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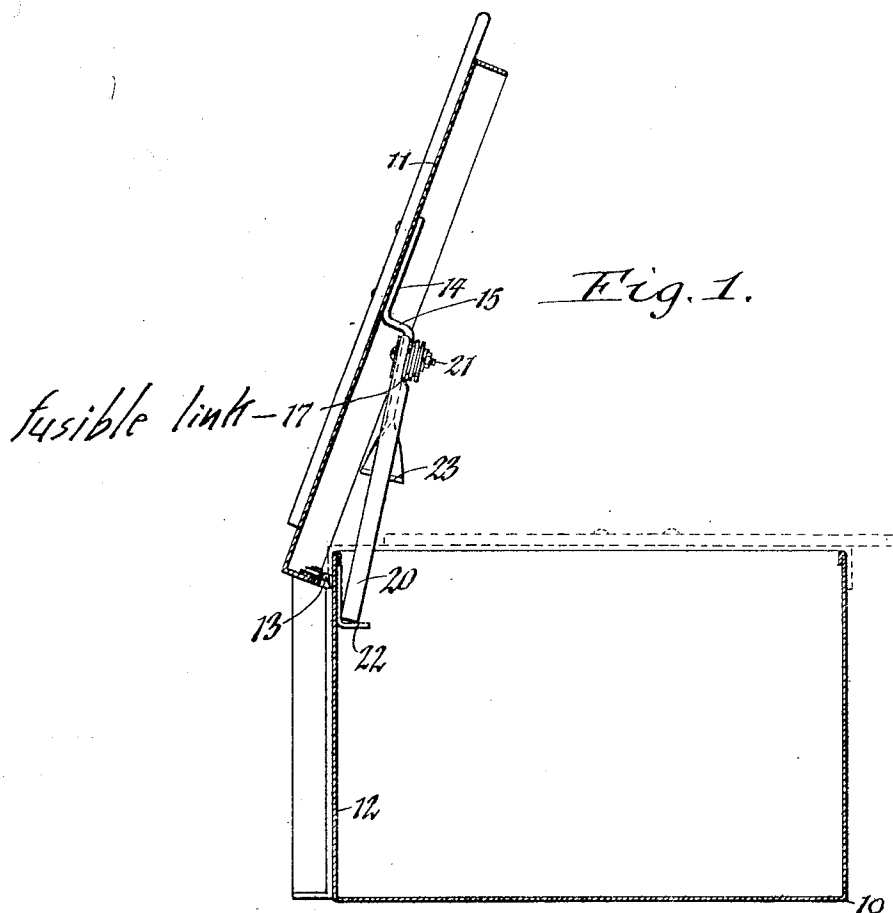
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AUTOMATIC CLOSURE FOR CONTAINERS

