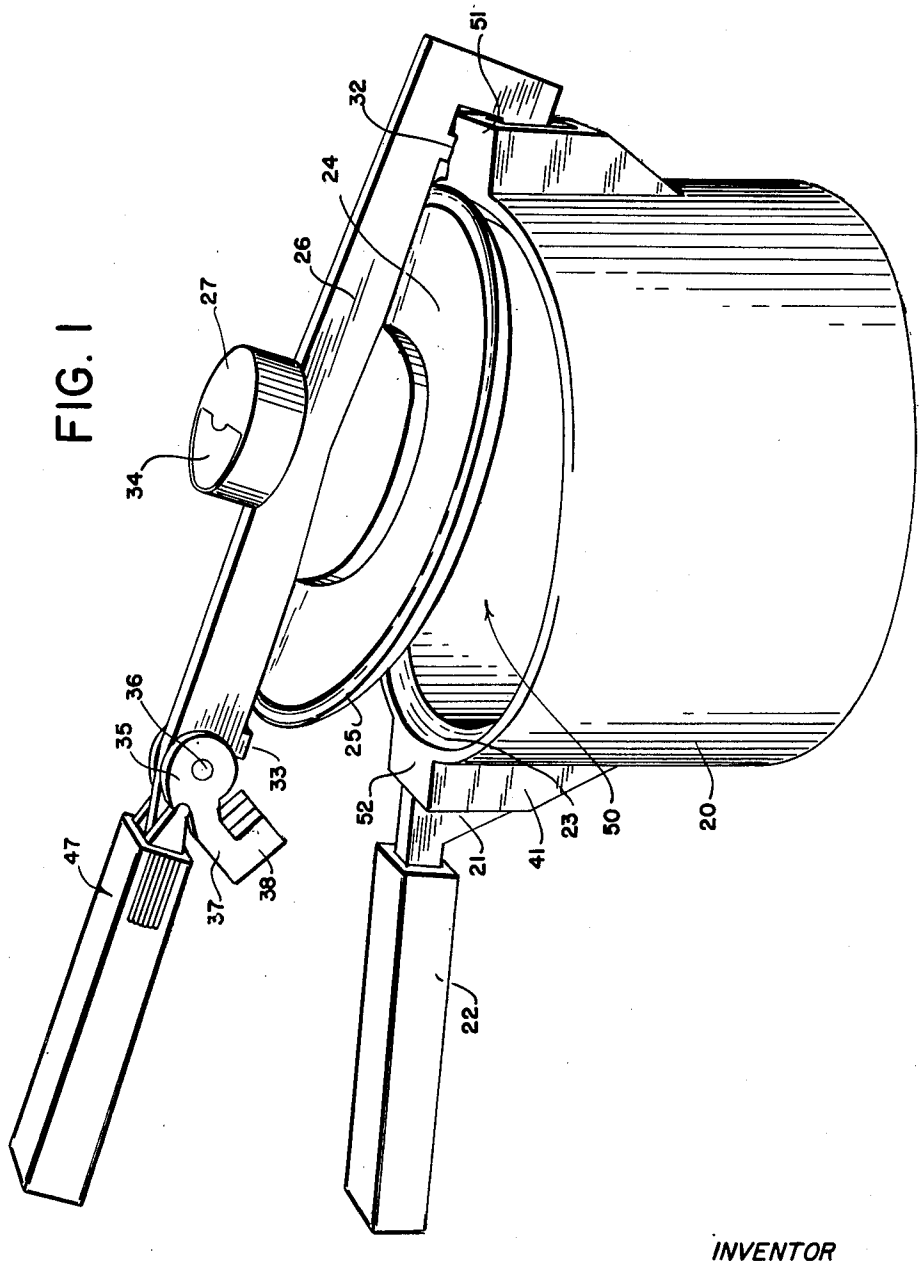
June 3, 1952 C. C. SCHWEISO 2,599,072

SAFETY MECHANISM FOR PRESSURE COOKERS

Filed May 3, 1948 4 Sheets-Sheet 1

FIG. 1



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SAFETY MECHANISM FOR PRESSURE COOKERS

