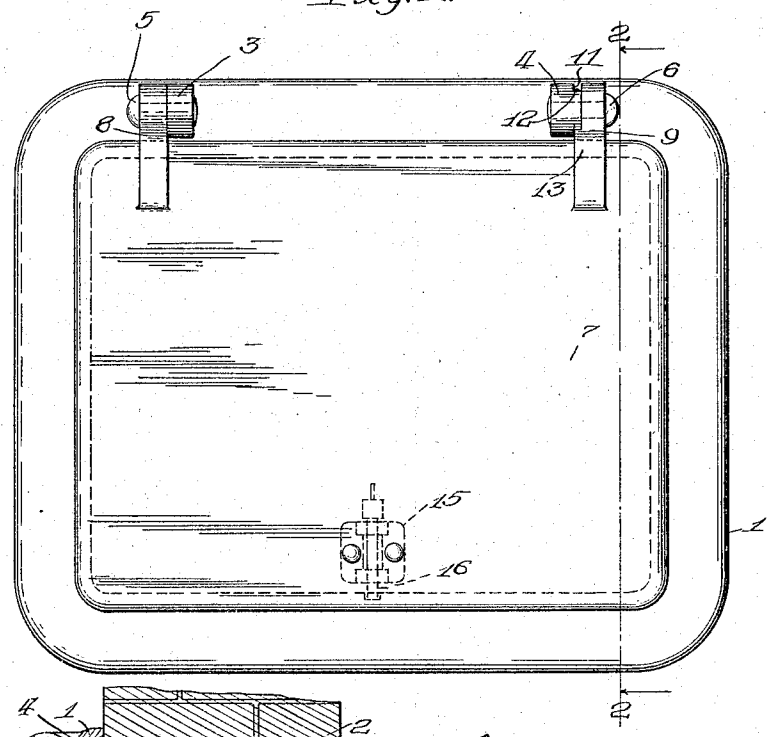
A. A. BOWSER.

COAL CHUTE DOOR.

APPLICATION FILED AUG. 26, 1915.

1,192,161. Patented July 25, 1916.

Fig. 1.



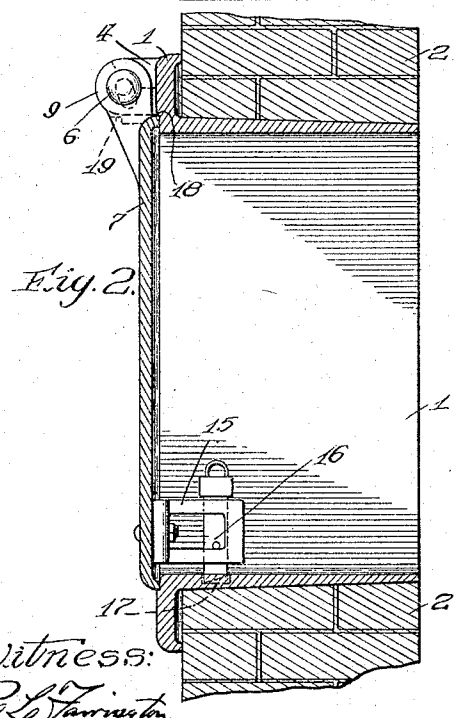


Fig. 2.

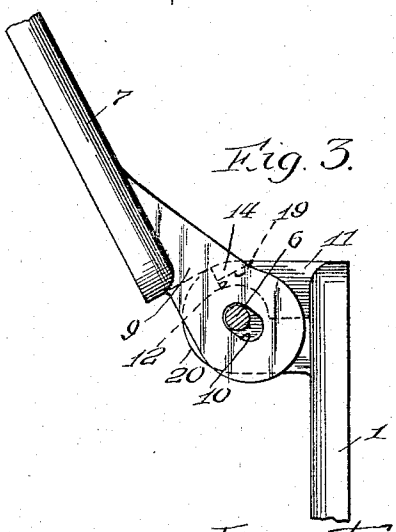


Fig. 3.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALLEN A. BOWSER, OF FORT WAYNE, INDIANA.

COAL-CHUTE DOOR.

1,192,161. Specification of Letters Patent. Patented July 25, 1916.

Application filed August 26, 1915. Serial No. 47,549.

To all whom it may concern:

Be it known that I, ALLEN A. BOWSER, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented a certain new and useful Improvement in Coal-Chute Doors, of which the following is a specification.

