Feb. 18, 1969 D. B. VALK 3,428,351

DOORKNOB SAFETY LOCKS

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Fig. 2.

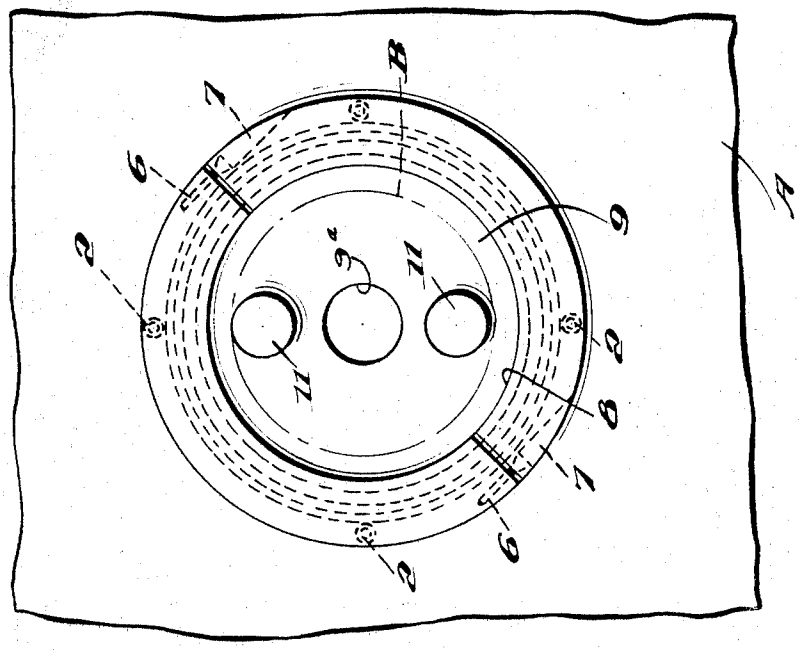
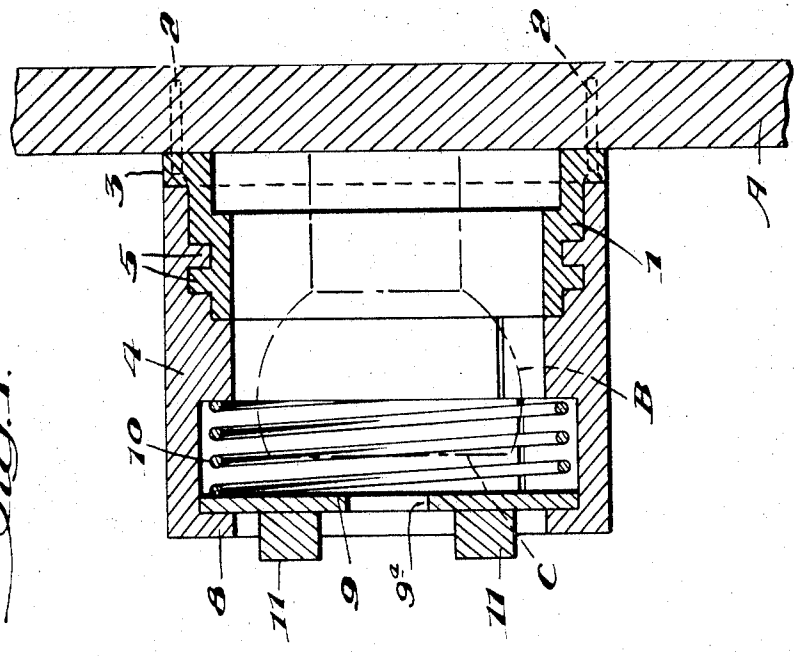


Fig. 1.



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Fig. 4.

