No. 862,602. PATENTED AUG. 6, 1907.

B. A. BAXTER.

STOVE DOOR.

APPLICATION FILED APR. 4, 1907.

Fig. 1.

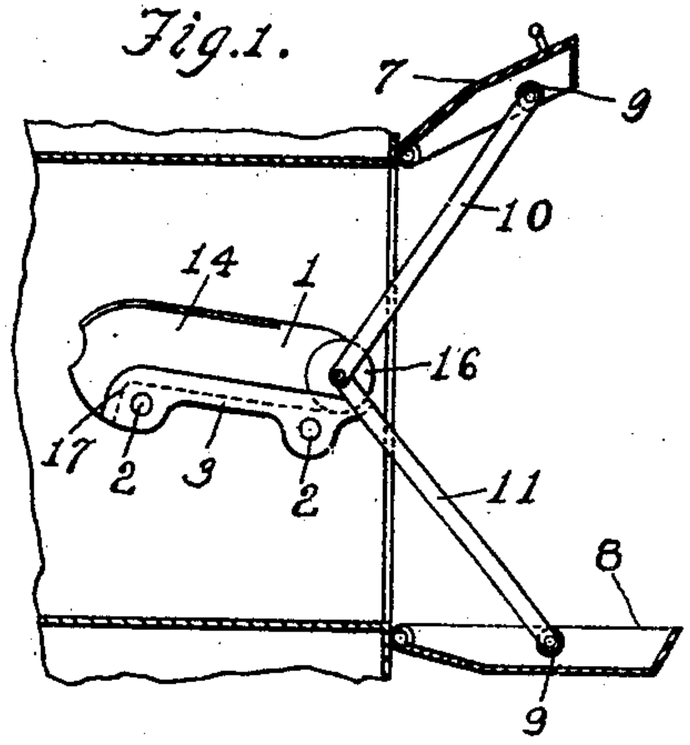


Fig. 2.

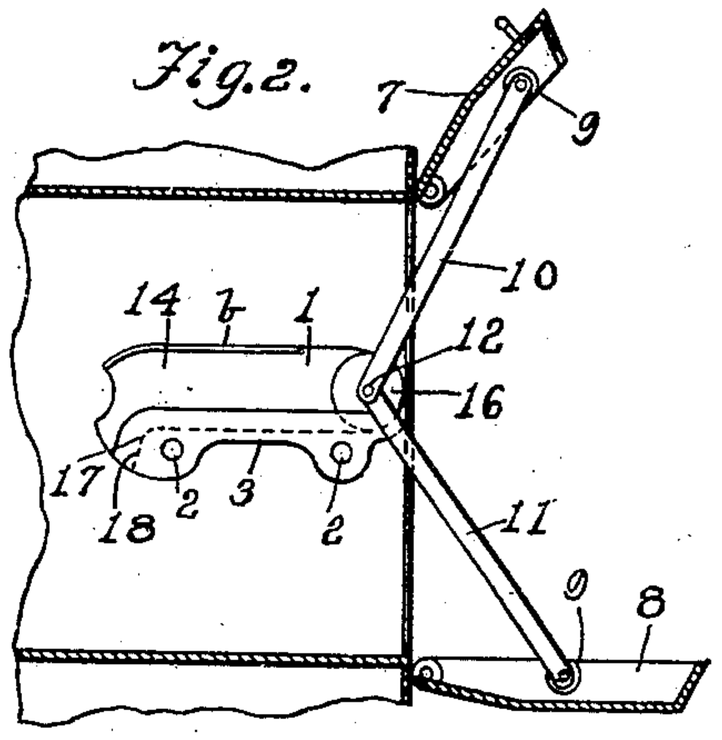


Fig. 3.

