United States Patent [19]

Hufford et al.

[11] **3,786,578**

[45] **Jan. 22, 1974**

[54] **DISPLAY MOUNT FOR LOCKS**

[75] Inventors: **Thomas P. Hufford**, Foster City; **Hollis L. De Vines**, Pacifica, both of Calif.

[73] Assignee: **Schlage Lock Company**

[22] Filed: **Nov. 24, 1972**

[21] Appl. No.: **309,206**

[52] **U.S. Cl.** **35/49**

[51] **Int. Cl.** **G09b 25/00**

[58] **Field of Search** 35/49, 50; 70/431, 466; 40/331

[56] **References Cited**

UNITED STATES PATENTS

1,292,508 1/1919 Orr ..... 35/49 X

OTHER PUBLICATIONS

Independent Lock Co. Catalogue No. 12, 1941, page 22, "Demonstrating Sample Mounts".

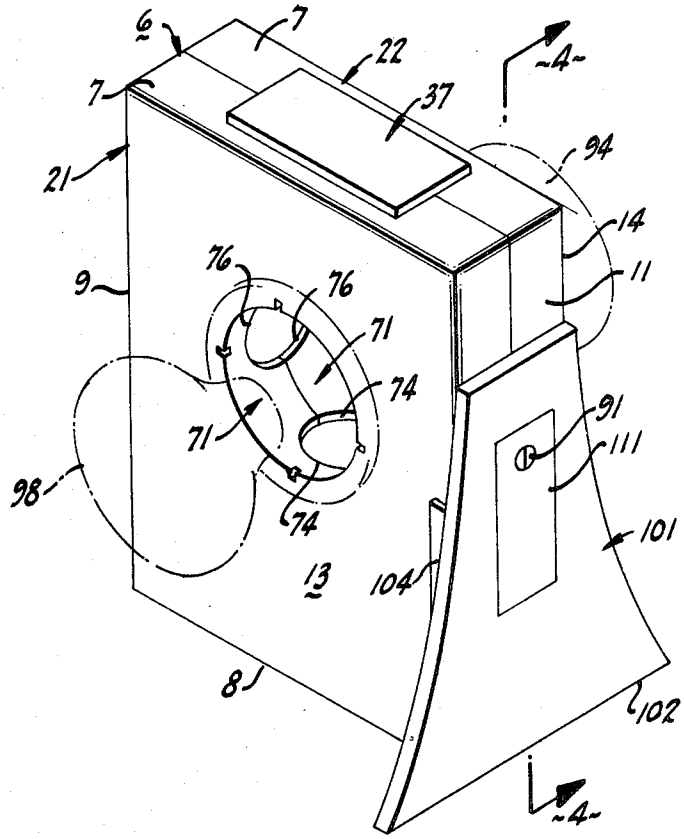
Primary Examiner—Harland S. Skogquist

Attorney, Agent, or Firm—Marcus Lothrop et al.

[57] **ABSTRACT**

A display mount is provided for any of several locks each having an actuator assembly and a bolt assembly, the bolt assemblies having different backsets or faceplate arrangements or both. The mount holds any one of the different locks assembled for operation and in appropriate position in the mount. The display mount is in complementary, detachable parts and may be supported on a table or wall.