Filed Nov. 15, 1930

2 Sheets-Sheet 1



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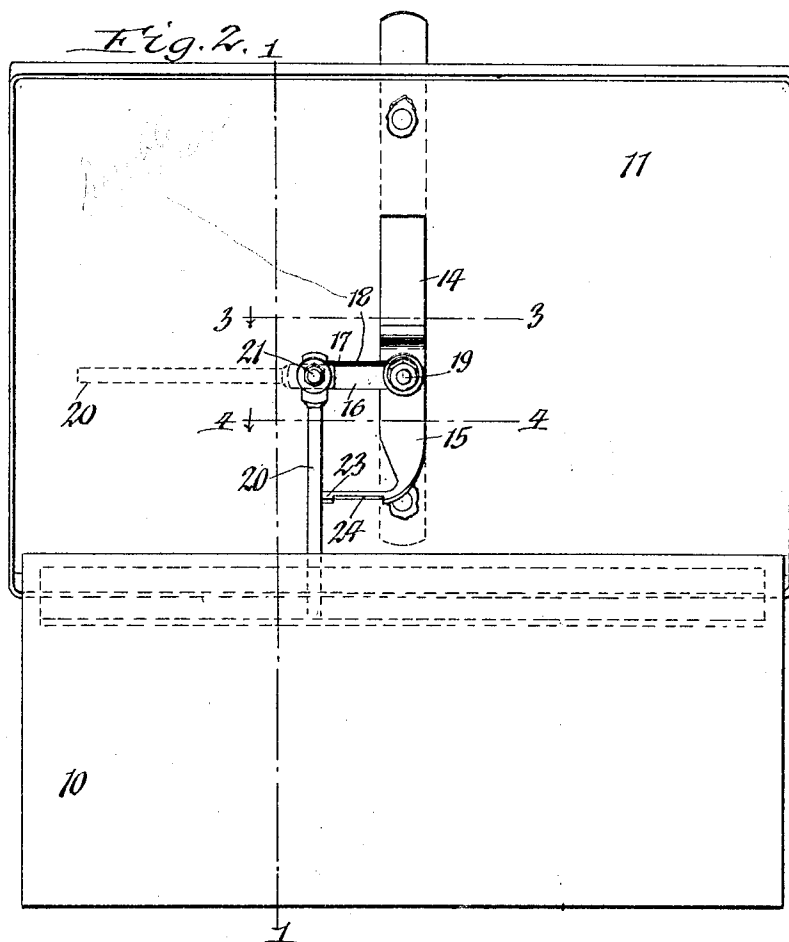
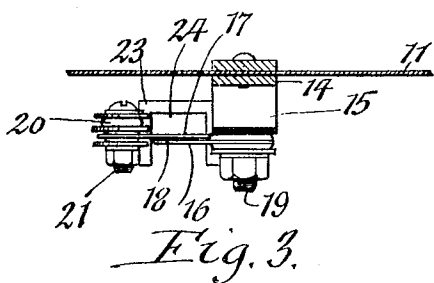
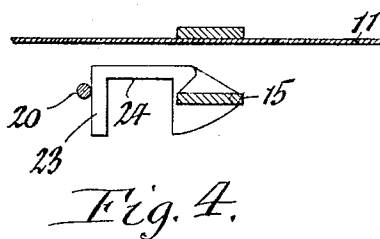
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AUTOMATIC CLOSURE FOR CONTAINERS

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This invention relates to a device for automatically closing a container when a fire occurs therein.

It is a common practice in automobile repair shops to place wrenches, screw drivers, nuts, bolts, and other tools and parts in a tank of gasoline for the purpose of removing therefrom oil and grease which has been deposited thereon during repairing and use of the same. This tank is provided with a hinged cover or lid which has heretofore been closed manually when the tank is not used so as to prevent ignition and is also closed manually when the gasoline becomes accidentally ignited so as to extinguish the flame.

It often happens that the attendant runs away without closing the lid when the gasoline ignites and the flame may also be so hot and wide spread as to prevent the attendant from manually closing the lid, thereby endangering the adjacent property as well as the safety of the persons nearby.

It is the object of this invention to provide means for automatically closing the lid or cover of a tank containing inflammable material such as gasoline whenever the latter becomes ignited, thereby quenching the flame and safeguarding persons and property.

In the accompanying drawings:

Fig. 1 is a vertical transverse section of a gasoline wash tank equipped with my invention and showing the lid of the same held open, the section being taken on line 1—1, Fig. 2.

Fig. 2 is a front elevation of the same.

Figs. 3 and 4 are fragmentary horizontal sections taken on the correspondingly numbered lines in Fig. 2.

In the following description similar characters of reference indicate like parts in the several figures of the drawings.

This invention is applicable to containers of various forms which are adapted to receive inflammable material and the cover or closure of which is to be closed automatically by the heat responsive controlling means when the temperature adjacent to the container rises above a certain predetermined degree thereby preventing the contents of the con-

tainer if they should become ignited from spreading to the outside of the container.

In the drawings, as an example, this invention is shown applied to a container which is adapted to hold a quantity of gasoline in which tools and parts of machinery, such as wrenches, screw drivers, nuts and bolts and the like are adapted to be placed for the purpose of washing off any grease which may be deposited thereon. This container comprises a tank or box 10 which is usually constructed of sheet metal and provided with an open top, and a vertically swinging cover or lid 11 which is pivotally connected at its rear edge with the upper edge of the rear wall 12 of the tank by means of a hinge 13 of any suitable construction so that this cover or lid may be swung downwardly into a horizontal position over the top of the tank for closing the same, as shown by dotted lines in Fig. 1 and the same may be also swung upwardly and rearwardly into a forwardly inclined position, as shown by full lines in Figs. 1 and 2.

