July 28, 1936. H. KARL 2,049,264

SANITARY PRESERVING CAN

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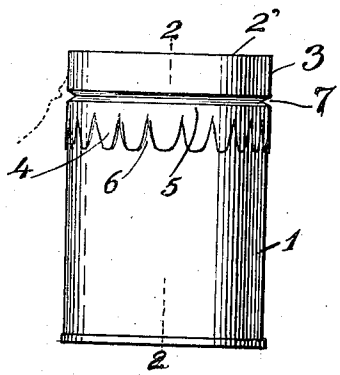


Fig. 1

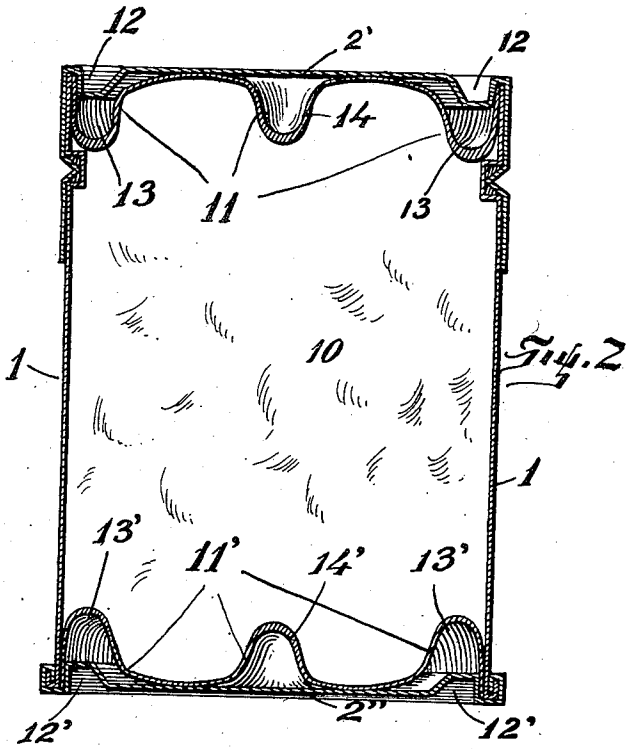


Fig. 2

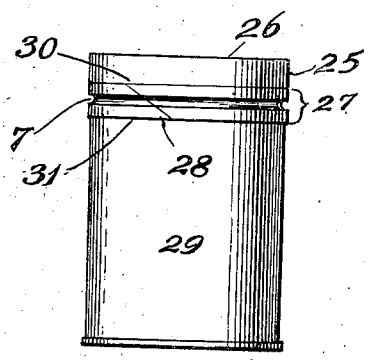


Fig. 3

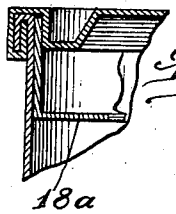


Fig. 17

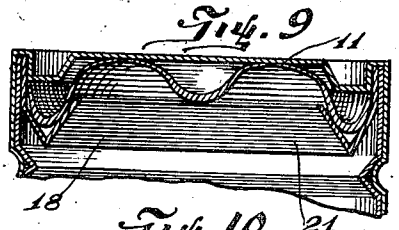


Fig. 9

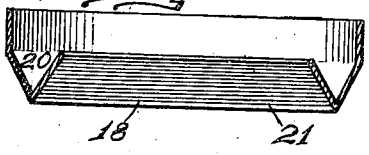


Fig. 10

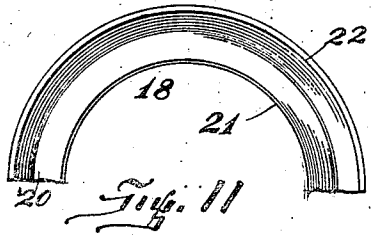


Fig. 11

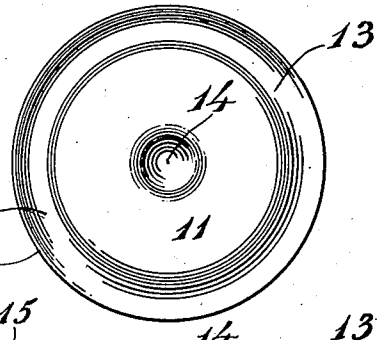


Fig. 7



Fig. 8

Inventor

Heinrich Karl

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Fig. 12