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FIG. 2

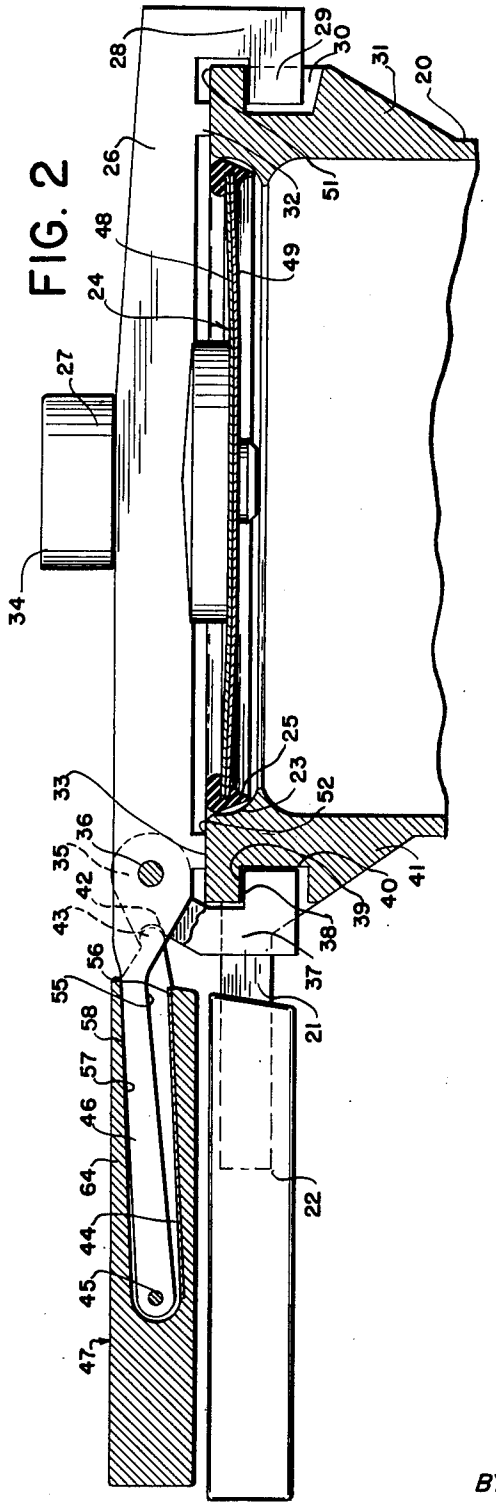
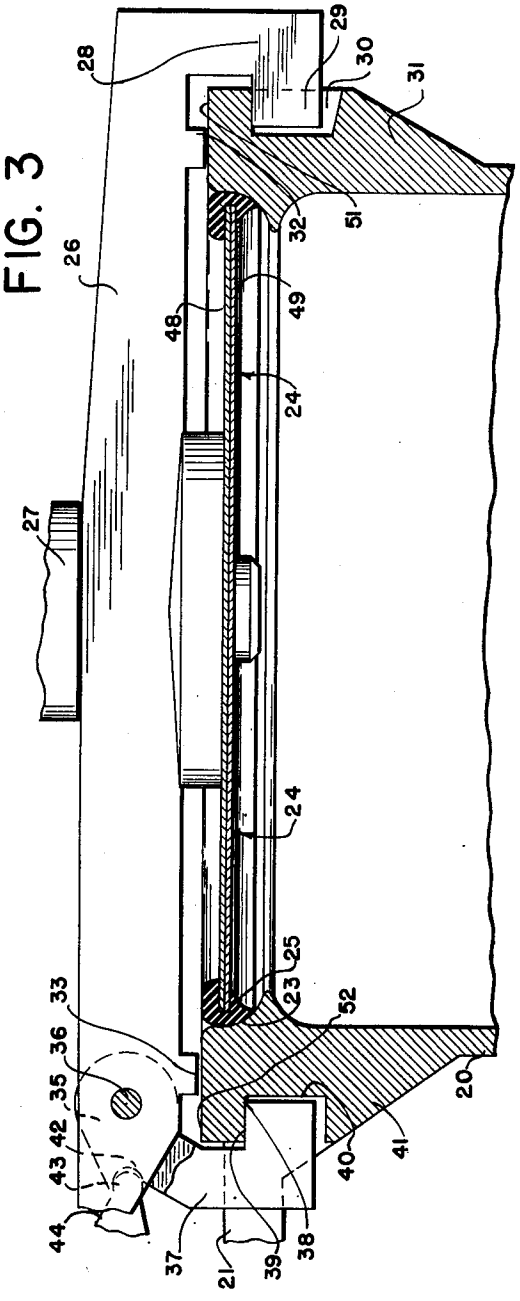


FIG. 3



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SAFETY MECHANISM FOR PRESSURE COOKERS

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FIG. 4

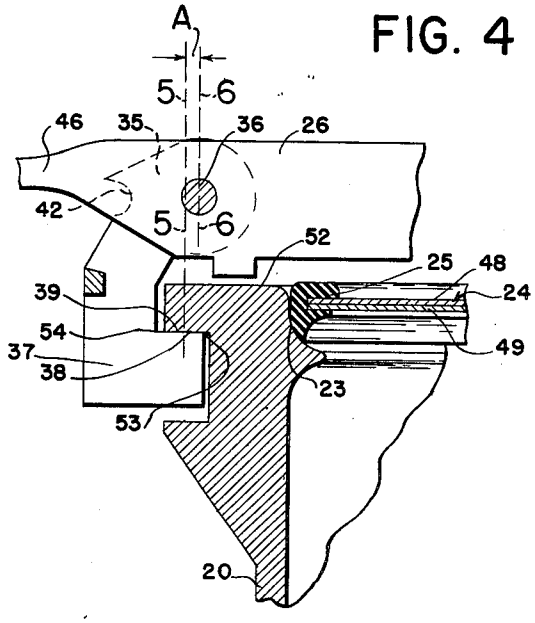


FIG. 5

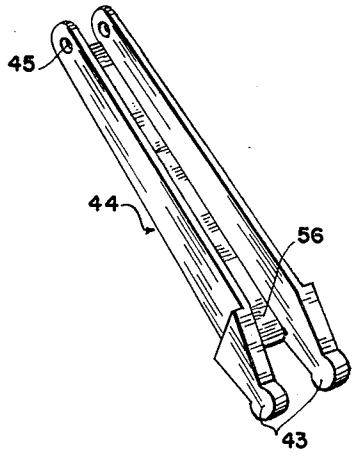
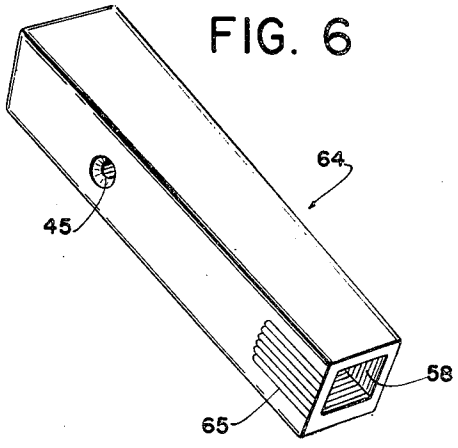


