

Nov. 11, 1924.

C. V. ROBERTS ET AL

1,515,413

OVEN DOOR HINGE

Filed May 16 1923

2 Sheets-Sheet 1

Fig. 1.

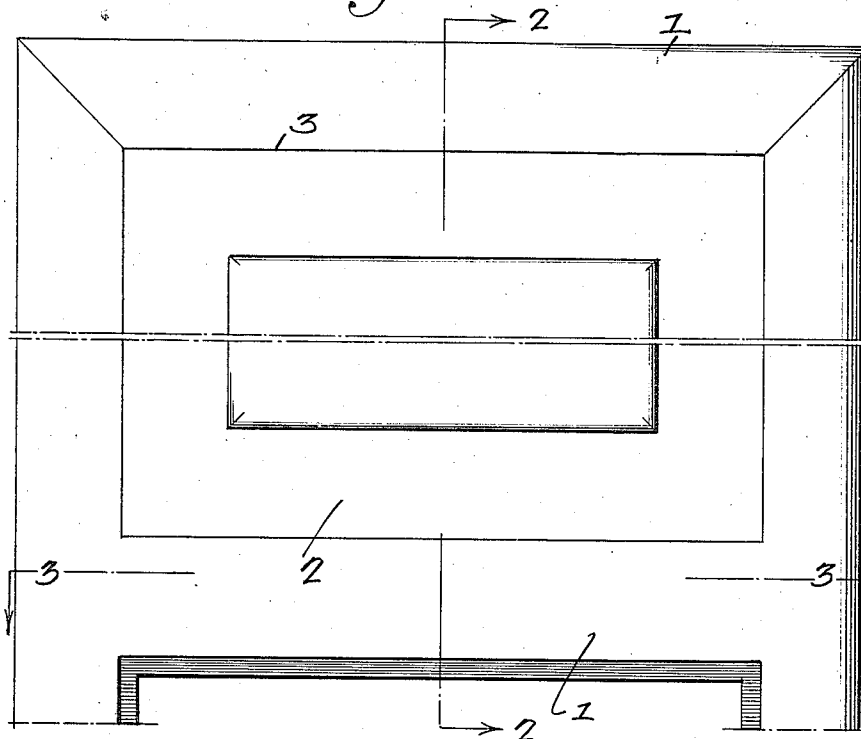


Fig. 2.

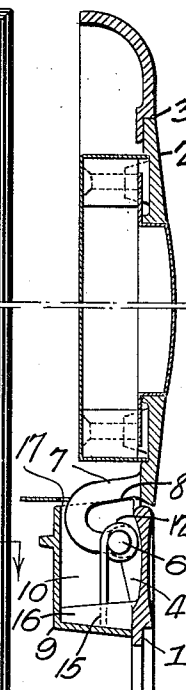


Fig. 3.

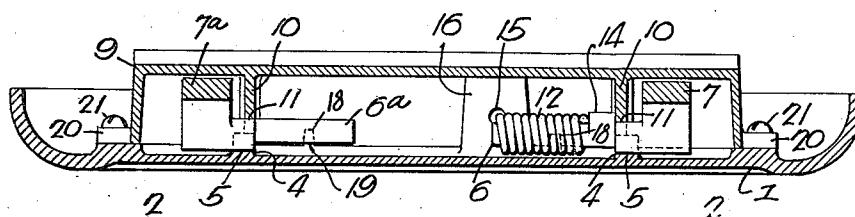
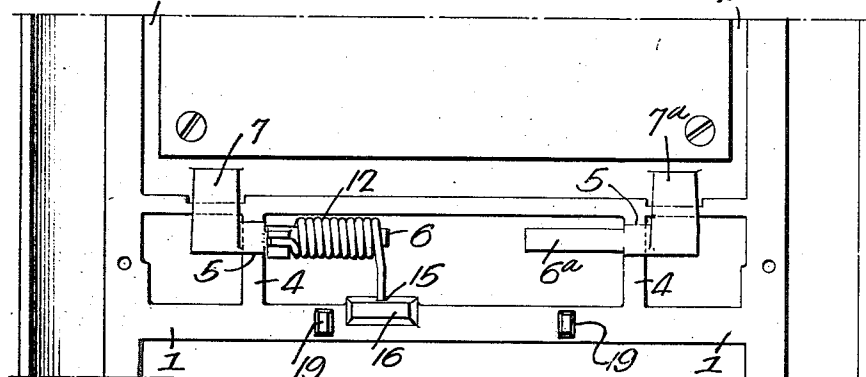


Fig. 4.



