Aug. 23, 1927.

1,640,250

M. A. POSSONS

DOOR HANGER

Filed July 29, 1925

3 Sheets-Sheet 1

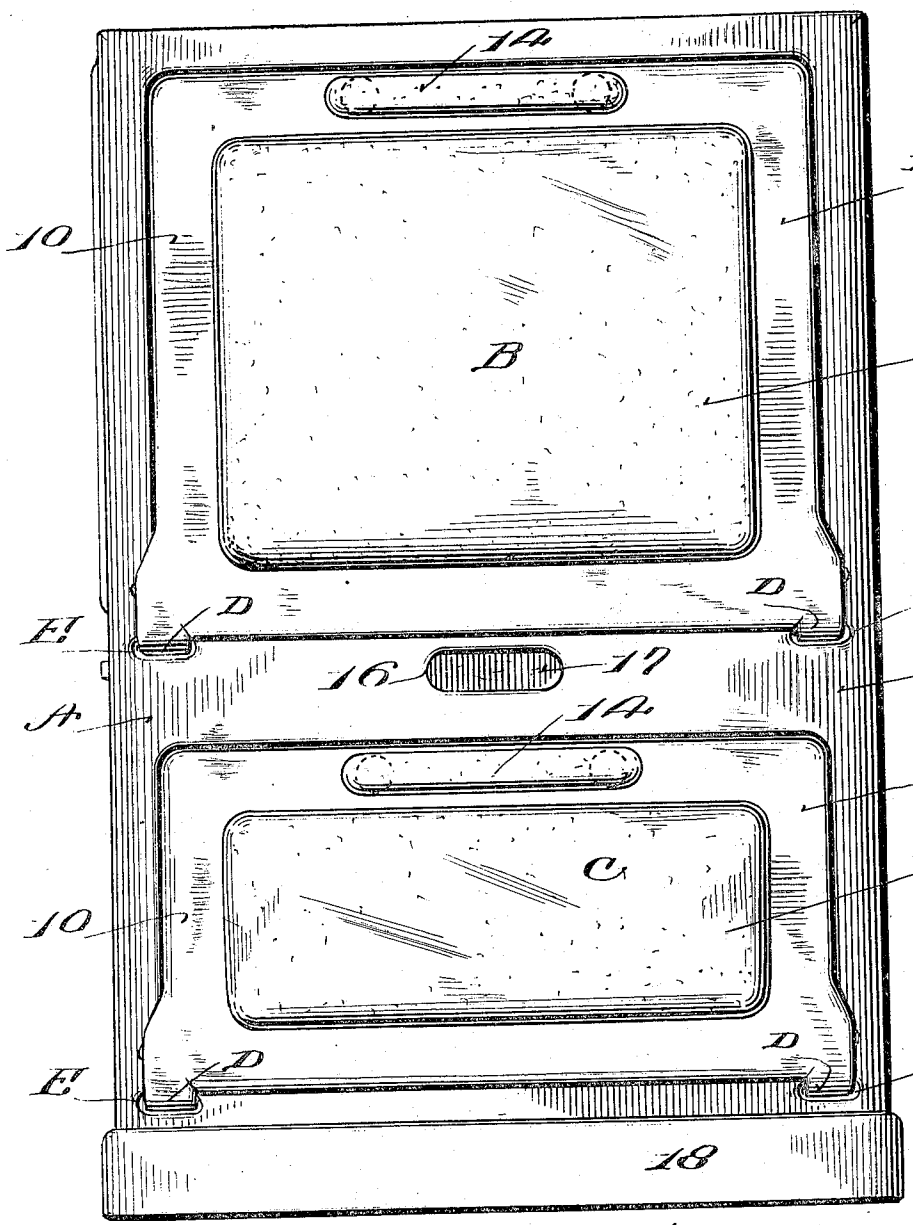


FIG. 1.

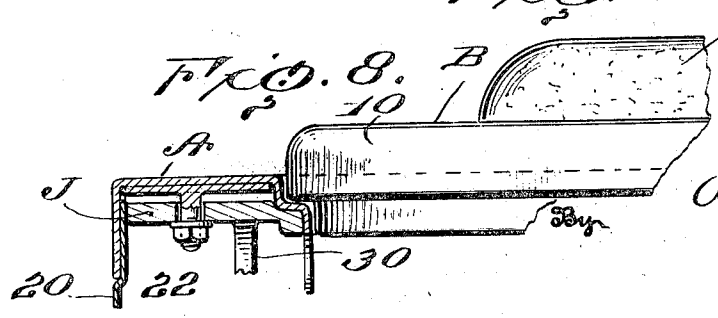


FIG. 2.

