

June 26, 1956

H. W. LIVERMORE

2,751,901

VESSEL COVER

Filed Sept. 29, 1952

FIG. 1.

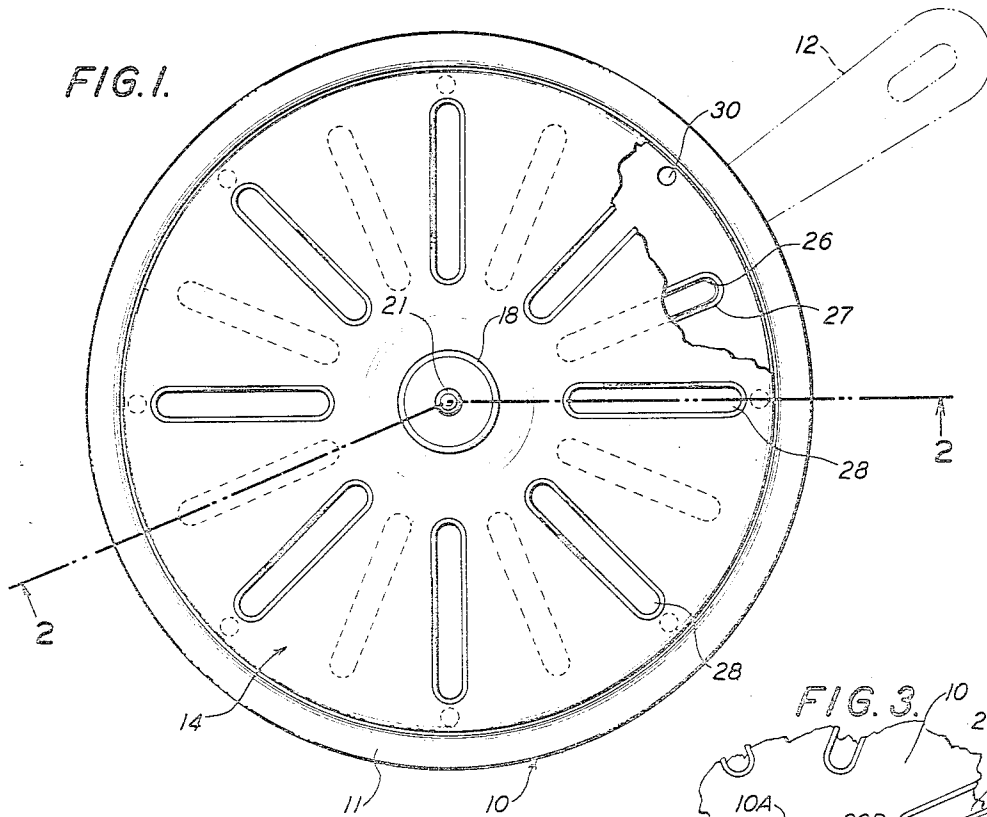


FIG. 2.

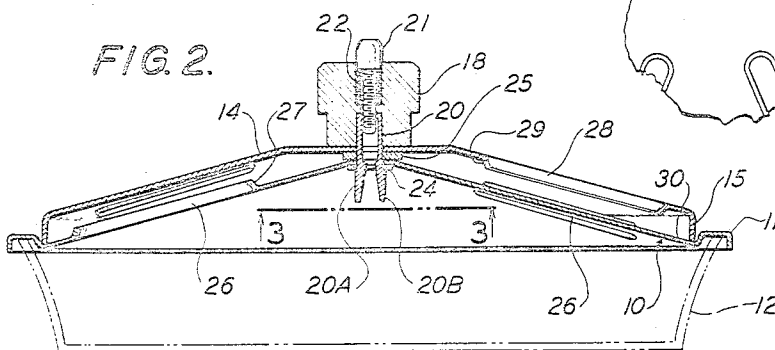


FIG. 3.

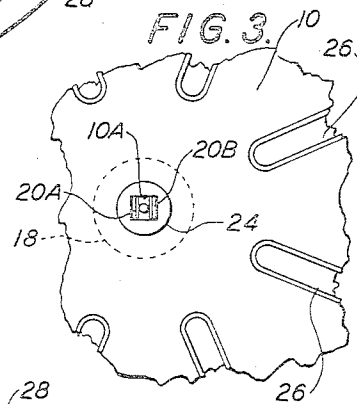


FIG. 4.