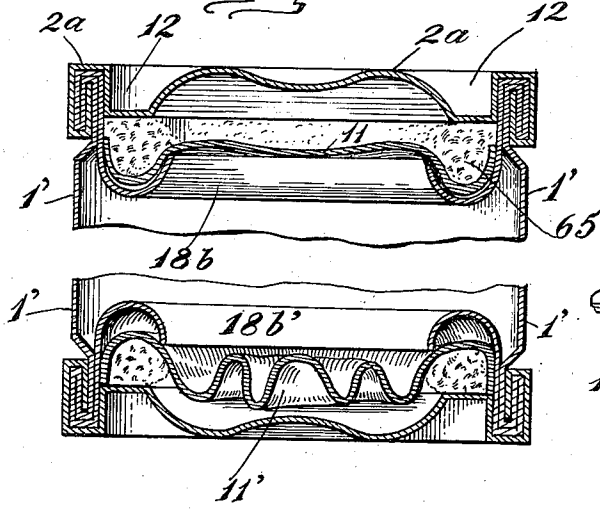
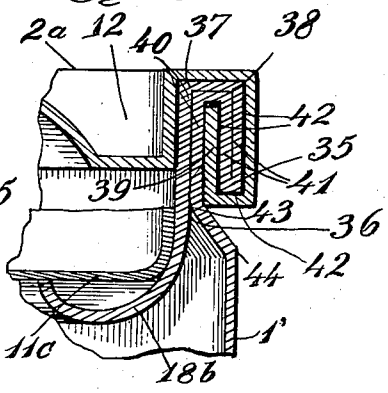


Fig. 13



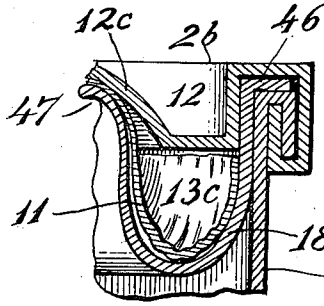
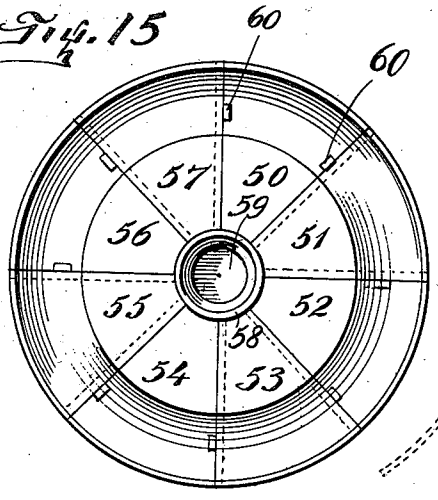


Fig. 14

Fig. 15



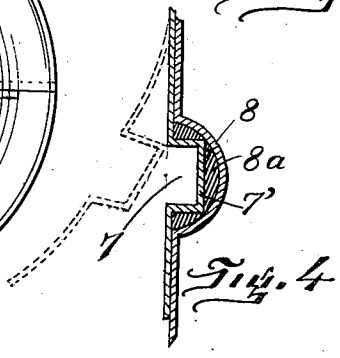


Fig. 4

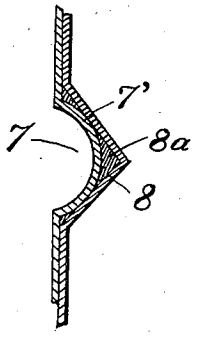


Fig. 5

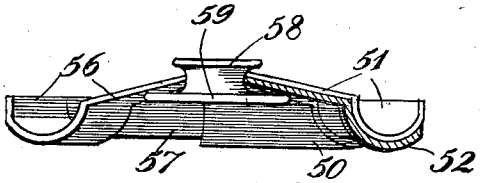


Fig. 16

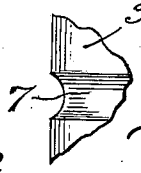


Fig. 6

Inventor

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UNITED STATES PATENT OFFICE

2,049,264

SANITARY PRESERVING CAN

Heinrich Karl, Jersey City, N. J.