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FIG. 2.

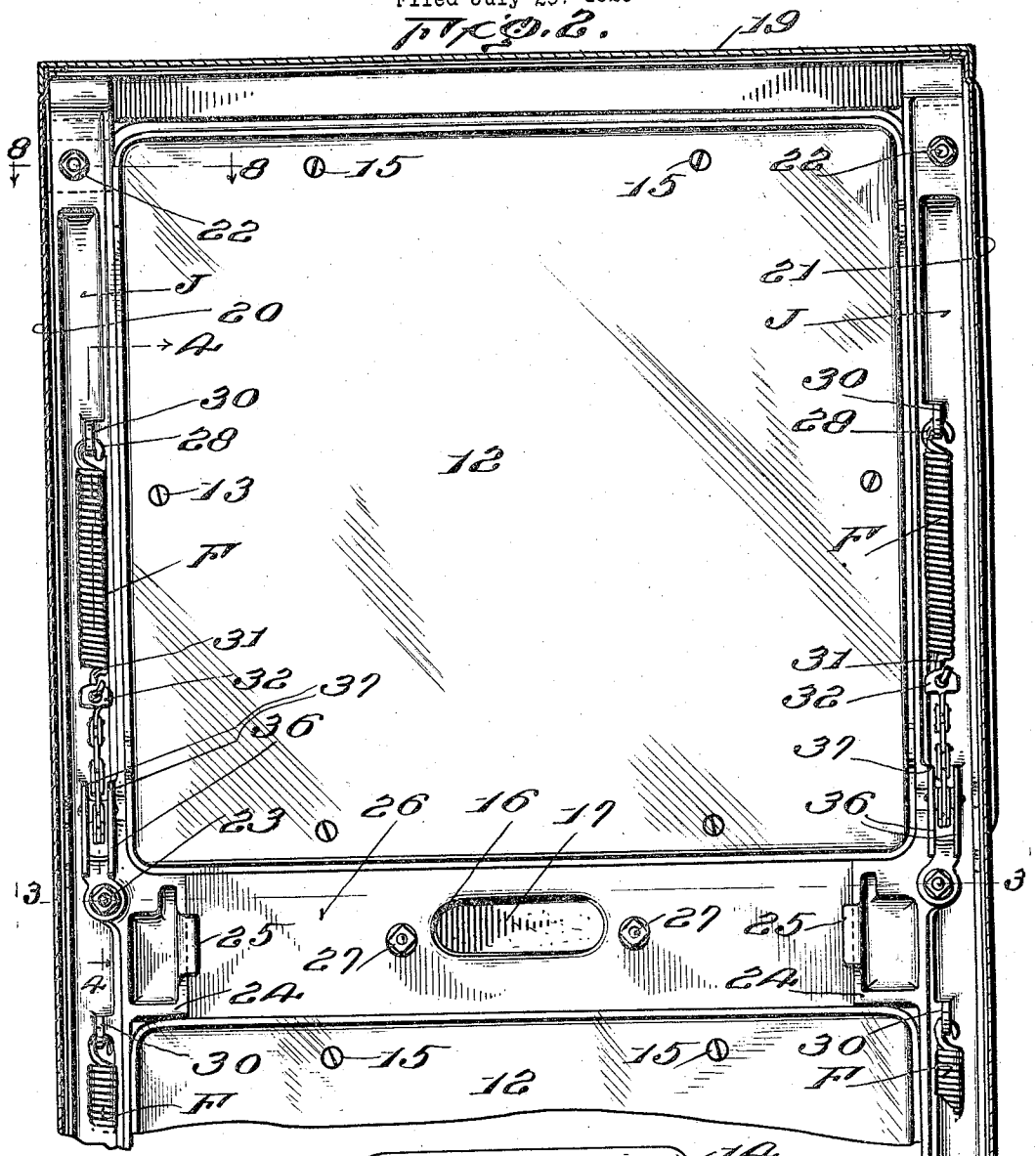
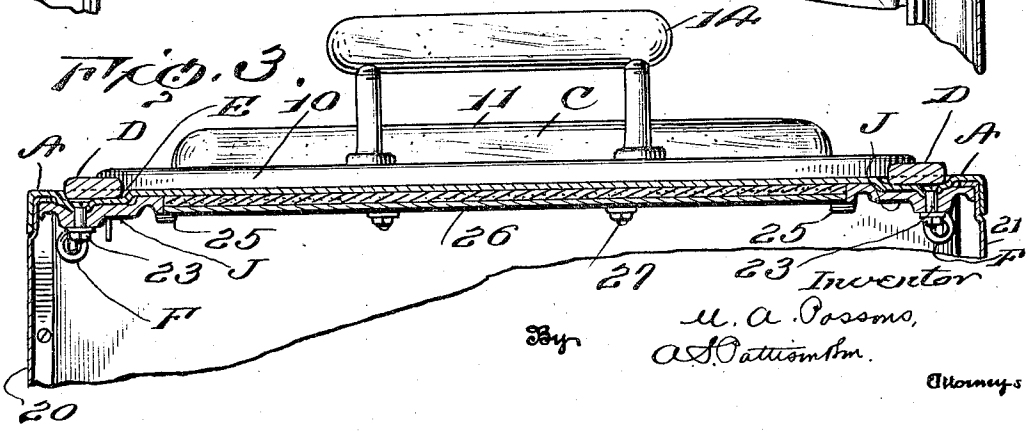


