

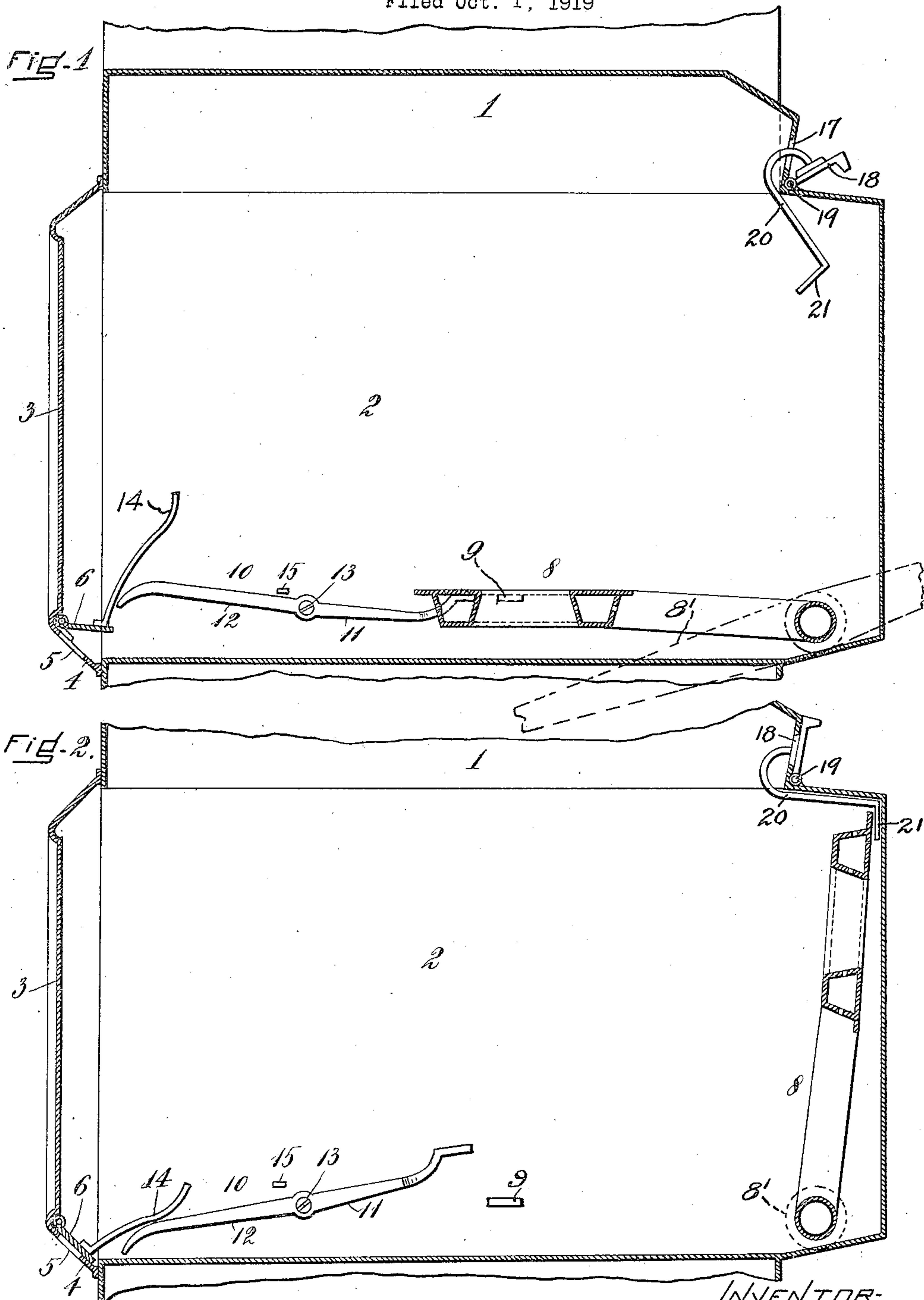
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AIR INLET CONTROL FOR COMBINATION COAL AND GAS RANGES

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AIR-INLET CONTROL FOR COMBINATION COAL AND GAS RANGES.

Application filed October 1, 1919. Serial No. 327,723.

To all whom it may concern:

Be it known that I, CLARENCE F. WILEY, of Taunton, in the county of Bristol and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Air-Inlet Controls for Combination Coal and Gas Ranges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The present invention relates to that type of range having a gas burner arranged within its oven, the range being otherwise adapted for burning either coal or gas. The invention pertains more essentially to a mechanism by which the entry of air to the oven of the range is automatically controlled.