This invention relates to doors for coal chutes such as are used for admitting coal through the walls of cellars and like storage places.

The invention consists substantially of the combination and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and more particularly set forth in the appended claims.

In the drawings—Figure 1 is a front elevation of a coal chute door provided with the present invention. Fig. 2 is a vertical sectional view on line 2—2 of Fig. 1, showing a portion of a cellar wall provided with a coal chute door made according to this invention. Fig. 3 is a fragmentary detail view of one of the hinges for the coal chute door.

In the drawing the numeral 1 represents a door frame made of suitable material, such as cast iron, and arranged to be built into a cellar wall shown in section at 2. The door frame extends entirely through the wall, thus providing an opening through which coal is transferred into the cellar or like storage room. Secured to the upper portion of the door frame 1, and extending outwardly therefrom, are two lugs 3 and 4, which carry pintles 5 and 6 on which the door 7 is hinged. The door 7 may be made of any suitable material, but preferably of cast iron, and carries at its upper edge knuckles 8 and 9. The knuckles 8 and 9 are provided with openings for the pintles 5 and 6, thus providing a hinged or swinging support for the door 7. The opening 10 in the knuckle 9 for the pintle 6 is elongated, as shown best in Fig. 3, to permit a slight movement of the lug 9 relative to the pintle carrying member 4 for a purpose to be described. The upper rear portion of the member 4 is cut away, forming an opening or notch 11 which terminates at the forward edge in a shoulder 12. A projection 13 is carried on the knuckle 9 in alinement with the opening 11 of the member 4. The projection 13 is provided at its upper rear portion with an overhanging offset 14, arranged to coöperate with the shoulder 12 on the pintle member 4 when the door is in its upper or open position.

Secured to the lower edge of the door is a latch member 15, which carries a sliding bolt 16 arranged to coöperate with an opening 17 in the lower portion of the door frame to hold the door in closed position. The door frame is provided with an offset or shoulder 18, which extends around the door when closed to prevent any lateral play thereof, which play, but for this offset, would be permitted by the slotted hinge and allow disengagement of the latch 16. It should be noted that latch 15 is placed on the inside of the door, and arranged to automatically lock the door in position when closed.

When it is desired to insert coal or other material through the chute door, the door is first unlatched from the inside, and swung upwardly into or past the position shown in Fig. 3. When the door is in its closed position, and until it reaches the position shown in Fig. 3, the upper edge 19 of the shoulder 14 will bear against the periphery 20 of the pintle member 4. When, however, the door reaches the position shown in Fig. 3, the offset shoulder 14 of the projection 13 will register with the opening 11 in the pintle carrying member 4, and the door 7 will then, under the influence of gravity, move slightly downwardly and to the right as shown in Fig. 3, the slot 10 moving on the pintle 6 until the offset shoulder 14 drops in behind the shoulder 12 on the pintle carrying member 4. It will be obvious that when the hinge assumes this position, the door will be automatically locked open as shown in Fig. 3. When it is desired again to close the door a slight lift in an upward direction will raise the offset shoulder 14 out of the notch 11, and disengage it from the shoulder 12 of the pintle member, and leave it free to swing downwardly into closed position. As will be seen from Fig. 2, the elongated slot 10 would, of itself, permit the door, when closed, to be raised slightly, and make it possible to release the latch 16 from the opening 17. This is prevented, however, by the fact that the surface 19 of the offset member 14 would strike the periphery 20 of the pintle carrying member 4, and also by the fact that the door, when closed, fits into the offset 18 of the door frame 1, thus preventing any movement of the door relative to the frame.

While I have disclosed one form of my

invention, it should be distinctly understood that this disclosure is merely by way of illustration, and that the invention may be embodied in many different forms that will be apparent to those skilled in the art.

What I claim as new, and desire to secure by Letters Patent, is:—

1. In combination, a vertically swinging coal chute door, a hinge for said door having the parts thereof connected for pivotal movement relative to one another and for relative movement transverse to the axis of said pivotal movement, interlocking members secured to the parts of said hinge and arranged to be moved into coöperative position by the weight of said door when said door is in its upper or open position to retain said door in said position, and means for preventing said movement of the parts of said hinge relative to one another transverse to the axis of said pivotal movement when said door is in its closed position.