FIG. 3.



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3 Sheets-Sheet 3

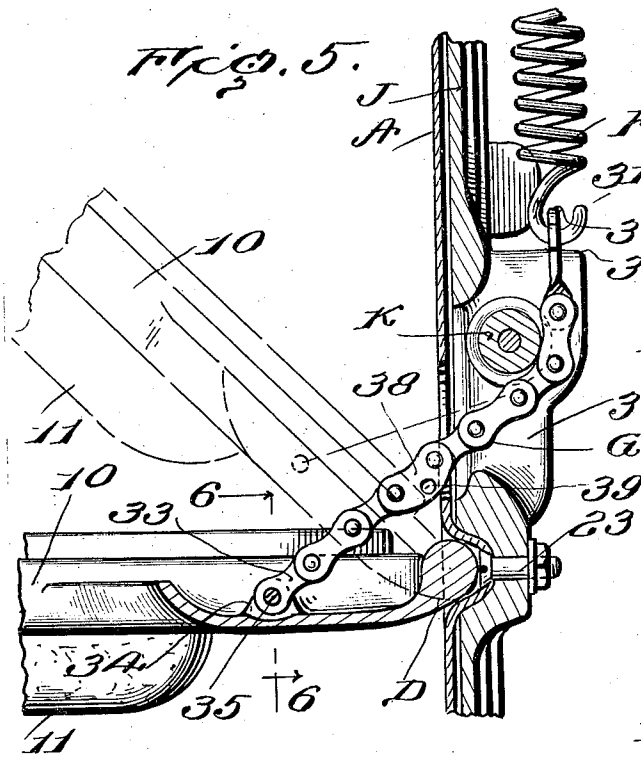


Fig. 5.

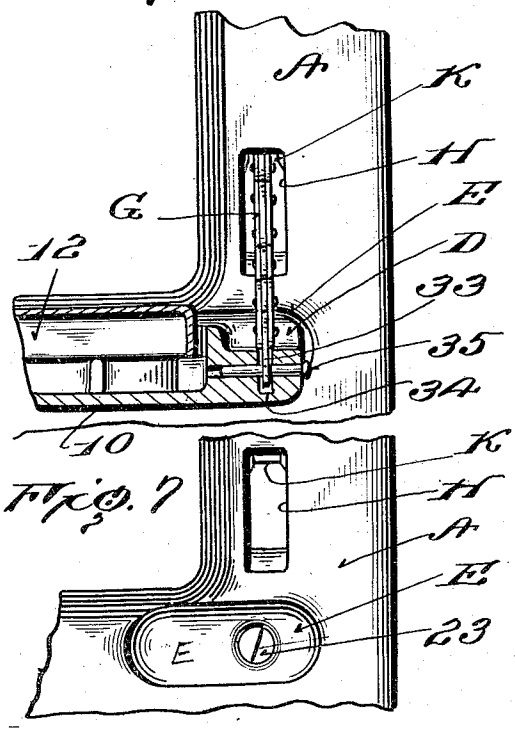


Fig. 6.