FIG. 6



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SAFETY MECHANISM FOR PRESSURE COOKERS

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FIG. 7

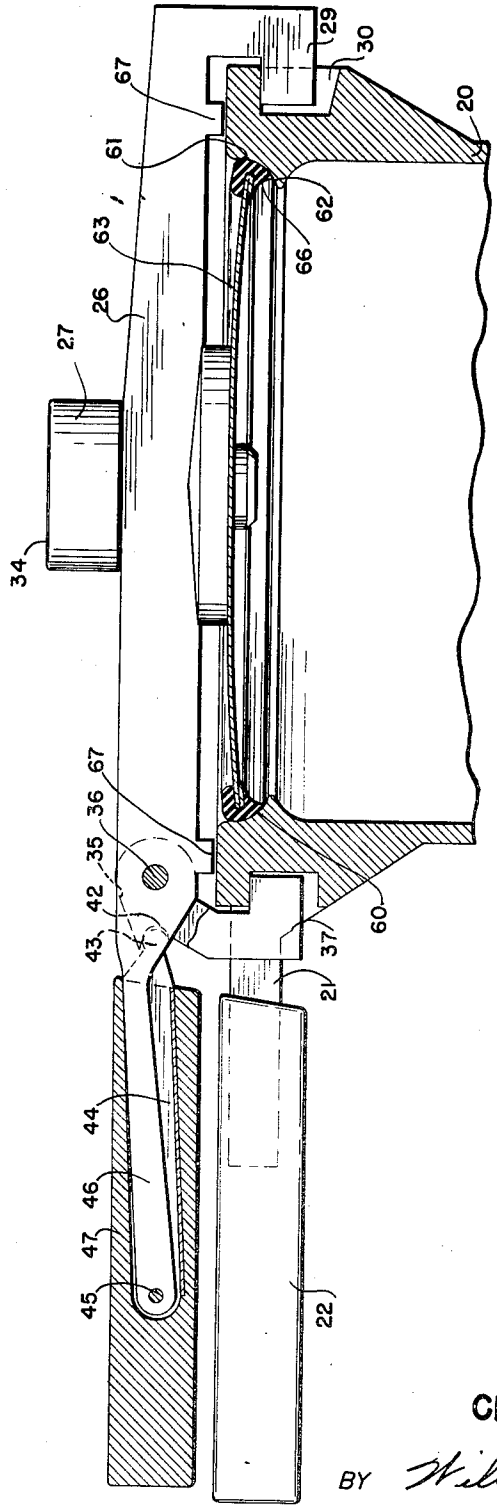


FIG. 9

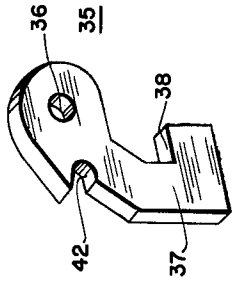
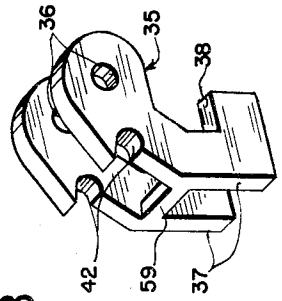


FIG. 8



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Patented June 3, 1952 2,599,072

UNITED STATES PATENT OFFICE

2,599,072

SAFETY MECHANISM FOR PRESSURE COOKERS

Clifford C. Schweiso, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

Application May 3, 1948, Serial No. 24,764

19 Claims. (Cl. 220—56)

1

The present invention is concerned with improvements in pressure cookers and, more particularly, with means for fastening the cover of such a cooker in position. The invention is also directed to improved methods for preventing removal of such a cover while there is still pressure within the container. This application is a continuation in part of my application, now abandoned, Serial No. 715,088, filed December 9, 1946, for Safety Mechanism for Pressure Cookers.

Various methods have been proposed in the prior art for attachment of the cover to a pressure cooker. Many of these forms fail to provide safety means to prevent removal of the cover when the container is under pressure. Other constructions which do attempt to provide such safety means are complicated in structure and expensive to manufacture.

Accordingly, one object of this invention is to provide a pressure cooker which will overcome these disadvantages of the prior art.

Another object of the invention is to provide improved means for attachment of the cover to a pressure cooker.

A further object is the provision of a readily constructed safety mechanism to prevent removal of said cover while there is still pressure inside the cooker.

Still another object is the provision of improved fastening means for a cover of the type which can be positioned and latched loosely on the cooker body and which subsequently engages said body to form a tight closure in response to a predetermined change in a cooking condition within the cooker.

A further object is the design of improved latching means for the cover of a pressure cooker, in which pressure from within the cooker will increase the force which holds said latching means in its locking position.

An additional object of the invention is the construction of improved latch operating means for the cover of a pressure cooker, in which the user of the cooker will be unable to exert substantial leverage to open the latch when there is pressure inside the cooker.

Other objects and advantages of this invention will be apparent from the following detailed description.

