

Oct. 30, 1934.

J. C. ROGERS

1,979,210

DOOR MOUNTING

Filed Oct. 28, 1933

2 Sheets-Sheet 1

Fig. 1.

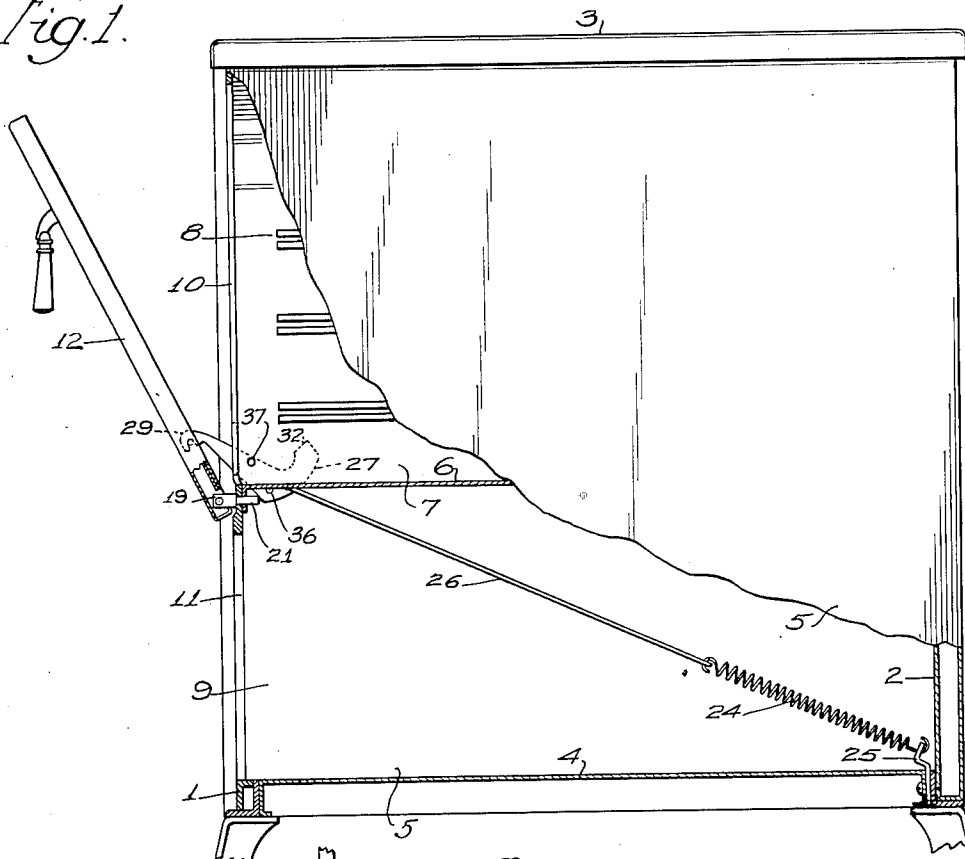
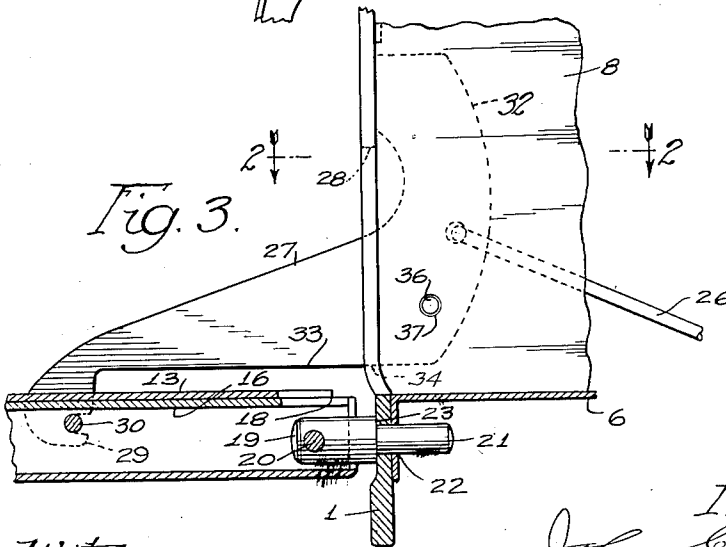


Fig. 3.