7 Claims, 11 Drawing Figures



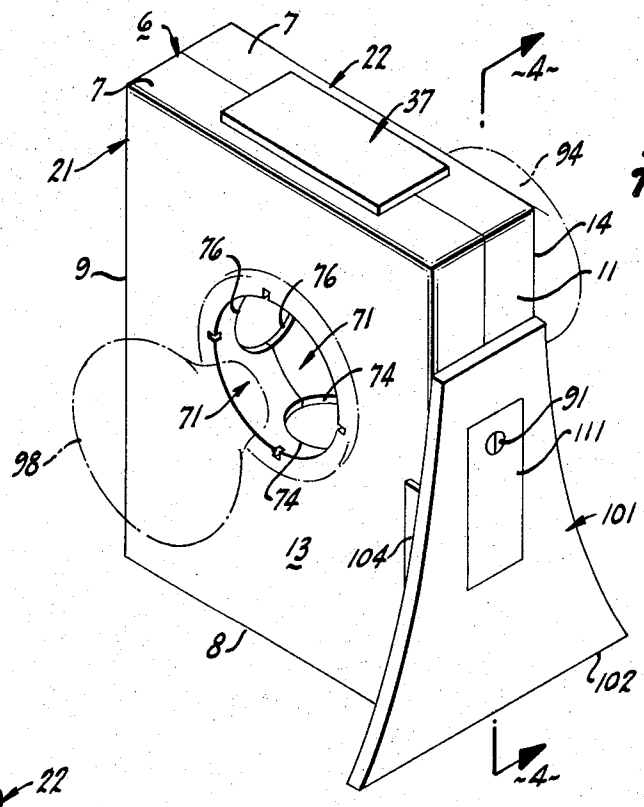


FIG. 1

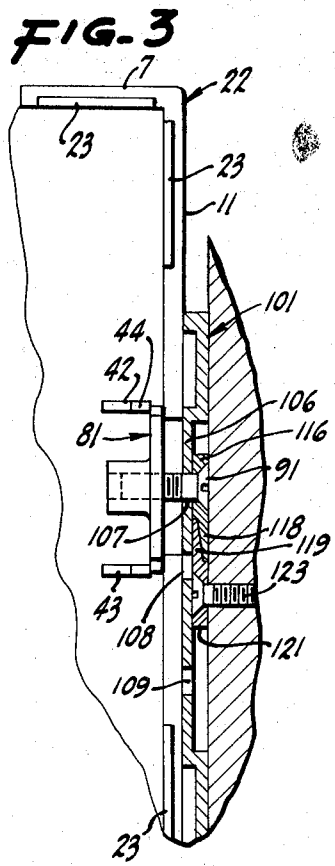


FIG. 3

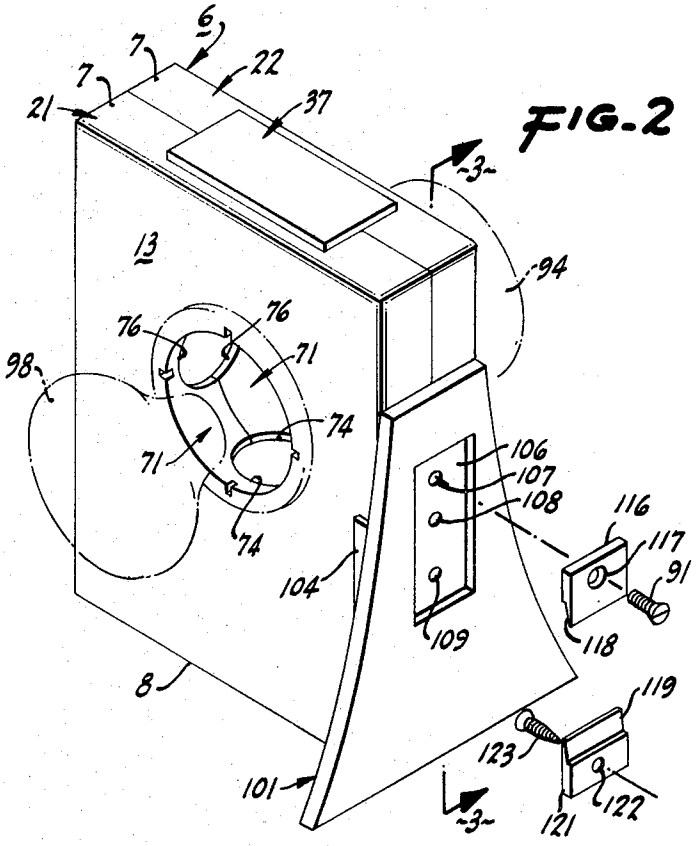


FIG. 2

FIG-4

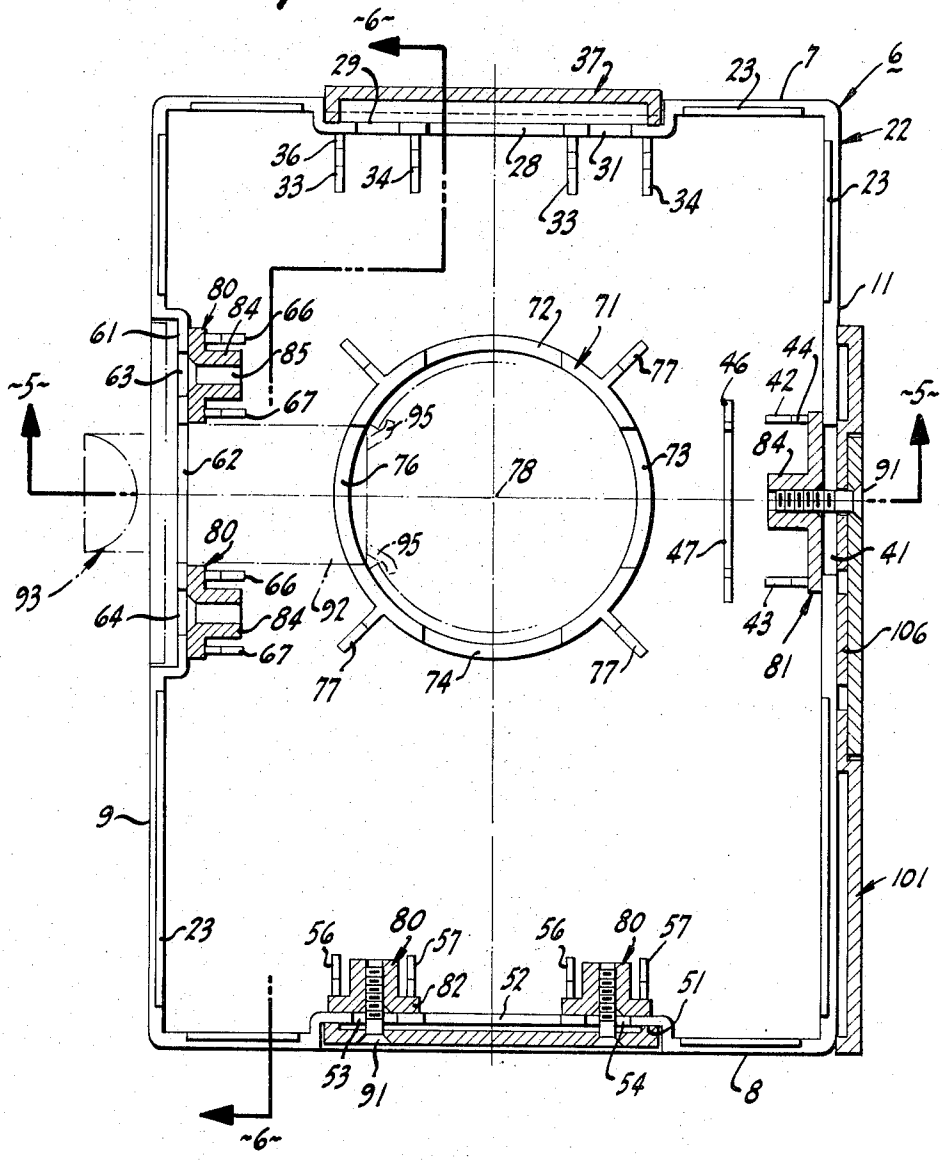

~6~
29
37
23
7