The invention accordingly embodies the features described herein and exemplified in the accompanying drawings, wherein like reference characters indicate like parts, and in which:

Figure 1 is a perspective view of a pressure cooker according to one embodiment of the present invention;

Fig. 2 is a sectional view taken on a vertical plane, running generally lengthwise through the handle of the cooker shown in Fig. 1, with the cover of the cooker in its latched but unsealed

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position, certain parts being broken away and others being shown in full lines for clearness.

Fig. 3 is a view similar to Fig. 2 but with the cover in sealed position.

Fig. 4 is a detail view of certain parts of the device of the preceding figure.

Fig. 5 is a perspective view of one form of operating handle according to this invention.

Fig. 6 is a perspective view of a handgrip for the device of Fig. 5.

Fig. 7 is a partial view of a modified fastening mechanism according to the present invention, applied to a cooker which has a different form of cover construction from that of Figs. 1 to 6;

Fig. 8 is a perspective view of the latch member of the preceding figures; and

Fig. 9 is a similar view of a modified form of the latch member.

The pressure cooker, made according to this invention, includes the usual body portion **20** which may be of any desired shape and external design. I prefer a substantially cylindrical pot as shown in Fig. 1. A handle extension **21** may be made integral with said body portion or may be separately manufactured and attached thereto by welding or other suitable means. A handle **22** of plastic or other desired heat-insulating material is fastened on the handle extension **21** and extends preferably horizontally and radially from the upper portion of the body to furnish a convenient and accessible grip for the hand of the user.

The top of the cooker body **20** is provided with an opening **50**; surrounding this opening is a suitable annular seat **23** shaped to cooperate with the cover means to be described below.

The cover **24** may be of any desired construction adapted to engage said seat from the outside and maintain tight sealing engagement therewith at elevated temperatures and pressures and at the same time flex slightly upward at its center in response to a cooking condition within the cooker. Since pressure and temperature have a definite correlation, once the air has been vented, it is possible to utilize either pressure or temperature or both to cause this flexing of the cover. For example, in Figs. 1 to 4, I have shown a bimetallic temperature-responsive cover. This cover comprises two relatively thin plates **48** and **49** fastened together throughout their areas by welding, or by casting one layer on the other, or by other known methods for the manufacture of compound metal stock. Plates **48** and **49** are of materials which have different coefficients of expansion with respect to temperature. Plate **48** has the greater coefficient of expansion. For example, plate **48** may be made of brass or stainless steel while plate **49** consists of that type of nickel alloy steel known as Invar. Thus, if the cover is heated, due to increase in temperature

of the cooker body and contents, the cover 24 will tend to bend or flex downwardly toward the seat 23 to establish a firm seal with said seat and prevent escape of the steam formed within the cooker body. At the same time, since downward movement of the edges of the cover is limited by seat 23, the central portion of the cover will tend to flex upwardly. This upward flexing will be further assisted by the upward force on said cover due to internal pressure. As the central portion of the cover rises, it will lift the crossbar 26 from the opening to an outer or displaced position as further described below.

The sealing action of the cover may be facilitated by the use of a gasket 25 of any desired construction. The gasket shown in the drawing is made of synthetic rubber or similar resilient material suitably resistant to the conditions encountered during operation of the cooker, and is provided with a thin downwardly projecting lip as shown, which will be pressed tightly against the seat by internal pressure after the initial seal is established.

The cover is carried by a suitable supporting member shown in the shape of a bridge or crossbar 26, positioned externally of the cover 24 and the opening 50, and extending substantially diametrically across said opening. The crossbar 26 and cover 24 are connected together so that the position and movement of the cover will be determined by the position and movement of the crossbar. In the example shown, this fastening is at the center of the cover.

The crossbar and cover may carry a suitable pressure control member in the form of a pressure weight 27 of any desired construction. The pressure control member is adapted to permit escape of steam when the internal pressure reaches a predetermined value, and it may also include a pressure gauge 34 from which the user can ascertain the specific pressure conditions within the cooker at any time. Such members are known in the art and need not be described in detail.

At one end of the external bridge or crossbar 26 cooperating means are provided to hold the end of the crossbar in operative position with respect to the cooker body. This cooperating means includes a downward extension 28 on the crossbar 26, said extension having an inwardly turned hook 29 for engagement with a recess 30 in the thickened portion 31 of the cooker body. A positioning lug 32 on the underside of the crossbar at this end cooperates with the flat surface 51 of the cooker body to hold the crossbar and cover in their preliminary positions prior to sealing of the cover.

A similar positioning lug 33 is carried by the crossbar at a point which will cooperate with the flat surface 52 near the handle of the pressure cooker body.

Cooperating latch means are provided on the cooker body and crossbar at a point near the body handle 22 to latch the crossbar and cover in position and to permit ready removal and attachment of the cover. The specific latch means shown in Fig. 1 includes a movable member 35 pivoted at 36 to the crossbar. Member 35 has two identical projections 37 which are provided with latching hooks 38 for engagement with the flat retaining surfaces 39 of notches 40. These notches are provided in a thickened portion 41 of the cooker body immediately adjacent to the handle extension 21 on each side of said extension.

It will be readily seen that member 35 is movable between two positions, namely the position of Fig. 1 in which the latching hooks 38 are out of engagement with the retaining surface 39 and that shown in Figs. 2 and 3 wherein the surfaces 38 are in position for actual engagement with the retaining surfaces 39 to prevent removal of the cover from the crossbar.