Application September 12, 1932, Serial No. 632,735

10 Claims. (Cl. 220—29)

The improvements of the preserving cans are of such character as to render the cans completely sanitary also in case where the cans are opened in a different way than it should be according to the design thereof, as, for instance, when the can is cut open by means of a can opener while it is so constructed that the rim of the lid is to be torn in by means of the fingers or some tool or that a strip is to be torn off from the rim.

More particularly, the invention embraces a new method of affixing the lid to the can for hermetically closing the same whereby solder will be eliminated for sealing purposes because solder is in many respects objectionable also from a sanitary viewpoint because the flux used in the manipulations with solder deteriorates the eatables.

Another still more important feature is the creation of relatively simple means in connection with the can that prevent metal particles from falling into the eatables contained in the can when the can will be opened with a cutting tool whereby said means which I will call the "covering means" permits also the removal of said metal particles before the eatable contents of the can are removed therefrom or consumed.

Another purpose of said means is also that of preventing the spilling when the contents of the can are liquid.

The usual way of opening metallic preserving cans by means of the can opener or other cutting tool whereby the sheet metal will be cut along a certain line, either on the top or on the bottom of the preserving can, became so customary to the majority of the people that they ignore other forms for opening the cans, and in order to protect also those persons from acquiring fatal intestinal diseases when they have to eat the eatables of cans that are opened with the can opener or other cutting tool, said simple but also inexpensive and very efficient means is introduced for making the preserving can absolutely safe and sanitary no matter of which construction the can may be.

Said means consists of a specially shaped piece of cellophane, celluloid or of impregnated cloth that may be stiffened somewhat, or it may consist of a suitably impregnated or waxed paper or fiber fabric and even wood or sheet metal formed in sections may be used therefor and placed so on top of and also under the eatables in such manner that when the metal of the lid or of the bottom is being cut the loose metal filings will fall into pockets or into a channel on the side (the then upper side) of said means that is separated from the eatables through said means. If then the cut-out part of the lid has been removed or bent up then the said means must be removed whereby the metal particles sticking or laying in the pockets or channels of the then upper surface of said covering means will be removed simultaneously and the eatables will then lay bare and are ready for consummation or for cooking, etc.

It is obvious that said covering means can be employed also in connection with those cans that are so constructed that they must be opened only with the can opener or a like cutting tool and in this connection as well as in all other makes of cans special supporting parts made of sheet metal may be employed which may be formed by a separate piece or by a piece that includes also another part of the can, such as the vertical walls thereof.

More features will be pointed out in the now following detailed description.

The improvements set forth are illustrated by the accompanying drawings in which:

Fig. 1 shows in elevation a can with the improvements applied thereto and more particularly such can that possesses improvements set worth in the specification of my United States Patent No. 1,691,394, issued November 13, 1928;

Fig. 2 is a sectional view (enlarged) taken on the line 2—2 of Fig. 1 and showing some of the main improvements according to the present invention;

Fig. 3 is an elevational view of one of the cans known to be opened by stripping off of a circumferentially extending portion of the rim of the lid, whereby also the improvements of the present invention are applied thereto, as shown in Fig. 2;

Figs. 4 and 5 show variations in the shape of the section of the part of the can that hermetically seals the can and which substitutes the more than in one instance objectionable solder with which heretofore those cans have been sealed which are of the type shown in Figs. 1 and 2;

Fig. 6 shows a fragmentary part of the can showing also the sealing part illustrated in Fig. 5;

