June 18, 1963 RYUJI TSUBOSAKA 3,094,237

FIXABLE ASH TRAY

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Fig. 1

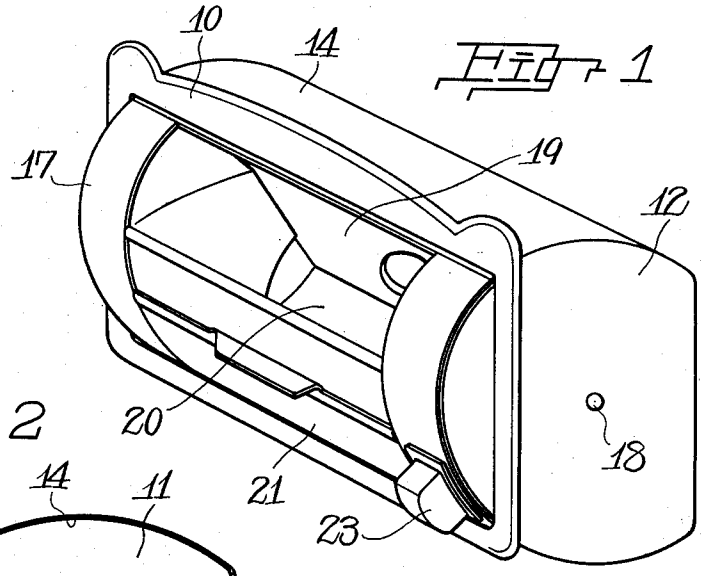


Fig. 2

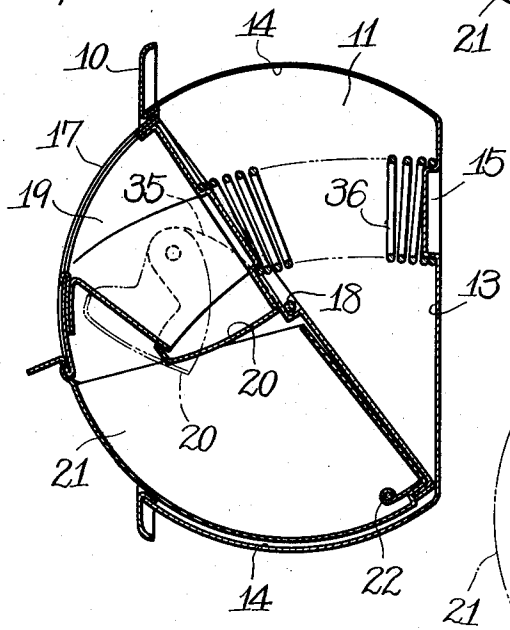
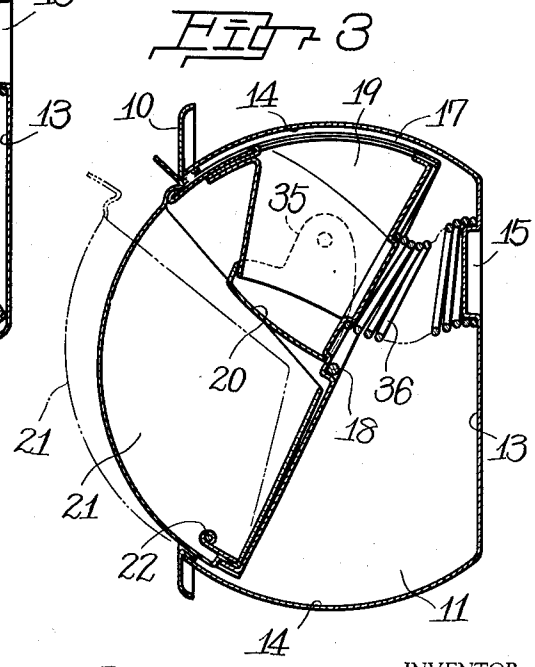


