Oct. 13, 1942. G. E. DEXTER 2,299,052

ATTACHMENTS FOR SLIDABLE DRAWERS IN OVENS OF STOVES OR RANGES

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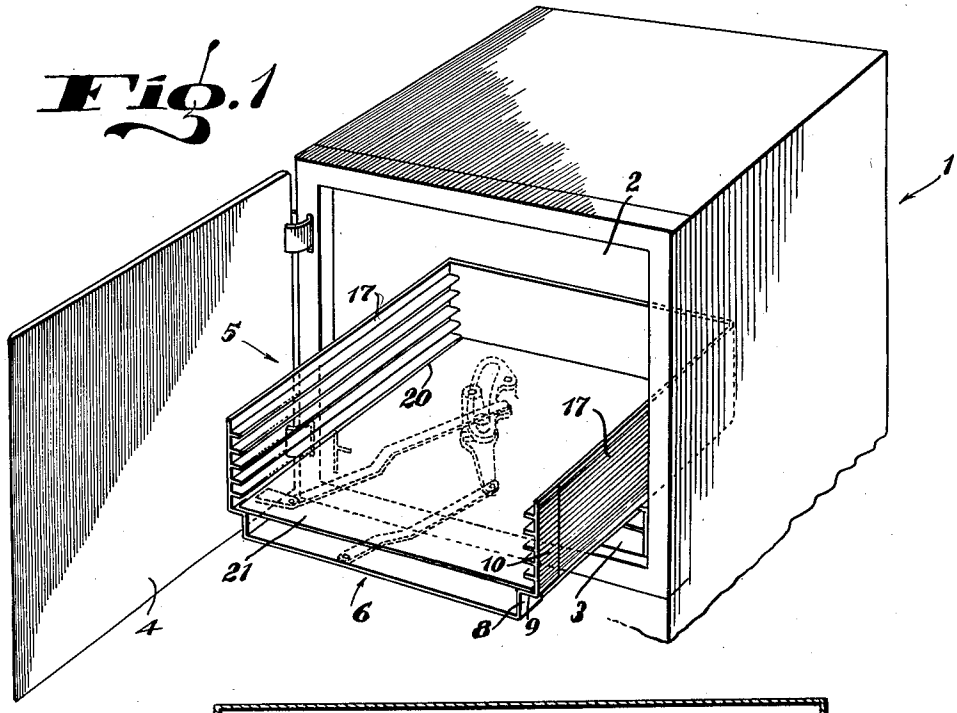
Fig. 1