In the combination type of range it is necessary, when gas is being burned within the oven, to admit air to the oven and burner within it, and the air is commonly admitted at the front of the oven through the door, which provides a convenient place of entry, the opening for the air being controlled by a damper. When coal is being used in the range it is desirable to close the opening by closing the damper.

The object of my invention is to provide a mechanism by which the damper controlling the air inlet opening may be automatically regulated or positioned whereby it may properly control the opening depending as the range is burning coal or gas. More essentially it is my object to provide an automatic control that will be absolutely "fool-proof," taking especially into consideration the opening and closure of the door of the oven.

My invention can best be seen and understood by reference to the drawings in which—

Figure 1 is a cross vertical section of an oven fitted with the automatic control constituting my invention, which is shown in an operative position.

Fig. 2 is a cross vertical section showing the automatic control in another or inoperative position.

1 represents that portion of the stove enclosing the oven 2, the same being provided at the front with the usual hinged door 3.

The door adjacent its lower edge is provided with a downwardly and inwardly in-

clined plate 4 having in it an opening, or rather a series of openings, 5 through which air is admitted to the oven. The openings 5 are controlled by a damper 6 hinged to the interior of the door above the openings in it and normally assuming by gravity a position closing said openings.

Located within the oven is the burner 8. This burner by suitable means of retention (not shown) is pivotally arranged to assume within the oven either a downturned position as shown in Fig. 1 or an upturned, out-of-the-way position as shown in Fig. 2. When occupying its downturned position the burner rests against a stop 9 projecting from the side of the oven, which defines such position. When in its upturned position the burner rests against the back of the oven. The burner is moved from its upturned to its downturned position or vice versa by means of a lever 8' indicated in dotted lines operable from outside the oven.

It will be observed that the burner when occupying its downturned position extends to a point about midway of the oven. Located between the forward end of the burner and the damper 6 is a lever 10 having arms 11 and 12, respectively, pivotally secured to the side of the oven by a pin 13. It is through this lever that the damper 6 is automatically controlled by the burner as it is moved into and out of its operative position. Coacting with the lever in the control of the damper is a bent finger 14 fixed to and projecting from the interior side of the damper.

The general form and arrangement of the lever 10 is such that it will normally occupy an overbalanced downturned operative position substantially as shown in Fig. 2 where it will be seen that the outer end of the arm 11 of the lever lies within the path described by the burner when turned from its upturned to its downturned position and the outer end of the arm 12 lies beneath and out of contact with the finger 14 on the damper. The outer end of the arm 11 of the lever is so disposed, preferably by bending the end of the arm, that as the burner is turned to occupy its downturned operative position, the side edge of the burner will strike the end of the arm 11, and the burner will thereby operate to turn the lever into an operative position, the operation continuing until the burner has assumed its downturned position defined by

the stop 9 as aforesaid. Such turning of the lever by the burner operates through contact between the outer end of the arm 12 of the lever and the finger 14 to open the damper and hold it open during the time
5 that the lever remains in its said operative position so that air may be admitted to the oven during such time.

The relative arrangement of the parts is also such that the lever will be turned by the burner only so far as to effect a proper and sufficient opening of the damper and this, the operative position of the lever, is defined by a stop 15. In other words, the
10 lever when operated by the burner is turned to a position where it is held by the burner and the stop, and this defined position is one which effects a proper opening of the damper.

The correlation between the finger 14 and the lever, when the lever is maintained in its operative position as above defined, is such that the damper will be maintained in an open position after the door of the oven
20 has been opened and closed. When the door of the oven is opened the damper gravitates to a closed position. Upon closing the door, however, with the lever maintained in its operative position as aforesaid, the finger 14
25 will bear against the end of the arm 12 of the lever and by such engagement open the damper.

Upon lifting the burner and restoring it to its upturned out-of-the-way position the
30 lever will become released and gravitate to its downturned position out of the way of the finger on the damper, and the damper will be allowed to close and remain closed until the burner is again turned down.

In connection with the above arrangement it will be seen that the operation of the damper is entirely automatic and "fool-proof," a proper control of the damper
40 always being effected independently of whether the door of the oven is open or closed for a proper control of the damper will be effected even though the door of the oven is closed when the burner is turned down into its operative position. If the
45 door of the oven is open when the burner is turned down the turning down of the burner will position the lever so that when the door of the oven is closed the bearing of the finger against the end of the lever will open
50 the damper.