Fig. 7 is a top view of said means shown also (but in section) in Fig. 2 and which serves for preventing the metal particles, dislodged through the cutting of the lid by means of the can opener or other tool, from falling into the eatables contained in the can and it serves also for removing the metal particles altogether;

Fig. 8 is a sectional view of the means shown in Fig. 7, whereby an addition is made to the border which in Fig. 7 is left away;

Fig. 9 is a sectional view of the upper part of a can showing the means of Figs. 7 and 8 employed in connection therewith and an additional means made of sheet metal for supporting said means of Fig. 7 when the eatables in the can are liquid; said additional means serving also other purposes so, for instance, in substituting said means of Figs. 7 and 8 when it became cut or crumpled through a too far penetrating cutting tool;

Fig. 10 is a sectional view of said additional means of Fig. 9;

Fig. 11 shows the part illustrated in Fig. 9 when seen from above;

Fig. 12 shows a section of the top and bottom part of a can that is to be opened by means of the can opener or similar tool and which is also provided with the improvements shown in Figs. 7, 8, 9, 10 and 11 whereby, however, the part of Figs. 9, 10 and 11 is formed in one piece together with the sheet metal of the can body;

Fig. 13 is an enlarged sectional view of the joint shown also in Fig. 12 and the additional means in connection therewith;

Fig. 14 is a sectional view of a modification of the additional means of Figs. 9, 10 and 11 showing also its combination with the joint of the can;

Fig. 15 is a top view of the covering means a modification to that shown in Figs. 7 and 8 whereby sections are employed;

Fig. 16 is a sectional view of the device of Fig. 15; and

Fig. 17 shows a modification of the additional means.

It is customary in canning certain preserves, mostly jellies of fruits, to cover them with a flat sheet of parchment paper or to place or pour an even layer of wax, etc. on top of the preserves. These precautionary means have the purpose of forming an airtight closure that prevents the preserves from spoiling, but purposes as set forth in connection with the means of Figs. 7 and 8, etc. cannot be pursued therewith because the parchment paper, not to speak of the layer of wax, would be crumpled or even cut through by the can opener or other tool and would spill the metal filings right into the preserves.

On the other hand, however, the means of Figs. 7 and 8 may fully serve the purpose of said parchment paper or layer of wax, etc. and consequently will have a manifold purpose.

