Nov 18, 1924. 1,516,348

T. E. POTTS

DOOR CONTROL

Filed July 9, 1923

Fig. 1.

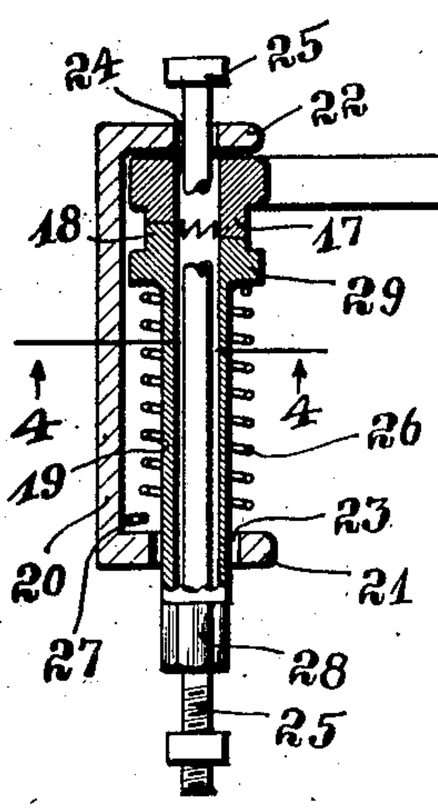


Fig. 4.

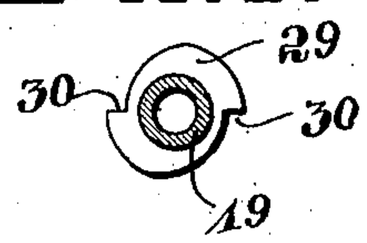


Fig. 3.

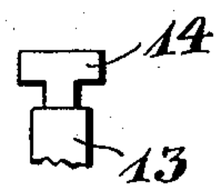


Fig. 2.

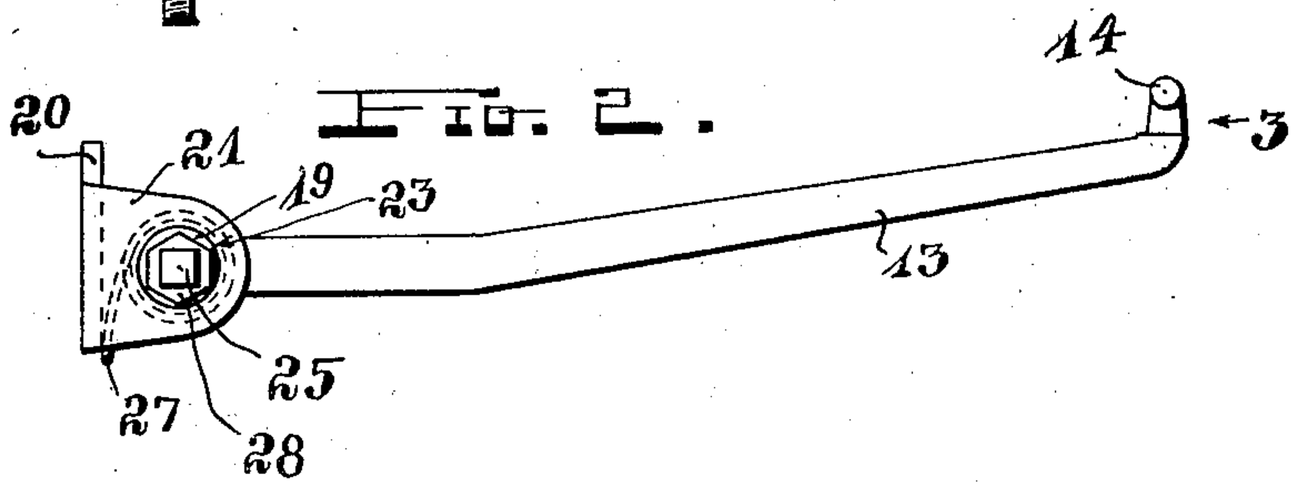


Fig. 5.

