Jan. 3, 1967 R. W. BEEBE ETAL 3,295,343

KEY EJECTOR

Filed Dec. 3, 1964

FIG. 1

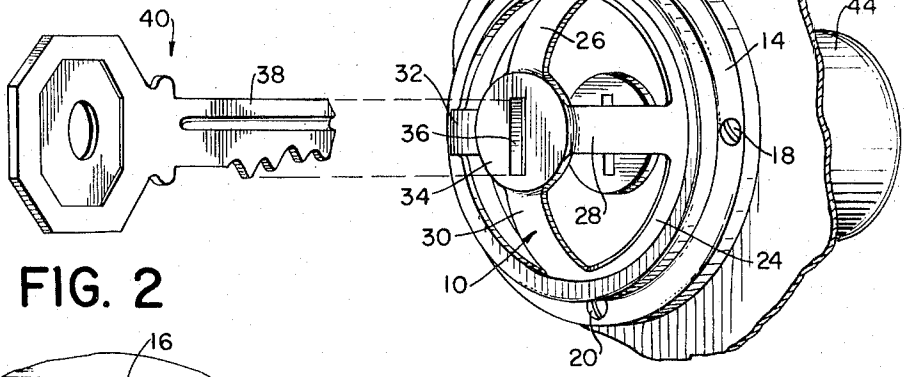


FIG. 2

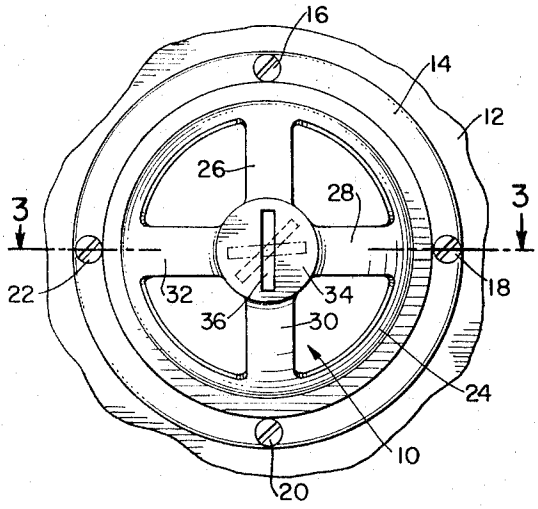


FIG. 3

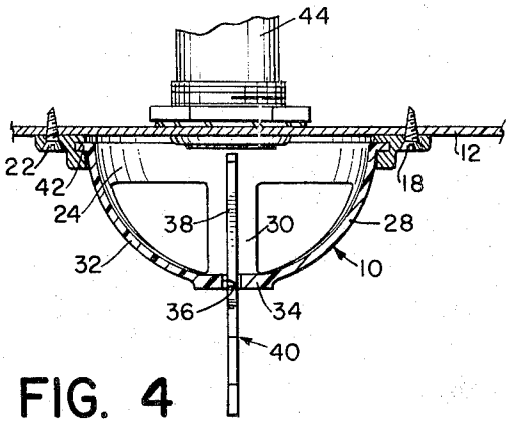


FIG. 4

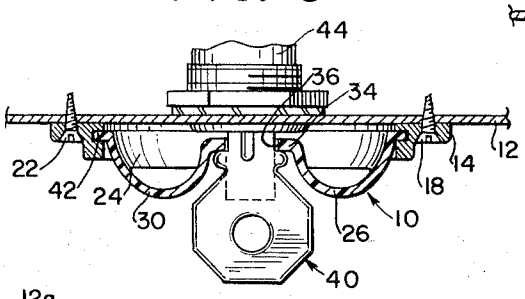
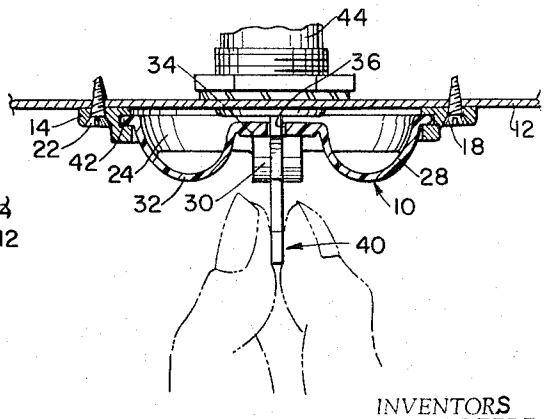


FIG. 5



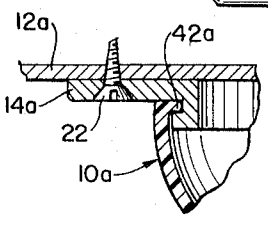


FIG. 6

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KEY EJECTOR

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4 Claims. (Cl. 70—388)

This invention relates to devices for extracting keys from locks or lock-type mechanisms.

Devices are known which will eject keys from locks—see, for example, Glubiak, 2,685,792. However, for simplicity of construction and ease of manufacture and operation, the present invention represents a novel departure in the state of the art.