Referring to Figs. 1 and 2 of the drawings, 1 is the can body and 2' the lid therefor. The lid 2' has a rim 3 which forms flaps 4 at its lower part which are to be bent outwardly with the fingers or with some tool and pulled upward so that the sheet metal 5 above the incisions 6 will be torn in to any desirable extent when the can is to be opened. Midway between the flaps 4 and the upper edge of the rim 3 the metal of the rim is impressed so as to form a circumferential channel 7 that may have convenient shapes in its section. While the section of the channel 7 of Fig. 1 shows two converging planes that are uniting in the center, the channel 7 of Fig. 4 shows an angular section of three walls while it is nearly semi-circular in connection with the channel 7 of Figs. 5 and 6. In any event the lines along which the channel 7 is made must correspond with a channel 8 made in the vertical wall of the can body 1 and this channel 8 may have as well varying shapes in its section. Preferably, the shape of the sectional cut of the channel 7 should be different from that of the sectional cut of the channel 8 for the purpose to allow enough space for the binder that is to be placed between these parts. A binding material 8a, such as rubber or sealing wax or wax or tar or rosin mixed with a suitable varnish or some oil-impregnated material or a material mixed with linseed oil such as pulverized cork, etc., is to be put in the channel 8 while in semi-liquid condition. At the impression of channel 7 of the rim 3 the binding material 8a in channel 8 will be compressed also and squashed to an extent that corresponds with the depth to which the bossed part 7', that is formed on the back side of the sheet metal when the channel 7 is made, penetrates the channel 8. The bossed portion of the rim 3 must penetrate sufficiently deep into the channel 8 to prevent the removal of the lid 2' from the can 1 excepting by means of the flaps 4 that are to be pulled so far upward that the metal above the incisions 6 and that of the channel 7 will be torn in whereby the bossed part 7' comes out of the channel 8 and consequently will not be held by the opposing borders of that channel. Said binders are adapted to dry in and become hard. The hardness thereof, however, does not prevent the metal of the bossed part of rim 3 to separate from the binder through the strong pull exerted upon that metal part. Once all the flaps 4 are lifted and the metal above the incisions torn in sufficiently far, the lid may be lifted from the body 1 so that access can be had to the contents of the can. If the persons that have to open the can would open it in the aforesaid manner no further precautions for safeguarding the consumer would be necessary but the indifference of many persons that have to handle cans forces the introduction of the additional means that safeguard the consumer also when the can is opened with the can opener or other cutting tool. The additional precautionary means are then situated inside the can and reference is therefore made to Fig. 2 of the drawings. There it will be seen that the eatables are indicated by 10 and that on top thereof is placed the protecting means indicated by 11. It will be noted also that a similar means 11' is placed upside down and underneath the eatables and this is done for the purpose to give also adequate protection to the consumer when the person that opens the can does open it on the bottom instead of on the top, as it often happens. Besides these means 11, 11' there is another precaution employed for guiding or forcing the person that has to open the can to cut it along prescribed lines. In this instance, there are on the lid 2' as well as on the bottom 2'' channels 12, 12' made which will be the most convenient guide for any cutting tool, while the remainder of the lid and bottom is made so as to prevent the easy cutting of the sheet metal and these parts are therefore of rounded shape. The covering means 11 and 11' are of a certain shape that has several purposes. Corresponding with the channel 12 (12') the means 11 (11') has a deep impression 13 (13') that is created for giving the blade or edge of the cutting tool that penetrates the sheet metal of the bottom of the channel 12 (12') sufficient room for its movement in the cutting operation and to thereby prevent said blade or edge to pierce or crumble the part of the means 11 that

forms the impression 13. In addition, the portion of that part may be of greater thickness and as it is obvious that a certain resiliency of that part of the means 11 (11') exists, especially when liquid or semi-liquid preserves are contained in the can, the cutting tool will not find such resistance that is necessary for piercing or cutting the means 11 (11'). The means 11 (11') shows also a relatively deep impression 14 (14') in its center which faces also the center of the lid, that of the bottom of the can, respectively. This deep impression 14 (14') has also the purpose of avoiding a point of a cutting tool of special construction that is widely in use which pierces the center of the lid, the bottom respectively, from piercing also the covering means 11 (11') in its center so that the metal particles dislodged at the piercing of the center of the lid or of the bottom of the can will not reach the eatables in the can but simply will fall into the impression 14 (14'). When the lid or bottom is thus cut with the can opener, etc. and the lid lifted entirely or sufficiently for permitting the removal of the protecting covering means 11 (11') this means is simply seized with the fingers or with some tool in such manner that the side on which lie the metal particles will not be turned to face the eatables in the can. In order to permit such manipulation and the safe removal from the can the means 11 (11') must preferably be made of such material that allows a certain flexibility and contractibility and in this instance cellophane or rubberized cloth or waxed or otherwise impregnated paper or so-called parchment paper may be the most suitable materials. For preventing the means 11 (11') from submerging into the eatables (especially if they are liquid or semi-liquid) the border 15 (Figs. 7 and 8) should be held somewhat by the slightly slanting outer wall of the part that forms the channel 12 (12') and the corresponding inner wall of the can body 1. The border 15 or its downwardly slanting part 15a if the latter is employed (see Fig. 8) may as well adhere to the inner side of the wall of the can whereby wax or some other suitable binder may hold it there sufficiently fast and hermetically tight for preventing the eatables from reaching the upper side of the covering means 11. In a similar manner should also be affixed the covering means 11' so that the eatables may not reach the underside thereof.

