(No Model.)

J. H. KNIGHT.

SLIDING OVEN SHELF.

No. 420,295. Patented Jan. 28, 1890.

Fig. 1.



Fig. 2.

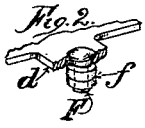


Fig. 3.

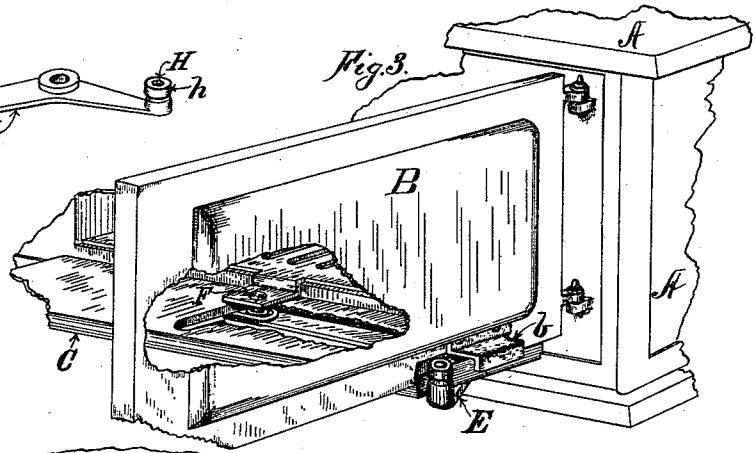


Fig. 4.

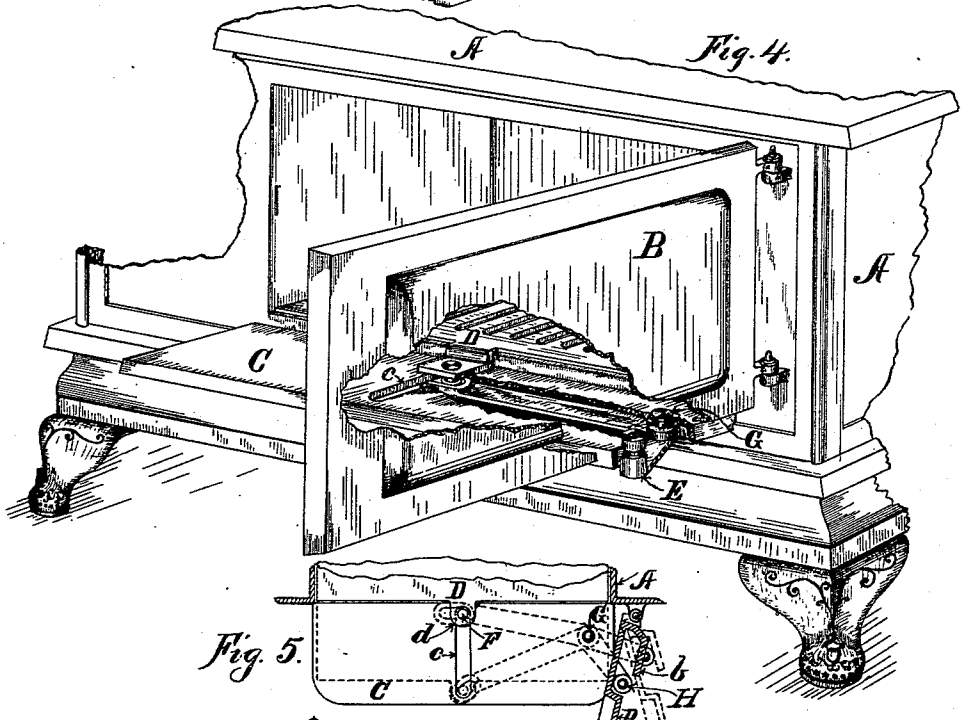


Fig. 5.

Fig. 6.

Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN H. KNIGHT, OF BUFFALO, NEW YORK.

SLIDING OVEN-SHELF.

SPECIFICATION forming part of Letters Patent No. 420,295, dated January 28, 1890.

Application filed January 21, 1889. Serial No. 297,060. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. KNIGHT, a citizen of the United States, residing at the city of Buffalo, in the county of Erie and State of York, have invented a new and useful Improvement in Sliding Oven-Shelves, of which the following is a specification.

My invention relates to cooking stoves or ranges provided with ovens designed and used for baking, roasting, and the like.

The object of my invention is to provide a ready and convenient means of placing articles within the oven and withdrawing the same therefrom.