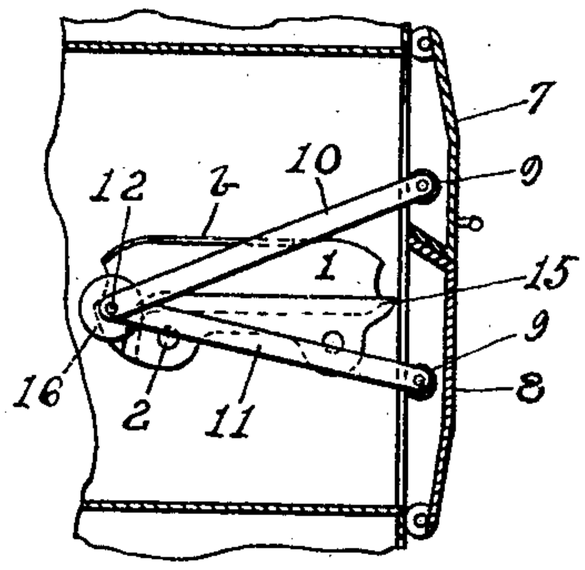


Fig. 4.

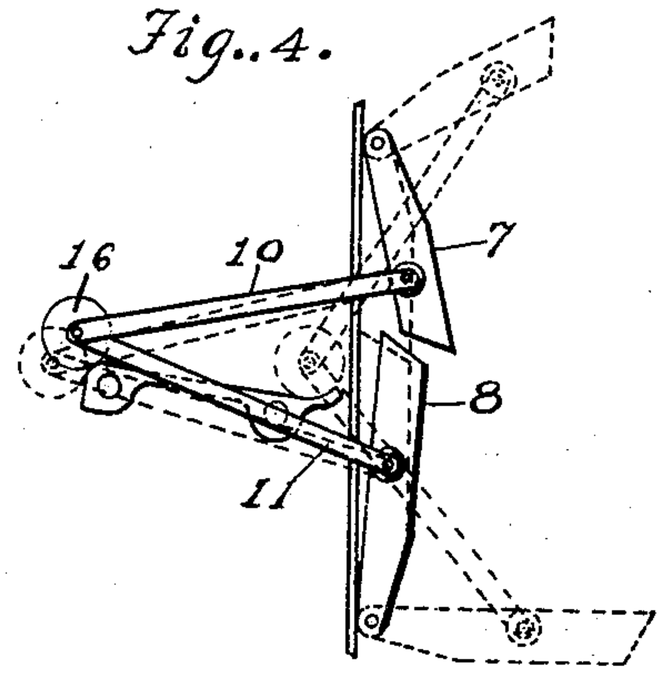


Fig. 5.

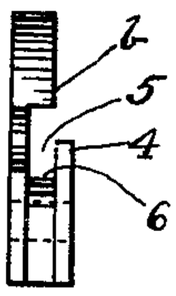


Fig. 6.

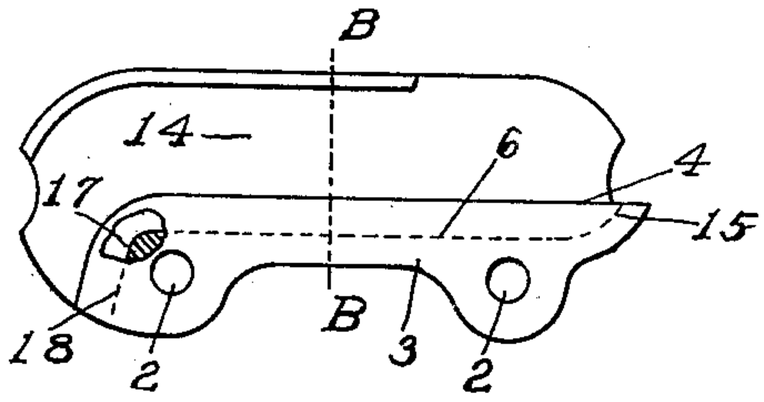


Fig. 7.

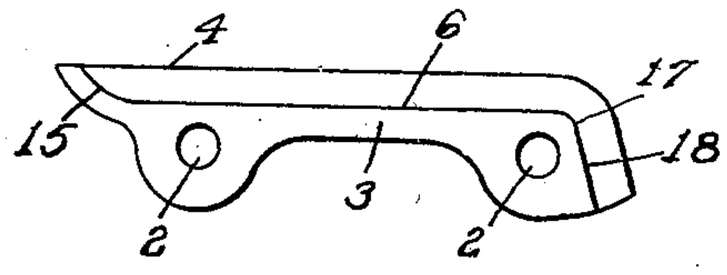
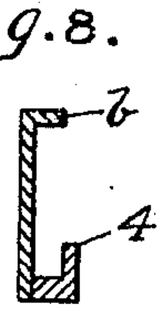


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

BERRY A. BAXTER, OF MANSFIELD, OHIO.