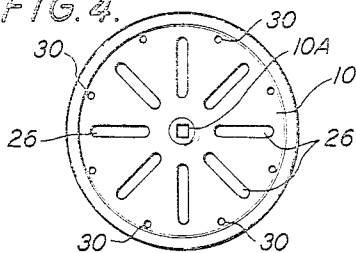
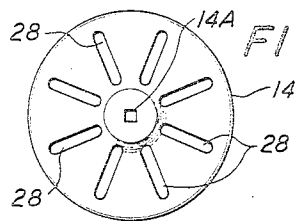


FIG. 5.



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2,751,901

VESSEL COVER

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Application September 29, 1952, Serial No. 312,101

4 Claims. (Cl. 126—384)

This invention relates to a cover for vessels and particularly to a pan cover characterized as a non-condensing, non-splattering cover.

In many cooking operations and particularly in pan frying, it is desirable to avoid any basting which might be attendant upon the use of a cover. At the same time considerable spattering is frequently associated with such a procedure. It then becomes a problem to minimize or avoid such spattering without at the same time inherently producing undesirable basting. I have now developed a cover which prevents spattering and at the same time permits unimpeded escape of steam and other vapors so as to avoid condensate return. The cover of the invention finds use in any application where these conditions are desired.

A cover in accordance with the invention comprises a first cover member having a plurality of spaced openings therein, a second cover member having a plurality of spaced openings therein and means joining the first and second cover members in superimposed spaced relation and in such orientation that the openings in one are laterally spaced from the openings in the other of said members.

In a preferred embodiment each of the first and second cover member are frusto-conical having a large apex angle and the openings therein are in the nature of radial slots. Preferably the slots are so formed as to include a defining lip projecting from the respective one of the two cover members toward the other so that there will be no direct "line of sight" between the opening in one cover member and the adjacent laterally spaced opening in the other of the cover members. In this manner steam or other vapors are virtually unimpeded in escape through the cover and at the same time particles of grease or other spatterings are retained. The lower of the two cover members is conveniently provided with an annular peripheral channel adapted to engage over the lip of the vessel on which the cover is used and with a plurality of small ports spaced circumferentially just inside the channel to provide drip holes through which spatterings trapped in the labyrinth formed by the cover members may return to the vessel.

The invention will be clearly understood from the following detailed description thereof taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a plan view of a cover in accordance with the invention;

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

Fig. 3 is a bottom plan view of the central portion of the cover member taken on the line 3—3 of Fig. 2;

Fig. 4 is a plan view to reduced scale of the lower of the two members forming the cover; and

Fig. 5 is a plan view likewise to reduced scale of the upper of the two members forming the cover.

Referring to the drawing, the preferred embodiment of a cover in accordance with the invention as there shown comprises a lower shallow frusto-conical member 10 having an integral downwardly opening annular channel 11

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formed around the periphery thereof and adapted to engage over the upper lip of a pan 12 illustrated in this instance as being a frying pan. A second frusto-conical member 14 is mounted concentrically on the first member 10 and includes a peripheral depending flange 15 spacing the member 14 above the member 10 and forming a substantially effective seal therewith. The two frusto-conical members are detachably held together by a knob 18 providing a body member for a forked clip 20. The clip 20 is affixed to a pin 21 mounted through the upper portion of the knob 18, the pin being spring-loaded with a spring 22 to urge the clip 20 into the retracted position shown. The two cover members are provided with square central openings 10A, 14A respectively through which clip 20 is inserted. The clip orients these openings in coaxial and angular alignment so that one opening coincides in vertical and in angular orientation with the other. Each tine 20A, 20B of the clip 20 is provided with an outwardly disposed shoulder adapted to engage under and clamp lower member 10 against the upper member. Conveniently a wear plate 24 is affixed to the lower cover member 10 and a spacer plate 25 is affixed to the upper cover member, both plates defining continuations of the square openings 10A, 14A. To separate the two cover members pin 21 is depressed, relieving any frictional tension on the tines of clip 20 whereby they may be squeezed together to release lower cover member 10.

