July 3, 1923. 1,460,713

J. L. FALK

FUEL CHUTE

Filed March 19, 1921

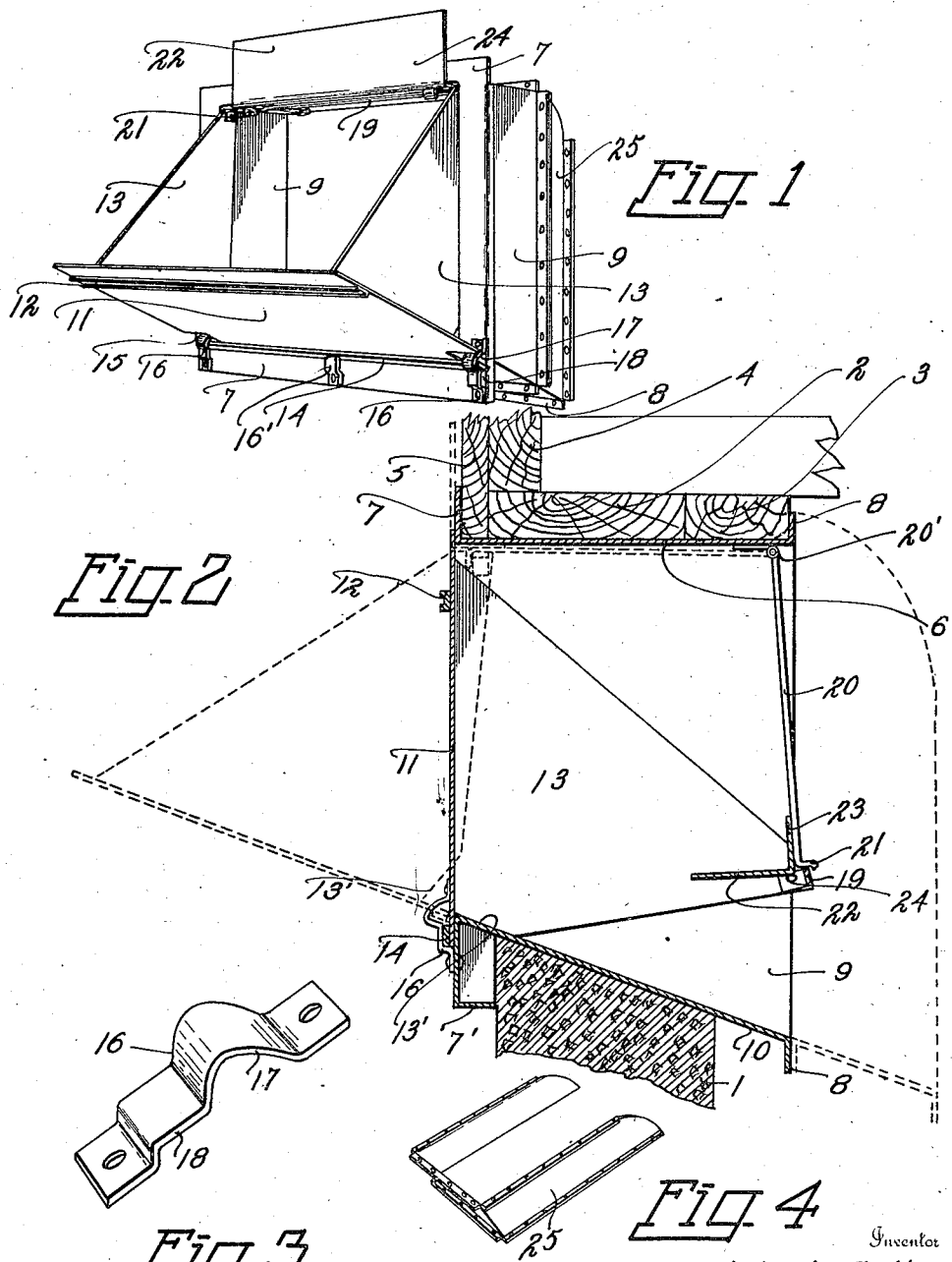


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Witness

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Patented July 3, 1923. 1,460,713

UNITED STATES PATENT OFFICE.

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FUEL CHUTE.

Application filed March 19, 1921. Serial No. 453,626.

To all whom it may concern:

Be it known that I, JOHN L. FALK, a citizen of the United States, residing at Spokane, in Spokane County and State of Washington, have invented certain new and useful Improvements in Fuel Chutes, of which the following is a specification.