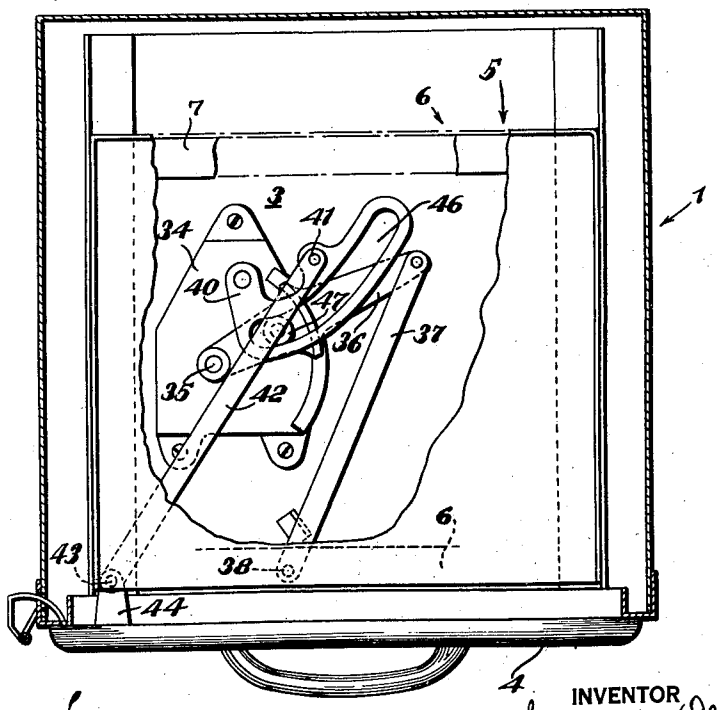


Fig. 2

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Fig. 3

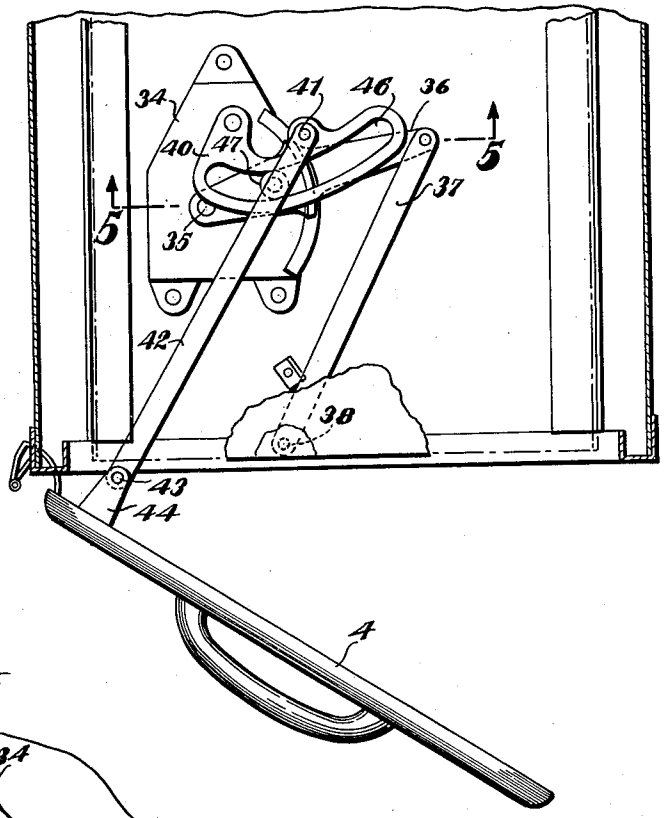
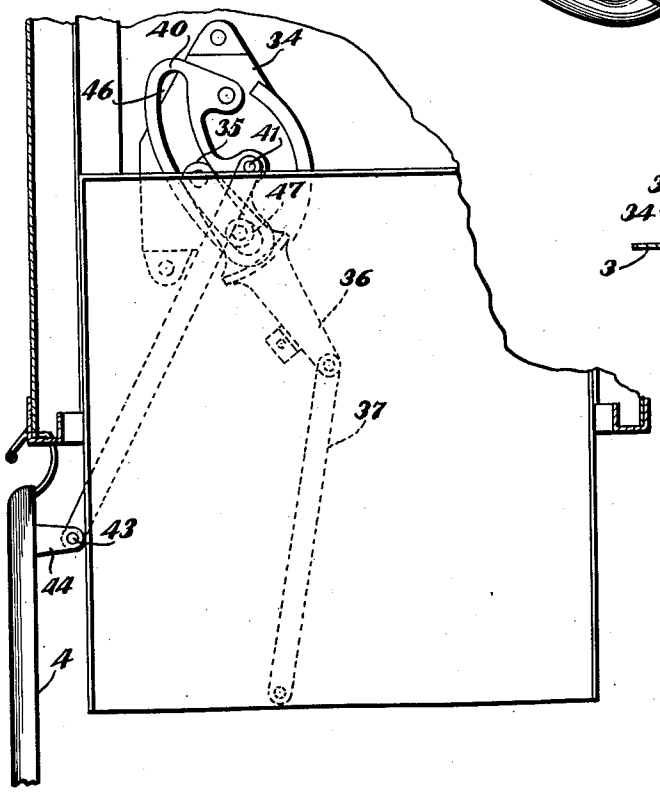


