2 Sheets—Sheet 1.

G. H. PHILLIPS.

Drop-Swinging Oven-Shelf.

No. 201,123. **Patented March 12, 1878.**

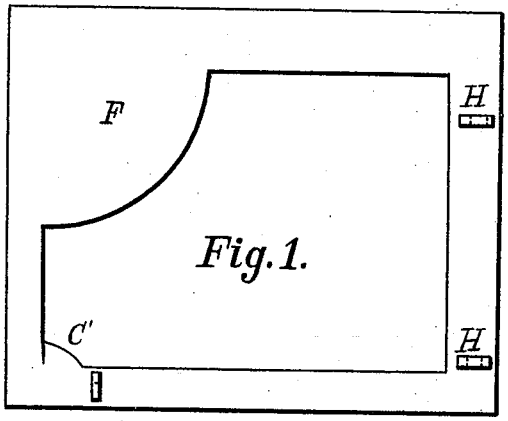

Fig. 1.

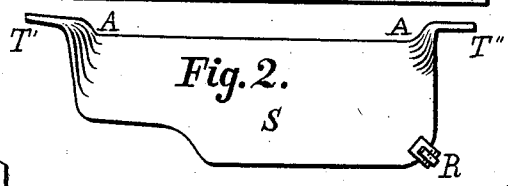

Fig. 2.

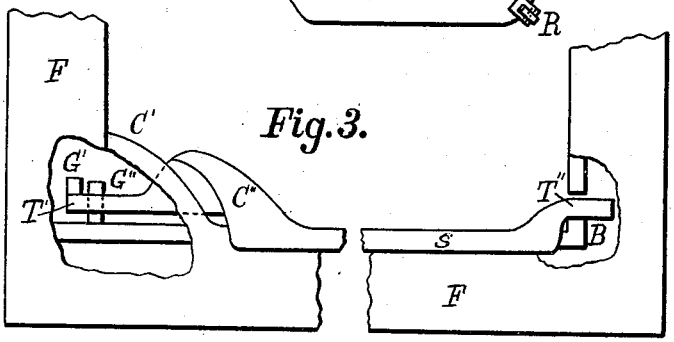

Fig. 3.

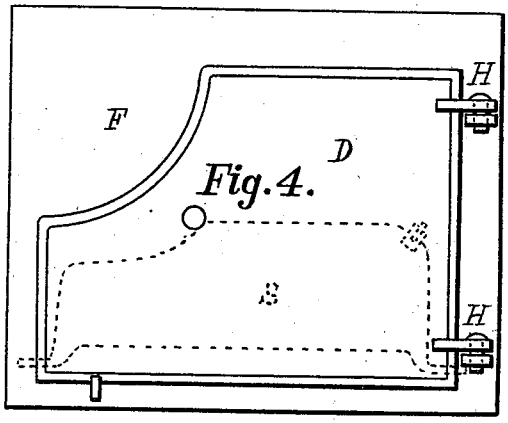

Fig. 4.

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2 Sheets—Sheet 2.

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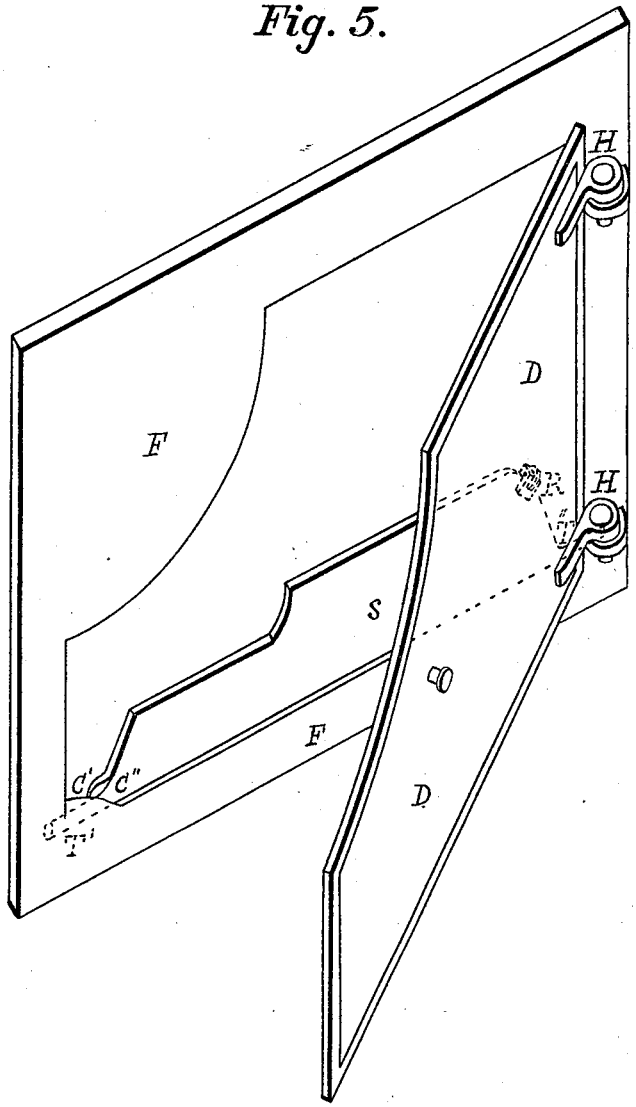
Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE H. PHILLIPS, OF TROY, NEW YORK.

IMPROVEMENT IN DROP-SWINGING OVEN-SHELVES.

