No. 867,156. PATENTED SEPT. 24, 1907.

H. W. RICHARDS.

COAL CHUTE.

APPLICATION FILED JUNE 28, 1906.

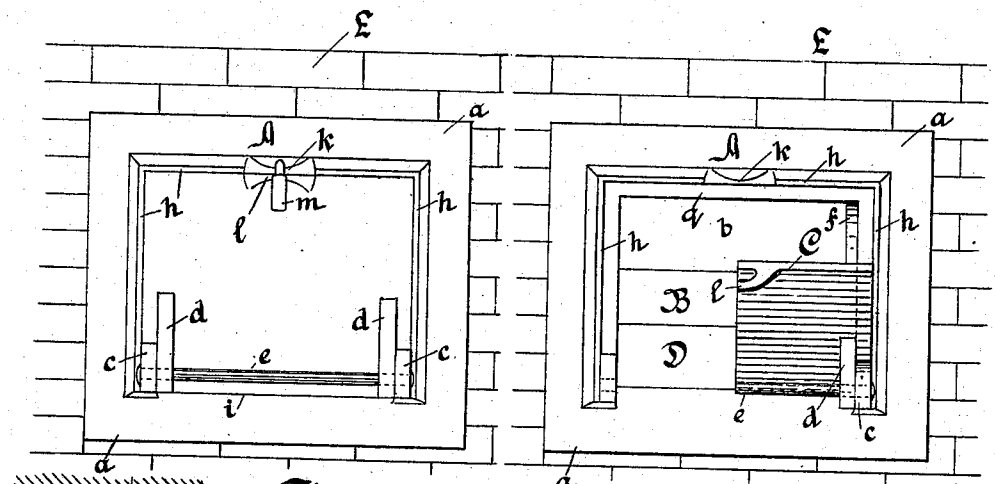


Fig. 1

Fig. 2

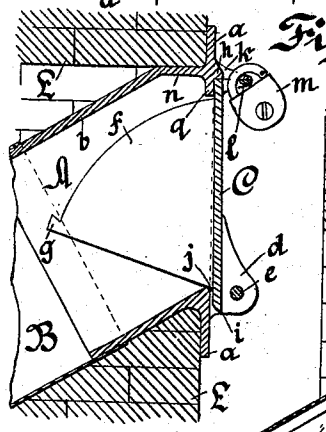


Fig. 4

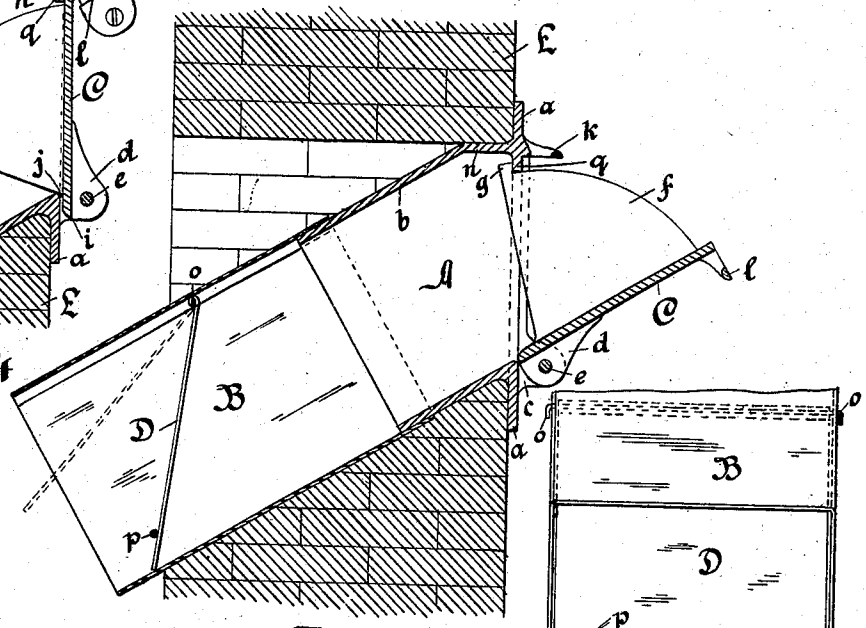


Fig. 3

Fig. 5

Witnesses

W. Schnelly

Gertrude H. Doink

Harry W. Richards, Inventor

By George Wetmore Colles

Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY W. RICHARDS, OF MANITOWOC, WISCONSIN.

COAL-CHUTE.