The cover is supported in this forwardly inclined position by means of the temperature controlled detent or retaining device which embodies my invention and is preferably constructed as follows:

The numeral 14 represents a supporting bracket which is secured in any suitable manner to the underside of the central part of the cover and is provided with an arm 15 which projects downwardly and rearwardly relatively thereto.

Upon the underside of this arm is mounted a fuse link which is composed of two metal plates 16, 17 which have their overlapping ends connected with each other by means of fusible solder or metal 18, the alloy of which is so determined that the same will melt at a predetermined degree of temperature and thereby permit the two plates of the link to separate. One of these plates of the fuse link, for instance the plate 16, is connected with the arm 15 of the cover bracket by means of a bolt 19 so that the fuse link as a whole projects horizontally and laterally from one side of the bracket.

To the outer end of the other fuse link

plate 17 the upper end of a brace 20 is pivotally connected by means of a bolt 21 which brace preferably has the form of a rod and can be turned either into an operative position in which the same projects downwardly and rearwardly from the fuse link, as shown by full lines in Figs. 1 and 2, or the same may be turned into a horizontal inoperative position in which it projects laterally from the supporting bracket, as shown by dotted lines in Fig. 2. When the brace 20 is moved into its vertical position the lower or rear end of the same is engaged with a shelf 22 which is secured to the inner side of the rear wall of the tank 10, as shown in Fig. 1, and when thus engaged the cover or lid is held open in a forwardly inclined position, as shown in Fig. 1. Upon swinging the brace out of engagement with the shelf 12 and into a more or less horizontal position the cover or lid is free to be moved forwardly and downwardly into a closed position over the open top of the tank. In order to arrest the movement of the brace 20 when the same has been turned downwardly into the vertical operative position a stop 23 is provided which is arranged at the lower end of the bracket arm 15 and projects laterally therefrom in the same direction as the fuse link and terminates in such a position that when the brace 20 is swung downwardly into engagement with the stop 23 this brace will be properly stopped in a vertical position for engaging its lower end with the shelf or shoulder 22. By means of this stop the brace may be definitely held in its operative position with ease and facility without requiring any special care on the part of the attendant.

When the gasoline in the tank is being used for washing tools and parts of machinery or the like the cover is propped in an open position as described, but when the same is not in use then the parts of the prop or retaining device are folded, as above stated, for the purpose of permitting the cover to be closed and thereby avoid the danger of the gasoline becoming ignited.

In the event that the gasoline should become accidentally ignited while the cover is held open by its retaining device the flame resulting from this ignition upon striking the fuse link will quickly melt the fusible connection between the plates of this link, thereby severing the connection between the bracket on the cover and the brace 20 and as a result the cover is no longer supported and will immediately drop by gravity from its forwardly inclined position into a horizontal closed position over the open top of the tank thereby confining the flame within the tank and extinguishing the same due to the exclusion of oxygen.

In order to permit the flame from the gasoline in the tank to strike the fuse link as quickly as possible, the front side of the stop

23 is provided with a notch 24 which is arranged below the fuse link and thereby removes, to a considerable extent, the obstruction which would otherwise be interposed between the flame and the fuse link, thereby causing the fusible connection between the plates of this link to be melted very rapidly and the means which hold the cover open to be released very quickly so that the cover can drop into its closed position and thereby extinguish the flame with a minimum of delay.

The danger to life and the injury to adjacent property and persons is thereby eliminated inasmuch as the flame is automatically extinguished by release of the detent means which normally hold the cover in its open position. This automatic operation of the cover releasing means will occur in like manner if the fire should occur adjacent to the gasoline containing tank or the surrounding temperature should be raised from any other cause above a predetermined degree which might ignite the contents of the tank and thereby eliminate the danger of the gasoline within the tank becoming ignited.