Fig. 7

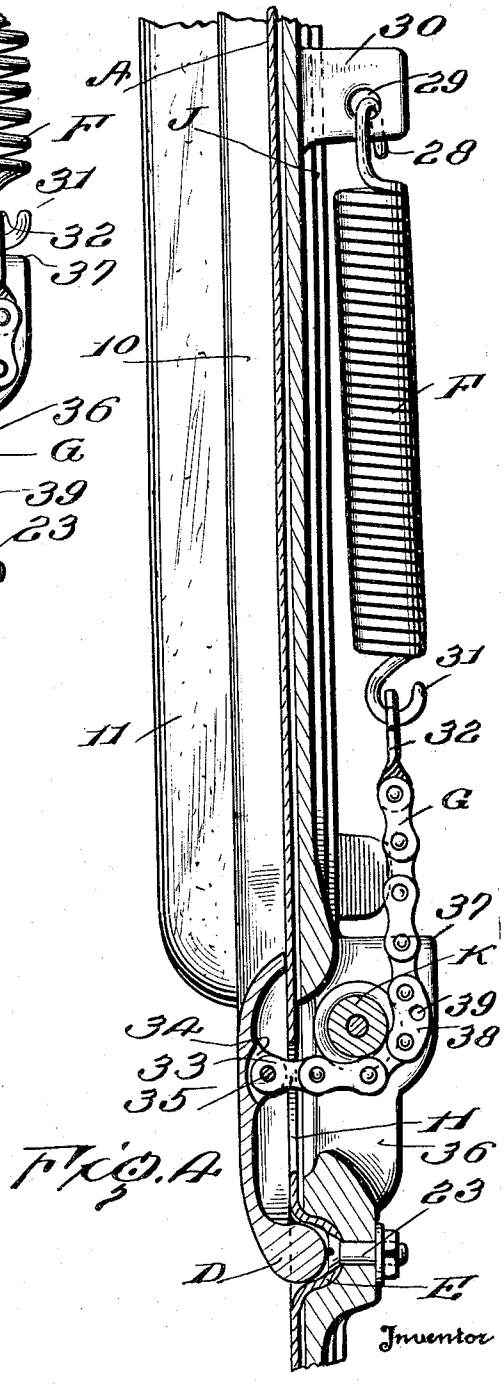


Fig. 4.

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UNITED STATES PATENT OFFICE.

MINARD A. POSSONS, OF CLEVELAND, OHIO, ASSIGNOR TO AMERICAN STOVE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

DOOR HANGER.

Application filed July 29, 1925. Serial No. 46,781.

This invention relates to improvements in door hangers and pertains more particularly to a hingeless door hanger adapted for use in respect to stove or range ovens or the like.

The primary object of the invention is the provision of a door hanger whereby the door is mounted and supported without the use of hinges.

Another object of the invention is the provision of a door hanger construction which will stiffen the door frame.

Another object of the invention is the provision of a door hanger wherein a suitable spring resistance is provided to the opening of the door and which additionally pulls the door to a closed position and holds the door closed, thereby eliminating the necessity of a door latch or catch.

A further object of the invention is to provide an improved door hanger of a construction cheap to manufacture and easy to apply and which will not only return the door to its closed position but will hold the door by direct action or pull against the jamb and prevent the door from sagging.

Another and further object of the invention is an improved door hanger construction for use on stove doors which will improve the construction and appearance of a gas range by reason of there being no hinges to protrude beyond the stove frame and the frame will have a smooth and pleasing appearance.

A still further object of the invention is the provision of a door hanger construction which will hold the door both in its closed and open positions.

A still further object of the invention is the provision of a door hanger construction of the hingeless type which is constructed in a manner to permit the easy and ready removal and application of the door.

Other objects, improved results, and novel features of construction of the invention will appear in the following description and accompanying drawings.

In the drawings:

Figure 1 is a front view of a gas range oven having doors thereof supported by the improved hanger.

Fig. 2 is a rear view of Fig. 1, the oven walls and top being shown in cross section.

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2, the lower door being shown in full lines.

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 2, looking in the direction indicated by arrow.

Fig. 5 is a fragmentary view similar to Fig. 4, the oven door being shown in open position, and the door being shown in dotted lines in the position it must assume for the action of the spring to automatically pull the door to a closed position.

Fig. 6 is a detail sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is a detail view of the oven front adjacent one of the corners of the door opening, the door having been removed so as to show the door supporting socket.

Fig. 8 is a detail sectional view taken on the line 8—8 of Fig. 2.