According to this invention, I have provided special safety means to prevent movement of said latch member from closed to open position while there is pressure within the cooker. These safety means will now be described in detail.

The hooks 38 and surfaces 39 are preferably flat and in substantially the same planes when latched in order to provide close frictional contact between these parts which will tend to resist movement of the latch to its open position when the cover is exposed to internal pressure and exerts an upward force on said crossbar due to its upward flexing as previously described.

Since the frictional force resisting lateral sliding movement between two surfaces is directly proportional to the force exerted perpendicularly to hold the surfaces against each other, it will be apparent that an increase of internal pressure will tend to lift the center of the cover and crossbar and will urge surfaces 38 and 39 into such tight engagement with each other that considerable force would be required to overcome the friction and move the latch 35 to its open or unlatched position.

This resistance of the parts to unlatching, when there is internal pressure, is further increased by positioning the pivot 36 at a point on the crossbar somewhat inside the point at which a line perpendicular to the plane of surfaces 38 and 39 at their center would intersect said crossbar. This spacing is shown by the double arrows A between dotted lines 5—5 and 6—6 of Fig. 4. Stated in another way, the tips 53 of latching hooks 38 should be closer to the center of pivot 36 than are the inner edges 54 of said hooks. While this effect can be achieved either by positioning the pivot as described or by upward inclination of surfaces 38 and 39 toward the center, I prefer the construction shown, in which surfaces 38 and 39 remain substantially horizontal since this arrangement makes it easier to position and remove the cover.

Thus, when internal pressure on the cover 24 lifts the crossbar to the position shown in Fig. 3, the surfaces 38 and 39 may exert a slight camming action on latch member 35 which tends to urge the latch more tightly into locking engagement with recess 40. The greater the internal pressure, the greater this camming action will be.

It will be readily understood that hooks 38 and retaining surfaces 39 could be formed at any desired angle to fit the above general conditions. However, I have found that only a slight camming action is required to prevent unlatching while internal pressure is present, and this camming action can be obtained with only a slight inward spacing of the pivot, as shown at A.

In order to move the latch member 35 from one position to the other, I have provided said latch member with suitable notches 42 (see Fig. 8), cooperating with lugs 43 on an operating handle designated generally as 47.

The lack of leverage is further emphasized by the handle construction and mounting. Notches 42 are preferably positioned on latch 35 so that they are nearer the latch pivot 36 than the surfaces of hooks 38 are. Thus, less force will be

transmitted to hooks 38 than is applied to notches 42, because of the low leverage or mechanical disadvantage of this arrangement.

The handle 47 may consist of two parts, namely a metal body member 44 (Fig. 5) and a plastic handgrip 64 (Fig. 6) which telescopes onto member 44. It will be seen from Fig. 2 that the external crossbar 26 has an integral handle extension 46 extending just above and substantially parallel to the handle extension 21 of the cooker body. The handle body member 44, according to this invention is channel-shaped as shown in Fig. 5 and is pivoted at 45 to this crossbar extension 46 by a suitable screw or rivet. Handgrip 64 is recessed to fit closely over the outer end of member 44 and then encloses and conceals both member 44 and handle extension 46. This arrangement is neat and compact in appearance, and also increases the safety factor as discussed below. Grip 64 may be similar to the plastic or insulated grip 22 on handle extension 21. Raised portions or knurlings 65 may be provided at each side of this grip 64 to enable the user to grasp the inner end of the handle. When the cover is in place, handle 47 may be just above body handle 22 and parallel to it, so that both handles may be gripped readily in one hand by the user. Point 45, at which this handle 47 is pivoted to the crossbar, is substantially spaced outwardly from the pivot 36 of the latch member 35. I prefer to position this point 45 at the extreme outer end of body member 44 and extension 46. Thus, it will be seen that the latch member can be actuated between its two positions by raising and lowering the inner end of the handle 47 immediately adjacent to said latch member. As shown in Fig. 2, the extension 46 narrows inwardly from pivot 45 to permit limited movement of member 44 on said pivot. Upward movement of member 44 is limited by contact of edge 55 of extension 46 against central portion 56 of member 44, while downward movement is similarly limited by contact of edge 57 against the upper inside face 58 of hollow handgrip 64. Spring means may be provided, if desired, to retain said latch against accidental movement from either of its two positions.

In the normal process of gripping handles 47 and 22, the thumb and forefinger of the user will be at the inner end of the handle 47 in a position to operate said handle and latch. Since the outer end of handle member 44 is fixed to the handle extension 46, and since any upward force against the handle extension or crossbar merely serves to tighten the engagement of latch member 35 with recess 40, it is apparent that the user cannot exert any substantial leverage to open the latch. The stronger arm and shoulder muscles will be ineffective, and only the relatively weaker muscles of the thumb, finger and wrist can be used to actuate the latch 35.

Furthermore, in the preferred form of my invention as shown in these drawings, the operating handle 47 lies substantially adjacent the body handle 22. Thus, there is no room for the user's fingers to pass between these handles and obtain a firm grip on handle 47. The only natural and practical method for the user is to pinch the sides of the inner end of handle 47 between the thumb and forefinger and thus lift the handle to operate the latch. It is apparent that this further feature of construction increases the safety factor and makes it impossible for the user to exert substantial force or leverage to open the latch.

