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C. L. GEHRICH

2,180,516

LOCKING DEVICE

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Fig. 1

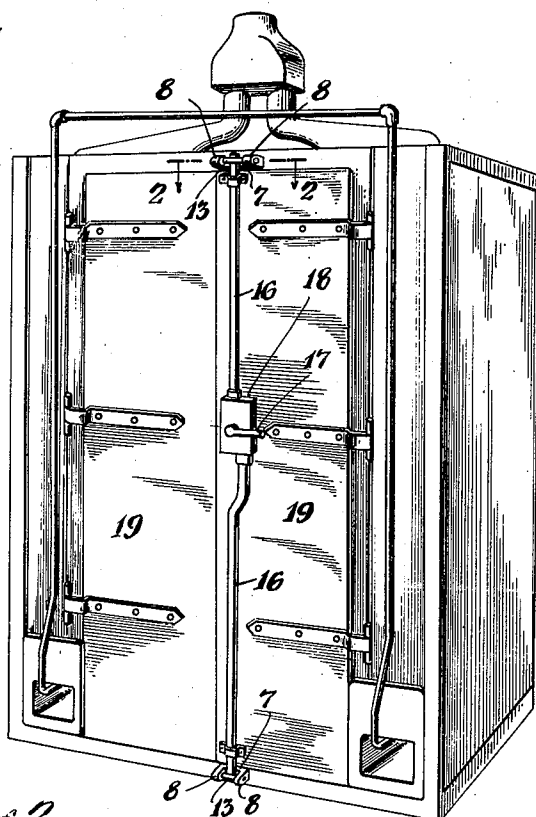


Fig. 2

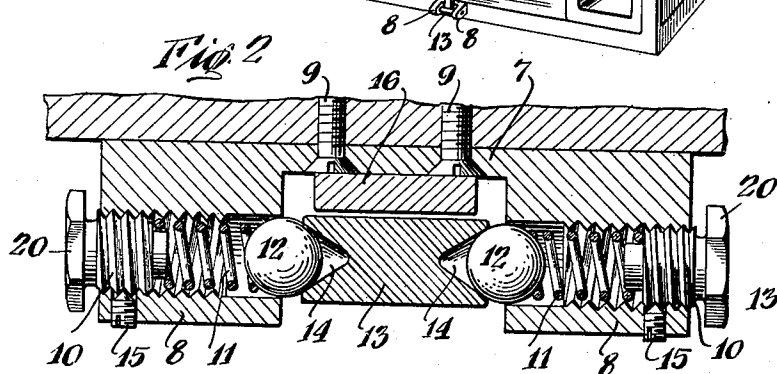


Fig. 3

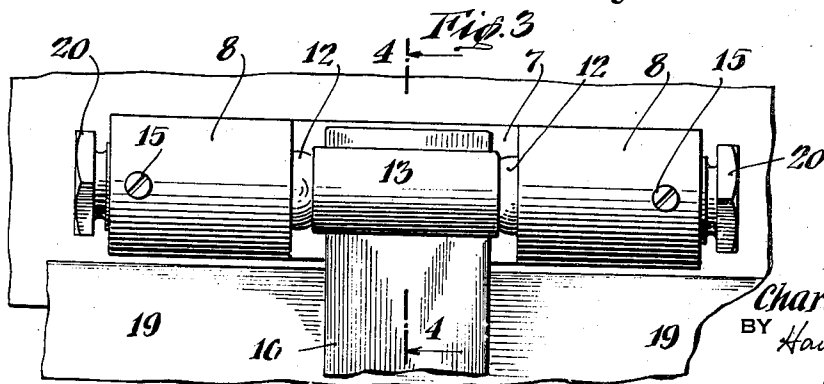
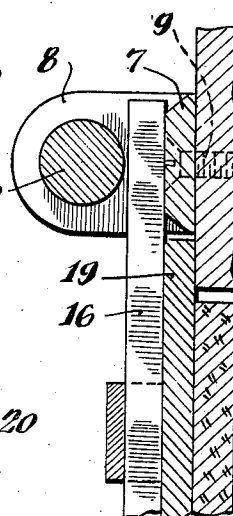


Fig. 4



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LOCKING DEVICE

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5 Claims. (Cl. 292—340)

This invention relates to a locking device and more particularly a lock to be used on doors for ovens, of the type hereinafter described. As is well known, metal articles coated with japans, enamel and other coating materials of a chemical nature are baked in ovens having a high temperature, in order to bake the enamel or other substances on the metal. Owing to the high degree of heat to which these coated articles are subjected, the chemical ingredients give off gases and at times explosions occur. When these explosions do occur they are of great violence. If the oven door were fastened as rigidly as are the tops and sides of the oven, such an explosion would completely destroy the oven.

The purpose of the present invention is to provide a locking device on the outside of the oven which will hold the oven doors in a rigid and air tight position, yet when an explosion occurs or when there is an excessive amount of pressure on the inside of the oven, the doors will automatically open.