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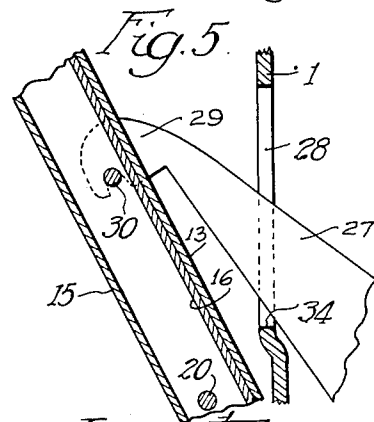
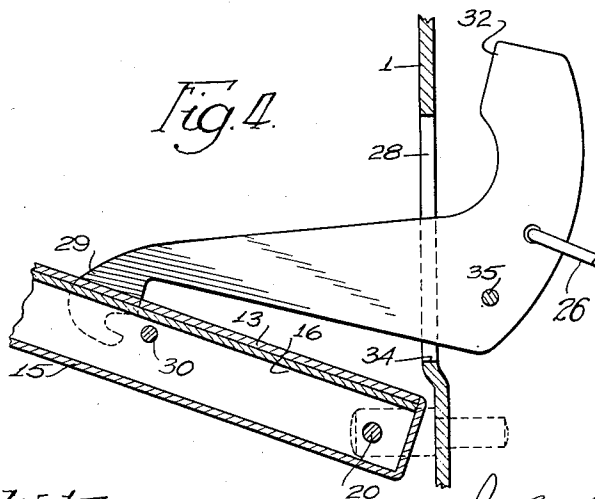
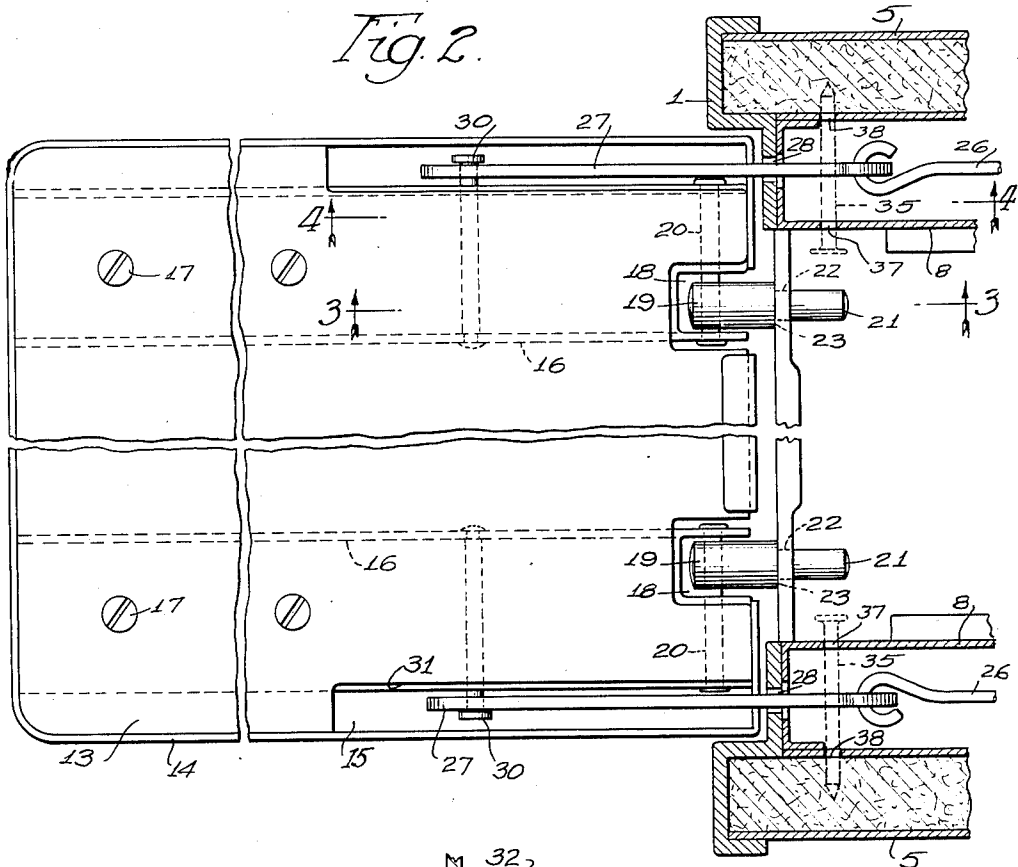
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2 Sheets-Sheet 2



Witnesses

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UNITED STATES PATENT OFFICE

1,979,210

DOOR MOUNTING

John C. Rogers, Cicero, Ill., assignor to Crown
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Application October 28, 1933, Serial No. 695,577

4 Claims. (Cl. 126—190)

This invention relates to mountings for hinged doors and more particularly to mountings for the doors of stove ovens and the like.