Specification forming part of Letters Patent No. **201,123**, dated March 12, 1878; application filed January 23, 1878.

To all whom it may concern:

Be it known that I, GEORGE H. PHILLIPS, of the city of Troy, Rensselaer county, and State of New York, have invented a new Method of Operating in a Cook-Stove a Drop-Swinging Oven-Shelf, of which the following is a specification:

My invention relates to a manner and means for operating a drop-swinging oven-shelf in a cooking-stove by opening and closing the oven-door, and so that the shelf shall swing up and remain inside of the oven-door when closed, and swing down automatically to project beyond the oven-bottom when the door is opened.

The object sought to be accomplished is to produce a convenient support for such vessels as are used within the oven for culinary purposes when it becomes necessary to draw them out to examine their contents and to return them to the oven.

My invention consists in hinging the shelf upon the inside of the oven-wall, so that it will swing up and down within the area opened and closed by the oven-door, and when down will be arrested and held in a plane parallel to, or nearly parallel to, the bottom of the oven.

The shelf is constructed with journals upon its lower corners, which have bearings for them to turn in formed upon the inside of the oven, at or near the bottom of the side walls of the door-area. The bearings are so made with reference to the length of the shelf that the latter may freely move in them horizontally when swinging up and down, there being a space sufficient upon each of the journals for this purpose. To regulate and guide this lateral motion of the shelf, and to cause it to swing freely, two curved parallel cam-surfaces are employed. One of them, being a stationary one, is formed upon the bearing placed inside of and at the bottom corner of the door opening or area, toward which the lateral motion of the shelf is directed when it is being turned up, and the other cam-surface is formed upon the turning-edge of the shelf at the journal end, toward which the lateral motion of the shelf is directed when it is being turned up. These cam-surfaces are so arranged that they engage by coinciding contact when the shelf is swinging up and moving laterally, the one upon the shelf moving over and along the other.

To move the shelf upon its hinged bearings upward and laterally, there is arranged upon its outer corner, diagonally opposite the one where the cams are placed, a small wheel, which turns in a slotted plate attached to the shelf, with the periphery of the wheel projecting beyond the edge of the shelf. The wheel turns in the slotted plate, having its axle-bearings in the sides of the slot. When the shelf is down and the door is being closed, the wheel comes in contact with the inner surface of the door and runs up along its side, swinging up the shelf; and the shelf having a free lateral motion, the wheel is relieved of all tendency to stick from direct pressure upon its periphery. When the door is closed, the upturned shelf rests against the inner wall of the former, and so that when the door is opened the shelf swings down and back to a horizontal position.

To throw the shelf downward, outward, and below the line of the journals and bearings, with the latter operating inside of the oven, and so that the shelf, when down, will fall outside the front line of and be parallel to the plane of the oven-bottom, the arms upon which the journals are formed project upward from the top at the rear, and rearward from the shelf, and sufficiently so for the required purpose.

In the accompanying drawing there are five figures illustrating my invention, and in all of which like letters of reference designate like parts.

Figure 1 shows the oven-door area with the door removed, and it also illustrates the position of the cam-surface formed upon the corner bearing, in part cut away for such construction. Fig. 2 illustrates a top view of the shelf removed from the oven, showing the journals formed upon its ends and the manner that the arms to which the journals attach are curved upward from the shelf-top and projected rearwardly from its back edge, so as to connect the bearings within the oven with the journals, and have the shelf, when down, fall outside of the oven, and in the same plane as the oven-bottom. Fig. 3 shows a front view of the bearings and cam-surfaces, with por-

tions of the oven-wall and sleeve-bearing removed to illustrate the applied position of the parts, the same being shown upon a larger scale than in the other figures. This figure shows also the position of the shelf and its journals. Fig. 4 illustrates a view of the combined shelf and door, with the position of the shelf when turned up within the oven and the door closed, the position of the shelf being indicated by a dotted line. Fig. 5 exhibits a view in perspective, with the oven-door partly open and the shelf partly turned up.

The various parts are designated as follows by letter reference: The front wall of the stove-oven at F; the shelf at S; the journals at T′ and T″; the bearings formed in the oven-wall for the swinging shelf at B; the sleeve and cam-surface connected with one of the bearings at C′; the cam-surface formed on the shelf-arm at C″; the bearing for the cam-journal at G′; the projecting guide for the journal at G″; the door-hinges at H H; and the wheel and slotted plate in which it turns upon the edge of the shaft is designated at R.

The arms of the shelf to which the journals are attached are shown at A A, Fig. 2, and these are shown as curving upwardly from the shelf, so as to place the line of the journals T′ and T″ in a higher plane than the top of the shelf, as shown at Fig. 3. The arms to which the journals are attached project beyond the rear edge of the shelf, so that when the shelf swings down to a horizontal position its top will be in a lower plane than the line of the journals, and in one corresponding with the oven-bottom.

I am well aware that a drop-swing oven-shelf has been made before, and also that such a device has been operated by means of two engaging cam-surfaces, one of them formed upon the door and the other upon the shelf, and in view of which I desire to limit my invention to the different manner and means employed to produce a similar result.

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

In a cooking-stove or range oven, the combination of the swing drop-shelf S, oven-door D, wheel R, cam-surfaces C′ and C″, journals T′ and T″, curved arms A A, and the bearings G′ and B, arranged to operate as and for the purposes set forth.

Signed at Troy, New York, this 21st day of January, 1878.

GEO. H. PHILLIPS.

Witnesses:

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AARON C. ANTHONY.