Fig. 4



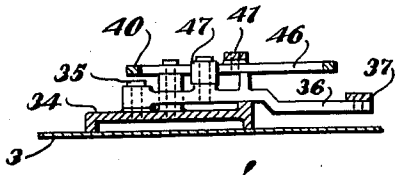


Fig. 5

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Fig. 6

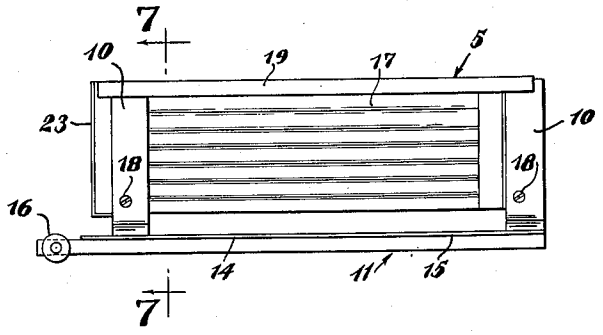


Fig. 7

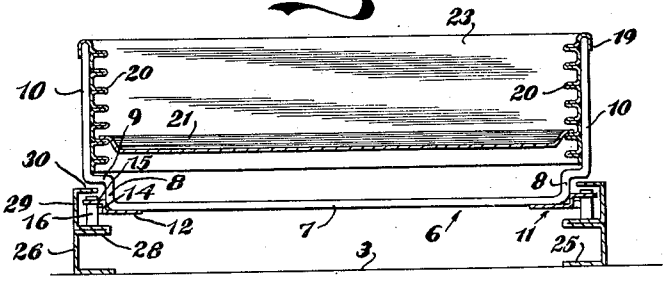
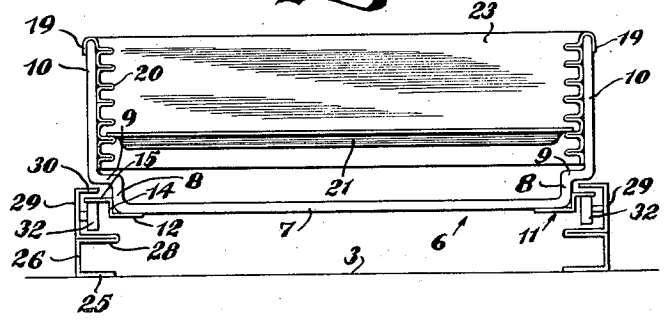


Fig. 8



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Patented Oct. 13, 1942 2,299,052

UNITED STATES PATENT OFFICE

2,299,052

ATTACHMENT FOR SLIDABLE DRAWERS IN OVENS OF STOVES OR RANGES

George E. Dexter, Taunton, Mass., assignor to Glenwood Range Company, Taunton, Mass., a corporation of Massachusetts

Application January 24, 1941, Serial No. 375,795

2 Claims. (Cl. 126—340)

The invention relates to various attachments relating to slidable drawers in ovens of stoves or ranges, and especially slidable broiler drawers, the position of which is controlled by the opening and closure of the oven door. The object of the invention is to generally improve attachments thus pertaining, especially as regards the slidable mounting of the drawer; but more essentially to provide improved means for controlling the drawer by the opening and closure of the oven door.

The invention can best be seen and understood by reference to the drawings in which an embodiment of the invention is shown, and in which

Fig. 1 is a perspective of the combined oven and drawer showing their general relationship, and especially the position occupied by the drawer when the door is full open.

Figs. 2, 3 and 4 are views mainly in plan, showing the various positions occupied by the operating parts which control the position of the drawer through opening and closure of the oven door; Fig. 2 showing the normal position of these parts when the oven door is closed; Fig. 3 their position when the oven door is partly open; and Fig. 4 their relative position when the oven door is full open.

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

Fig. 6 is a side elevation of the drawer.

Fig. 7 is a cross section on the line 7—7 of Fig. 6, including a cross section of the track way on which the drawer is mounted, and

Fig. 8 is a front elevation of the drawer and track way on which it is mounted.

1 represents an exterior casing or housing forming a part of the range, and providing within it a broiler oven 2, of which 3 represents the bottom of the oven. The casing 1 and bottom 3 of the oven form a part of the body of the stove, and are supported by its frame structure (not shown) in any suitable manner. The open front of the oven is controlled by a door 4 hingedly mounted. The oven is also furnished with one or more burners (not shown).