Oven doors are usually hinged at their lower corners to the stove body and are connected to springs within the body for closing the doors. It is frequently necessary to replace parts of an oven door or its mounting and, therefore, it is highly desirable to provide a mounting which will permit the door to be quickly and easily removed without disturbing other portions of the stove. Most of the mountings heretofore in common use have been objectionable because they did not permit removal of the door without first dismantling part of the oven.

The main objects of this invention are to provide an improved door mounting which will permit the door to be readily removed from the body without disturbing any part of the body; to provide an improved coupler for detachably securing the door to its spring; to provide improved means for taking the strain of the door spring from the door so as to permit removal of the door and its hinge; to provide improved means for resisting the action of the spring so as to permit the door to remain fully open and in various partly open positions when desired; and to provide a door mounting of this kind which is simple and inexpensive and still sufficiently sturdy to withstand the strain to which door mountings are usually subjected.

An illustrative embodiment of this invention is shown in the accompanying drawings wherein:

Figure 1 is a fragmentary side elevation of a stove having an improved door mounting; certain portions of the stove being broken away for clearness.

Figure 2 is a horizontal section taken on the line 2—2 of Fig. 3.

Figure 3 is a vertical section taken on the line 3—3 of Fig. 2.

Figure 4 is a section taken on the line 4—4 of Fig. 2 but showing one of the couplers as it is about to be rocked upwardly around its retaining pin after having been disengaged from the door.

Figure 5 is an enlarged detail showing one of the couplers after it has been lifted out of frictional contact with the front wall of the body.

Inasmuch as this invention relates to the door mounting and such mountings may be applied to many different types of stoves and similar devices, the accompanying drawings illustrate only those portions of a stove which will be of assistance in describing the mounting.

In the form shown, the mounting is associated with a stove comprising a body or frame having a front wall 1, rear wall 2, top 3, bottom 4, side walls 5, and partition 6 defining an upper baking compartment or oven 7 having inner side linings 8, and a lower broiler compartment 9. Openings 10 and 11 are formed in the front wall 1 to provide access to the main oven and broiler oven, respectively. The broiler oven may be provided with a suitable drawer such as shown in Patent No. 1,865,212 issued June 28, 1932 to Walter F. and John C. Rogers.

A hinged door 12 for the main bake oven is secured to the stove body by the improved mounting embodying this invention.

The door illustrated comprises an inner sheet metal lining 13 which is secured within the marginal flanges 14 of an outer plate 15. Housed between the plate 15 and lining 13 is a pair of reinforcing members in the form of channel bars 16 which are disposed in substantially parallel spaced relation to the side edges of the door. The reinforcing channels may be anchored to the inner lining 13 by bolts or screws 17. At the hinged edge of the door, the lining 13, marginal flange 14, and channel bars 16 are cut away to provide a pair of recesses 18 for receiving a pair of hinge members 19 which are pivotally secured to the channel bars 16 by hinge pins 20 disposed parallel to the plane of the front wall 1.

The hinge members 19 have reduced inner ends 21 which are seated in apertures 22 formed in the front wall 1 directly below the opening 10. Annular shoulders 23 on the hinge members abut against the wall 1 to limit the inward movement of the hinge members. The outer portions of the hinge members 19 are preferably of less width than the recesses 18 so that, if the apertures 22 are not properly spaced apart in the front wall 1, the hinge members may be shifted laterally a short distance so as to register with the apertures in assembling the structure.

With this improved construction, the hinges are entirely concealed by the door. The hinge members are retained in the apertures 22 by a pair of springs 24 located within the body and connected to the door and body for yieldingly retaining the door in closed position. These springs are preferably located in the broiler compartment close to the side walls thereof where they may be conveniently reached for replacement when necessary. The rear ends of the springs are connected to brackets 25 secured to the lower rear portion of the body. The forward ends of the springs are connected to rods 26 which are fas-

tened to a pair of coupling arms 27 detachably secured to the door 12 and movable outwardly and inwardly through slots 28 formed in the front wall 1 on opposite sides of the opening 10.

The arms 27 are preferably sheet metal stampings having hooks 29 formed at their forward ends for engagement with pins 30 secured to the channels 16 of the door. The lining 13 of the door is slotted as shown at 31 so as to permit the hooks 29 to engage the pins 30. Formed on the inner end of each arm 27, is a stop 32 adapted to engage the front wall to limit the outward movement of the door, as shown in Figure 3.