It should also be noted that the handle 47 projects only a short distance outwardly beyond pivot 45, this distance being substantially less than the distance from pivot 45 to latch-engaging lugs 43. Thus, an attempt to open the latch by squeezing this extreme outer portion toward body handle 22 will be equally unsuccessful, as long as there is substantial pressure inside the cooker, because of the lack of leverage.

The frictional locking force, the camming action of hooks 38, the engagement of the handle with the latch at a point near the latch pivot, and the relative arrangement of the handle pivot, handgrip portion and latch-engaging portion each contribute to the safety of the device. The combination of a plurality of these features makes it impossible for the user to open the latch and remove the cover until the pressure within the cooker has been lowered to a safe degree—either by operation of valve 27 or other venting means well known in the art, or by cooling of the cooker and contents sufficiently to cause relaxation of cover 24 to substantially its unsealed position as shown in Fig. 2.

The operation of this device can now be readily understood with reference to the foregoing structural features and description. The cover is placed in position on the cooker by first engaging the hook 29 in the recess 30 while the cover and crossbar are held substantially in the position shown in Fig. 1. The handle end of said crossbar can then be swung down toward body handle 22 until the supporting lugs 32 and 33 are resting on the flat surfaces 51 and 52 of the cooker body. As the handle 47 completes its movement toward handle 22, the latch 35 will be rotated to the position shown in Fig. 2.

After the cooker and its contents are heated, the cover 24 will expand or flex downwardly at its edges and the gasket 25 will be seated tightly against the annular seat 23. As further heat is applied, the cover will continue to flex and will exert an upward force at the center of the crossbar 26 as previously described. This will lift the crossbar so that the supporting lugs 32 and 33 are no longer resting on the surfaces 51 and 52. This position of the cooker is shown in Fig. 3 from which it will be apparent that the hook 29 and the latching hook 38 will now be in tight engagement with their respective retaining surfaces in the recesses 30 and 40. The safety means previously described will make it well nigh impossible for the user to open the latch and be injured by sudden ejection of the cover or escape of steam until the pressure within the container has again been reduced to a safe degree.

While I have shown the preferred embodiment of my invention in Figs. 1 to 6, in connection with a cooker having a bimetallic cover, it will be readily apparent to those skilled in the art that I may use any other type of cover which tends to flex or expand with reference to the cooker body to form a tight seal and exert an upward force on crossbar 26 due to an increase in temperature or pressure within the container. In Fig. 7, for example, I have shown my improved latching and safety mechanism in combination with a cooker having a dome-shaped cover 63 formed from a single sheet of resilient metal which has a high coefficient of expansion due to temperature. Cover 63 may be made, for example, of stainless steel. The edge of the cover is doubled back on itself to form a reinforcing flange about its periphery for increased strength. Details of construction of the cooker

body 20, crossbar 26 and handle-operating mechanism are identical with the similar features shown in the embodiment discussed above.

The annular seat 60 at the top of the cooker body includes a substantially vertical portion 61 and a relatively sloping inner portion 62. These two portions form a sort of tapered recess into which a suitable gasket 66 on the edge of the cover will be forced to form a tight seal when cover 63 is applied. This sealing effect is increased by internal pressure on the thin, downwardly projecting gasket lip, as in the previous embodiment.

Cover 63 is fastened in its center to crossbar 26. In this particular embodiment of the invention the cover and gasket will fit closely against the seat when the cover is in latched position on the pot, the slight flexing of the cover and gasket being sufficient to effect an initial mechanical seal.

Lugs 67 on the crossbar 26 serve to limit the inward movement of the crossbar to prevent flexing of the cover beyond its elastic limit during initial sealing. As heat is applied, the cover will tend to expand radially. Since the edges of the cover cannot move outwardly to any substantial extent because of the vertical wall 61 of the seat 60, and because of the slightly slower expansion of the reinforced edge portion, it is obvious that the center of the cover will bend upwardly and will exert an upward force on crossbar 26 just as in the case of the embodiment previously described. As pressure builds up within the cooker, such pressure will further tend to lift the center of the cover. Because of the dome-like shape, and the resulting inclination of the edges of the cover, such pressure will force the edges more tightly against wall portion 61 of seat 60 and will thus maintain a tight seal.

It will be apparent that the operation of the latching mechanism and of the safety features previously described will be the same in this case as in the device of Figs. 1–6.

As shown in Fig. 8, the latch member so far described consists of two identical sides connected by an integral crossbar 59, each side having its own latching hook 38, notch 42 and pivot hole 36.

It will be apparent that a single latch member could be used, or that crossbar 59 could be omitted, so that there would be two separate latches, one pivoted at each side of bar 26. Such a separate latch member is shown in Fig. 9. Obviously two such latches would be actuated as a unit by lugs 43 on handle 47, so that omission of crossbar 59 would not change the operation of the latching mechanism in any way.

Although this latching mechanism and handle construction is of particular advantage when combined with a pressure cooker cover of the responsive type exemplified herein, it is apparent that such construction can also be used for fastening any other type of cover to a cooking vessel. Thus, a plain cover which is not responsive to pressure or temperature could be used with my latch and handle mechanism with obvious advantages of utility and appearance, even where there is no pressure and no need of the safety features of the invention.

Now that I have described the details of construction and operation of suitable examples according to my invention, various equivalent modifications will be apparent to those skilled in the art. Accordingly, my invention is not

to be limited by the specific mechanical details of construction shown but only by the spirit and scope of the attached claims.

