(No Model.)

I. BURNETT.

COAL CHUTE.

No. 489,926. Patented Jan. 17, 1893.

Fig. 2.

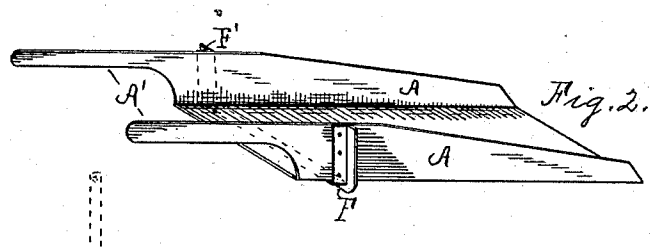


Fig. 1.

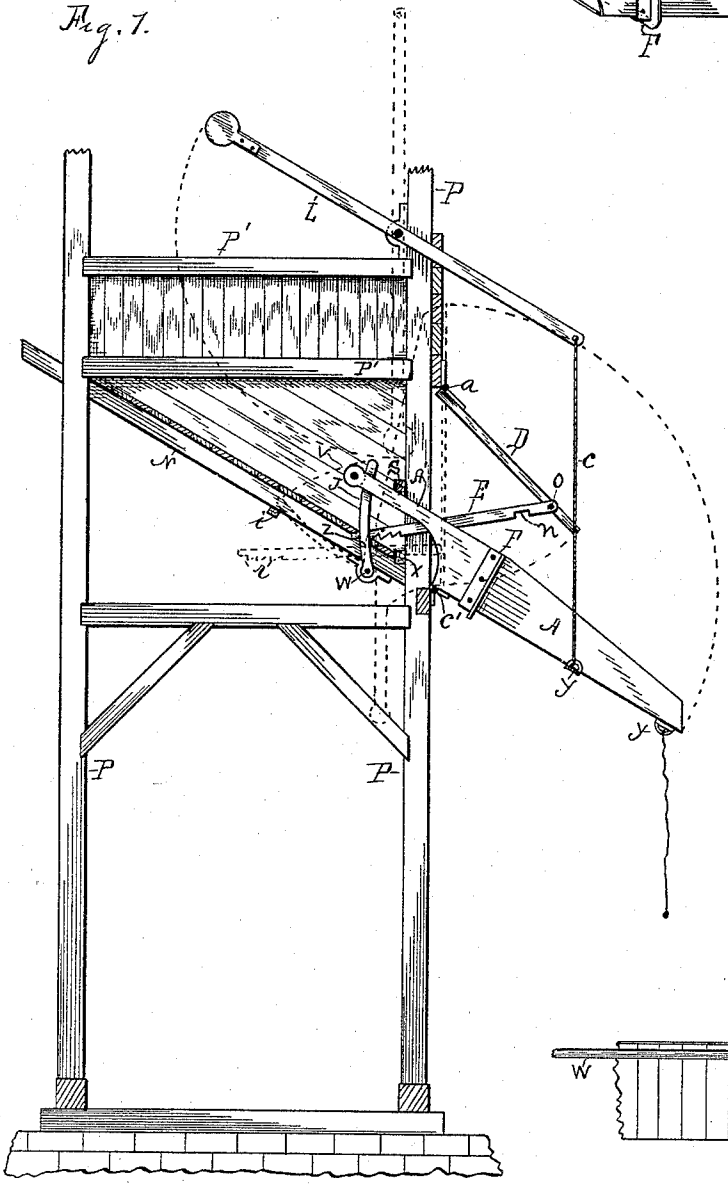
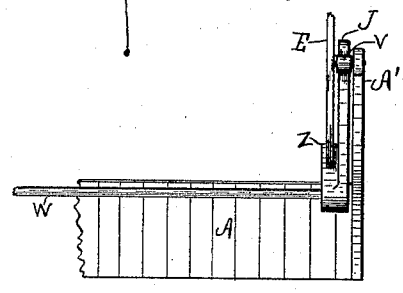


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

ISAAC BURNETT, OF JOLIET, ILLINOIS.

COAL-CHUTE.

SPECIFICATION forming part of Letters Patent No. 489,926, dated January 17, 1893.

Application filed August 8, 1892. Serial No. 442,521. (No model.)

To all whom it may concern:

Be it known that I, ISAAC BURNETT, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Coal-Chutes, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a perspective view of the apron and, Fig. 3 is a detail view of the latch mechanism from its rear side.

This invention relates to certain improvements in coal chutes, which improvements are fully set forth and explained in the following specification and claims.

Referring to the drawings—P represents the supporting posts or frame of the chute held together by cross girths P′, and having formed in the frame a coal bin K or receptacle having an inclined floor H, resting on proper sills N.