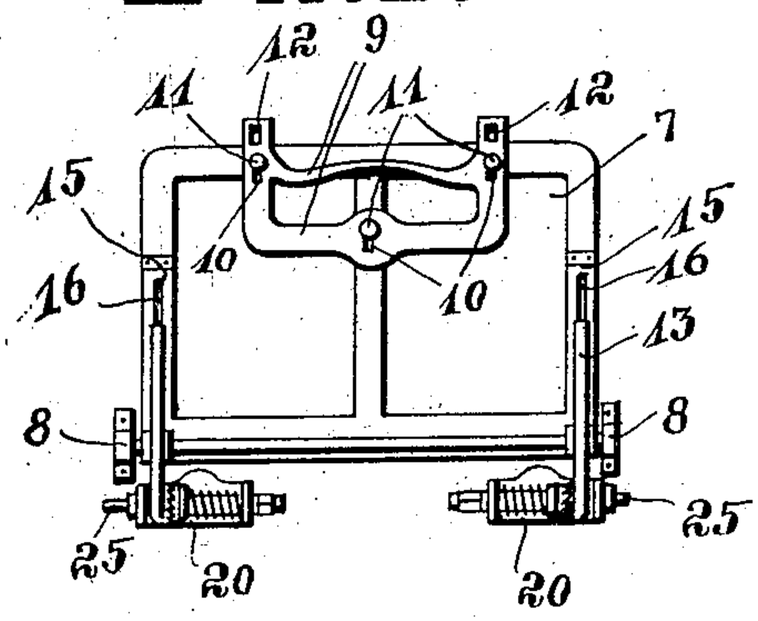
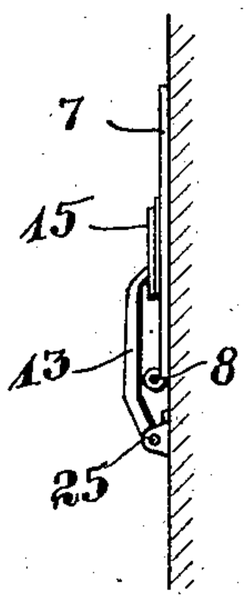


Fig. 6.



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UNITED STATES PATENT OFFICE.

THOMAS E. POTTS, OF LOS ANGELES, CALIFORNIA.

DOOR CONTROL.

Application filed July 9, 1923. Serial No. 650,393.

To all whom it may concern:

Be it known that I, THOMAS E. POTTS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Door Control, of which the following is a specification.

This invention relates to devices for checking and controlling the movements of doors, and is especially useful in connection with the doors of ranges and ovens.

One of the objects of this invention is to provide a device of simple construction, having designed the individual parts so as to eliminate machine finishing.

Another object is to provide a device of which the individual parts are designed so as to avoid a coring of the patterns, especially the cam or ratchet members.

Another object is to provide ratchet adjusting means between the supporting arm and the adjusting member.

Another object is to arrange a spring between the adjusting member and the supporting bracket.

Other objects will appear from the following description and appended claims as well as from the accompanying drawing, in which—

Fig. 1 is a top plan view of the supporting arm of the device, the adjusting parts being illustrated in horizontal midsectional view.

Fig. 2 is a side elevation of the device in Fig. 1.

Fig. 3 is a fragmentary front elevation of the engaging end of the supporting arm.

Fig. 4 is a cross section through the ratchet sleeve on line 4—4 of Fig. 1.

Fig. 5 is a front elevation of an oven door, illustrating the relative position of the device.

Fig. 6 is a side elevation of the door and attached supporting and controlling means of Fig. 5.

Doors of ranges and ovens are, as a rule, of considerable weight. On the other hand, a person handling such doors normally is obliged to use both hands in handling articles and matter in connection with the cooking and preparing of meals.

The heavy doors must therefore easily open and yet not fall down too heavily against their hinge connections.

A door of the type commonly in use on ranges and ovens is illustrated in outline in Figs. 5 and 6. The door 7 is hingedly supported at 8. The handle member 9 forms at the same time the locking means of the door, being provided with slots 10 to slidingly engage with the pins 11 of the door. The free slot-like apertures 12 in the handle-member 9 are provided to engage cooperating members of a range or oven, not shown in the drawing.

On disengaging the handle member 9 at the points of the slots 12, a door can normally fall to opened position, by swinging around the hinge connection at 8. The hinge connections as well as any other lugs that may be provided to take up or resist such a fall are subjected to heavy wear under such conditions.

Braces or supporting arms are therefore provided to support the door and for checking the movements of the door. In the drawing, the arms 13 are of a length to limit the downward movement of the door. The free ends 14 of the arms are provided with T-shaped portions to engage with cooperating members 15 on the door. The guiding means, in the form of slots or recesses, indicated at 16, are limited so that the T-shaped terminations of the arms may abut against the terminations in one direction of the guiding means so as to stop the downward movement of the door at a certain point in a suitably opened position of the door.

To facilitate a proper and beneficial bracing and supporting of a door, the supported ends of the arms are preferably disposed below the hinge connections of the door. This, however, is not absolutely necessary, as will be more fully described hereafter.

