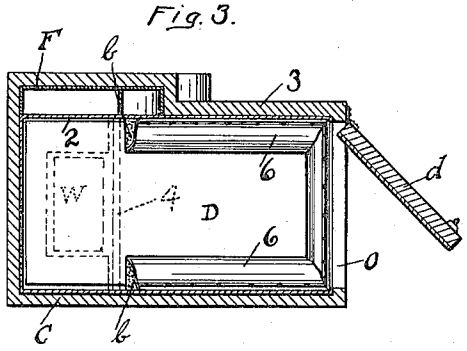


Fig. 4.

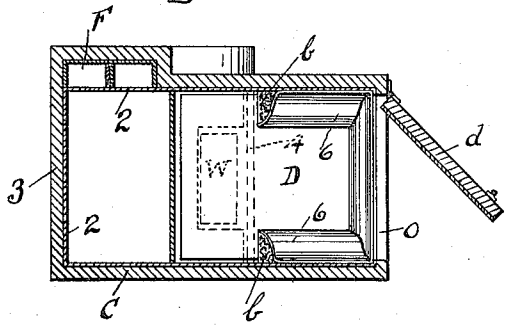


Fig. 6.

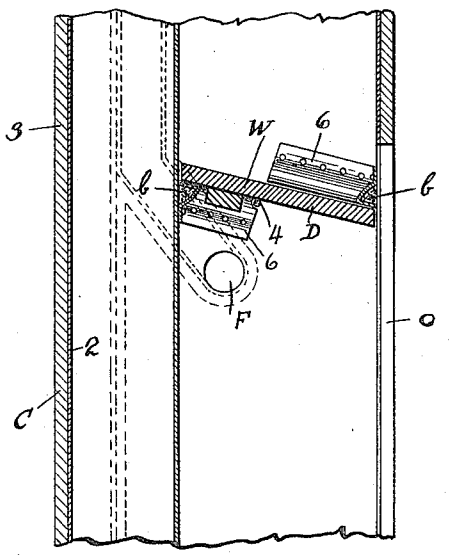
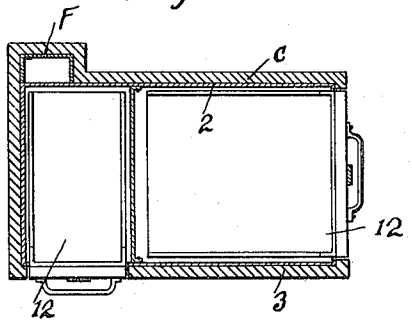


Fig. 5.



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CHUTE AND SHAFT IN BUILDINGS.

1,152,309. Specification of Letters Patent. Patented Aug. 31, 1915.

Application filed April 20, 1914. Serial No. 833,009.

To all whom it may concern:

Be it known that I, JOHON W. FARLEY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Chutes and Shafts in Buildings, of which the following is a specification.

This invention has reference to clothes chutes, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional elevation of a multiple chute for a building of several stories, and Fig. 2 is a front elevation thereof. Fig. 3 is a cross section on line 3—3, Fig. 1 plus the door. Fig. 4 is a cross section on line 4—4, Fig. 1, plus the door. Fig. 5 is a cross section of the lower portion of the chute. Fig. 6 is a sectional elevation showing one of the dampers closed and the vent flue from beneath same.

The invention herein proceeds on the theory that all clothes chutes should be constructed of fire proof or at least fire resisting materials, and for such purposes I find that black or galvanized sheet metal plates and terra cotta are desirable because they afford a smooth interior surface and are non-inflammable. If sheet metal be used, it should be not less than 22 gage and covered with not less than one-half to three quarter inch asbestos, mill-board or air cell board, or what is known as transite board, one-fourth inch or more in thickness and made air tight.