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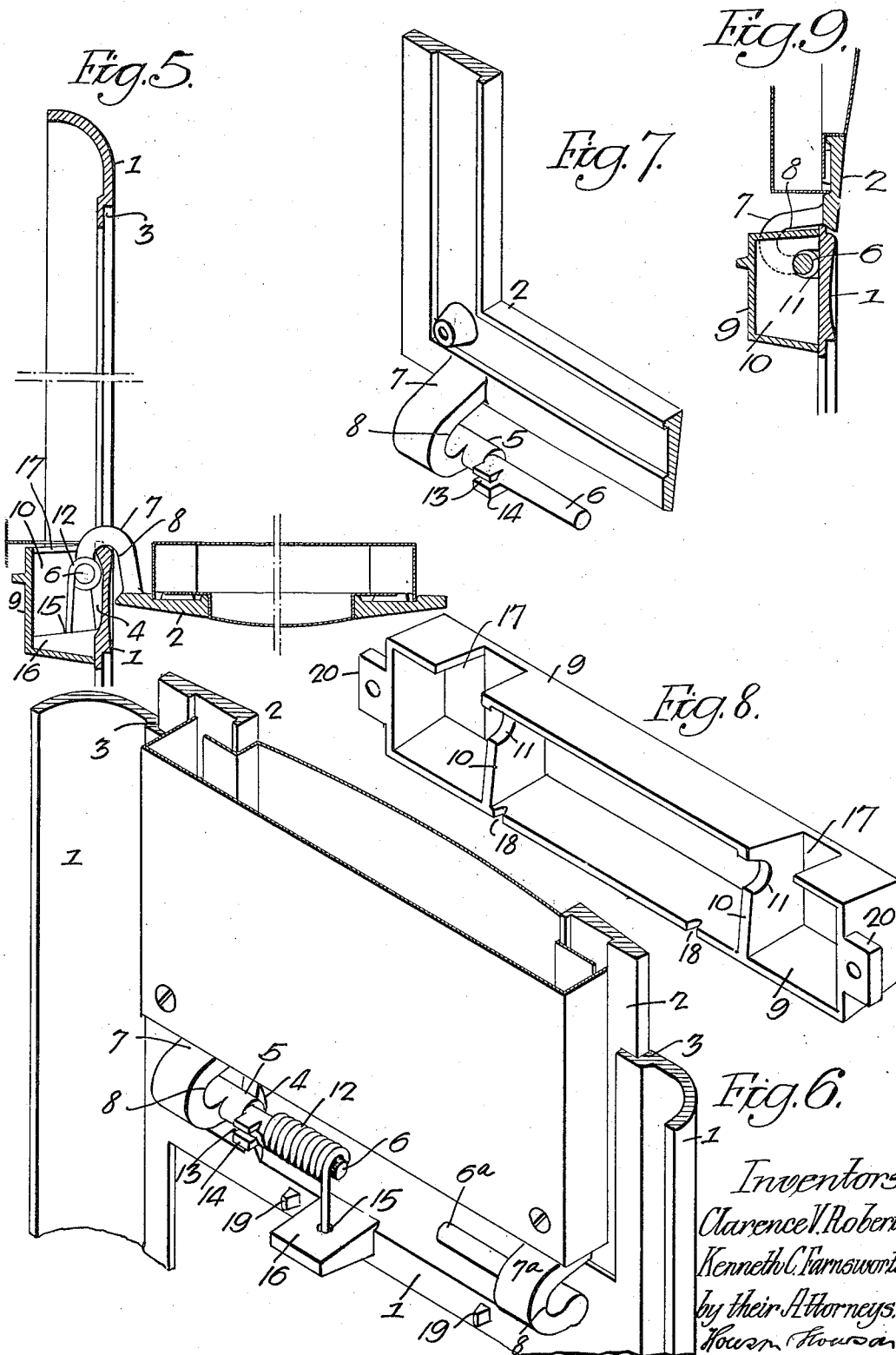
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

CLARENCE V. ROBERTS, OF PHILADELPHIA, AND KENNETH C. FARNSWORTH, OF GLENSIDE, PENNSYLVANIA, ASSIGNORS TO ROBERT & MANDER STOVE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

OVEN-DOOR HINGE.

Application filed May 16, 1923. Serial No. 639,309.

To all whom it may concern:

Be it known that we, CLARENCE V. ROBERTS and KENNETH C. FARNSWORTH, citizens of the United States, residing in Philadelphia, Pennsylvania, and Glenside, Montgomery County, Pennsylvania, respectively, have invented certain Improvements in Oven-Door Hinges, of which the following is a specification.

One object of our invention is to provide a concealed hinge for an oven door of a gas range so that the exterior of the door can be made flush with the frame in which it is mounted.

Another object of the invention is to provide a spring hinge for the door so that it will cushion the door when being opened and will also hold the door closed.

A further object of the invention is to provide a box for enclosing the hinge that forms part of the bearing so as to protect each hinge and the front plate from the action of the heated air in the oven.