In connection with the operation of the oven, it is provided with the customary outlet opening 17 controlled by a damper 18. This damper is arranged upon the outside
55 of the oven casing and hinged thereto by a connection 19, the damper opening outwardly and closing inwardly to cover the opening. The damper is controlled by a bent arm 20 fixed to it and which extends
60 through the opening and into the oven

chamber, the arm being provided with a bent or turned end 21. The arrangement of the parts is such that the normal gravitated position of the arm controlling the
70 damper will maintain it in a normal open position. When, however, the burner 8 is raised to its upturned out-of-the-way position it will engage the turned end of the arm 20 and thereby through the arm draw
75 the damper into a closed position and maintain it in such position until the burner is again lowered when the damper will automatically become opened upon the release of its controlling arm.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States:—

1. A combination coal and gas range provided with an oven having an air inlet, a gravity-actuated damper normally closing
85 said inlet, said damper having a member fixed to and projecting from it by which the damper may be moved to and maintained in an open position, a burner arranged within the oven and movable to assume therein
90 either an upturned or downturned position, and a pivoted lever adapted and arranged whereby it will normally assume an out-of-the-way position with relation to said member and whereby also said lever will be
95 turned to engage said member and open said damper and maintain it in an open position by the movement of the burner to its downturned position and the assumption by the burner of such position.

2. A combination coal and gas range provided with an oven having an air inlet, a gravity-actuated damper normally closing
100 said inlet, said damper having a member fixed to and projecting from it by which the damper may be moved to and maintained in an open position, a burner arranged within the oven and movable to assume therein
105 either an upturned or a downturned position, and a lever pivotally arranged between the burner when occupying a downturned position and said member, said lever having separate arms, one arm of the lever being
110 arranged to extend into an out-of-the-way position beneath said member when said burner is occupying an upturned position and the other arm of the lever being arranged to extend into the path described by
115 the burner when turned from its upturned position into its downturned position whereby the burner when turned from its upturned position to its downturned position will operate said lever to engage said
120 member and open said damper and maintain the damper in an open position.

3. A combination coal and gas range provided with an oven having an air inlet, a gravity-actuated damper normally closing
125 said inlet, said damper having a member fixed to and projecting from it by which the

damper may be moved to and maintained in an open position, a burner arranged within the oven and movable to assume therein either an upturned or a downturned position, and a lever having separate arms pivotally arranged between said member and said burner when occupying a downturned position, said lever being overbalanced whereby one arm of the lever will normally assume an out-of-the-way position beneath said member and the other arm of the lever a position within the path described by the burner when turned from its upturned to its downturned position whereby the burner when turned from an upturned to a downturned position will engage said lever and move the same into an operative position to engage said member and open said damper and whereby also the damper will be maintained in an open position by the bearing of the burner when occupying its downturned position against said lever.

4. A combination coal and gas range provided with an oven having an air inlet, a gravity-actuated damper normally closing said inlet, said damper having a member fixed to and projecting from it by which the damper may be moved to and maintained in an open position, a burner arranged within the oven and movable to assume therein either an upturned or a downturned position, a pivoted lever between said member and said burner when occupying a downturned position, said lever having separate arms, one arm of the lever being normally arranged to extend into an out-of-the-way position beneath said member and the other arm of the lever into the path described by the burner when turned from an upturned to a downturned position whereby the burner when so turned will engage said lever and move the same into an operative position to engage said member and open said damper and maintain the same in an

open position, and a stop for defining the operative position of the lever and between which stop and the burner the lever is held against displacement when the burner is occupying its downturned position.

5. A combination coal and gas range provided with an oven, a door to the oven having an air inlet, a gravity-actuated damper normally closing said inlet, a pivoted lever arranged whereby it will normally occupy an out-of-the-way position with relation to said damper and whereby also said lever will be turned to and maintained in an operative position by the movement of the burner to its downturned position and the assumption by the burner of such position, and a member carried by said damper and adapted upon closing the door of the oven to engage said lever when occupying its operative position as aforesaid thereby opening said damper and maintaining the same in an open position during the closure of said door.

6. A combination coal and gas range provided with an oven, a door to the oven having an air inlet, a gravity-actuated damper normally closing said inlet, a pivoted lever arranged whereby it will normally occupy an out-of-the-way position with relation to said damper and whereby also said lever will be turned to and maintained in an operative position by the movement of the burner to its downturned position and the assumption by the burner of such position, a stop defining the operative position of the burner and co-operating with the burner to maintain the lever in such position, and a member carried by said damper and adapted upon closing the door of the oven to engage said lever when occupying its operative position as aforesaid thereby opening said damper and maintaining the same in an open position during the closure of said door.

CLARENCE F. WILEY.