June 29, 1937. H. S. PLETCHER ET AL 2,085,387

DOOR FOR RANGES

Filed Aug. 30, 1934

Fig. 1

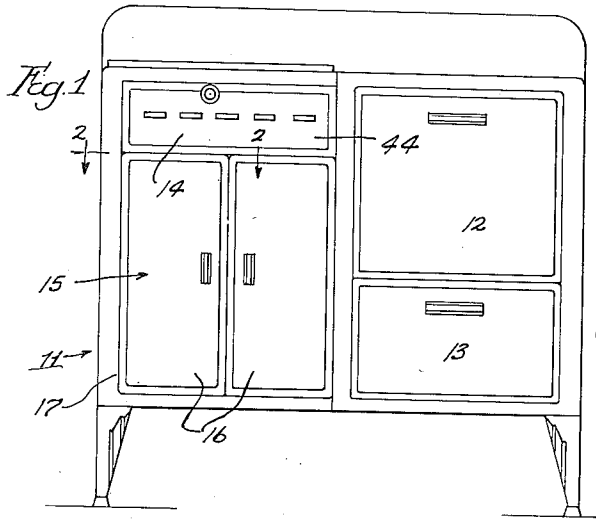


Fig. 2

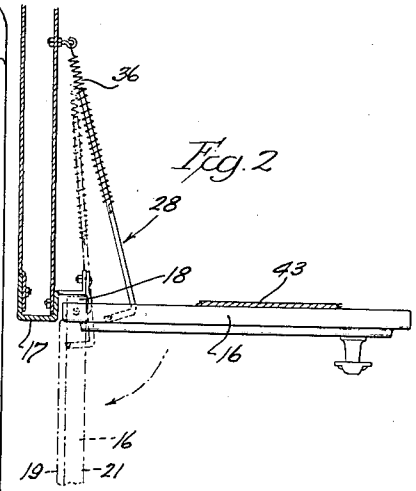


Fig. 3

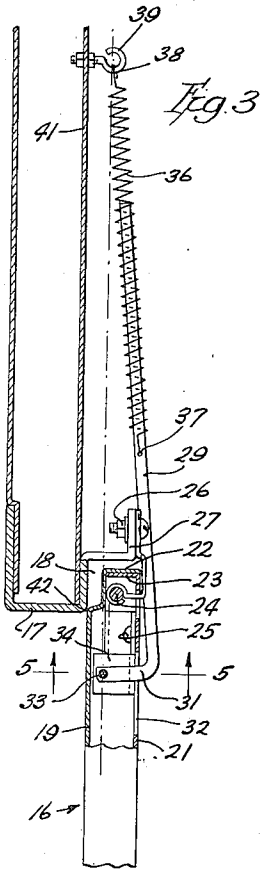


Fig. 5

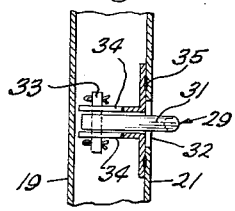
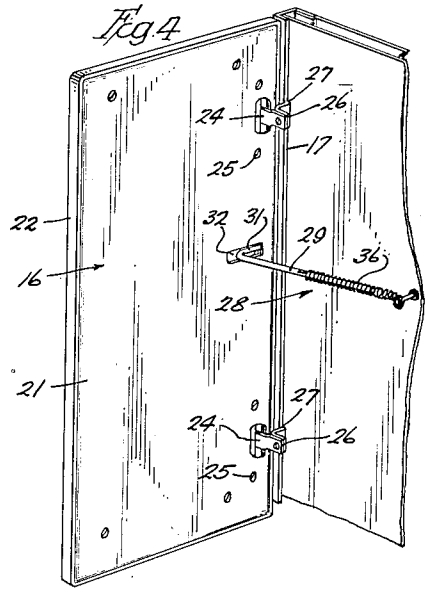


Fig. 4



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DOOR FOR RANGES

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Application August 30, 1934, Serial No. 742,103

1 Claim. (Cl. 16—72)

This invention relates to closures and has more particular reference to a novel and effective door for gas ranges and the like.