A is an apron which is hinged at C′ to the frame and when let down forms a continuation of the floor H. The outer end of the said apron A, is counter balanced by means of the weighted arm L pivoted to the frame, P above the apron, and connected with the apron by means of a chain or cord C attached to one of its floor cleats Y so as to render it easy to turn said apron up or let it down. The sides of the apron extend rearwardly a short distance past the outer sides of the bin K as shown at A′ and are provided on the inner side of the end of said extensions with friction rollers V, or if desired simply with a pin.

J is an arm secured on the outer end of cross shaft W extending across the chute under the bin and boxed to the floor beams N so that said shaft may turn in its boxes and oscillate said arm, or permit it to be oscillated by the apron as it is let down or turned up. Said arm J rests near its outer end normally on a stop or support *i*, and when the chute or apron A is turned down the friction roller V engages said arm and turns it up to substantially a vertical position.

D is a door closing the discharge opening of the bin K and is located immediately above apron A, and hung upon hinges *a* at its upper end so that it may swing out and back on said hinges.

E is a latch having one end pivoted to the lower end of door D, and having its other or outer end resting on shaft W, on a projecting stop Z (shown in Fig. 3). Said latch is provided at its outer end on its under side with notches *r* that fall over said stop Z when the door D is swung out, to lock said door open and hold it open until all the coal has passed out of the bin K. and until the apron is turned up. Said latch is also provided with a notch *n* on its under side near said door D. which notch falls down over a catch X when said door is closed, to lock said door closed.

S is a stop which is engaged by projections A′ of the apron A. to arrest the apron and prevent it from turning down too far.

G is a cross girth that passes along beneath the apron A. for connecting a series of such chutes together.

In the drawings the latch mechanism is shown as applying only to one side of the apron and door, but it may be applied to both sides as well, and it is intended to have several such chutes arranged in a line standing side by side and connected by suitable girths or beams.

In operation the apron A is turned down from the position shown in the broken lines to that shown in the full lines in Fig. 1. This causes the arm J to be raised by contact with friction roller V, and rotates shaft W, so that stop Z will elevate the outer end of latch E, and disengage its notch *n* from the catch X. The pressure of coal in the bin K. on the inclined floor H and against door D is sufficient to instantly open door D to the position shown in full lines and cause the notches *r* of said latch to catch over stop Z, on shaft W, and hold said door D locked out, and hold it so locked until all the coal has passed out and until apron A is turned up and permits shaft W, with its stop Z to roll over and permit said latch S and its door D to resume their first position. After the coal has been discharged the apron A is turned up and releases stop Z from notches *r* on latch E which allows the door D to pull by gravity and lock itself. It will be seen that the door D is locked both closed and open by means of turning the apron up or down and that it is not necessary

for the operator to touch the door D for any purpose or to lock or unlock it, all this being done automatically by the apron. It will also be observed that by the use of the counter balance arm L placed above the coal bin out of the way, it becomes unnecessary to have the projections A′ of the apron long and weighted and extend so far rearward that when they turn downward they obstruct the space below the bins, which space in this case may be used for storage purposes as projections A′ are so short they do not interfere in the least with such storage space. Said space is valuable for storing a surplus of coal, or may be used for any other material.

In order to prevent spreading of the apron A, it is provided with the angle iron cleat F which extends across the bottom at its inner end next its hinges which angle iron continues up each side to the top as shown in Fig. 2 which thoroughly prevents any spreading of the sides of the apron at that place.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is as follows to wit.

1. In a coal chute, the combination of the apron A having the rearwardly extending projections A′ provided with the friction roller V, shaft W, having arm J and stop Z, notched latch E, door D. stops S, *i*, and X, counter balance, weighted arm L and cord C all arranged to operate substantially as and for the purpose set forth.

2. In a coal chute, the combination of balanced apron A having friction roller V, arm J, stop Z, notched latch E, door D, and stops S, *i* and X all arranged to operate substantially as and for the purpose set forth.

3. In a coal chute, the combination of the door D, latch E, having the notches *n*, *r*, stop X, and the means for operating said latch and door, substantially as and for the purpose set forth.

4. In a coal chute, the combination of the balanced hinged apron A, A′ having the friction roller V, oscillating arm J, adapted to be engaged by said friction roller, rock shaft W, having the stop Z, door D, latch E, having one end pivoted to door D and its opposite end free and adapted to be engaged by said stop for releasing door D and for holding said door open and closed, all arranged to operate substantially as and for the purpose set forth.

5. In a coal chute, a balanced apron, a depending door for closing the discharge opening of the coal bin or receptacle, a latch pivotally attached at one end to said door at its side near its bottom and adapted to have its free extending end rest upon a stop, and having notches for engaging said stop for holding said door open or closed, all combined and arranged to operate substantially as and for the purpose set forth.

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