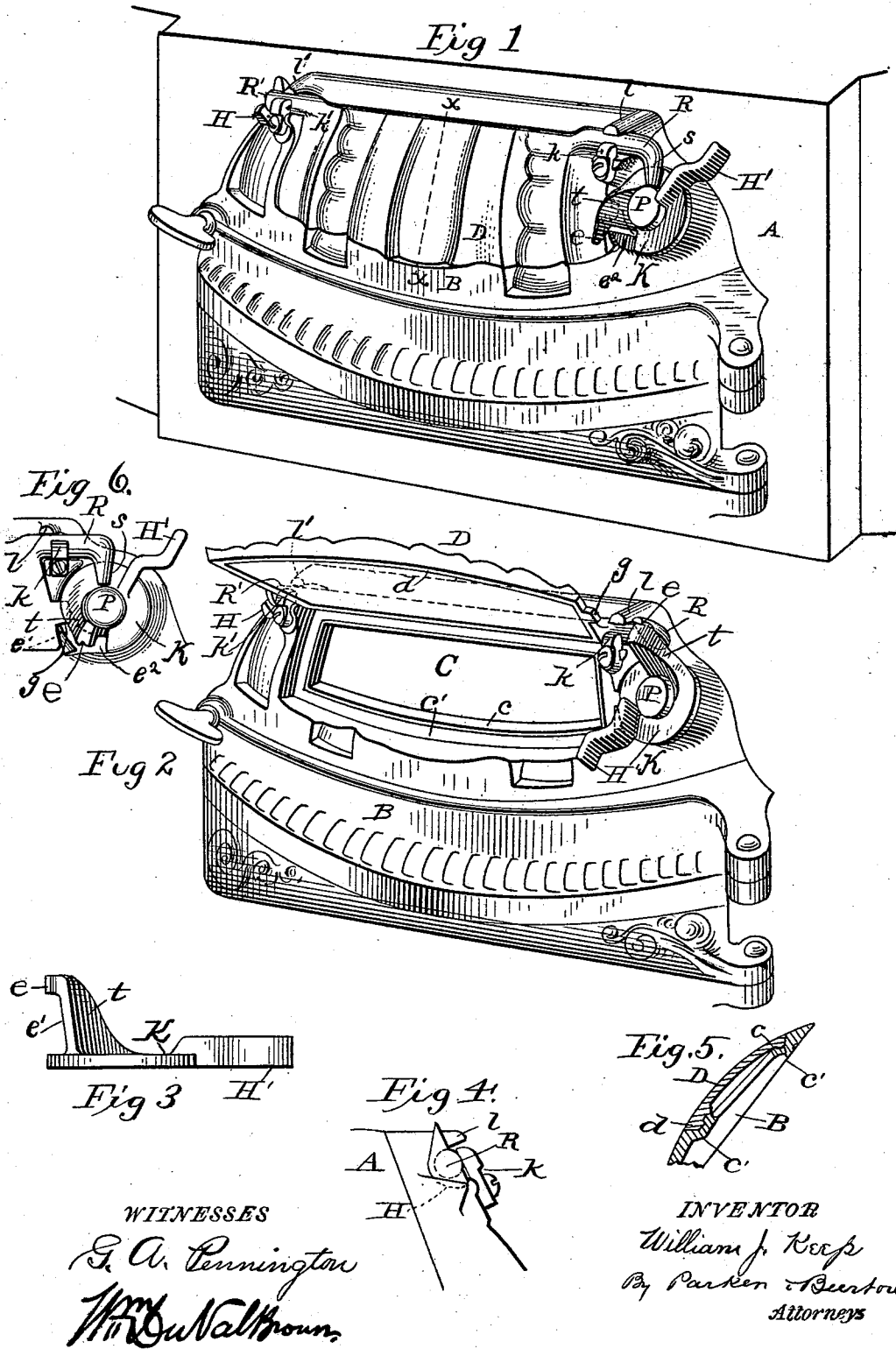


(No Model.)

W. J. KEEP.
STOVE.

No. 528,945.

Patented Nov. 13, 1894.



UNITED STATES PATENT OFFICE.

WILLIAM J. KEEP, OF DETROIT, MICHIGAN, ASSIGNOR TO THE MICHIGAN STOVE COMPANY, OF MICHIGAN.

STOVE.

SPECIFICATION forming part of Letters Patent No. 528,945, dated November 13, 1894.

Application filed May 31, 1893. Serial No. 476,045. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. KEEP, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Stoves; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to stoves and has for its object an improvement in the means for opening and closing, and for holding in either its open or closed position the damper, or small auxiliary door, through which the air necessary for combustion is admitted to the fire. The opening for the admission of air, is usually made through the main door that opens into the space, below the fire pot or fire place, and this opening is arranged to be closed, either by a small door turning on hinges or by a sliding door, sliding in ways. The latter method is objectionable because it requires that both the ways and the doors should be straight, in order that the doors may slide in the ways without binding, and if in the process of manufacture, either of the parts is warped at all as is quite likely to happen, the door does not accurately fit the ways, and the opening is not perfectly closed.