Now, therefore, I claim:

1. In a pressure cooker comprising a body having an opening therein, a handle for said body extending outwardly therefrom, a cover for said opening, and a crossbar supporting said cover and having a handle extension projecting outwardly substantially adjacent and parallel to said body handle when the cover is moved into position to close said opening, the combination of automatic means for movement of a portion of the cover and said crossbar outwardly to a slightly displaced position in response to a predetermined change in a cooking condition within the cooker, cooperative latching means on said crossbar and said body including a latch mounted on the crossbar and movable between an open position in which it permits disengagement of said crossbar and cover from the body and a closed position in which it prevents such disengagement and limits said outward movement of the crossbar, and safety means preventing movement of said latch from closed to open position when said crossbar is held in said displaced position as a result of said predetermined change, said safety means including cooperating cam surfaces on said latch and said body urging said latch into closed position when said crossbar is forced toward said displaced position, said safety means also including an operating handle for said latch having its outer end pivoted to the outer end of said handle extension and its inner end engaging said latch and mounted along the inner portion of said handle extension for limited movement away from said body handle to actuate said latch from closed to open position, said operating handle engaging said latch at a point on said latch which is nearer said latch pivot than said cam surfaces are.

2. A pressure cooker according to claim 1 in which the automatic means comprises a bimetallic cover portion movable to displaced position in response to a predetermined change in temperature within the cooker.

3. A pressure cooker according to claim 1 in which the automatic means comprises a flexible cover portion having a high thermal coefficient of expansion and movable to displaced position in response to a predetermined change in temperature and pressure within the cooker.

4. A pressure cooker including a body member having an opening therein, a bi-metallic cover for said opening, a portion of which is adapted to flex outwardly in response to temperature and pressure, a supporting member for said cover movable to a slightly displaced position by outward flexing of said cover portion, a latch mounted on one of said members and movable between an open position in which its permits disengagement of said support and cover from the body and a closed position in which it prevents such disengagement and limits movement of the support to said displaced position, and safety means preventing movement of said latching means from its closed to its open position while said supporting member is in its displaced position, the safety means comprising an operating handle pivoted to said one member at a point spaced from the latch and having an actuating portion engaging the latch and a main hand grip portion, substantially the entire hand grip portion being nearer the handle pivot point than is the latch engaging portion.

5. A pressure cooker including a body member

having an opening therein, a cover member for said opening, a supporting member for said cover, said cover including temperature responsive means for movement of the cover into sealing engagement with said opening at a predetermined temperature and for moving said supporting member outwardly to a displaced position in response to further increase of temperature, a latch mounted on one of said members and movable between an open position permitting disengagement of said supporting member and cover from the body and a closed position preventing such disengagement and limiting the outward movement of said supporting member, and safety means preventing movement of said latching means from its closed to its open position while said supporting member is held in its displaced position as a result of said increase of temperature, the safety means comprising an operating handle pivoted to said one member at a point spaced from the latch and having an actuating portion engaging the latch and a main hand grip portion, substantially the entire hand grip portion being nearer the handle pivot point than is the latch engaging portion.

6. A pressure cooker including a body member having an opening therein, a resiliently flexible metallic cover having a high thermal coefficient of expansion for sealing said opening and flexing a portion of the cover outwardly in response to a predetermined pressure, a supporting member for said cover movable to a slightly displaced position by outward flexing of said cover portion, a latch mounted on one of said member and movable between an open position in which it permits disengagement of said support and cover from the body and a closed position in which it prevents such disengagement but permits movement of the support to said displaced position, and safety means preventing movement of said latching means from its closed to its open position while said supporting member is in its displaced position, the safety means comprising an operating handle pivoted to said one member at a point spaced from the latch and having an actuating portion engaging the latch and a main hand grip portion, substantially the entire hand grip portion being nearer the handle pivot point than is the latch engaging portion.

7. A pressure cooker including a body member having an opening therein, a cover for said opening, a supporting member for said cover, said cover including automatic means for movement of the cover into sealing engagement with said opening and for moving said supporting member outwardly to a slightly displaced position in response to a predetermined change in at least one condition selected from the group consisting of temperature and pressure, a latch mounted on one of the members and movable between an open position in which it permits disengagement of said support and cover from the body and a closed position in which it prevents such disengagement and limits said outward movement of the supporting member and safety means preventing movement of said latching member from its closed to its open position while said supporting member is held in said displaced position as a result of said predetermined condition, the safety means comprising an operating handle pivoted to said one member at a point spaced from the latch and having an actuating portion engaging the latch and a main hand grip portion, substantially the entire hand grip portion being nearer the handle pivot point than is the latch engaging portion.

8. A pressure cooker including a body member having an opening therein, a cover member for said opening having a portion which is movable to a slightly displaced position in response to a predetermined change in a cooking condition within the body, a latch mounted on one of the members and movable between an open position in which it permits disengagement of said cover from the body and a closed position in which it prevents such disengagement and limits movement of the cover portion to said displaced position, and safety means preventing movement of said latching means from its closed to its open position while said cover portion is in its displaced position, the safety means comprising an operating handle pivoted to said one member at a point spaced from the latch and having an actuating portion engaging the latch and a main handgrip portion, substantially the entire handgrip portion being nearer the handle pivot point than is the latch engaging portion.

