

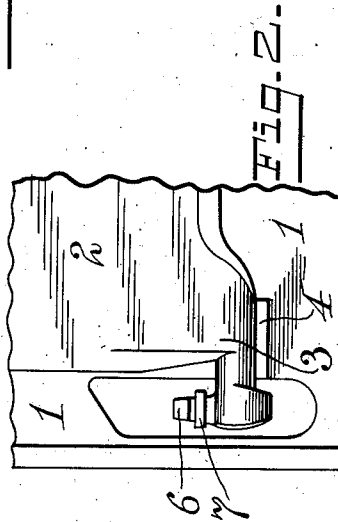
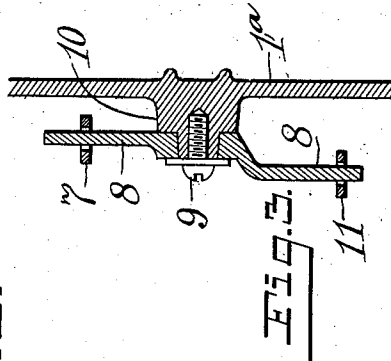
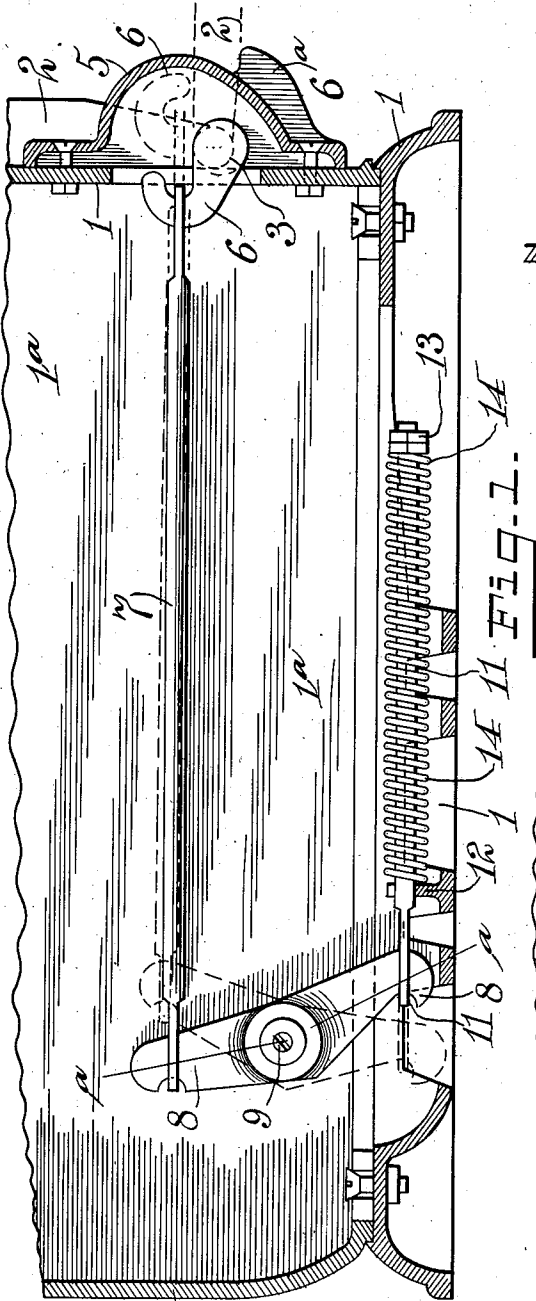
A. M. GUMMER.

STOVE DOOR.

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997,550.

Patented July 11, 1911.



Witnesses

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UNITED STATES PATENT OFFICE.

AUGUST M. GUMMER, OF DAYTON, OHIO, ASSIGNOR TO THE GEM CITY STOVE COMPANY,
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STOVE-DOOR.

997,550.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AUGUST M. GUMMER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Stove-Doors; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in means for balancing the oven doors of stoves. Or to define the invention in other language, it consists in the employment of a compression spring to counterbalance the weight of the oven door in opening the same, thereby preventing the door from dropping under its own weight if released by the hand.

The object of the invention is to so utilize a coil spring that in the event of the breakage of the spring at any point of its length, the effectiveness thereof will not be destroyed.