I have shown my invention as applied to the base of a heating stove, in which there is a large ash pit having a door, adapted to swing on vertical hinges, and I have shown the small door or damper, as closing an opening through the upper part of this large door, the opening being so located that it can be utilized, not only for the admission of air and the regulation of the draft, but also for the admission of a poker or shaker; but the auxiliary door and its opening and closing devices may be attached to any other form of stove base, than that shown in the drawings.

In the drawings, Figure 1, shows a round stove base, with my damper attached to the door opening into it, the damper being in a closed position. Fig. 2, shows the same combination with the damper in an open position. Fig. 3, shows in elevation the cam by

which the damper is opened and locked open, or closed and locked closed. Fig. 4, shows an end view of the bearings which secure the damper to its frame. Fig. 5, is a cross section at the line *xx* of Fig. 1. Fig. 6 is a detail view of a portion of the damper door and cam.

A, indicates a stove base; B, a large door closing an opening into the same.

C, indicates an opening through the door B, and D, indicates the damper or door, closing the opening C.

I prefer to make the door D, concave or shell shaped, with its concave side toward the door B. The concave shape of the door D, gives it greater strength, and rigidity than it would have if it were made flat, and enables me to secure a more nearly air tight connection between the door and its frame.

Around the edge of the opening C, is a raised flange *c*, behind which is a depression or valley *c'*, and around the edge of the door D, is a flange *d*. When the door closes the flange *d*, drops into the valley or depression *c'*, and the engagement between the two parts brings the door to its proper closing position and corrects any tendency of the door D, to move axially in its bearing or loosely in them.

The hinge of the door is formed by a hinge rod R, R', which I prefer to cast integral with the door D, one branch R, extending to the right, and the branch R', extending to the left. The door is held in place by lugs *l*, *l'*, and clips *k*, *k'*. The lugs *l*, *l'*, are cast with the main door B. The clips *k*, *k'*, are held to the main door by rivets or bolts. A lug H, also cast to the main door B, engages the left end of the pintle R', and prevents the door D, from moving to the left.

To the right of the opening C, is a cam K, rotating on a central holding pin P. The under side of the cam K, is fitted to the contour of the part of the stove door B, with which it engages and may be either flat or conical, preferably flat. The upper side is provided with a cam track *t*, rising somewhat like the section of a thread of a screw for about a quarter of the circumference of the entire piece. Underneath the cam part *t*, the piece K, is concave or cut away, as indicated in Fig. 3 at *e'* and in dotted lines at Fig. 6. The

upper end of the track t , terminates in a holding face e , and this holding face e , is substantially at right angles to the radius of the piece K. It is slightly indented, the axis of the notch being parallel with the axis of the pin P. The cam K below the part e has a cut-away portion e^2 which registers with the inclined under face of the track as indicated in Figs. 1 and 6.

10 g is a spur extending laterally from the damper D over which the cam is adapted to bear when the damper is closed as hereinafter described.

15 The cam K, is provided with a handle H' , or with other suitable means by which it may be turned on its pin P.

The right hand end R, of the damper pintle, is curved and the curved part s , when the damper D, is closed extends over the outer surface of the cam K, as shown in Fig. 1. 20 When the cam K, is turned on its pin the curved end s , of the pintle R, rides on the cam surface t , and the damper D, is thrown open. The curved end s , continues to rise or 25 turn on the axis of the pintle R, until it becomes parallel with the axis of the pin P, at which time it has been lifted off from the cam track t , and engages with the indented holding face e . The spring or weight of the metal 30 is sufficient to hold the pintle in close engagement with the cam, and lock the damper open against accidental closing.

To close the door the cam K is moved back forcing the portion s from the holding face,

the portion s riding down the track t while 35 the spur g enters the opening e^2 in the cam K, shown in Fig. 6, while the continued movement of the cam K carries its upper face over the outer face of the spur and locks the door 40 in position. It is to be understood that the spur has a uniform upward movement with the part s by virtue of the inclined upper face e' of the track as shown in Figs. 1, 3 and 6.

The concave or shell form of the damper causes a perfect contact to be made around 45 the entire edge.

What I claim is—

1. In a stove, the combination of a damper, a crank terminated pintle, a rotating cam having an inclined track and a grooved hold- 50 ing face, the groove having its axis parallel to the axis of rotation of the cam and being adapted to engage with the arm of the crank, substantially as specified.

2. In a stove the combination of a damper 55 provided with a projection and a locking spur, a cam provided with a track the upper side of which is adapted to engage with the projection and throw the door open, the under side of which is adapted to engage with 60 the spur and lock the door shut, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM J. KEEP.

Witnesses:

S. E. WIDDIFIELD,
ISAAC S. FILER.