O. P. MOON.

OVEN DOOR HOLDER OR CATCH.

APPLICATION FILED MAY 23, 1907.

**925,936.** Patented June 22, 1909.

Fig. 1.

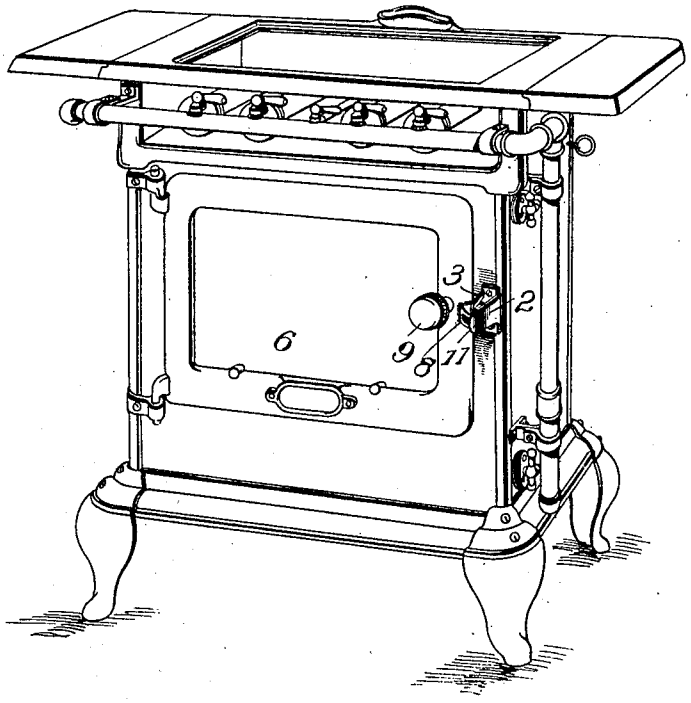



Fig. 2.

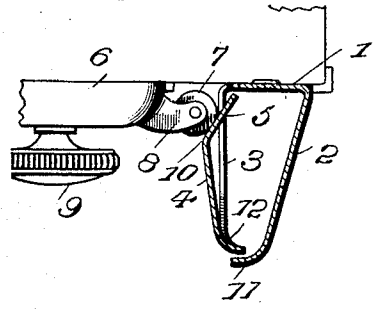



Fig. 3.

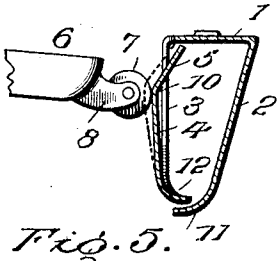



Fig. 4.

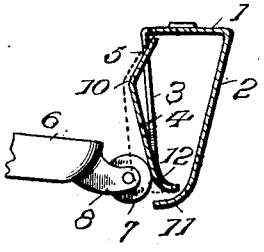
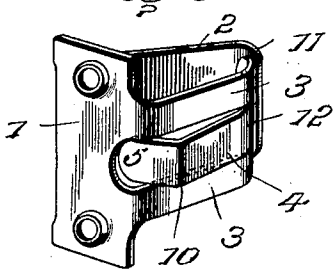



Fig. 5.




Witnesses

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# UNITED STATES PATENT OFFICE.

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## OVEN-DOOR HOLDER OR CATCH.

No. 925,936. Specification of Letters Patent. Patented June 22, 1909.

Application filed May 23, 1907. Serial No. 375,351.

*To all whom it may concern:*

Be it known that I, ORVILLE P. MOON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Oven-Door Holders or Catches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in oven door holders or catches, and is designed to be used for holding the oven door of a gas range closed.

The object of this invention is to so construct the holder or catch that the door can be closed by a simple pushing movement thereof, and which acts to hold the door tightly closed in such a manner that in the event of an explosion within the oven (as sometimes happens), it will permit the door to be readily blown open by the explosion, and thus prevent any injury or destruction of any part of the oven or range.

In the accompanying drawings, Figure 1 is a perspective view of a gas range showing the improved holder applied thereto. Fig. 2 is a longitudinal central sectional view through the holder, showing it acting to hold the door closed. Fig. 3 is a similar view showing the door almost closed and the position of the parts of the holder. Fig. 4 is a similar view showing the position assumed by the holder when it is first engaged by the door. Fig. 5 is an enlarged detached inside perspective view of the holder.

Although I herein show and describe a particular and preferred form of spring, combined with the roller for holding the oven door closed, yet I wish it understood that other forms of springs, combined with a roller, may be used without departing from the scope and spirit of the broad idea.