The device of the invention is made of a resilient element easily compressed as needed by the force required to insert the key into the lock mechanism. When that mechanism is released, that is, when the lock is opened, the key will be forced out of the lock by the spring action of the material comprising the invention. Thus the key cannot be left in the lock.

A few locks, such as the ignition switch on some cars, will not allow the key to be extracted from the mechanism until it is returned to its original insertion position. Only then will the key be ejected by the device of the invention; up to that time the resilient element will be held in its compressed state by the interaction of the key surfaces and the interior of the lock.

Accordingly it is an object of this invention to provide a device for ejecting a key from its lock mechanism when the key action has been completed.

This and other objects and advantages of the invention will become apparent and the invention will be fully understood from the following description and drawings in which:

FIG. 1 is a perspective view of the invention mounted upon a surface containing a keyhole and adjoining lock mechanism, with a key shown before insertion therein;

FIG. 2 is a front elevational view of the invention, the dominant features residing in the full lines;

FIG. 3 is a cross section view of the invention taken along the line 3—3 of FIG. 2, with a key shown engaged by the invention but before insertion into the lock;

FIG. 4 is the same cross-section as shown in FIG. 3, but with a key inserted in the lock mechanism;

FIG. 5 is the same cross-section shown in FIG. 3 but with the key now engaged in the lock and turned 90 degrees from its original position, showing also the concomitant movement of the invention;

FIG. 6 is a fragmentary section of the view of FIG. 3 showing an alternate method of attaching the resilient portion of the invention to its stationary element.

Referring to the drawings in particular, a resilient hemispherical piece **10** is held to a surface **12** by means of a circular mounting unit **14** attached to surface **12** by screws **16**, **18**, **20** and **22**. Piece **10** is formed with a circular base **24** and four spokes **26**, **28**, **30** and **32** joined at the apex **34** of hemisphere **10**. The apex **34** contains a slot **36** large enough to accept the shank **38** of key **40**. It is to be noted that hemisphere **10**, which is made of plastic or any other suitable material, resilient enough to return to its former shape and position after being subjected to stress and released, is free to rotate in the mounting unit **14** since it has a circumferential flange **42** which fits into a corresponding groove in unit **14**, permitting annular movement of hemisphere **10**, if required, as the key **40** is turned in the lock **44**.

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In the alternate embodiment partially illustrated in FIG. 6, the spring means **10***a* has a circumferential flange **42***a* which projects inwardly toward the cooperating groove on the outer circumference of mounting unit **14***a*. This groove and flange is deep enough so that the pressure necessary to force spring means **10***a* into its compressed position will not disengage flange **42***a* from its cooperating groove in unit **14***a*.

In the case of metallic dashboards or other like surfaces, it would be possible to dispense with screws and fasten the mounting unit to those surfaces by means of magnets imbedded around the periphery of the unit. Alternately, but in like manner, the whole mounting unit could be made of magnetic or magnetized metal, or just that portion in contact with the metallic surface.

In either case, the mounting unit would perform the same function as it does in the illustrated embodiments—that of maintaining the position of the resilient portion of the device in place over the keyhole.

It is also feasible to have these resilient elements constructed of materials which phosphoresce, fluoresce of luminesce, or can have such qualities imparted (e.g., sprayed with fluorescent paint) to them. Either property would allow the user to find the ignition switch or keyhole in the dark with minimum difficulty.

It is to be noted that, in the event the key has no shoulder which will provide a stop mechanism for the engagement of the key and the spring means in the embodiment which requires such engagement in order to rotate the spring means, the device will operate just as effectively by the engagement of the spring means with the gripping portion or head of the key.

Although preferred embodiments of the invention have been illustrated and described, many modifications thereof will be obvious to those skilled in the art. Accordingly, the invention should not be limited except as defined by the following claims.

What we claim is:

1. A key-extracting device in combination with a lock assembly, comprising a one piece resilient hemispherical member having a circular base, a central portion spaced perpendicular from a plane through said circular base and parallel to said plane, said central portion having a non-circular aperture for insertion of a key therethrough and for engaging said key so as to be rotatable therewith, said circular base having a flange, mounting means cooperating with said flange to secure said member to said lock assembly, and a plurality of spokes joining said circular base to said central portion, and wherein said key cooperating with the lock assembly is released from said lock assembly by the spring action of said hemispherical member.

2. The device as claimed in claim **1**, wherein said flange of said hemispherical member is rotatably mounted within a cooperating groove in said mounting means, said groove being disposed around the periphery of said lock assembly.

3. The device as claimed in claim **1**, wherein said hemispherical member is permanently mounted to said lock assembly, said key exerting an annular pressure against said hemispherical member when being rotated in said lock assembly.

4. The device as claimed in claim 1, wherein said hemispherical member consists substantially of a resilient plastic material so as to allow a spring action for ejecting said key from said key assembly.

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