Other means may be provided for keying the separate cover members in predetermined relative angular orientation. The importance of such fixation will become apparent.

Each of the two frusto-conical members 10 and 14 is provided with a plurality of equal, angularly spaced, radial slots 26, 28, respectively. The slots in the two cover members are relatively angularly displaced with respect to the square central opening in the respective member. As a result, when the two members are keyed by the clip 20 so that the respective square central openings 10A, 14A are aligned, the slots 26, 28 in the two members will be offset with respect to each other so that the slots 28 in the member 14 will be spaced intermediate the slots 26 in the member 10. In effect, the slots are symmetrically out of phase upon alignment of the central openings. Further, and to prevent line of sight through the slots of the so-aligned members forming the cover, each of the slots is formed with a definitive lip, the slots 26 having lips 27 extending upwardly in the direction of the upper member 14 and the slots 28 having a definitive lip 29 extending downwardly toward the lower member 10.

This orientation and configuration of the frusto-conical members forming the cover develops a maze or labyrinth through which steam and vapors are free to pass substantially unimpeded, and particles of grease or other spattered material are retained. If such spattered material succeeds in passing through the slots 26 in the member 10 they cannot, without an impossible abrupt change of direction, also pass through the slots 28 in the member 14. Liquids trapped between the two members flow toward and accumulate around the outer edge of the lower member 10 and specifically are trapped in the region defined by the depending flange 15 of the upper member 14. A plurality of relatively small orifices 30 are provided in the lower member 10 adjacent the point of engagement of the depending flange 15 to permit such accumulated spattered material to return to the pan 12. In this manner loss of grease or water droplets from the pan 12 is virtually eliminated, whereas vapors and steam are passed through the cover to avoid condensate return as attendant upon their retention by a conventional closed cover.

I claim:

1. A pan cover comprising a lower substantially conical member having a plurality of equally angularly spaced, radially oriented elongated openings therethrough, upwardly projecting lips circumscribing each of the openings in the lower member, an upper frusto-conical member having a plurality of equal angularly spaced radially oriented elongated openings generally conforming in size and shape with the openings in the lower member, downwardly projecting lips circumscribing each of the openings in the upper member, a downwardly depending peripheral lip on the upper member and means detachably joining the upper and lower members at their centers with their conical sides substantially parallel and spaced apart by the peripheral lip resting upon the periphery of the said lower conical member, the two members being so angularly oriented that the openings in one lie out of vertical registry with the openings in the other.

2. A pan cover comprising a lower substantially conical member having a plurality of equally angularly spaced, radially oriented elongated openings therethrough, upwardly projecting lips circumscribing each of the openings in the lower member and an outwardly extending peripheral lip upset from the base of the cone formed by the lower member to form a channel therewith, an upper frusto-conical member having a plurality of equal angularly spaced radially oriented elongated openings generally conforming in size and shape with the openings in the lower member, downwardly projecting lips circumscribing each of the openings in the upper member, a downwardly depending peripheral lip on the upper member on a diameter approximately equal to the inside diameter of the peripheral lip of the lower member, means detachably joining the upper and lower members at their centers with their conical sides substantially parallel and spaced apart by the peripheral lip resting upon the said lower conical member inwardly of the peripheral lip of

the lower member, the two members being so angularly oriented that the openings in one lie out of vertical registry with the openings in the other, and a plurality of angularly spaced ports in the lower member adjacent its base and spaced inwardly from the peripheral lip of the lower member so as to lie inwardly of the peripheral lip of the superimposed upper member.

3. Apparatus according to claim 1 wherein the lower of said members is provided with a peripheral downwardly opening annular channel adapted to engage over the upper lip of a pan on which the cover is disposed.

4. Apparatus according to claim 1 wherein the upper and lower members each have a square centrally disposed hole therein with the angular orientation of said openings in one member about the respective square hole being displaced in relation to the angular orientation of said openings in the other member about the respective square hole therein, and the means joining the upper and lower members being adapted to align the square holes therein to insure positioning of the said openings in each member intermediate the openings in the other member.

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