Now, having a fire proof or fire resisting chute or shaft in view, and particularly a chute for clothes in private residences and for papers in office and other buildings, as well as for various inflammable materials in mercantile and manufacturing establishments, I construct the chute or shaft after the manner herein shown, with an inclosing wall C. If this wall be of galvanized iron, as above described, and which is employed in this instance as indicated by 2, I cover the same outside with a heavy layer of fire resisting material 3, which, preferably, is either asbestos, mill-board or air-cell board, or its equivalent, and of such thickness or depth as the character of the building or the surrounding conditions may require. For example, if the building itself be fire-proof, so that the immediate surroundings of the chute or shaft are not combustible, the chute will be in comparatively small danger and may have a lighter covering than where it is practically set in wood, as in the average private dwelling. However, in any event, the sheet metal interior is to have a fire protecting or insulating covering, and the same precaution is taken if terra cotta be used instead of metal. A further precaution against the spread of fire is a fireproof door or damper D, at each landing. This door is preferably of the swinging damper type, having pivots 4 off center and adapted to swing down into closed position by gravity after having been opened. To this end, I employ a counterweight *w*, or its equivalent, on the short side of the damper, and asbestos or like cushions or packings *b* of fire proof material serving also as stops for the door when it is closed and also and especially to seal those edges against the passage of air up through the chute or shaft. These cushions are covered by a sheet metal strip or plate 6, so as to present a smooth exterior, and the said metal or sheet 6 is continued along the sides of the chute, as to the pivots 4, above and below, Fig. 6 and inclined inward toward the damper or door from the riveted top edge thereof so that the lower edge of said sheet or lining stands out over the damper more or less. Possibly, for practical purposes the opening of the chute beneath the damper door need not be narrowed quite as much as shown. Normally the said damper is closed by its own weight, and it is only opened when used to drop anything into the chute. A similar door *d* is provided at each and every landing for the opening *o* and which also is fire proof. The bottom of the chute may come entirely down to the cellar floor or stop at any point between the said floor and the ceiling, and all exterior or exposed surfaces have the asbestos covering.

Another feature of the invention consists in the ventilating means represented by a flat sided flue F, or its equivalent terminating in a pipe or tube *f* at its top which has its exit through the roof of the building and is adapted to draw off foul air from the different floors and also from the cellar or laundry room beneath. A constant draft is maintained by this flue or vent by reason

of its being constantly open, and of course the covering with asbestos is maintained from end to end. The said ventilating flue is also provided with a weather proof ventilator *v* at the top, if it be not directed into a chimney or smoke stack, as sometimes occurs. The entrance to this flue is from beneath each self closing door D, as herein shown to avoid stagnant air in the chute or shaft, and the said shaft has increased area from the bottom upward to provide for the several inlets thereto at the successive elevations. It follows that each floor has its own equipment of a self-closing door inside the chute, and a ventilating flue or duct and fire proof door to close the chute from the apartment. From the said opening *o*, there is no obstruction in the chute to the bottom except the single damper D for the said portion of the chute at about the bottom of said opening and where one can easily reach by hand. Each particular floor has a like complete equipment. The bottom of each chute or subdivision has a tilting closure 12 of the form of a receptacle which serves to dump the contents and roll back into closing position, the front thereof serving as a door.

What I claim is:

1. A chute or shaft having a fire resisting wall and openings at intervals and fire resisting dampers next beneath the said openings to prevent air drafts therethrough, said dampers being pivoted at their side edges in the chute and adapted to close by gravity, and fire-proof packing fixed in the chute at the front and rear edges of the said dampers.

2. A chute as described having a fire-resisting wall provided with openings at its front corresponding to the floors in the building, in combination with a series of fire-resisting dampers in said chute next beneath said openings and pivoted in the side wall of the chute and adapted to be pressed downward at the front by hand and to close by gravity.

3. A fire resisting clothes chute having a plurality of vertically disposed ducts to drop the clothes provided each with a front opening in its top and a damper beneath said opening, in combination with a fire proof ventilating tube extending from the lowest damper to a point above said chute and of gradually increased area in cross section from bottom to top and a duct from beneath each damper into said tube.

4. A fire-resisting chute for clothes and the like having an opening at its top and front adapted to receive the clothes and an opening at its bottom to remove the clothes and fire-resisting closures adapted to automatically shut both of said openings and prevent fire from passing up through the same.

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

JOHON W. FARLEY.

Witnesses:
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F. J. GREER.

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