Fig. 3



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Fig. 4

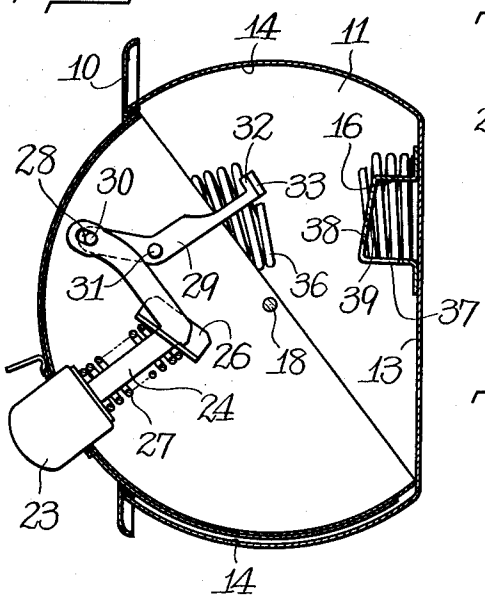


Fig. 5A

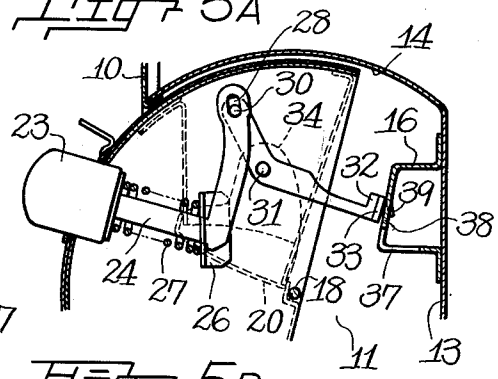


Fig. 5B

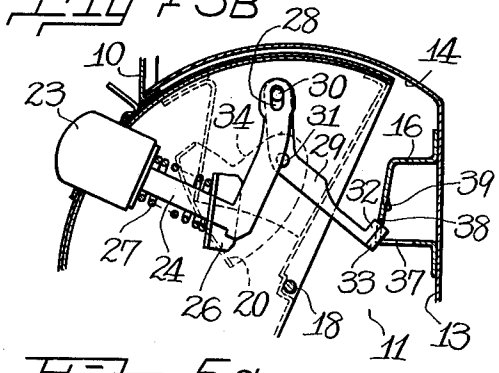


Fig. 6

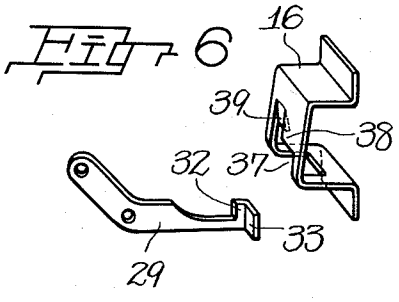
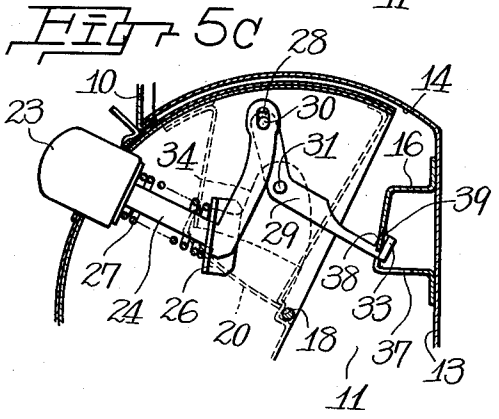


Fig. 5C



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3,094,237

FIXABLE ASH TRAY

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3 Claims. (Cl. 220—18)

This invention relates to an ash tray which can be fixed to a suitable place where people smoke in an automobile, railroad train, electric train, all kinds of ships and airplanes, and other places in ordinary houses or offices, etc. whereby ashes or cigarette butts thrown into an inlet opening are dropped into a heap chamber by means of a push button system, and keep the inlet opening being concealed within the tray without exposing it outside while the tray is not in use, so as to always maintain it cleanly and sanitarily and prevent any fire hazard.

In the fixable ash tray of this type used heretofore in the seats of an automobile or railroad train etc., cigarette butts or ashes thrown into the ash tray are opened to the view, or cigarette butts or ashes are usually rubbed around the inlet opening with resultant dirtiness as can be seen in said seats, etc., and in the tray of a type wherein a cover is provided, the cover is moved manually when closing or opening it, however, one cannot deny that it is rather unpleasant to handle such dirty ash tray, and the appearance of the tray itself is not good at all.

A main object of the present invention is to provide an ash tray fixable to the wall of a suitable place where people smoke in the seats or passenger quarters in various vehicles, ships, airplanes and buildings, whereby causes cigarette butts or ashes thrown into the inlet opening to drop into a heap chamber, so as to be disappeared by means of a push button, and causes the inlet opening to be concealed within the tray without appearing outside.

A next object of this invention is to provide a fixable ash tray comprising a fixable casing and a receptacle member which is rotatable within said casing with a transversal axis as the center and to provide means for causing the inlet opening to appear by operation of the push button, although the inlet opening of the receptacle member is concealed manually.

Another object of the invention is to provide means for manual rotation of the receptacle member within the fixable casing, and means for opening the bottom of the inlet opening at a moment said inlet opening is concealed within the said casing, following the rotation thereof, and then by gearing a closing operation thereof together, so as to remove all cigarette butts and the like completely from the receptacle member when the tray is not in use.