My present invention relates to improvements in fuel chutes designed especially for domestic use, but equally readily adapted for various purposes, when located in the building wall. When properly located within an opening provided therefor in the building wall, the chute provides a convenient means for transferring coal, wood, or other material to the basement of a dwelling or residence, and when not in use for this purpose, the chute opening is closed and the device effectively locked against unauthorized or surreptitious opening thereof.

The primary object of the invention is the provision of a device of this character possessing certain meritorious features and combinations and arrangements of parts involving means for securely and effectively locking the device in closed position, and the utilization of one of the locking members, when the chute is open, for a shield or guard to protect the front of the house during coaling operations against marring or disfigurement from lumps of coal. The invention also contemplates an improved arrangement of extension means for adjusting the chute to building walls of various thicknesses, and one of the meritorious features of the invention resides in the construction of the hinge joint for the hopper or door member of the chute. The several features of the device as improved by me insure a chute that is simple in construction, comparatively inexpensive in first cost, facile in manipulation, and one presenting a neat and finished appearance on its exterior that will not detract from the attractive or ornamental appearance of the building equipped with such a device.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention, and a modified form thereof, in which the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principles of my invention.

Figure 1 is a perspective view of a chute constructed according to and embodying the novel features of my invention, the hopper portion of the chute being shown in open position for the transfer of fuel such as coal, wood, or other material.

Figure 2 is a vertical sectional view of the chute, showing the hopper open in dotted lines, closed in full lines and locked at two different places, and showing also in dotted lines the utilization of a rear extension to the chute.

Figure 3 is a perspective view of one of the two combined door hinges and fastening devices.

Figure 4 is a perspective view in miniature, of the inner extension adapted for use with the chute in thickened building walls.

In the preferred form of the invention as shown in the drawings, in order that a clear understanding may be had of the structure I have designated the building wall as 1 in which provision is made for an opening to accommodate the chute structure, and across the upper face of the wall, above the opening, a sill 2, and filler plate 3, of wood are indicated. The chute structure is placed in position in the building wall before these frame members are located, after which the building frame including the upright indicated at 4 and the sill course indicated at 5 in Figure 2, is erected.

The chute body and its several members are preferably made up of sheet metal, and the chute is provided with an upper horizontal wall 6 fitting neatly against the under side of the frame structure supported on the wall 1, and fashioned with an exterior front plate 7 extending around the rectangular chute opening. At the top, this plate abuts against the sill course 5 forming the bottom finish for the house front, and its side and bottom members are provided with inwardly extending flanges 7′ which fit against the face of the front wall 1, as shown in Figure 2, thus effectively closing the space around the wall opening and giving the exterior of the chute a neat and finished appearance. At the inner face of the building wall, or within the basement of the house the chute has an outwardly projecting flange 8 around its edges the top member of the flange engaging against the filler plate 3 as shown in Figure 2.

The side walls 9 of the chute body fit against the side walls of the opening in the building wall, and the declining bottom wall 10 of the body rests upon the complemen-

tary face of the wall, to permit passage of material through the chute in usual manner.

In connection with the chute I utilize a tiltable hopper, openable toward the exterior of the building wall to adapt the chute for receiving coal, etc., and adapted to swing within the body of the chute with its door member closing the open body, when not in use. The hopper comprises a rectangular door plate 11 which may be graced with a transverse, exterior channel iron plate or strap 12, and triangular side plates 13, which have complementary truncated edges 13′ adapted to seat on the top surface of the chute bottom 10, when the door or hopper is closed.

Along the lower edge of the door member of the hopper is attached a hinge bar 14, which, as shown projects in front of the cut out or notched corners 15 of the door, for engagement and co-action with the two hinge straps 16. These straps are of special construction, as seen in Figure 3, and are riveted in vertical position, to the exterior face of the rectangular front plate 7 in the two lower corners thereof. At 17 each hinge strap is rounded outwardly to form a recess in which the ends of the hinge bar 14 may turn, and at 18 a vertical, straight, offset is formed below this recess to provide a socket for the rectangular ends of the hinge bar, when the door is locked. It will be noted that the hinge bar has flattened ends, which, when the door or hopper is closed fit snugly in the complementary sockets formed between the hinge straps at 18 and the front plate to which they are attached, while the recess formed by the rounded portion 17 of the hinge strap affords sufficient space for the flattened ends of the hinge bar to turn when opening or closing the door. Thus, to open the door, it is bodily lifted until the hinge bar is free from the sockets 18 and the ends of the bar are located in the recesses 17, then the door may be swung open. When closed, the door is swung toward the chute and then permitted to fall until the bar ends are fixed in the sockets provided therefor. In this position the door is held in closed relationship to the chute, the fastening being accomplished at the lower end of the door or hopper. In addition to this fastening means I employ an interior lock for the hopper when in closed position, which insures close contact with the door and top member of the front plate 7, and effectively locks the door in closed position against opening from the exterior.