A principal object of the invention is the provision of a door which is adapted to remain either in open or closed position by means of an overcenter principle, having relatively few parts in its construction and which may be cheaply manufactured and assembled.

Another important object of the invention is the provision of a closure mechanism which is trouble proof and positive in its operation, at the same time requiring very little effort to open or close the door, since the parts in its construction may be of relatively light gauge material, yet sufficiently strong to withstand constant use.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

In the drawing,

Figure 1 is a front elevation of a range showing a typical installation of the door;

Fig. 2 is a plan section taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged section, similar to Fig. 2, showing the door in an open position;

Fig. 4 is a perspective view of one of the doors and its operating parts, with certain portions omitted; and

Fig. 5 is a cross section taken substantially on the line 5—5 of Fig. 3.

Referring to the drawing, reference character 11 indicates a range, comprising an oven compartment 12, a broiler compartment 13, a burner compartment 14, and a utility compartment 15. The utility compartment 15 is closed by a pair of doors 16 centered within a front door frame member 17 and arranged to lie, when closed, within a recessed portion 18 of the door frame member 17.

The doors 16 are constructed of any preferred or suitable material to give them stiffness and yet be light in weight and comprise a front wall 19 and a rear wall 21 spaced apart from each other and fastened at their edges by marginal flanges 22 bent to overlap one another at 23. Hinges 24 are fastened at 25 to the inner surface of the rear wall 21 and at 26 to lugs or projections 27 cast integrally with the door frame member 17.

Positioned above the horizontal axis of the doors and located between the hinges is a door retaining member, generally referred to by reference character 28. The door retaining member comprises a rod 29, one end of which is bent at right angles at 31. This bent portion extends through a slot 32 in the rear wall 21 of the door 16 and is secured from vertical displacement by suitable pivoting means 33 to a pair of right angle clips or fastenings 34 which are welded or otherwise secured at 35 to the inner surface of the rear wall 21. The axis of the pivot 33 for the bent portion of the rod 28 is so positioned as to lie beyond a plane through the axis of the hinge and parallel to the face of the door.

A coil spring member 36 is positioned so as to encompass the rod 29 for a portion of its length, one end of the spring being fastened to the rod at 37 and the opposite end of the coiled spring member being secured at 38 to an eye bolt 39 which is secured to the inner wall 41 of the utility compartment 15.

It will be apparent, viewing Fig. 2, that as the door is swung from a closed position (shown in full lines) to an open position (shown in broken lines) the pivot 33 of the rod 29 will be moved arcuately about the hinge 24 as the fixed center and against the tension of the coiled spring member 36 until the door reaches the position shown in more detail in Fig. 3. In this position the axis through the pivot 33 and the point 38 at which the spring attaches to the eye bolt will pass to one side slightly beyond the axis of the hinge. The tension of the spring will thus serve to maintain the door in this open position. In this position the door may rest against the door frame member, as shown at 42 (Fig. 3), which thereby constitutes a stop for limiting the opening movements of the door, in the instant disclosure the open position being substantially 90° from the closed position. When the door is swung to a closed position the spring will act to bring the door against the stop 43 which may form a part of the manifold cover 44 in the burner compartment 14.

It will be apparent from the foregoing description that this closure device is both novel in its construction and in its operation and may be installed at very little expense with no danger of mis-function of the operating parts.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and

scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

We claim:

In a door structure for an enclosure having a door pivotally supported on an axis, a stop on the enclosure limiting the opening movement of the door to substantially 90° from its closed position, means on the inner side of said door pivotally connected therewith eccentric to the pivotal axis thereof for normally holding the door in closed position and for yieldingly holding it in such fully open position when once moved to said position, said means consisting of a rod pivotally supported within the door at a fixed point exteriorly of a vertical plane parallel to the sides of the door and containing the pivotal axis thereof, and a spring fixedly connected at one end with the rod and fixedly connected at the other end with the enclosure, whereby the connecting line between the points of attachment of the rod to the door and of the spring to the enclosure is located between the pivotal axis of the door and the stop for the door after the door has once been moved through an angle of substantially 90°.

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