STOVE-DOOR.

No. 862,602. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed April 4, 1907. Serial No. 366,250.

To all whom it may concern:

Be it known that BERRY A. BAXTER, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, has invented certain new and useful Improvements in Stove-Doors, of which the following is a specification.

My invention relates to improvements on the device shown and described in Letters Patent No. 370,849, granted to Berry A. Baxter on the fourth day of October, 1887.

The object of my invention is to construct a stove door composed of a pair of doors hinged to the walls of the stove in such a manner as to afford facilities for opening and closing both doors simultaneously and securely retaining the doors in open or closed position through the medium of the operating mechanism which holds the doors in closed or open position by gravity.

An essential feature of my improvement is the means employed to automatically and movably lock and retain both doors in close contact with the wall of the stove.

I attain these and other objects by the mechanism illustrated in the accompanying drawing in which,

Figure 1 is a cross sectional side elevation of the oven, doors and operating mechanism showing the doors in open position with the track set at an incline above the vertical center of the oven showing links of the same length pivotally secured to the doors at different points with relation to the hinges. Fig. 2 represents a cross sectional side elevation of an oven showing the doors in open position with the track secured to the oven in a horizontal position above the vertical center of the oven and showing links of the same length pivotally secured to the doors at points equally distant from the hinges. Fig. 3 is a cross sectional side elevation of the oven, doors and operating mechanism showing the doors in a closed position and the track secured to the oven in a horizontal position at a point below the vertical center of the oven, and also showing links of different lengths pivotally secured to the oven doors at points equally distant from the hinges. Fig. 4 is a diagram of the oven doors and operating mechanism in side elevation showing the position of the links and roller when the doors are at the points indicated by solid and dotted lines. Fig. 5 is an end elevation of the bracket and track. Fig. 6 is a horizontal side elevation of the bracket and track showing the traveled portion of the track in dotted lines. Fig. 7 is a detail view of the track. Fig. 8 is a cross sectional end view of the wall of the bracket showing track and flange made intergral, forming a groove, and taken on the lines BB of Fig. 6.

In the construction of my device, I provide a bracket (1) which is secured preferably at an incline, (see Fig. 1), to the side wall of the oven through the medium of bolts passing through apertures (2) provided in the track (3) which register with similar openings formed in the bracket. A track (3) having an upwardly extending flange (4) made integral therewith, is secured to the bracket by any well known fastening means. I prefer, however, to attach the bracket and track together to the wall of the oven by through-going bolts as shown on the drawing. When the track is secured to the bracket the wall of the bracket and the upwardly extending flange (4) form a groove (5) over the face (6) of the track. It is provided with a semi-circular stop to limit the forward travel of the roller described hereinafter.

Reference characters 7 and 8 designate an upper and lower door which form a complete closure for the oven opening. These doors are hinged to the wall of the oven as shown in the drawings. Both doors are provided with bosses 9 which are made integral with one end of each door and extend inwardly therefrom. One end of links (10 and 11) are secured to the bosses (9) by bolts which pass through apertures provided in one end of the links and the bosses (9). The upper link (10) is preferably secured to the door (7) at such a point as will permit the upper door (7) to close after the lower door (8) is closed. This is accomplished by changing the relation of the boss with reference to the hinge of the door. That is to say, the link is attached a little nearer the hinge of the door, (see Fig. 1). The free ends of the links have apertures provided therein and a bolt (12) passes through the apertures in the free ends of the links connecting them together forming an elbow as shown in the drawing. One end of the bolt (12) projects beyond the ends of the links and a roller (16) is journaled on the projecting end of the bolt (12). The roller is adapted to travel on the face of the track (6).