In carrying out the invention, the preferred holder is struck out of a piece of sheet metal which is bent into approximately a U-shape, as shown in Figs. 2, 3 and 4, which forms an intermediate base-portion 1 and two outwardly-extending arms 2 and 3. The inner arm 3 is formed into double oppositely-extending springs, one being the arm itself, and the other a spring tongue 4. This spring tongue is struck from the arm 3, and as shown, is bent outward out of line with the arm, and the inner end 5 of this spring tongue has an inwardly bent portion 5.

The oven door 6 carries a roller 7 which is journaled in an arm or extension 8 preferably cast integral with the door, and the door is provided with a suitable knob or handle 9 by which it is conveniently opened and closed.

As shown in Fig. 2, when the door is closed, the roller 7 engages the inclined portion 5 of the spring 4, and this inclined portion serves to hold the door closed with a constantly-acting closing tension, and thus acts to hold the door tightly closed. When the door is being closed, the roller 7 first acts upon or engages the outer end of the spring arm 3, which is moved inward as shown in Fig. 4. As the door moves inward, the roller then engages the spring tongue 4 and forces it inward, as shown in Fig. 3. When the door reaches its closed position, the two springs 3 and 4 are then in their normal positions, as shown in Fig. 2.

From the foregoing it will be observed that the holder constitutes or comprises oppositely extending springs which are successively acted upon by the closing of the door. It will also be observed that the outer end of the spring 3 is first acted upon, and thus offers only an easy resistance to the closing of the door, and that as the roller 7 moves inward, it then acts upon the free end of the spring 4, which prevents the stiffness which would be occasioned if only an outwardly-extending spring arm were provided, for the reason that in such case the roller would reach the inner end of the outwardly-extending spring arm, and thus afford practically no leverage in actuating the arm. By providing the inwardly-extending arm 4, which is carried by the arm 3, this spring 4 begins to act before the stiffness of the spring 3 is felt. This arrangement affords what may be termed a compound action of the two springs, whereby an easy acting, but effective holder is produced. It also provides a spring support for the spring tongue 4, which at one point of the movement of the door, will have a compound action of the two springs. That is to say, when the roller reaches a point of the spring 4 where the resistance of the two springs is equal, both springs will act to permit the movement of the door. This compound action provides an easy acting but effective holder, and one which will readily yield in both the closing and opening of the door, whether the opening of the door be effected by hand or by an accidental explosion within the oven.

Preferably, the inner end of the spring 4

has a decided bend as at 10, rather than a gradual turn, which provides straight engaging surfaces for the roller, as contradistinguished from a curved surface, and is more effective in the working of the holder.

While the holder is here shown as formed from a single piece of metal, it will be understood that this may be varied without departing from the broad idea of the construction, yet the integral formation is preferable in that it is not only cheaper to construct, but makes a holder more effective in its operation, and one which does not require several fastenings to hold separate parts to the oven door, and is therefore more readily placed in position, and the several parts absolutely held against displacement.

To prevent the springs from being accidentally sprung out of their proper position by being struck, the protective arm 2 is provided, which is found to effectively prevent such accidental springing of the parts, and also serves to provide a finished appearance to the outer side of the holder. This arm 2, as shown, has its outer end 11 extending beyond the arm 3, and around its outer end, which adds to its protecting and finishing effect. Attention is also called to the inwardly-curved end 12 of the outer end of the arm 3, and that the outer end of the spring 4 is correspondingly curved, which adds to the easy working of the parts in the closing of the door.

The arm 4 is struck from the center of the arm 3, which leaves the arm 3 with two parallel portions, as shown, and these parallel portions form an effective support for the outer end of the arm 4.

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

1. The combination with an oven door and the wall of the door opening, of a holder of the character described secured to the wall and comprising parallel outwardly extending arms, and an inwardly extending arm located between the parallel arms and having its outer end rigidly secured to and connecting the outer ends of the parallel arms and adapted to engage the door for the purpose described.

2. The combination with an oven door and the wall of the door opening, of a holder of the character described comprising a base portion, outwardly extending spring arms formed integral with the base, and an inwardly extending spring arm located between the said outwardly extending spring arms and having its outer end formed integral with the outer ends of the aforesaid outwardly extending spring arms, and co-acting with the door to hold it closed.

3. The combination with an oven door and the wall of the door opening, of a holder of the character described comprising a base portion, an outwardly extending integral spring arm, an inwardly extending spring arm having its outer end connected with the outer end of the outwardly extending arm, the two arms located in different planes and edge to edge, the inner end of the inwardly extending arm bent laterally and co-acting with the door for the purpose described.

4. The combination with an oven door and the wall of the door opening, of a holder of the character described, comprising a base portion, an outwardly extending spring arm connected therewith, and an outwardly extending protecting arm located at a point outside of the spring arm, and having its outer end bent around the outer end of the said spring arm, the spring arm co-acting with the door for the purpose described.

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

ORVILLE P. MOON.

Witnesses:
JOHN G. WAY,
A. E. WILLIAMS.