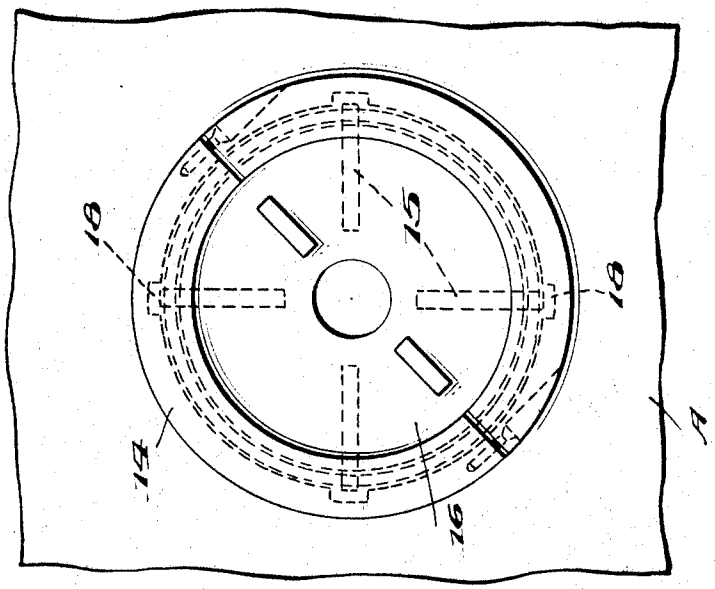
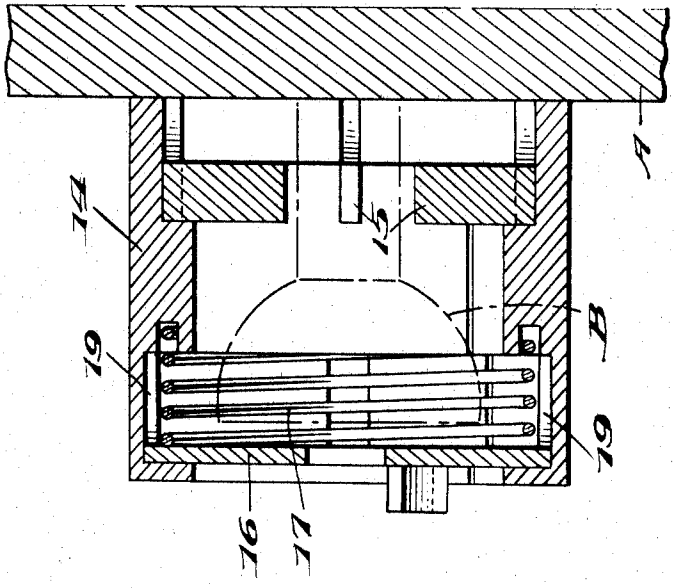


Fig. 3.



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DOORKNOB SAFETY LOCKS

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U.S. Cl. 292—347 9 Claims
Int. Cl. E05b 1/00

ABSTRACT OF THE DISCLOSURE

A safety lock for preventing children from opening a door, but allowing adults to readily operate the doorknob for opening the door. The safety lock includes a shell which is mounted either on the door or on the stationary doorknob stem, so that rotation of the shell does not impart rotation to the doorknob which is enclosed within the shell. A pressure plate on the outer end of the shell is movable inwardly to engage the outer face of the doorknob, but a spring urges the pressure plate out of engagement with the doorknob. To operate the doorknob, it is necessary to press in on the pressure plate and subsequently to rotate the shell, thereby applying torque to the doorknob. Since it is difficult for children to coordinate these two motions, they are unable to open the door.

This invention relates to improvements in doorknob safety locks of the character used for preventing the unauthorized opening of doorknobs, particularly by young children, while permitting ready opening thereof by adults and responsible persons.

It has long been recognized that young children should be excluded from dangerous household areas, that they have a tendency to open doors and to gain access to rooms and other areas wherein conditions may exist which offer some danger to a child or to an unauthorized person.

While various types of safety locks have been provided heretofore, some of which have included handle portions for opening the doors or other closures attached thereto, such locks are self-contained and independent of the usual door hardware provided for opening and closing of doors and the like.

One object of this invention is to overcome the foregoing objections and to provide a new type of safety lock to protect the lives of young children.

Another object of the invention is to apply a safety lock to a conventional doorknob so as to prevent turning of the knob by a young child or an unauthorized person except upon proper manipulation of the lock structure when the doorknob may be turned for opening or closing the door in the usual way.

Still another object of the invention is to simplify and improve the construction of a safety lock that may be applied to a door or other closure to prevent access thereto by a young child or unauthorized person, but to permit of ready opening or closing, when desired, by an adult.

These objects may be accomplished, according to certain embodiments of the invention, by providing a shell as a housing to surround and enclose the doorknob, but free thereof and rotatable relative thereto. Means is provided for confining the shell against separation and removal from the doorknob either by securing it to the face of the door or by overlapping relation with the doorknob itself to prevent withdrawing the shell from off the doorknob.

A pressure plate is mounted in the outer end of the shell, spring biased in an outward direction away from the doorknob, but capable of being moved inwardly into frictional or interfitting relation with a face of the doorknob to engage the latter and thus to effect turning movement of the doorknob. A rotary motion may be imparted to the pressure plate by projections thereof or to the shell while the pressure plate is held in engagement with the face of the doorknob to effect the desired turning action.

These embodiments of the invention are illustrated in the accompanying drawings, in which:

FIG. 1 is a longitudinal sectional view through the safety lock applied to a door;

FIG. 2 is an end elevation thereof;

FIG. 3 is a longitudinal sectional view showing a modified form of safety lock; and

FIG. 4 is an end elevation thereof.

The invention is shown in connection with a door, generally indicated at A, having a doorknob B offstanding therefrom in the usual way with an outer face C capable of gripping engagement.

A base section **1** of the safety lock is cylindrical and is sleeved over the doorknob B into abutting relation with the outer face of the door A. Suitable means should be provided for securing this base section **1** to the face of the door such, for example, as screws **2** that extend through suitable holes in the flange edge **3** on the base section **1**.

This base section **1** may be adhesively secured to the face of the door in addition to or in place of the screws **2**, as found desirable.