Located within the oven 2 is a broiler drawer 5. This drawer comprises a frame of skeletal structure including bent end pieces 6, each preferably made of one piece strap metal. Each of the end pieces comprises horizontal bar portions 7 which at the front and back define, respectively, the bottom of the drawer. The metal is bent upwardly at the opposite ends of the bars 7 for a short distance forming webs 8; thence the metal is turned outwardly to form narrow shoulders 9, and thence turned upwardly to form vertical bars 10 which support, respectively, the opposite sides of the drawer. The two end pieces 6 are rigidly joined, along what corresponds with the bottom corner edges of the drawer, by strips 11 of sheet metal, which are bent to form horizontal foot pieces 12 spot welded to the ends of the bars 7 on the under sides thereof; thence bent upwardly to form webs 14; and thence bent outwardly to form elongated flanges 15 which assist in the slidable control of the drawer, as will presently be explained.

The strips 11 extend rearwardly at the back of the drawer beyond the rear end pieces 6 to which they are secured, and the flanges 15 are cut away in part to admit of the entry of wheels 16 which are secured to turn upon the webs 14 of the respective strips. The location of these wheels is such that their peripheries, during the turning thereof, will extend slightly below the bottom faces of the foot pieces 12 of the respective strips.

Borne by the vertical bars 10 are the sides 17 of the drawer. These sides are secured to the bars 10 by fastenings 18; while the top edge of each side is provided with a curved rib 19 which overlaps the top ends of the bars 6 to which the side is fastened. The sides are each provided with corrugations forming channels 20 on corresponding pairs of which is slidably mounted a broiler pan 21 which may be adjustably raised or lowered, depending upon the channels in which it is placed. 23 represents the rear end of the drawer which is fastened to the sides 17 in any suitable manner.

The drawer is mounted within the oven to be slidable into and out of the oven on ways or tracks in the following manner: Spot welded to the bottom 3 of the oven at either side thereof, beneath where the drawer is normally located, are elongated foot pieces 25 of sheet metal. Along the outer edge of each of these foot pieces the metal is bent upwardly to form webs 26; thence the metal is bent inwardly upon itself to form elongated horizontal flanges 28. From the inner end of these flanges 28 the metal is again bent upwardly to form webs 29, from the top ends of which the metal is again bent inwardly to form elongated flanges 30. These flanges are cut away in part at their forward ends to admit of the entry of wheels 32 which are secured to turn upon the webs 29. The location of these wheels is such that their peripheries during the turning thereof will extend in part below the flanges 30.

The drawer is mounted to ride upon the ways or tracks thus provided by fitting the wheels 16,

borne by the drawer at the rear thereof, to run, respectively, on the flanges **28** of the respective tracks or ways. The foot pieces **12** on the drawer will then lie above, slightly spaced from these flanges, owing to the fact that the peripheral edges of the wheels **16** extend in part below the foot pieces as previously explained. At the same time the flanges **15** on the drawer will lie below the flanges **30** on the tracks or ways which, accordingly, will prevent accidental lifting of the drawer or its displacement in a vertical direction. The flanges **15** on the drawer will rest to ride upon the wheels **32** of the respective tracks or ways. The drawer will accordingly be slidable at all times upon the wheels **16** and **32**. In this way great facility of movement is afforded the drawer, it being slidable in or out with very little effort, and this is increased by the fact that all the wheels preferably run on ball bearings.

The drawer is controlled by the opening and closure of the oven door **4**. It is moved to lie well out of the oven as the door is opened, and moved back into the oven as the door is closed. For this the following described mechanism is provided.

Fixed to the bottom **3** of the oven, on the top side thereof, is a plate **34**. Pivoted at **35** to this plate is a primary lever **36**. Pivotally connected to the outer end of this lever is an arm **37** which is pivotally connected at **38** to the front end bar **6** of the drawer. The lever **36** is one of some considerable length, and, when the drawer is occupying its normal position within the oven, as shown in Fig. 2, this lever has a generally backward inclination towards the rear end of the oven, and accordingly lies at an acute angle with relation to the arm **37** secured to it. When the lever **36** is so turned as to bring it into obtuse angular relationship with the arm **37**, and especially as this obtuse angular relationship is increased to bring the lever and arm more into alignment with one another as shown in Fig. 4, then the combined lever and arm will have operated to move the drawer out of the oven. When these operating parts are restored to their normal position they will have operated to move the drawer back into the oven.