No. 867,156. Specification of Letters Patent. Patented Sept. 24, 1907.

Application filed June 28, 1906. Serial No. 323,847.

To all whom it may concern:

Be it known that I, HARRY W. RICHARDS, of Manitowoc, Wisconsin, have invented a Coal-Chute, of which the following is a specification.

My invention relates to chutes applicable to the walls of ordinary residences for the introduction of coal and other fuel, or roots, such as potatoes and the like, directly from a cart outside into bins provided for them in the cellar of the house. Such chutes as heretofore made have been open to several objections. One of the principal of such objections is the projection of the chute beyond the wall of the house, whereby it acts as an obstruction to street traffic, and in the cases of narrow alleys, it is apt to be struck by passing carts and damaged in some way. Another is that the door of the chute is so arranged that rain works its way in through the cracks and rusts the chute on the interior, and moreover, coal dust becomes lodged in the hinges of the door and prevents the same from shutting, besides causing undue wear. Still another objection has been the admission of cold air to the house while the coal or other material is being delivered through the chute.

It is the object of this invention to construct a chute which shall not be open to any of these objections and which shall in addition offer some features of construction which shall offer some superior advantages over any of those heretofore devised; such, for example, as means for locking the entrance through the chute both from inside and outside; a cheap and efficient combination of sheet and cast metal to lower the cost of construction; and means for properly closing the hole in the wall without unduly enlarging the aperture of the chute, permitting the latter to be set on a slant.

To these and other ends my invention comprises the features of construction and combination which will be hereinafter more explicity set forth and embodied in my claims.

In the accompanying drawings I have illustrated the preferred form of my chute in various positions, and herein Figure 1 is a front view thereof as set in the wall with the door closed; Fig. 2 is a similar view with the door open, and one-half removed; Fig. 3 is a longitudinal section through the chute with the door open; Fig. 4 is a similar view of the upper part of the chute with the door closed and locked on the outside; Fig. 5 is a rear elevation of the lower end of the chute to show the swinging-door and inside locking-device.

In these drawings every reference letter and numeral refers always to the same part.

My chute comprises four principal parts: namely, a cast iron front and upper portion A, a sheet-iron lower portion B, an outer door C preferably of cast metal, and a swinging inner door D preferably of sheet metal.

My chute is made in rectangular form both to accommodate the square ends of the delivery troughs carried by coal wagons, and also because such a chute is easier to set in the wall of the house, which is here shown and designated by the letter E. The front and upper portion A, carries a rectangular flange *a*, which surrounds the body-portion *b* to cover the edges of the hole. The said front is provided with a pair of hinge-lugs *c*, which coöperate with the lugs *d* on the door C, a pintle-rod *e* being passed through them as shown. When the door C is closed the inner face thereof rests against a depending flange *q* formed on the member A on the upper side thereof, and overlaps the outer surface of the part *a* on the other three sides of the opening. The door C is provided with a pair of sector-shaped wings *f*, one on each side, which cause the door to act as a trough or a prolongation of the chute when it is opened, and are provided with projecting lugs *g* on their free ends which engage behind the flange *q* as shown in Fig. 3, limiting the open position of the door to an angle which is preferably about the same as that of the chute.

To prevent rain from entering the chute, I provide the front of the part A on three sides of the door with a raised beading *h*, which covers the edges of the door, but said beading is omitted from the bottom side of the door so as to enable any water entering in spite of the flange *h*, to run out. It will be noted from Fig. 4 that the pintle of the door is so placed that when closed the lower edge *i* of the door does not come close to the face of the casting A, but there is a narrow interval *j* left open at this point, so that the water which enters around the upper or side edges of the door runs down the inner face thereof and out through the crack *j*, instead of running down inside of the chute and rusting the same. It will be further noticed that the lower edge *i* of the door is made sharp so as to accelerate the dripping of the water from the lower edge, and it extends to such a point that when the door is opened it abuts closely upon the front of the casting A at the point where the sliding surface of the chute begins, as clearly shown in Fig. 3, so that when open, no coal-dust can pass between the door C and the chute-member A. But when the door is closed any dust which may rest upon it will slide down and out through the crevice *j* and will not clog the hinges or the action of the door. This construction of the cover or door C and the coöperating surface of the casting A is an important element of my invention.