One feature of my invention relates to mechanism for inserting and withdrawing the shelf within the oven, whereby the force exerted upon the shelf is always in a straight line with the movement thereof.

Another feature is the lever employed to accomplish these results and the manner of connecting it to the stove.

A third feature of the invention is the manner of operating the lever after it is attached by means of the oven-door in opening and closing it, and a fourth feature of the invention is the combination in one device of the several features above mentioned.

The accompanying drawings illustrate one method of accomplishing the objects of the invention, and like letters refer to corresponding parts in each figure thereof.

In the accompanying drawings, Figure 1 is a plan view of the operating-lever, showing its particular construction. Fig. 2 shows the construction of a pin or lug designed to enter a slot therein and connect it to the oven-shelf. Figs. 3 and 4 are each a perspective view of a portion of a stove provided with my improvements and with portions broken away to illustrate the location and construction of different parts. Fig. 5 is a top plan view of the outside shelf below and in front of the oven, together with portions of the stove, the dotted lines showing the position of the lever and other parts when the oven-shelf is within the oven and when it is withdrawn therefrom; and Fig. 6 is a front view of a portion of the same parts.

In the drawings, A represents the stove-body, and B the oven-door; C, the outside shelf, and D the inside or oven shelf; E, a bell-crank lever, and *e* is a slot therein; F, a pin or lug, and *f* a friction-spool thereon. G represents a pivotal pin or fulcrum passing through the lever E, and H is a similar pin secured in the short arm of the same lever and provided with a friction-spool *h*, designed to make contact with the oven-door or a lip or stop secured thereto, all clearly shown in the drawings.

The oven-shelf is of ordinary construction, except that it is provided with an extension *d*, designed to extend outside of the oven, as shown, and thereby afford a means for connecting the shelf with the lever E, as shown. The outside shelf is also of ordinary construction, except the crosswise slot *c* shown therein, and the oven-door may be slightly modified by providing a track or way *b*, (shown in Figs. 3 and 5;) otherwise the whole stove may be of ordinary construction. To the under side of the outside shelf is pivoted and secured, by means of pin G, the operating-lever E, provided with the slot *e*, designed to receive friction-spool *f*, thereby detachably connecting it through pin G to the oven-shelf, as shown. From the above and an inspection of the drawings the operation of the device will be readily understood, and is as follows, viz: When the oven is closed and all the parts in their normal position, the door may be opened to an angle of about ninety degrees freely and without operating the shelf or meeting any resistance from the pin H; but if the door be swung still farther open the oven-door strikes against the friction-spool *h* and forces that end of the lever E rearward. This throws the opposite end of the lever outward from the stove, and with it pin F and the oven-shelf D. When the door is swung back, to close it, the lip *b* upon the door engages with the spool *h* and forces the end of the lever forward to its normal position. This throws the opposite end inward toward the stove, and pin F forces the shelf back within the oven. This is accomplished when the door is about half closed, when the lip *b* disengages with the spool and the door is freed therefrom. Now, the end of the lever when thus thrown outward from the stove describes the arc of a circle, and the force employed to operate the

shelf should be exerted in a straight line and directly in line with the movement of the shelf. To accomplish this and make it possible for the pin F to be moved in a straight line, I provide the slot *e* in the lever, (and the slot *c* in the shelf to serve as a guide,) which makes it possible to move the pin F in two directions simultaneously, thereby preserving a line of movement directly in line with the movement of the shelf; hence the force exerted upon the shelf to move it forward and back is a force acting in a straight line and in line with the movement of the shelf, and the danger of binding is removed. It is also obvious that if it be desired to open the oven-door without operating the shelf the pin F may be detached from the shelf, and the swinging of the door will not operate the shelf.

What I claim, therefore, and desire to secure by Letters Patent of the United States, is—

In cooking-stoves, the combination, with an outside shelf located in front of and on a lower plane than the oven-bottom and provided with a slot *c*, extending partly across the same laterally and at right angles with the oven-front, of a sliding oven-shelf provided with an extension *d*, detachably joined to the outside shelf by means of pin F, rigidly secured in the sliding shelf, and bell-crank lever E, fulcrumed upon a pivotal pin G, provided at one end with a slot *e*, receiving the pin F, and at the other end with spool *h*, making contact with the oven-door when the same is opened, all as and for the purpose set forth.

JOHN H. KNIGHT.

Witnesses:
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