Also sleeved over the doorknob **8** is a shell **4** which extends axially substantially in alignment with the base section **1**. The inner end portion of the shell **4** overlaps the base section **1** and is journaled thereon, with interfitting ribs **5** between these portions guiding the rotary movement thereof and holding the shell in place on the base section.

As shown in FIG. 2, the shell **4** is split longitudinally to facilitate assembly on the base section **1**, with the ribs **5** in interfitting relation as shown. Screws **6** interconnect these sections of the shell **4** and secure them together in surrounding but journaled relation for turning movement upon and relative to the base section **1**. Grooves **7** are formed in the side faces of the sections of the shell for access to the screws **6** for insertion and removal thereof.

The outer end of the shell **4** is provided with an inturned flange **8** which serves to confine within the outer end portion of the shell a pressure plate **9** that is slidably mounted for axial movement relative to the shell toward and from the face C on the end of the doorknob B and into engagement with the face C.

A hole **9a** is provided in the center of the plate to expose a key receptacle in the doorknob face C.

The pressure plate **9** normally is urged outwardly in seated position against the flange **8** by a coiled spring **10** housed within the shell. Projecting lugs **11** are provided on the outer face of the pressure plate **9** to facilitate inward movement of the pressure plate toward the face C of the doorknob.

To operate the doorknob safety lock, it is necessary to push inward on the pressure plate **9**, forcing the spring **10** toward the doorknob until the pressure plate contacts the face C. It is held in this position when the pressure plate is rotated either directly or by rotation of the shell **4** to turn the doorknob and thus open the door with the usual door lock structure.

The spring **10** will keep the pressure plate away from the doorknob until the latter is forced inward deliberately. When the doorknob safety lock is not in operation, the outside shell is free to rotate around the base section **1**, as well as the pressure plate. A child could continually turn these parts, but by so doing the door would not be opened.

In assembly of this structure, the pressure plate and spring are inserted into one-half of the outside shell. The outside shell grooves are then fitted into the grooves on the base and the other side of the shell is then placed

opposite this and the two halves are secured together by the screws **6**.

The structure is extremely simple and inexpensive to build and install. One size will fit all standard types of doorknobs. Assembly is uncomplicated and it can be installed by the average householder. The safety lock can be manufactured either from plastic or from light weight metals, as desired.

A modified form is shown in FIGS. 3 and 4, in which a shell **14** surrounds the doorknob B, but is free and independent of the door, so as to be rotatable relative thereto. This shell is retained in place by lugs **15** projecting radially inwardly toward the shank of the doorknob B to prevent the positive withdrawing of the shell from off the doorknob, while yet allowing its free rotation relative thereto. A pressure plate **16** and spring **17** are used, as described, the pressure plate being forced inward into engagement with the abutting face of the doorknob to rotate the latter.

In this form, the pressure plate **16** has radial tongues **18** fitting into grooves **19** formed in the shell **14** so as to cause the pressure plate to rotate with the shell. Thus, by pressing the pressure plate into engagement with the end of the doorknob and rotating the shell, the knob will be turned. At all other times, the shell is free to rotate independently of the doorknob without causing opening of the door.

While the invention has been illustrated and described in certain embodiments, it is recognized that other variations and changes may be made therein without departing from the invention, as set forth in the claims.

I claim:

1. A doorknob safety lock comprising a shell having an opening at the inner end and adapted to receive a rotary doorknob therein, means for attaching the shell to a door independently of the doorknob, means mounting the shell for rotary movement relative to the doorknob, a pressure plate at the outer end of the shell in position for movement relative to the shell toward and from said shell inner end, whereby the plate engages the face of the doorknob that is received within the shell for operating the doorknob.

2. A doorknob safety lock according to claim **1**, including means for yieldably biasing the pressure plate away from the shell inner end.

3. A doorknob safety lock according to claim **1**, wherein the pressure plate is located within the shell in the outer end portion thereof, and has means at the inner face thereof for turning engagement with the doorknob.

4. A doorknob safety lock according to claim **1**, including a coiled spring interposed between the pressure plate and the shell for normally urging the pressure plate away from the doorknob.

5. A doorknob safety lock according to claim **1**, including projecting means at the outer surface of the pressure plate for grasping engagement to effect turning thereof.

6. A doorknob safety lock according to claim **1**, including a base having means for secure connection with a door, and means on the base for journaling the shell for turning movement relative thereto.

7. A doorknob safety lock according to claim **1**, including means projecting radially inwardly from the shell in overlapping relation with the doorknob for preventing removal from the doorknob.

8. The combination with a doorknob having an enlarged hand-hold portion, of a shell surrounding the doorknob and freely rotatable relative thereto, and means supported by the shell and movable relative thereto into interengagement with the doorknob for turning the doorknob.

9. The combination according to claim **8**, including a pressure plate spring biased away from the doorknob and in position for movement into engagement therewith to turn the doorknob.

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