Another important feature of my invention consists of the manipulating and locking means from the outside, which consists in a pair of coöperating bails, *k*, *l*, located at the upper edge of the door on the front and door respectively, the two together forming a bail through which the bolt of a padlock *m* is passed to lock the door. When the door is to be opened, the lower half *l* of the bail is used as a handle. It is important to note that this construction involves the least possible

projection, and being horizontal and rounded off at the ends, it gives a maximum of strength against a horizontal blow, and affords no catching point for a cart wheel or the like which would be apt to break it off.

The casting A is also made with a horizontal portion *n* of the roof thereof, which acts as a support to the wall E over the opening. But the horizontal portion *n* is not placed over the entire width of the wall, as this would unduly enlarge the opening, besides making the chute larger and more expensive, consequently the lower portion of the body *b* is made parallel or tubular; and it extends only far enough from the outside to permit the attachment thereto of the sheet-metal portion B, which forms the remainder of the chute and engages around the lower end of the casting A.

In the sheet-metal end of the chute B, I also preferably provide a swinging-door D, which is pivoted on a pintle-rod *o*, extending across near the top as shown in Fig. 5. This swinging-door D is preferably of such length that it strikes the bottom of the part B before reaching a vertical position, and thus by its weight maintains the opening of the chute always automatically closed. When coal or other material is delivered through the chute, it strikes the outer side of the door D and throws it open and it slides through, but at other times the door D remains closed, so that there is at no time a clear opening maintained through the chute through which air can pass or the interior of the house can be viewed. The door D, moreover, may be locked from the inside by means of a bar *p*, which is passed through holes in the side of the part B just back of the door, as shown. This method of bolting may be used either in lieu of or in addition to the external means of locking already described.

I do not wish it understood that my invention is limited to the use of all the above described features and constructions, for some may be omitted and others may be varied or modified in various ways, as will readily occur to those skilled in the art.

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

1. In a chute of the class described, a front having an oblique sloping rectangular passageway of substantially uniform section, the upper portion of the upper side whereof is formed horizontally to support the exterior portion of the wall over the hole through which said chute passes.

2. In a chute of the class described, the combination of a front, and a door pivoted thereto and abutting against said front when closed, the lower edge of said door being arranged to stand apart from said front when said door is closed leaving a space through which water may pass, whereby water is prevented from being transferred to the chute.

3. In a chute of the class described, the combination of a front, and a door pivoted thereto and abutting against said front when closed the lower edge of said door being arranged to stand apart from said front when said door is closed leaving a space through which water may pass whereby water is prevented from being transferred to the chute; and the lower edge of said door being sharp to assist the dripping of water therefrom.

4. In a chute of the class described, the combination of a body-portion having a passageway and a front, and a door pivoted on said front and having means for limiting its motion to an angle down which material is adapted to slide, the lower edge of said door being arranged to come into close contact with said front when said door is opened and to stand apart therefrom when said door is closed whereby dust resting on said front is caused to fall through the opening left on closing the door.

5. In a chute of the class described, a body-member having a front, a door pivoted thereto, and a raised weather-beading on said front surrounding three edges of the door, the front at the lower edge of the door being left smooth; the lower edge of said door being arranged to stand apart from said front while overlapping the same, whereby a crevice for the exit of water and dust is left therebetween.

6. In a chute of the class described, the combination of a sloping tubular passageway, a pintle-rod passing across and through the same near the upper side thereof, and a swinging-door mounted on said pintle-rod and adapted to be opened by the pressure of material sliding downwardly through said passageway.

7. In a chute of the class described, the combination of a tubular passageway, a pintle-rod passing across the upper side thereof, a swinging-door mounted on said pintle-rod and adapted to be opened by the pressure of material sliding downwardly through said passageway, and a locking-bolt passing from side to side of said passageway behind said door.

8. A coal-chute comprising, in combination, a cast-metal body-portion of rectangular section and of substantially uniform section, the upper portion close to the front thereof being flattened to hold the edge of the opening in the wall through which said chute passes, said cast-metal portion having a flanged front formed thereon surrounding the edges of said hole and carrying a pair of pintle-lugs, a door pivoted thereto and having means for limiting its open position, a bail on said door having means for engaging it with said front for locking the same in closed position, a sheet-metal portion of uniform rectangular section telescoping over and continuous with the lower end of said cast-metal portion, and an automatic swinging-door mounted in said sheet-metal portion.

In witness whereof I have hereunto set my hand this 5th of March, 1906.

HARRY W. RICHARDS.

In presence of—
E. G. NASH,
A. L. NASH.