This device is particularly suitable for use in connection with the gasoline containers which are commonly used in garages for washing tools and automobile parts inasmuch as these tanks are sometimes used in an exposed position where strangers may have access thereto and accidentally light the gasoline by means of cigarettes and the like.

By the use of this automatic closing device it is unnecessary for the attendant to endanger himself by attempting to close the lid if the gasoline becomes accidentally ignited but instead the attendant can simply abandon this tank and seek safety leaving the automatic releasing and controlling device to perform the function of closing the cover over the tank and extinguishing the flame.

I claim as my invention:

1. A container having a tank adapted to receive inflammable material and having an opening in its top and a cover pivoted to said tank and adapted to move downwardly into a horizontal closed position to close said opening and to move upwardly into a forwardly inclined open position, and releasable means which support said cover in said inclined open position and which are responsive to heat and permit said cover to drop by gravity into its closed position, said releasable means comprising a shelf arranged on the inner side of the tank, a bracket arranged on the underside of the cover, a brace adapted to engage said shelf, and a fusible link connecting said bracket and brace.

2. A container having a tank adapted to receive inflammable material and having an opening in its top and a cover pivoted to said tank and adapted to move downwardly

into a horizontal closed position to close said opening and to move upwardly into a forwardly inclined open position, and releasable means which support said cover in said inclined open position and which are responsive to heat and permit said cover to drop by gravity into its closed position, said releasable means comprising a shelf arranged on the inner side of the tank, a bracket arranged on the underside of the cover, a brace adapted to engage said shelf, and a fusible link connecting said bracket and brace, said brace being pivotally connected with said link and movable into engagement with said shelf for holding the cover open and out of engagement from said shelf for permitting said cover to be closed.

3. A container having a tank adapted to receive inflammable material and having an opening in its top and a cover pivoted to said tank and adapted to move downwardly into a horizontal closed position to close said opening and to move upwardly into a forwardly inclined open position, and releasable means which support said cover in said inclined open position and which are responsive to heat and permit said cover to drop by gravity into its closed position, said releasable means comprising a shelf arranged on the inner side of said tank, a bracket arranged on the underside of said cover, a fusible link connected at one end with said bracket and projecting laterally therefrom, and a brace pivotally connected at its upper end to the outer end of said link and movable downwardly into a position to engage its lower end with said shelf for holding the cover open and upwardly into a position for disengaging its lower end from said shelf and permitting said cover to be closed.

4. A container having a tank adapted to receive inflammable material and having an opening in its top and a cover pivoted to said tank and adapted to move downwardly into a horizontal closed position to close said opening and to move upwardly into a forwardly inclined open position, and releasable means which support said cover in said inclined open position and which are responsive to heat and permit said cover to drop by gravity into its closed position, said releasable means comprising a shelf arranged on the inner side of said tank, a bracket arranged on the underside of said cover, a fusible link connected at one end with said bracket and projecting laterally therefrom, a brace pivotally connected at its upper end to the outer end of said link and movable downwardly into a position to engage its lower end with said shelf for holding the cover open and upwardly into a position for disengaging its lower end from said shelf and permitting said cover to be closed, and a stop for limiting the downward movement of said brace.

5. A container having a tank adapted to receive inflammable material and having an opening in its top and cover pivoted to said tank and adapted to move downwardly into a horizontal closed position to close said opening and to move upwardly into a forwardly inclined open position, and releasable means which support said cover in said inclined open position and which are responsive to heat and permit said cover to drop by gravity into its closed position, said releasable means comprising a shelf arranged on the inner side of said tank, a bracket arranged on the underside of said cover, a fusible link connected at one end with said bracket and projecting laterally therefrom, a brace pivotally connected at its upper end to the outer end of said link and movable downwardly into a position to engage its lower end with said shelf for holding the cover open and upwardly into a position for disengaging its lower end from said shelf and permitting said cover to be closed, and a stop projecting laterally from said bracket below said link and adapted to be engaged by said brace when the latter is moved downwardly into engagement with said shelf and provided with a notch to permit unobstructed passage of flame from within the container upwardly to said link for fusing the same and releasing said brace so that the cover drops automatically by gravity into its closed position.

In testimony whereof I hereby affix my signature.

LESTER W. YOUNG.