The arms 27 are urged downwardly by the springs 24 and the lower edges 33 of the arms are held in contact with shoulders 34 at the lower ends of the slots 28 when the door is open. The engagement of the edges 33 with the shoulders 34 frictionally resists the springs 24 and permits the door to be left in fully open position or balanced in any one of numerous partly open positions without any additional retaining means. When the door is moved close to the fully closed position as shown in Figure 5, the springs 24 lift the arms 27 out of contact with the shoulders 34.

To remove the door from the body, the arms 27 are unhooked from the pins 30, whereupon the door and hinge members 19 may be withdrawn as a unit, inasmuch as these hinge members are held in their seats solely by the springs 24. To unhook the arms 27 they may be pulled outwardly against the action of the springs until the pins 30 are released from the hooks 29 or the springs may first be detached from the rods 26 or from the brackets 25. To facilitate the detachment of the arms 27 from the door without the necessity of unfastening the springs, I have provided retaining means associated with the arms 27 for taking the strain of the springs from the door and which will permit the arms to be detached from the door automatically by the mere movement of the door from its open position toward its closed position.

In the construction shown, the improved retaining means comprises a pair of pins 35, one for each of the arms 27. Each arm 27 has an aperture 36 below the connection between the arm and its rod or link 26. When the door is fully open, as shown in Fig. 3, this aperture 36 of each arm registers with a pair of apertures 37 and 38 formed in the adjacent lining and side wall of the body to form a seat for one of the retaining pins.

When the retaining pins 35 are in place, they serve as pivots for the arms 27 and, therefore the springs tend to rock the arms around the pins 35 instead of pulling these arms inwardly. For this reason, when the pins are in place and the door is moved upwardly, the hooks 29 are lifted from the pins 30, as shown in Fig. 4. As soon as the hooks are released from the pins 30, the forward ends of the arms 27 move upwardly into engagement with the front face of the wall 1, and the door and its hinge members may then be withdrawn.

To replace the door, its hinge members 19 are again inserted into the apertures 22 and the arms 27 are rocked so as to bring the hooks 29 into engagement with the pins 30. The door is then moved to fully open position and the retaining pins 35 withdrawn.

Although but one specific embodiment of this

invention has been herein shown and described, it will be understood that details of the construction shown may be altered without departing from the spirit of the invention as defined by the following claims.

I claim:

1. A device of the class described comprising a body having a compartment provided with an opening in one side of said body, a door adapted to close said opening, means adjacent the lower edge of said door for hinging said door to said body, an arm movable outwardly and inwardly through said one side of the body, the outer end of said arm being pivotally and detachably connected to said door, a spring connected to said arm for urging said door into closed position, and releasable means adapted to pivotally connect said arm to said body, said spring being adapted to rock said arm on its pivotal axis for disengaging the forward end of said arm from said door.

2. A device of the class described comprising a body having a compartment provided with an opening in one side of said body, a door adapted to close said opening, means adjacent the lower edge of said door for hinging said door to said body, an arm movable outwardly and inwardly through said one side of the body, the outer end of said arm being pivotally and detachably connected to said door, a spring connected to said arm for urging said door into closed position, and releasable means adapted to pivotally connect said arm to said body at a point located inwardly from the plane of said opening, said spring being adapted to rock said arm on its pivotal axis for disengaging the forward end of said arm from said door.

3. A device of the class described comprising a body having a compartment provided with an opening in one side of said body, a door adapted to close said opening, means adjacent the lower edge of said door for hinging said door to said body, an arm movable outwardly and inwardly through said one side of the body, the outer end of said arm being pivotally and detachably connected to said door and its inner end having a stop adapted to engage the said side of the body to limit the outward movement of said door, a spring connected to said arm for urging said door into closed position, and releasable means adapted to pivotally connect said arm to said body, said spring being adapted to rock said arm on its pivotal axis for disengaging the forward end of said arm from said door during the movement of said door from its fully open position toward its closed position.

4. A device of the class described comprising a body having a compartment provided with an opening in one side of said body, a door adapted to close said opening, means adjacent the lower edge of said door for hinging said door to said body, an arm movable outwardly and inwardly through said one side of the body, the outer end of said arm being pivotally connected to said door, a spring connected to said arm for urging said door into closed position, and a shoulder on said body adapted to frictionally engage one edge of said arm for frictionally resisting the action of said spring, said spring being adapted to release said arm from said shoulder when said door approaches its closed position.

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