There are, however, certain difficulties in connection therewith, that is, when the means 11, 11' is to be held only by the metal parts of the lid and of the corresponding wall of the can, because once the lid and bottom is affixed to the can it can not be found out if the means 11 (11') is held too fast because it should be easily removable, or if it is not held fast enough in which event it would submerge when the eatables are liquid or semi-liquid. An additional means 18 (Figs. 9, 10, 11) and 18a (Fig. 17) and 18c (Fig. 14) is therefore introduced and is made of sheet metal or of any other suitable material and is so shaped that it will support the part 13 or 13' and will also be adapted to be firmly held between the exterior wall of channel 12 (12') and the corresponding wall of the can 1. The covering means 11 (11') does then need no fixing whatsoever when the preserves are not liquid but it can be affixed with wax to the additional (supporting) means 18 (Figs. 9, 10, 11) or 18a (Fig. 17).

The means 11 (11') simply lies then with its part that forms the pocket 13 (13') on the additional means 18 (18a).

The supporting means 18 (18a) is shaped in conformity with the shape of the can which in this instance is circular as shown by the drawings. Referring more particularly to the supporting means indicated by 18, it has its two sides bent up so that a circular channel 20 is created thereby. The inner bent side or wall 21 is shorter than the outer wall 22 for facilitating the removal of the means 11 (11'). It is obvious that additional means 18' similar to 18, 18a are also employable in connection with the bottom of the can.

Referring to the modification of the supporting means 18a shown in Fig. 17, there is no channel formed but it consists chiefly of a vertical part and a supporting part which latter extends to the interior of the can in a more or less horizontal manner. In connection with this supporting means the covering means 11, 11' should be affixed with wax or other suitable binding material which, however, will not hold it so fast that it forms an obstruction to the removal with the fingers. On the covering means 11 (11') directions might be printed informing the person that opens the can of how to handle the means 11 (11') and why it is employed.

It is also obvious that the additional means 18, 18a if made of sheet metal can be made of one piece together with one of the other metallic parts of the can and such construction necessitates additional shaping of other parts of the can which will be described subsequently in connection with Fig. 12.

Referring to the construction of the can of Fig. 3, it is shown that the rim 25 of the lid 26 has a strip 27 that is adapted for being pulled off in the known manner by seizing and pulling the tongue 28. In constructions of this kind the only binder that could successfully be employed heretofore for hermetically sealing the can was solder that was introduced between said rim 25 and the outer side of the wall 29 of the can body and especially along a line that corresponds with a line drawn a little lower than the line 30 which latter is the line along which the furrow or furrows are made for weakening the sheet metal along that line. Solder was also placed along the line that corresponds with the lower edge of the strip 27.

Now in conformity with the present invention, instead of using solder a method is employed in which solder is eliminated and whereby the sealing of the can is performed by the similar means already described in connection with Figs. 1, 4, 5 and 6. The channels 7 and 8 respectively correspond with a line running centrally of the strip 27. Besides the improvement mentioned in connection with the can of Fig. 3 there are also all the improvements incorporated in that can that have been described so far in connection with Figs. 2 to 11 inclusive and with Fig. 17 and a repetition of the description of these improvements deems therefore unnecessary.

Referring to Fig. 12 it is shown that the additional part 18b that has the same purpose of supporting the covering means 11 is combined with the joint of the can and is made of one piece together with the metal wall 1' of the can. In the same fashion is also bent the similar part 18b' which serves in connection with the means 11' that lies on the bottom of the can.

In Fig. 13 where the joint of the can of Fig. 12

is shown in a still more enlarged proportion it will be noted that the sheet metal of the can body 1 is bent at 35 and folded upon itself as far as to the point indicated by 36 where the sheet metal is turned toward the interior of the can and thus forms the additional supporting part 18b. The portion of the sheet metal of the can that is bent upon itself is again bent twice, namely at the point 37 and at the point 38 in such manner as to permit the lid 2a to surround and grip the said portion that is bent upon itself and to permit also the edge portion 39 of the lid to be inserted between the vertically directed parallel running two pairs 40, 41 of that sheet metal of the can body that forms part of the joint. The binding material 42, such as rubber, is placed on that side of the lid that faces the last named part of the joint and after the compression is made the rubber between the respective metal walls will also be compressed and the joint finished and the ultimate shape thereof is then created as shown in Figs. 12 and 13. An additional feature may also be obtained by bending the sheet metal 1 at 43 and at 44 whereby the joint will not protrude so much over the vertical plane of the wall 1 of the can body which is an advantage for packing purposes.