An additional object of this invention is to provide means for removing all contents from the heap chamber, enabling to clean said chamber which is arranged at the internal bottom of the receptacle member within the fixable casing while said receptacle member is in a state being concealed within said casing by causing said heap chamber to be pushed out to the front.

FIG. 1 is a whole perspective view showing the inlet opening when it appeared outside.

FIG. 2 is a cross sectional view showing a middle portion of FIG. 1.

FIG. 3 is a cross sectional view showing a state when the receptacle member having the inlet opening is being concealed in the fixable casing so as to conceal the inlet opening.

FIG. 4 is a cross sectional view of the receptacle member showing the push button means.

FIG. 5 is a diagram showing a specific movement of the receive dish when concealing the receptacle member within the fixable casing, and A in the figure shows the locking lever being contacted with locking seat, showing a state just before opening operation; B shows the slide head subsided over the locking seat showing an opened state; C shows the locking pawl of locking lever being locked on the stop edge of the locking seat, showing a state when bottom of the inlet opening being closed by the receive dish and the receptacle member is being stopped; and

FIG. 6 is a perspective view of the locking lever and locking seat.

The mechanism and operation of the tray according to the present invention is explained referring to accompanying drawings as follows:

A fixable casing **10** with a hollow **11** of laterally long rectangular shape within inner walls thereof on its front has two flat sides **12, 12**, and flat bottom face **13** which forms its bottom, but upper and lower faces **14, 14** are of round shapes, so as to be adapted for rotation of the receptacle member **17** as hereafter described. And, the whole of exterior portion of the hollow **11** is embedded into the fixing surface; securing it in a manner causing only front surface of the casing to appear outside. And a spring seat **15** is provided at almost middle area of bottom face **13** of said hollow **11** and has a locking seat **16** on the right side of said spring seat **15** with a little space therefrom. The functions of said spring seat **15** and locking seat will be apparent from the descriptions hereafter. The receptacle member **17** assembled within the hollow **11** of said fixable casing is semicircular shape, and adapted to both upper and lower faces **14, 14** of said hollow **11**, so that it can rotate without causing any gap on the contacting points at all, and the receptacle member is supported within the hollow **11** by inserting projected shafts **18, 18** projecting on the center of on both sides **12, 12** into shaft receiving holes at equivalent positions on both sides **12, 12** of the fixable casing **10**.

On the top of said receptacle member is formed an inlet opening **19** having a bottom opening which can be closed by a receive dish **20** which will contact from the inside thereof. And, a heap chamber **21** seat at lower portion of the receptacle member **17** is supported within the said receptacle member **17** in a manner able to expose the interior of the heap chamber by inverting the whole of itself to the front by means of a hinge **22** located at the lowest portion as its center. Besides, a pressure spring **27** is interposed at middle of a bracket **26** which supports a shaft rod **24** of a push button **23** projecting on the right side surface of the receptacle member **17**, shown in the drawing, pushes out the push button **23** constantly in the direction of its projection, and the tip of said shaft rod **24** bends upwardly, and contacts a pin **30** secured to one end of the locking lever **29** with an elongated hole **28** provided at the extreme end portion by inserting thereinto in a manner leaving slight gaps on the periphery.

The other end of this locking lever **29** which is spaced with the center shaft **31** thereof extends into interior of the hollow **11** of the fixable casing **10** and forms an upward locking pawl **32** and slide head **33**, and the center shaft **31** of said locking lever **29** is connected with a shaft of an ear-piece **34** on one side of the above described receive dish **20**, and because another ear-piece **35** of the receive dish **20** is axially supported loosely by a shaft on the opposite side of the inlet opening, the receive dish **20** moves forwardly and rearwardly with the movement of the locking lever **29**. In the case as shown in the drawing, the receive dish **20** is closing the inlet opening **19**, but if the receive dish **20** moves forward in such state, it results in the opening of the bottom of the inlet opening. Such receptacle member **17** is constantly pressed in the direction of the front by a spring **36** supported by a spring seat **15** previously provided on the inner bottom face of the hollow **11** of the fixable casing **10**, and the locking seat **16** is fixed at a position where a slide head portion **33**, which is an extension of the locking lever **29**, comes to

contact precisely on the interior bottom face of said hollow **11**.