A teethed or ratchet-like portion 17 is provided at the supported end of the arms, facing in a sidewise direction. A cooperating ratchet portion 18 is provided at one end of the sleeve member 19. The supporting bracket 20 is provided with two lugs 21 and 22. The lug 21 is provided with an aperture 23 of a size to allow a turnable support of the sleeve member 19. The lug 22 is provided with an aperture 24 of a size to allow an insertion of a bolt 25. The bolt 25 is also disposed through the sleeve 19 for holding the sleeve in engaged position with the ratchet member of the supporting arm. In order to allow a disengagement of the ratchet members or portions, the bolt 25 is loosened enough to allow a shifting of the sleeve in the direction away from the ratchet engage-

ment. A spring 26 is inserted between the sleeve and the supporting bracket 20, one end of the spring being hooked around or engaged with the lug 21, or placed against the base 20 as indicated at 27, while the other end of the spring is engaged with the sleeve so as to confer a turning force to the sleeve member.

For adjusting the turning force of the sleeve-member 19, the free end 28 is provided with suitable means to allow applying a wrench or suitable instrument, in the drawing it being made of hexagon shape, but, of course, it may be of other shapes as long as a suitable instrument or tool can be appl ed for turning the sleeve against the tension of the spring in order to adjust or control the tension of the spring, and thereby the turning force of the sleeve.

The bracket 20 is preferably riveted or otherwise securely applied to a stove or range, and the whole device is des gned so that the necessity of replacing a bracket is eliminated by having the practically only wearing or breakable parts, the ratchet members, provided on the removable parts of the device.

The spring, also, may easily be replaced, by withdrawing the bolt 25 far enough to allow a removal of the sleeve while still supporting the arm 13.

The shouldered end 29 of the sleeve 19 is preferably provided with cam-like or hook-like portions 30 in order to allow an engaging of the spring end.

The spring is made strong enough that a door may be properly supported by the tension of the spring without material bracing through the supporting arm. It is therefore not absolutely necessary to dispose the bracket at any certain distance below the hinge connection 8 of the door 7. While it is desirable that the tension of the spring is strong enough to keep the door closed, it may be arranged so that the door will be kept slightly open when the locking means are disengaged. A person handling such door may then use both hands otherwise and be assured that a slight touch of the locking means will disengage the door and allow it to open to an extent that it may be pressed downwardly by a cooking utensil that requires both hands of the operator.

The tension of the spring may, of course, be adjusted to suit the operator.

Having thus described by invention, I claim:

1. In a door control, a bracing arm, a supporting bracket having apertured lugs, a sleeve disposed through one of the lugs and having engaging means to engage with the arm, a bolt disposed through the sleeve and bracing arm and one of the lugs of the bracket, and a spring disposed between the bracket and the sleeve to impart a turning force to the sleeve.

2. In a door control, a bracing arm having a T-shaped termination at one end and having an apertured termination at the opposite end, the apertured end be ng provided with a ratchet face transversely to the aperture.

3. In a door control for kitchen ranges and the like a sleeve having a ratchet face in axial direction at one termination and having wrench engaging means at the opposite term nation and having furthermore torsional spring engaging means at a point between the two terminations.

4. In a door control for kitchen ranges and the like, a bracket consisting of a base plate and two plain lugs projecting at practically right angles from the base plate and hav ng apertures with a common axis practically parallel to the base, one of the apertures being proportionaly larger than the other as and for the purpose described.

5. In a door control of the class described, a sleeve having an elongated body to support a spring and having a ratchet face pointing in axial direction from one termination, the sleeve having also engaging means projecting radially from the sleeve near the ratchet termination.

6. In a door control, a bracket having apertured lugs, a bolt disposed through the bracket, a bracing arm disposed on the bolt adjacent to one of the lugs of the bracket, a sleeve disposed on the bolt adjacent to the bracing arm and extending through the opposite lug of the bracket, the arm and the sleeve having ratchet engagement, and a spring disposed between the sleeve and the bracket.

7. In a door control of the class descr bed, a sleeve having a ratchet face in axial direction at one termination and having wrench engaging means at the opposite termination and having furthermore cam-like members projecting rad ally from the sleeve near the ratchet termination.

8. In a door control for kitchen ranges and the like, a bracing arm having an apertured termination at one end by which the arm is swingably mounted, the apertured termination having a ratchet face transversely to the aperture for controll ng the swinging movements of the free end of the arm.

In testimony that I claim the foregoing as my invention I have signed my name in the presence of two subscribing witnesses.

THOMAS E. POTTS.

Witnesses:
O. H. KRUEGER,
L. C. MASAN.