An object of the invention is to provide a keeper both at the top and bottom of the oven through which the movable bolt of an oven door passes and which will open automatically by reason of excess pressure on the interior of the oven.

A further object of the invention is to provide a lock in which the keeper can be firmly secured in order to hold the oven door tight when in normal position, and at the same time so constructed that the keeper holding the door will be automatically released by means of undue pressure on the interior of the oven.

A further object of the invention is to provide a keeper for an oven door, the holding tension of which can be adjusted to suit varying conditions.

Although the novel features which are believed to be characteristic of this invention will be more fully pointed out in the claims appended hereto, the invention itself may be better understood by referring to the following description, taken in connection with the accompanying drawing in which specific embodiments thereof have been set forth for purposes of illustration.

While the locking device has been shown in connection with the door of an oven of the type hereinbefore described, it will be understood that the locking device may be used for other purposes if desired.

In the accompanying drawing,

Fig. 1 shows the lock placed upon the top and bottom of the framework of an oven for baking

japanned articles etc., with the door closed in normal position.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1 showing a portion of the top of an oven with the locking device secured thereto.

Fig. 3 is a front view of the locking device.

Fig. 4 is a cross sectional view of the device taken on line 4—4 of Fig. 3.

In the form illustrated in the drawing, the locking device is in the form of a bracket having a base 7 to which are attached uprights 8. This bracket is attached to the top and bottom of the oven by screws 9. In each of the uprights 8 an adjusting screw 10 is placed which threads into the upright 8. These adjusting screws have flanges 20 on the ends thereof in order to prevent deadlock of the roller or keeper 13. Coacting with this adjusting screw is a coiled spring 11, one end of which bears against the adjusting screw 10 and the other end of the spring engages with a ball bearing 12. It will be understood that each upright 8 has the same interior mechanism, viz, adjusting screw 10, a coiled spring 11 coacting therewith and a ball bearing 12 in engagement with the spring 11. Between the uprights is a rolling keeper 13, preferably made of steel. This keeper has angular recesses at each end thereof designated by the numeral 14. At 15 on Fig. 4, is shown a set screw, which may be screwed down on the adjusting screw 10 to hold the same tightly in position.

It will be apparent from the drawing and above description that the holding member or keeper 13 is placed between the uprights and held in position by means of the adjusting screws 10 which, in conjunction with the ball bearings 12 and the springs 11 hold the holding member or keeper 13 in position. Obviously the adjusting screws 10 can be moved inwardly or outwardly by turning and the required pressure on the keeper 13 may be obtained. The adjusting screws 10 may be operated to hold the keeper 13 as firmly as may be desired.

As shown in the drawing (Fig. 1) locking bolts 16 in the oven door are operated in the usual manner by a handle 17 in a locking member 18. The rolling holding member or keeper 13 permits the arms 16 to pass under the keeper 13 with a minimum amount of friction because the balls 12 freely revolve in the recesses 14 irrespective of the amount of pressure exerted by the adjusting screws 10.

It will be seen that when an explosion or any excessive pressure occurs on the interior of the oven, the doors 19 will be forced outwardly and

the bolts 16, by reason of the pressure against the keeper 13 will throw the same out of position and allow the doors to open.

5 While in the drawing and description the locking device is shown in the form of a bracket secured to the front of the oven, it will be understood that the uprights 8 may be secured in different ways. For instance the uprights 8 may be formed integral with the walls of the oven, or 10 they might consist of separate members secured to the framework of the oven in some other manner.

15 Although a specific embodiment of the invention has been set forth for purposes of illustration it is to be understood that the invention is capable of various uses and that various changes and modifications may be made therein, as will be readily apparent to a person skilled in the art. Certain specific terms have been used 20 herein for convenience of description only and not as a limitation on the scope of the invention. The invention is only to be limited in accordance with the following claims.

What I claim is:

25 1. A locking device for oven doors or the like having a locking bolt thereon, said locking device comprising a bracket having spaced uprights ex-

tending outwardly from the plane of said door to receive said bolt therebetween, a keeper for said bolt positioned between said uprights, and releasable means carried by said uprights normally holding said keeper in position but permitting said keeper to be released in response to a predetermined opening pressure on said door. 5

2. The invention set forth in claim 1 in which the releasable means comprises spring members engaging the ends of said keeper for holding the same under compression. 10

3. The invention set forth in claim 1 in which the keeper is provided with end recesses and said releasable means comprises spring pressed members engaging said recesses. 15

4. The invention set forth in claim 1 in which the keeper is provided with end recesses and the releasable means comprises balls engaging said recesses and springs in said uprights holding said balls in holding engagement therewith. 20

5. The invention set forth in claim 1 in which the keeper comprises a roller and the releasable means engages the ends of said roller to permit rotation thereof when said bolt is being positioned for locking the door. 25

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