In Fig. 14 a slightly different modification of a joint is shown in which the additional supporting means is included which latter, however, is made of a piece of sheet metal separate from any other part of the can. The part 46 of the additional supporting means 18c is bent so that it can lay on that portion of the joint that is formed by the sheet metal of the can 1'' and when the edge of the lid 2b is bent on that joint in the usual way the said additional supporting means will be held firmly thereby. In Fig. 14 the additional supporting means 18c is relatively longer than the other similar devices shown in the drawings and the interior edge 47 thereof is as far bent upward that it presses against the lid. It is thus obvious that the covering means 11 will also be pressed against the underside of the lid, in this instance, against the slanting side wall 12c of the channel 12. The advantage is thereby obtained that the covering means is held firmly without the need of a binding material, such as wax, to be applied to the covering means 11 or to the supporting means 18c and there is still the possibility for safely removing the covering means 11 after the lid has been cut along the channel and lifted. It is obvious that also the other modifications shown in the drawings may be bent as high as that indicated by 18c in Fig. 14. For liquid preserves the modification of the supporting means of Fig. 14 is preferable over the others because no extra binder is necessary for preventing the liquid contents of the can to enter the space 13c.

Referring to Figs. 15 and 16 the embodiment of that covering means consists of several sections 50, 51, 52, etc. that may be made of any suitable material, such as stiff cardboard or stiffened cloth, celluloid or cellophane, wood or sheet metal, aluminum etc. Any of the supporting means so far described would suffice for holding the covering means of Figs. 15 and 16. There is a central piece 58 arranged against the side of which lean the narrow ends thereof in concentrated fashion. The central piece 58 is hollow and is open on top. The bottom thereof is sufficiently broad with edges 59 protruding for avoiding the sections from falling down while they are being inserted. The function of the central piece 58 is similar to that of the keystone or the central piece of a dome against which the converging parts find support. And since it is also hollow metal particles that become loosened when the center of the lid will be pierced will fall into the hollow of said central piece and can be readily taken away when the cut part of the lid is removed. In removing this kind of covering means it is preferable to remove first those sections 51, 53, 55 and 57 that lie on top of their neighbor sections 50, 52, 54, 56, respectively, whereafter the latter can be removed. In order to prevent the sections 51, 53, 55 and 57 to displace themselves there are little elevations 60 embossed or otherwise made near the radially directed edges of the sections 50, 52, 54 and 56.

As an additional feature it might be introduced still another precautionary means which consists of cotton or of some other material 65 (see Fig. 12) which might be soaked or which may be of an adhesive character and placed into the channel 13 and pocket 14 (or 13c etc.) and to which must stick the metal filings. This last named means should be adapted to be removed easily before the covering means itself will be removed.

There might be made the objection that the arrangements described will take some room and therefore reduce the capacity of the can. As I have shown in the figures, however, the space required by the channel 13 and pocket 14 is sufficiently replaced again to the can interior by elevating the larger part of the lid and covering means to the level line that corresponds with the uppermost edge of the joint and on the bottom of the can the arrangement is similar in regard to the bottom line which reaches as far down as the base line of the lower joint.

The additional means 18, 18a, 18b, 18b' can be of the same material as the covering means 11, 11' and the latter may have any of the convenient shapes as shown in Figs. 2, 7, 8, 9 and on the top and bottom part of Fig. 12 as well as in Fig. 13.

The material 65 shown in Fig. 12 may have also another purpose besides the one mentioned already; it may be used at the same time for wiping off the raw edge of the cut metal of the bottom of the channel 12 (12') right after the can has been opened.