Describing the invention in general terms, A represents the front of a gas stove or range oven upon which is mounted the two oven doors B and C. These oven doors swing or rotate on the members D, positioned at their lower corners, said members being received by the pockets, indentations, or bearings E in the oven front frame A. The doors are held in position by springs F, positioned at either side of the door. These springs are mounted in back of the doors and have connection with them by means of a suitable chain or cable G one end of which extends outwardly through openings H in the oven front frame. Positioned behind the oven front frame at either side of the door or oven opening are uprights J to which one end of the springs are fastened and these uprights further carry rollers K over which the chain or cable pass.

Describing the invention in detail the doors B and C are composed of a door frame 10 having a central opening which is closed, in a manner common to the art, by plates 11. These plates are preferably enameled so as to add to the appearance of the stove and are held in place by the door lining 12 (see Fig. 2) which is provided with suitable screws or bolts 13. The door handles 14 are provided and these handles are held in place by screws 15 at the upper edge of the door lining.

The door B provides access to the main or baking oven while the door C is for access to the broiling oven.

The oven front frame A is provided intermediate the oven doors B and C with an opening 16 provided with a glass or transparent medium 17 to permit vision into the oven without necessity of opening the oven

doors. As is common practice the oven, including the oven front frame, is supported upon a base 18.

Referring to Figure 2 of the drawings it will be seen that the oven top is indicated at 19 while the oven side walls are designated by the numerals 20 and 21.

The present invention is not limited to the particular size or shape of the oven door frames and irrespective of the configuration of the door frames they are provided at their lower corners with the inwardly extending members D heretofore referred to. The oven front frame is provided at points adjacent the lower corners of the door openings with the pockets or sockets E, heretofore referred to, which pockets are of a size and shape to receive the members D of the door frames. The members D and the pockets are preferably of a slightly elongated shape to give a larger bearing surface. The specific shape of the members D and the sockets is however optional and need not necessarily conform exactly to the shape shown in the drawings.

Positioned within the oven immediately behind the oven front frame are a pair of narrow uprights J. These uprights are positioned adjacent the oven door openings and lie between these openings and the oven side walls 20 and 21, being held in place by suitable bolts or screws 22 at their upper and lower ends while midway their length they are secured by the screws 23, the heads of which are counter-sunk in the cam pockets E, as clearly appears in Figure 4 of the drawings. These uprights extend the entire height of the ovens and form braces for the oven adding great rigidity to the over structure. At a point opposite the space between the upper and lower oven door openings the uprights are provided with inwardly extending portions 24 which are provided with lips 25. The lips 25 secure the ends of the oven lining member 26 which is additionally held in place by suitable screw bolts 27 adjacent the transparent covered opening 16 which opening in addition to extending through the oven front frame likewise extends through the oven lining member 26.

The springs F are fastened to the uprights J by means of their hooked-shaped upper ends 28 which have engagement with the openings 29 in the extending lugs 30 of the uprights. The lower ends of the springs are likewise hooked-shaped as at 31 and have engagement with an opening in the T-shaped link 32 of the chain G.

The chain G extends downwardly from the spring, passing over the roller K outwardly through the opening H in the oven front frame where its end link 33 enters the groove or slot 34 formed in the inner rear face of the door frame, being held within the slot by means of a pin 35.

The roller K is rotatably mounted between the ears 36 which form a part of the uprights J. The upper ends 37 of these ears cooperate with the extending ends of the T-shaped link 32 to form a stop for the door when it is in its open position, as shown in Figure 5 of the drawings, the T-shaped link coming into positive contact with the upper ends of the ears 36 and acting as a positive stop for the outward or downward movement of the door.

Due to the coil springs F it is not necessary to use a latch or catch to hold the doors in closed position as the spring tension is sufficient to hold the doors snugly against the oven front frame. As shown in Fig. 5 of the drawings, the springs likewise hold the door in its extreme open position, the direction of pull upon the door through the chain G being such as to hold the door in its open position. When the door however has been moved to the position shown in dotted lines of Fig. 5 of the drawings the direction of pull of the chain upon the door has changed sufficiently to permit the springs to pull the doors to a closed position.

To enable the easy and ready mounting and removal of the doors the chains G are provided with links 38 having therein openings 39 whereby when the door is swung into an open position a nail or pin can be inserted through the openings and thereby remove the tension of the coil spring from the door. It then remains only to unfasten the outer links 33 of the chain from the door by the removal of the pins 35 as the tension of the coil spring is taken up by the nails bearing against the face of the outer oven frame A.