2. In combination, a door frame, a pair of pintle carrying members mounted on said frame, a door having a pair of knuckles pivotally supported by said pintle carrying members for movement about a horizontal axis, interlocking devices on one of said knuckles, and pintle carrying members arranged to be automatically moved into cooperative relation to one another by the weight of said door when said door is raised to its open position for holding said door in said position, and means for preventing movement of said door transverse to the axis of the pivotal movement thereof when in its closed position.

3. In a device of the character described, a vertically swinging door, a hinge for said door having a horizontal pivot and two relatively movable parts secured together by said pivot, one of said parts being provided with an elongated slot to permit lateral movement thereof relative to said pivot, interlocking shoulders carried by said parts and arranged to be automatically moved under the weight of said door by the lateral movement of said parts relative to one another into position to hold said door from closing when it has been raised to open position and means for preventing movement of said door in the direction of said slot when said door is closed.

4. A coal chute door comprising a door frame, a door pivotally mounted on said frame for movement about a horizontal axis, a hinge for securing said door to said frame provided with two parts having a pin and slot connection to permit lateral movement of said parts, interlocking members for preventing pivotal movement of said door on said hinge and arranged to be moved into or out of operative relation by the lateral movement of the parts of said hinge relative to one another when said door is open, and means for preventing lateral movement of the parts of said hinge relative to one another in the direction of the slot of said pin and slot connection when said door is closed.

5. In combination, a door frame, a pintle-carrying member secured to the upper portion of said frame, a door for said frame having a knuckle secured to its upper edge, a loose motion pivotal connection between said pintle-carrying member and said knuckle arranged to permit vertical swinging opening and closing movement of said door and also lateral movement thereof relative to said frame, interlocking members on said knuckle and pintle-carrying members arranged to be moved into contact with one another by said lateral movement to lock said door in open position, a latch for holding said door in closed relation with said frame, and means on said frame arranged, when said door is in closed position, to prevent lateral movement of said door and knuckle relative to said frame and pintle-carrying member transverse to the axis of said pivoted connection and consequent displacement of said latch.

6. In combination, a door frame, a pintle-carrying member secured to the upper portion of said frame, a vertically swinging door for said frame, a knuckle with an elongated slot therein secured to the upper portion of said door, a laterally extending pintle mounted on said pintle-carrying member extending into said slot and forming a loose motion pivotal connection between said door and frame, an upwardly extending shoulder on said pintle-carrying member, and a catch member on said knuckle arranged to slide over said shoulder as said door is opened to raise said door and move the slot in said knuckle relative to said pintle and to automatically drop under the weight of said door behind said shoulder to lock said door open when said door has reached its uppermost position.

7. The combination with an upright frame for a coal chute door, of a pintle member secured to the upper portion of said frame and having a horizontal pintle carried thereby, a door for said frame having a knuckle provided with an elongated slot mounted on said pintle and arranged with its longitudinal axis approximately parallel with the plane of said door, a cam on said pintle member having a surface arranged to curve upwardly and outwardly from the axis of said pintle, and a stop on said knuckle arranged to coöperate with said cam when said door is swung upwardly to slide said slot on said pintle and force the door upwardly in a direction transversely to the axis of said pintle, said cam and stop being shaped to permit said door when raised to its extreme upper position to fall by its own weight in the direction of the axis of said slot to move

said cam and stop into interlocking position to prevent closing of said door.

8. The combination with an upright frame for a coal chute door, of a pintle member secured to the upper portion of said frame and having a horizontal pintle carried thereby, a door for said frame having a knuckle provided with an elongated slot mounted on said pintle and arranged with its longitudinal axis approximately parallel with the plane of said door, a cam on said pintle member having a surface arranged to curve upwardly and outwardly from the axis of said pintle, a stop on said knuckle arranged to coöperate with said cam when said door is swung upwardly to slide said slot on said pintle and force the door upwardly in a direction transversely to the axis of said pintle, said cam and stop being shaped to permit said door when raised to its extreme upper position to fall by its own weight in the direction of the axis of said slot to move said cam and stop into interlocking position to prevent closing of said door, a flange on said frame arranged to coöperate with said door when closed to prevent movement of said slot transversely to the axis of said pintle, and a latch inaccessible from the interior of said door for holding said door closed.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 21st day of August, A. D. 1915.

ALLEN A. BOWSER.

Witnesses:
J. R. MATLACK,
CHAS. FEICHTER.

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