Having described a preferable form of my invention, what I claim is:

1. A preserving can consisting of the body thereof and of the lid therefor, a covering means for the preserves, a supporting means for the covering means having one of its edges extending as far as to thrust against the underside of the lid and having the other edge held fast by the joint of the can, the said edge of the supporting means consequently thrusting also against the said covering means that is situated between said lid and said supporting means, thus creating such a separation between the preserves and the lid that nothing of the preserves can reach the upper surface of the covering means, and a similar arrangement in connection with the bottom of the can.

2. A preserving can comprising a body portion, a lid seamed to said body portion, a removable covering means adjacent the lid for covering the contents of the can and a supporting means for said covering means attached to the can and having a portion lying between the contents of the can and the covering means to hold said covering means in place.

3. A preserving can comprising a body portion,

a lid seamed to said body portion, a removable covering means adjacent the lid for covering the contents of the can and a supporting means for said covering means attached to the can and having a portion lying between the contents of the can and the covering means to hold said covering means in place, said covering means having depressions formed chiefly at such parts which correspond with parts of said lid that will be cut or pierced by the tool for opening the can and said depressions adapted therefore to receive the particles cut loose at that cutting operation.

4. A preserving can comprising a body portion, a lid of sheet metal seamed to said body portion, a removable covering means adjacent the lid for covering the contents of the can and a supporting means for said covering means attached to the can and having a portion lying between the contents of the can and the covering means to hold said covering means in place, said covering means having a central depression and an endless channel-like depression near its circumference, said central depression corresponding with the part of the lid that will be punctured by a cutting tool of special construction and the channel-like depression corresponding with that part of the lid that will be cut by the blade of said cutting tool, both kinds of depressions adapted therefore to receive the metal filings cut loose from the lid at the cutting operation.

5. A preserving can comprising a body portion, a lid secured to said body portion, a removable covering means adjacent the lid for covering the contents of the can and a means for holding said covering means to said can body portion and for holding said covering means in place, said covering means having depressions and being made of a contractile material, said depressions and the contractibility being such as to permit the gripping of said covering means with the fingers and its withdrawal from the can when the lid is cut open and the opening in the lid is even cut relatively smaller than the actual circumference of said covering means.

6. A preserving can comprising a body portion, a lid seamed to said body portion, a removable covering means adjacent the lid for covering the contents of the can and a supporting means for said covering means attached to the can and having a portion lying between the contents of the can and the covering means to hold said covering means in place, said covering means having depressions and the walls and the bottoms of the parts forming said depressions being reinforced.

7. A preserving can comprising a body portion, a lid seamed to said body portion, said lid having a guiding channel for the can opener, a removable covering means adjacent the lid for covering the contents of the can and a supporting means for said covering means attached to the can and having a portion lying between the contents of the can and the covering means to hold the covering means in place, said covering means having a channel-like depression near its outer edge and said depression corresponding with the position of said guiding channel on the lid and having such depth that said can opener will not touch or cut that covering means during the can opening operation.

8. A preserving can comprising a body portion, a lid seamed to said body portion, a removable covering means adjacent the lid for covering the contents of the can and a supporting means for said covering means to hold said covering means in place, said covering means having a means on its upper side for catching the particles cut loose from the lid when the latter will be cut through.

9. A preserving can comprising a body portion, a lid seamed to said body portion, a removable covering means adjacent the lid for covering the contents of the can and a supporting means for said covering means attached to the can and having a portion lying between the contents of the can and the covering means to hold said covering means in place, said covering means formed by sections arranged around a center piece and each of said sections having an abutment for preventing displacement of the single sections.

10. A preserving can comprising a body portion, a lid secured to said body portion, a removable covering means adjacent the lid for covering the contents of the can and a supporting means for said covering means attached to the can and having a portion lying between the contents of the can and the covering means to hold said covering means in place, said covering means made of paper that is impregnated with a water and grease resisting substance that is unadulterable to the contents of the can and said supporting means made of suitable metal.

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