By referring to Fig. 8 of the drawings it will be seen that the uprights J are of a shape similar to the surface against which they bear and therefore assure added rigidity to the oven frame.

It will be seen by reference to the drawings that the construction of both the upper and lower door links are similar and that the uprights J extend the entire height of the ovens and are provided at proper points with the lugs 30, ears 36 and rollers K for use with the hangers of both the upper and lower oven doors.

From the foregoing it will be seen that there is provided in reality a hingeless door construction which by reason of there being no protruding parts makes a door which is much more pleasing in appearance and one which is less apt to collect dirt or foreign substance. Furthermore the construction is such that the doors can be easily and readily removed and hung as desired which is an added advantage from the manufacturing standpoint as well as making it possible for the doors to be removed by the user so that the construction can be more readily and easily gotten at for cleaning purposes.

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

1. A hanger construction for stove doors or the like, comprising a door having circular-shaped members at its lower edge, a door frame having depressions forming bearings for said circular shaped members, and resilient means behind said door frame and having connection with the door for holding the door members in their bearings.

2. A hanger construction for stove doors or the like, comprising a door frame provided with depressions, a door provided with members adapted for rotation in said depression, resilient means behind said door frame having connection with said door, and said resilient means exerting a pulling force for holding the rotating members of the door in the door frame depressions and holding the door in closed position.

3. A hanger construction for stove doors or the like, comprising a door having circular-shaped members, a door frame having depressions forming bearings for said members, means for holding said door members in their bearings, and said holding means provided with a stop to limit the downward movement of the door.

4. An oven having a door opening, depressions adjacent thereto, a door having engagement with said depressions, means for maintaining engagement between the door and said depressions, and said last named means adapted to limit the outward movement of the door.

5. An oven having a door opening, depressions adjacent thereto, a door having engagement with said depressions, resilient means for maintaining engagement between the door and said depressions, said resilient means having connection with the door through the medium of a chain passing over a roller, and said chain provided with a portion adapted to engage a stop, whereby the outward movement of the door is limited.

6. The combination with an oven door frame provided near the lower corners with depressions, of a door having members at its lower edges adapted to be rotatably supported in said depressions, and resilient means behind the door frame and having connection with the door for holding the door members in the depressions.

7. The combination with an oven door frame provided adjacent the lower corners of the door opening with depressed portions, a door having extensions at it corners, said door extensions adapted to seat in said depressions, and resilient means behind said door frame and having connection with the door for holding the door extensions in the depressions.

8. The combination of an oven having a door frame, depressions in said frame, a door having engagement with said depressions, a normally contracting spring having one end connected with the inner side of the frame, a chain connected with the other end of the spring, the opposite end of the chain connected with the door inside of its engagement with the depressions, and a roller connected with said frame with which the said chain engages for the purpose specified.

9. The combination of an oven having a door frame, depressions located at the lower edge of the said frame, an oven door having its lower edge constructed to engage said depressions, a normally contracting spring located at the inner side of said frame, its lower end connected with the said frame, a chain having its upper end connected with the lower end of the said spring, said chain passing around a roller and its opposite end connected with the door at a point above the part engaging the depression when the door is closed, for the purpose specified.

10. The combination of an oven having a door frame, the said frame having at its lower end outwardly opening depressions, the door having at its lower edge trunnions fitting loosely in said depressions, a spring located above the said depressions at the inner side of the said frame and extending upward, the upper end of the spring connected with said frame, a chain having its upper end connected with the lower end of said spring, a roller located at the inner side of said frame and between the spring and the said depressions around which the said chain passes, the opposite end of said chain connected with the door at a point above its trunnions when closed, whereby the chain and spring act to constantly hold the trunnions within the said depressions of the frame.

11. The combination of an oven having a door frame with depressions at its lower edge opening outwardly, the lower edge of the door having trunnions that loosely fit in the said depressions, an upwardly extending spring located at the inner side of the said frame, its upper end being connected with the frame, a roller located below the lower end of the spring and the said depressions, a chain having its upper end connected with the lower end of the spring and passing around the said roller and connected to the inner side of the door above its trunnions, and means cooperating with the chain for limiting the outward movement of the said door, the parts operating for the purpose specified.

In testimony whereof I hereunto affix my signature.

MINARD A. POSSONS.