Referring to the accompanying drawings, Figure 1 is a transverse vertical sectional elevation of the lower portion of a cook stove. The line of the section is immediately in advance of the front wall of the oven and on one side of one of the oven door hinges. Fig. 2 is an elevation of one of the lower corners of the oven door, showing one of the pivot members and the lug thereof. Fig. 3 is a detail sectional view on the line *a a* of Fig. 1.

In the following description and in the drawings, similar reference characters indicate the same parts.

1 designates the lower portion of the frame of a well known form of cook stove, 1^a one of the walls thereof, and 2 the usual oven door. The lower portion of said door at the corners is provided with pivot members 3 forming hinges in connection with lugs 4 upon which said pivots rest. 5 designates a housing secured to the door over each pivot and serving to maintain said pivots in place. The housings 5, one of which is shown in the drawings, are provided with stops 6^a which serve to arrest the downward movement of the door when the latter is opened

to its limit. When the door is in engagement with the stops 6^a, it occupies a horizontal position and may conveniently serve as a shelf. To resist the weight of the door when the same is being opened, and to overcome the resistance of the door due to its weight, in closing said door, as well as to provide means for maintaining the door at any point of a partial opening, I provide the following devices: One of the pivot or hinge members 3 is provided with a rigid crank 6, the upper end of which terminates in a hook. The pivot or hinge 3 in this case is the one nearest the front of the stove, the other pivot or hinge may, however, be utilized for the same purpose. Engaging the hook of said crank 6 is a rod 7. The end of said rod so engaging said hook is preferably flattened and provided with an eye which receives the hook. The other end of said rod 7 is likewise provided with an eye which receives the upper recessed end of a lever 8 pivoted upon a lug 10 extending from the wall 1^a and held therein by a screw 9. The lower end of the lever 8 is suitably curved to connect with the eye of a second rod 11, which lies below and parallel with the rod 7, which we have seen forms a connection between the oven door and the lever 8. The rod 11 passes freely through a stationary guide 12 which supports said rod in a horizontal position as shown. The free end of the rod 11 is provided with a head or enlargement which may consist of one or more nuts 13. Mounted upon the said rod and inclosed between the guide 12 and the head 13, is a coil spring 14 which is normally expanded. From what has been said and from the drawings, it will be seen that the spring 14 is instrumental in holding the door closed while in its normal condition, and that when the door is opened, the spring is compressed in proportion to the extent of the door opening, and will at all times serve to counterbalance the weight of the door and will hold it at any point of its opening, only yielding to the force of the hand in opening or closing said door. At this point it is proper to state that a spring thus placed in a stove, is subjected to constant and very great changes in temperature. A spring whose expanding influence is relied upon to counteract the weight of the oven door will be very materially weakened through the effect of such heat and the constant drawing out of the coils. The result is

that such spring will break, and once broken, it becomes totally useless for the purposes intended. It is not so with a spring which is so mounted and associated with other co-
5 operating elements that it performs its useful functions while compressing. If such spring should become broken from the causes above specified, the coils, though disconnected, would be held in place upon the rod
10 11 and between the guide 12 and the head 13. The effective length of the spring would not be materially affected, nor would its original function be interfered with.

Having described my invention, I claim:

15 1. In a stove, the combination with the frame of said stove, and a door hinged thereto having a crank member, a lever pivoted to the stove frame, connecting rods pivoted to said lever, one of which connects with
20 said crank member and the other of which is provided with a head, a stop forming a support for the last named rod, and a compression spring mounted on the last named rod between the head thereof and said stop,
25 whereby the said spring is subjected to compression through the movement of the last named rod when said door is opened, substantially as specified.

2. In a stove, the combination with an

oven door having a crank arm extended 30 therefrom, of a lever pivoted to a suitable part of the stove, a rod provided with a head or enlargement connected with said lever, a support for said rod, a spring mounted on said rod between the head thereof and said
35 support, and adapted to be compressed through a movement of said rod, and another rod forming a connection between said lever and the crank arm on the door, substantially as specified. 40

3. The combination with a stove having an oven door provided with a crank 6, of a lever 8 fulcrumed on the frame of said stove, a rod 7 connecting the upper end of said lever with said crank, a compression spring 45 14, a fixed member 12 inclosing one end of said spring, and a rod 11 having a head or enlargement 13 inclosing the other end of said spring, said last named rod being connected with said lever, substantially as speci- 50 fied.

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

AUGUST M. GUMMER.

Witnesses:

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