9. In a pressure cooker comprising a body member having an opening therein and a cover member for said opening, the combination of fastening means including a latch pivoted to one of said members and movable between an open position in which it permits disengagement of said cover from said body and a closed position in which it prevents such disengagement, and safety means preventing movement of said latch from closed to open position while there is pressure within the cooker, said safety means including cooperating cam surfaces on said latch and the other of said members urging said latch into closed position in response to pressure within the cooker tending to open said cover, an operating handle pivoted to said one member at a point substantially spaced from said latch pivot, said operating handle having a portion engaging said latch at a point on the latch which is nearer the latch pivot than said cam surfaces are, for movement of said latch by said latch engaging portion, and a main hand grip portion on said operating handle between said handle pivot and said latch engaging portion, whereby less force is transmitted to the cam surfaces than is applied to the grip portion.

10. In a pressure cooker comprising a body member having an opening therein and a cover member for said opening, the combination of fastening means including a latch pivoted to one of said members and movable between an open position in which it permits disengagement of said cover from said body and a closed position in which it prevents such disengagement, and safety means preventing movement of said latch from closed to open position while there is pressure within said cooker, said safety means including cooperating cam surfaces on said latch and the other of said members urging said latch into closed position in response to pressure within the cooker tending to open said cover, and an operating handle pivoted to said one member at a point substantially spaced from said latch pivot, said operating handle having a portion engaging said latch for movement of the latch and a handgrip portion, substantially the entire hand grip portion being nearer said handle pivot than is said latch engaging portion, whereby less force is transmitted to the latch than is applied to the handgrip portion.

11. In a pressure cooker comprising a body member having an opening therein and a cover

member for said opening, the combination of fastening means including a latch pivoted to one of said members and movable between an open position in which it permits disengagement of said cover from said body and a closed position in which it prevents such disengagement, and safety means preventing movement of said latch from closed to open position while there is pressure within the cooker, said safety means including cooperating flat retaining surfaces on said latch and the other of said members, said surfaces engaging each other in a plane substantially parallel to the plane of said opening and cover when the cover is in place and said latch is in its closed position, and said latch pivot being at a point which is nearer the vertical center line of said cover than the effective center of said retaining surfaces is, said safety means also including an operating handle pivoted to said one member at a point spaced from said latch pivot and having a grip portion and a latch engaging portion, the entire grip portion being nearer said handle pivot than said latch engaging portion is.

12. A cooking vessel comprising a body having an opening therein, a handle for said body extending outwardly therefrom, a cover for closing said opening, said cover including a handle extension projecting outwardly substantially adjacent and parallel to said body handle when the cover is moved into position to close said opening, cooperative latching means on said cover and body including a member movable between an open position in which it permits engagement and removal of said cover assembly and a closed position in which it prevents such removal, and an operating handle for said latching member having its outer end pivoted to the outer end of said handle extension and its inner end engaging said latch member, said operating handle substantially enclosing and concealing said handle extension and being mounted for limited movement with respect to said handle extension and said body handle.

13. A cooking vessel comprising a body having an opening therein, a handle for said body extending outwardly therefrom, a cover for closing said opening, said cover including a handle extension projecting outwardly substantially adjacent and parallel to said body handle when the cover is moved into position to close said opening, cooperative latching means on said cover and body including a member movable between an open position in which it permits engagement and removal of said cover assembly and a closed position in which it prevents such removal, and an operating handle for said latching member having its outer end pivoted to the outer end of said handle extension and its inner end engaging said latch member and mounted along the inner portion of said handle extension for limited movement with respect to said handle extension and said body handle to actuate said latching means from closed to open position.

14. A cooking vessel comprising a body member having an opening therein and a cover member for said opening, a handle extension projecting from one of said members, a latch pivoted to said one member at the inner end of said extension for fastening said cover member on said body member, and an operating handle the outer portion of which is pivoted to the outer end of said extension and the inner end of which engages said latch for movement thereof by said handle.

15. A cooking vessel comprising a body member having an opening therein and a cover member for said opening, a handle extension projecting from one of said members, a latch movably mounted on said one member for fastening said cover member on said body member, and an operating handle engaging said latch, said handle being pivoted to the outer portion of said extension and having a movable handgrip portion inwardly spaced from said pivot.

16. A cooking vessel comprising a body having an opening therein, a cover for said opening, an external crossbar to which said cover is fastened, cooperating latch means on said body and said crossbar, including a latch member pivoted on said crossbar and an operating handle pivoted to said crossbar at a point substantially separated from said latch pivot, said handle having a portion engaging said latch, and a main handgrip portion between said latch engaging portion and said handle pivot point, whereby less force is transmitted to said latch than is applied to said handle.

17. A cooking vessel comprising a body member having an opening therein and a cover member for said opening, a handle extension projecting from one of said members, a latch movably mounted on one of the members for fastening said cover member on said body member, and a hollow operating handle operatively connected to said latch and pivoted to the outer end of said extension and substantially enclosing and concealing said extension.

18. In a cooking vessel comprising a body member having an opening therein and a cover member for said opening, the combination of fastening means including a latch pivoted to one of said members, and an operating handle for said latch pivoted to said one member at a point substantially spaced from said latch pivot and having a portion engaging said latch for movement of the latch, said handle having a main handgrip portion between said latch-engaging portion and said handle pivot.

19. In a cooking vessel comprising a body member having an opening therein and a cover member for said opening, the combination of fastening means including a latch movably mounted on one of said members, and an operating handle for said latch pivoted to said one member at a point substantially spaced from said latch and having a portion engaging said latch for movement of the latch, said handle having substantially its entire handgrip portion nearer said handle pivot than is said latch-engaging portion.

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