At the apex of the triangular side plates of the hopper and extending transversely of the hopper, is arranged a fixed latch bar 19, with which co-acts a detent 20 swinging from the pivot 20′ on the under face of the top plate 6 of the chute body, near the inner edge of the chute body. At its lower free end this detent is provided with a latch or hook 21 to engage the upper edge of the latch bar 19 when the hopper is closed, as in Figure 2. Thus after the hopper is swung to closed position within the chute, the freely swinging detent is swung into engagement with the latch bar 19, and as the latch bar is rigid with the side plates of the hopper which at their bases extend the full height of the door, the entire area of the door is thus firmly held, with its four edges in close contact with the front plate 7. Before the door can be opened, the detent 20 must be swung out of engagement with the latch bar to free the hopper, and then after the hopper has been lifted as described, the door may be opened, to swing the hopper in proper position for receiving material.

There are two of these hinged detents, one hinged adjacent each side of the chute body as described, and at their lower free ends these detents are connected by an angular metal plate forming a rigid connection between the detents, said plate comprising a flange 22 and a narrower flange 23 at right angles thereto. This angle plate, designated as a whole by the number 24 is adapted to form a shield or guard for the wood frame of the house and particularly the sill 5 as well as the front plate 7 to prevent lumps of coal striking and marring these parts.

After the detents have been freed from the latch bar 19, and as the hopper is swung outwardly to dotted lines in Figure 2 the guard is swung on the hinges 20′ to dotted position in Figure 2, with the wide flange or plate 22 standing erect as in Figure 1 over the front plate 7 and a part of the sill 5, and the narrower flange or plate 23 fitting up against the front edge of the top wall 6 of the chute body. As the hopper is swung outwardly, the latch bar 19 engages the hooks 21 of the detents 20, and the weight of the hopper, through the bar 19, holds the detents and shield in dotted position as shown. In this manner the shield is retained in place by the weight of the outwardly swung hopper for performing its required functions.

In Figure 1 an additional socket member 16′ is shown attached centrally of the door, to the front plate 7 to support the hinge bar when open and receive the bar 14 when the door is in lowered position and locked, to insure close contact of the door with the plate intermediate of the hinge straps 16.

In Figure 4 an extension 25 is illustrated, which is made up into angular form from metal plates, and this is adapted to be attached to the inner side of the chute body, as in Figure 1 full lines, and dotted lines Figure 2, for use in comparatively thick walls.

From the above description taken in con-

nection with my drawings it will be apparent that I have provided a coal chute in which the hopper may be manipulated with facility, effectively locked in closed position, and retained with stability in open position, and which is equipped with proper means for shielding the surrounding wood work and other parts from disfigurement.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is—

1. The combination with a chute, hinge straps co-acting therewith to form upper recesses and lower sockets, and a hopper, of a hinge bar on the lower edge of said hopper, said bar having angular ends adapted to swing in said recesses but adapted to be fixed in said sockets, whereby the hopper may be lifted from locked engagement of the hinge bar in said sockets, and said hopper tilted outwardly and downwardly with said ends in said recesses.

2. The combination with a chute and tiltable hopper having a latch bar fixed thereto, of a pair of detents pivoted to the chute and adapted to engage said latch bar to hold the hopper in locked position, an angular shield joining the free ends of said detents for engagement with the chute when the hopper is opened, and said latch bar adapted to engage said detents to hold the shield in operative position.

3. The combination with a chute having hinge straps adapted to form recesses and sockets, of a hopper including a door section having a hinge bar co-acting with said straps as described, side plates on said hopper, a latch bar connecting said plates, and an interior locking device on said chute for engagement with said latch bar, and an extension chute secured to the chute proper for the purpose described.

In testimony whereof, I affix my signature.

JOHN L. FALK.