Motion is imparted to the lever **36** through motion obtained by the opening and closure of the oven door.

Pivoted to the plate **34** on the oven bottom is a cam lever **40** which overlaps the lever **36**. Pivotally secured to the side of this lever at **41** is an arm **42** which is pivotally secured at **43** to a bracket **44** on the door. This bracket on the door is arranged adjacent the bottom of the door, somewhat removed from the axis on which the door turns, so that when the door is opened and closed the bracket upon it will be made to describe an arc, turning around said axis, and the motion thus imparted to the bracket will, through the arm **42**, turn the cam lever **40**. The cam lever **40** has cut within it a cam way **46** within which runs a cam roll **47** fixed to the side of the lever **36**. As the oven door is opened the cam lever will be moved forward, whereupon the cam roll **47** will move along the cam way **46** owing to the change in the relative co-operative position of the co-operating elements. Owing to the arcuate form of the cam way **46** no motion will at first be imparted to change the angular position of the lever **36** to its connecting arm **37**, or to straighten these elements. In fact the oven door may be appreciably opened, as shown in Fig. 3, attended with no withdrawal of the drawer, avoiding all tendency of the drawer being withdrawn so suddenly as to strike the door, and at the same time permitting, as occasion requires, an inspection of the oven without moving the drawer. As the oven door becomes more fully opened, effecting further movement of the cam lever, thereupon the cam lever, through the operation of the cam roll, will tend to change the angularity of the lever **36** and arm **37**, bringing them more into alignment, and this especially as the cam roll approaches the end of the cam way upon full opening of the oven door, substantially as shown in Fig. 4, when the drawer will have become moved well out of the oven, substantially as shown in Fig. 1. On closure of the oven door a reverse operation takes place, and the drawer will be moved back into the oven to occupy its normal position therein.

Inasmuch as motion is imparted to draw out the oven only throughout a partial movement of the door during the opening thereof, or during the latter phase of its opening, consequently the motion of withdrawal imparted to the drawer is a more or less rapid motion of withdrawal, but the acceleration is brought about gradually and with the utmost smoothness of action, the start of the door from its position of rest being imperceptible to one opening the door.

I claim:

1. In a range the combination comprising an oven with a doorway and a bottom wall, a draw out member in said oven arranged above said bottom wall, an oven door hingedly supported and closing the doorway to the oven, two levers, one an actuated lever and the other an actuating lever, means for pivotally mounting each of said respective levers upon the bottom of said oven beneath said draw out member whereby they may be severally moved towards or away from the doorway of said oven, means between said levers whereby one lever may be operated by the other as said other of said levers is reversely turned towards or away from said doorway, and separate means connecting said levers with said draw out member and door, respectively, one with the door and the other with the draw out member, whereby said draw out member will be withdrawn from the oven as said door is opened and returned into the oven as said door is closed.

2. In a range the combination comprising an oven with a doorway and a bottom wall, a draw out member in said oven arranged above said bottom wall, an oven door hingedly supported and closing the doorway to the oven, two levers, one an actuated lever and the other an actuating lever, means for pivotally mounting each of said respective levers upon the bottom of said oven beneath said draw out member whereby they may be severally moved towards or away from the doorway of said oven, means connecting said levers whereby one lever may be operated by the other as said other of said levers is turned towards or away from said doorway, and separate means connecting said levers with said draw out member and door, respectively, one with the door and the other with the draw out member, whereby said draw out member will be moved from an initial position of rest within said oven to one of withdrawal therefrom by the opening of said door only after said door has attained a determinate extent of opening and afterwards said draw out member be returned to its initial position within said oven by the closing of said door.

GEORGE E. DEXTER.