When the doors (7 and 8) are being opened and closed, the projecting end of the bolts extend over the face of the track to permit the roller to travel on the track and within the groove (5) formed by the upwardly extending flange (4) and the face (14) of the bracket while the links travel clear of the track and flange. Contiguous with the track (3) and formed on the front portion thereof, the semi-circular stop (15) is formed to control the outward travel of the roller (16) and retain the doors (7 and 8) in open position as shown. Contiguous with the rear end of the face (6) of the track and beginning at a point indicated by reference numeral (17) the track is formed at an incline with the face, which incline conforms to the arc of the circle described by the lower link (11) when the door is closed. This inclined portion of the track is secured to the oven and so placed as to represent the arc described by the roller (16) and link (11) when the lower door (8) is closed. The true arc represented by inclined portion of the track is cut away leaving sub-

stantially an incline plane (18) as shown in the drawings. A guard (*b*) is provided and secured to the upper portion of the bracket to control and regulate the movement of the roller when descending the inclined portion of the track.

The operation of opening and closing the doors and movably locking the doors in closed position is accomplished as follows: The upper door (7) is pressed downward forcing the roller to which both links are connected, to travel rearwardly on the track (3) until it reaches the point (17) of the track. When the point (17) is reached by the roller, the door (8) is closed and in contact with the oven wall. The roller then starts downward on the inclined portion of the track which is secured to the oven wall in the same arc of the circle as is transcribed by the link (11) when the door is closed. It will be observed that the link (11) continues to transcribe the arc of a circle outlined by the inclined plane (18) always retaining the door (8) in close contact with the oven wall. When the roller (16) is traveling on the inclined portion of the track and tracing the arc of the circle described by the link (11) it securely locks the lower door (8) and upper door (7) in closed position. The relation of the inclined plane to the angle formed by the link (11) is such that it forms what might be termed "a dead center" and the doors can not be opened except by first opening the upper door (7).

I prefer, in the construction of my device, to connect the upper door to the link in such a manner as will permit the lower door to close first. This can be accomplished as stated, by changing the relation of the boss with reference to the hinge of the upper door or by making the upper link (10) longer than the lower link (11).

Attention is called to the fact that the operating mechanism shown and described in Figs. 2 and 3 are substantially the same but the arrangement of the parts shown in Fig. 1 is preferably used. In Fig. 1, the opening and closing of the doors is accomplished by pivotally securing the upper link (10) in closer proximity to the hinge of the door (7). In Fig. 2 the operation of opening and closing the doors is accomplished by placing the track upon the inner wall of the oven in such a relative position as to bring the axis of the bolt upon which the roller is mounted above the vertical center of the oven. In Fig. 3, the doors are opened and closed in the same manner as shown in Figs. 1 and 2 except that links of different lengths are used to permit the roller to travel downward upon the inclined portion of the track and movably retain the doors in closed position.

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

1. In a stove a pair of doors hinged to the wall of the stove, links pivotally connected to said doors on one end, a bolt pivotally connecting the free ends of the links, a roller journaled on said bolt, a bracket attached to the inner wall of the oven, a track having the forward end straight and the rear end inclined, a flange secured to said bracket forming a groove, the parts being so proportioned and arranged that the roller is made to travel on said track and when it reaches its rearward position the roller is on the inclined portion and the doors are closed.

2. In a stove, a pair of doors hinged to the wall of the oven, links connected thereto on one end, a bolt connecting the links, a roller journaled on said bolt, a track having the forward end straight and the rear end inclined, the parts being so proportioned and arranged that when the roller reaches the end of its rearward travel the doors are closed and the roller is on the inclined portion retaining the doors in closed position.

3. In a stove provided with a pair of hinged doors, links connected to said doors on one end, a bolt passing through the free ends of said links, a roller journaled on said bolt, a track having the forward end straight and the rear end inclined, said track attached to the wall of the oven with the inclined portion in the same arc of the circle described by the roller in its rearward travel when the doors are closed.

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

BERRY A. BAXTER.

Witnesses:
JOSEPH OGDEN,
H. C. REMER, Jr.