In the accompanying drawings:

Fig. 1 is a face view of a portion of a front of a gas range with the door in the closed position;

Fig. 2 is a sectional elevation on the line 2-2, Fig. 1;

Fig. 3 is a sectional plan view on the line 3-3, Fig. 1;

Fig. 4 is a rear view of a portion of the structure showing the hinge, the box being removed;

Fig. 5 is a sectional view, similar to Fig. 2, showing the oven door in the open position;

Fig. 6 is a perspective view, showing the door mounted in the frame, the frame and the door being partly in section;

Fig. 7 is a detached perspective view of the hinge;

Fig. 8 is a detached perspective view of the enclosing box; and

Fig. 9 is a view of a modification of the invention.

Referring to the drawings, 1 is the frame of a gas range. 2 is the door, which fits the door opening 3 in the frame. The exterior surface of the door is flush with the exterior surface of the frame so that there will be a smooth finish to the structure.

At the back of the frame are two ribs 4-4, recessed to receive the bearing portions 5 of the hinge pins 6, 6^a, which extend parallel

with the door and are attached to the door by the arms 7, 7^a, respectively. These arms are cut away at 8 so that, when the door is opened, as in Fig. 5, these arms will clear the lower edge of the door opening in the frame. Enclosing the hinge portion of the door is a box 9, which is made as clearly shown in Fig. 8. This box has ribs 10, notched at 11 to form the other half of the bearing of the hinge pins 6, 6^a, as clearly shown in Fig. 3.

In order to hold the door yieldingly in the closed position, a coiled spring 12 is provided, which is coiled around the hinge pin 6. One arm of this spring extends into a slot 13 in an enlargement 14 of the pin 6, while the opposite end of the spring extends freely into a hole 15 in a lug 16 cast on the back of the frame 1 so that, as the door is opened, the tension on the spring is increased and the end of the spring which extends into the hole 15, has a slight movement.

The box 9 is notched at 17 to allow the free movement of the arms 7, 7^a of the door and is also notched at 18 to receive the centering lugs 19 on the frame 1. On each end of the box are ears 20, through which the securing screws 21 extend. These screws are tapped into the openings in the frame 1.

It will be seen from the above construction that the hinge for the door is entirely concealed and that the exterior surface of the door can be flush with the exterior surface of the frame.

Furthermore, the hinge is enclosed within the box so that it is protected. This box also prevents the heat of the interior of the oven coming in direct contact with the cross plate of the frame between the doors.

In Fig. 9, a modification is illustrated, in which the inner surface of the frame is flush and the box is shaped to form substantially the entire bearing of the hinge pins. In some instances, however, there may be a spring on each of the hinge pins, but this depends upon the size and weight of the door. Small doors require only one spring, while heavy doors require two springs.

A drop oven door made in accordance with our invention has no parts projecting beyond the sides of the door, consequently, the door resembles a rectangular panel, preferably flush with the frame of the door. When the door is opened to permit access

to the oven, it is dropped, the spring taking the shock and allowing the door to assume a position in which its inner surface is on a level with the bottom of the oven. When the door is raised to the closed position, the spring acts to hold the door closed against the frame.

While our invention is especially adapted for use in connection with oven doors of gas ranges, it can be used with the doors of other cooking ranges. It can also be applied to doors, when it is desired to conceal the hinges.

We claim:

1. The combination of a frame; a door mounted on the frame and having rearwardly and downwardly extending hinge members; bearings on the lower portion of the frame in which the hinge members are mounted; a box enclosing the hinge members and forming part of the bearing; and means for securing the box to the frame.

2. The combination of a frame; a door mounted in the frame, the outer surface of the door being flush with the outer surface of the frame; arms projecting from the rear of the door, said arms being curved back of the frame; longitudinal pins projecting from the arms; a box enclosing the pins; and bearings formed on the frame and on the box for the said pins.

3. The combination of a frame; a door mounted in the frame, the outer surface of the door being flush with the outer surface of the frame; arms projecting from the rear of the door, said arms being curved back of the frame; longitudinal pins pro-

jecting from the arms; a box enclosing the pins; bearings formed on the frame and on the box for the said pins; and a coiled spring on one of the pins, one end of the coiled spring being attached to the pin and the other end being adapted to a hole in a lug on the frame.

4. The combination of a frame of a gas range having a door opening therein; a door fitting said opening; hinged arms projecting rearwardly from the door and located back of the frame, the arms being cut away to allow the door to swing to the opened and closed positions; transverse hinge pins projecting from the arms back of the frame and having a bearing surface; a spring mounted on one of said pins, one end of the spring engaging the pin; a lug projecting from the frame under the pin on which the spring is mounted, said lug having a hole therein for the passage of the opposite end of the spring; a box enclosing the hinge members and forming part of the bearing for the hinges; and means for securing the box to the frame, the box having slots for the free movement of the arms carrying the hinges.

5. The combination of a frame; a door mounted in the frame, the outer surface of the door being flush with the outer surface of the frame; arms projecting from the rear of the door, said arms being shaped to clear the frame when the door is opened; pins on the arms; and bearings on the frame for the pins.

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