And, a cut-out **37** having slide edge **38** and stop edge **39** is bored in the surface of this locking seat **16**, and when the receptacle member **17** rotates so as to conceal the inlet opening **19** on the top of the said member **17** within the fixable casing **10**, the slide head **33** of the locking lever **29** subsides sliding over the slide head **38**, and when the cut-out **37** engages thereafter, the locking pawl **32** on the tip of locking lever **29** which is constantly pressed in the upward direction is locked by the stop edge **39** of the locking seat **16**. The movement of the locking lever **29** at a moment it subsides sliding over the slide edge **38** operates the receive dish **20** into its opposed state by the center shaft **31**, and then when the locking pawl **32** is locked on the stop edge **39**, it functions to return the receive dish **20** into its closed state. And the fact that the locking pawl **32** on the tip of the locking lever **29** is locked by the stop edge **39** means simultaneously that the receptacle member **17** comes to support the inlet opening **19** as it remains being concealed within the fixable casing **10**. Further, when the locking of the locking pawl **32** and stop edge **39** is released by pressing the push button **23**, the receptacle member **17** is automatically rotated by an elastic force of the spring **36**, causing the inlet opening **19** to appear to the outside surface with resultant returning to a normal state suitable for the use.

In the construction of the ash tray according to the present invention, pushing operation of the push button **23** moves the locking lever **29**, and because the receive dish **20** is moved in the direction of an opening in the inlet opening **19**, cigarette ashes and butts or the like thrown into the inlet opening **19** are dropped into the heap chamber **21**, whereby not only maintain the inside of the inlet opening **19** always clean, but also functions to extinguish fire and smoke. Furthermore, if the receptacle member **17** is pressed upwardly when the tray is not in use, the inlet opening **19** is kept in an state being concealed within the fixable casing **10**. At such juncture, it functions to drop the contents in the inlet opening **19** down into the heap chamber **21**, and when the push button **23** is pressed at the time of using it subsequently, the receptacle member **17** is pushed out, so as to cause the inlet opening **19** to appear outside immediately. Accordingly, if the ash tray is used by fixing it at a suitable place where people smoke in an automobile, railroad train and other vehicle or ships, it can be used as a most decent butts container undoubtedly, and also can obtain a very clean and sanitary smoking appliance which serves to prevent a fire.

What I claim is:

1. A fixable ash tray comprising a laterally long hollow fixable casing which will be embedded into a wall surface at a suitable place where people smoke in an automobile, railroad train, airplane, ship, and building, etc., having a semicircular receptacle member supported by lateral pivots within said casing, said receptacle member having an inlet opening, a receiving dish pivoted in said receptacle member which can receive ashes from the inside of said inlet opening; a push button arranged on a flank of said receptacle member, and means for causing the casing to be in an opened state by moving said receive dish forwardly through pushing of said button, means for closing the bottom of said inlet opening by pivotal movement of said receive dish when the pressure on said push button has ceased, a locking pawl and slide head formed on the tip of a locking lever connected with a shaft for moving the receive dish to close and open said inlet opening of said receptacle member and a locking seat is mounted on the inner bottom face of the fixable casing and is formed with a surface having a cut-out providing a slide edge and a stop edge, and characterized in that when the receptacle member moves said inlet opening within the fixable casing, so as to conceal it therein, said slide head slidably contacts the surface of said locking seat.

2. A fixable ash tray comprising a laterally long hollow fixable casing which will be embedded into a wall surface at a suitable place where people smoke in an automobile, railroad train, airplane, ship, and building, etc., having a semicircular receptacle member supported by lateral pivots within said casing, said receptacle member having an inlet opening, a receive dish pivoted in said receptacle member which can receive ashes from the inside of said inlet opening; a push button arranged on a flank of said receptacle member, and means for causing the casing to be in an opened state by moving said receive dish forwardly through pushing of said push button, means for closing the bottom of said inlet opening by pivotal movement of said receive dish when the pressure on said push button has ceased, said receive dish having an ear piece at each end thereof, each ear piece being pivoted on a shaft, the shaft of one of the ear pieces having a locking lever fixed thereon arranged to be operated by said push button.

3. A fixable ash tray comprising a laterally long hollow fixable casing which will be embedded into a wall surface at a suitable place where people smoke in an automobile, railroad train, airplane, ship, and building, etc., having a semicircular receptacle member supported by lateral pivots within said casing, said receptacle member having an inlet opening, a receive dish pivoted in said receptacle member which can receive ashes from the inside of said inlet opening; a push button arranged on a flank of said receptacle member, and means for causing the casing to be in an opened state by moving said receive dish forwardly through pushing of said push button, means for closing the bottom of said inlet opening by pivotal movement of said receive dish when the pressure on said push button has ceased, said receptacle member having a hinge section forming a heap chamber capable of swinging to the front.

References Cited in the file of this patent

UNITED STATES PATENTS

2,323,884	Will	July 13, 1943
2,377,713	Penney	June 5, 1945

FOREIGN PATENTS

738,011	Germany	Aug. 11, 1943
801,758	Germany	Jan. 22, 1951