6
22
36
33
34
28
31
34
33
23
11
80
84
66
61
85
63
67
72
71
77
46
44
42
~5~
~5~
95
76
78
73
84
91
62
80
95
47
41
93
66
92
64
84
67
43
106
81
77
74
77
9
101
23
56
80
57
56
80
57
82
52
51
53
91
54
8
~6~

FIG-5

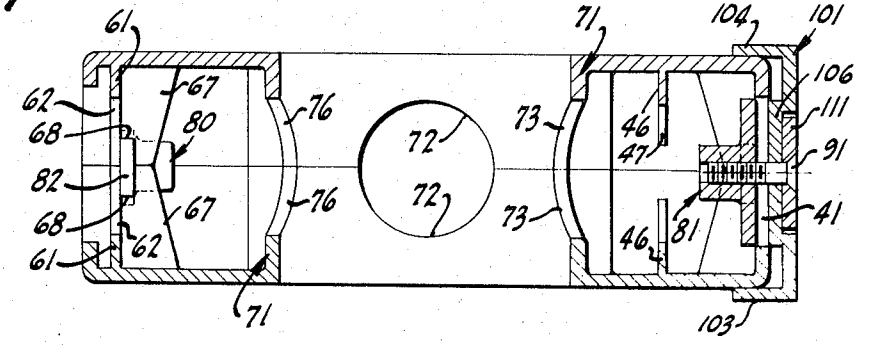
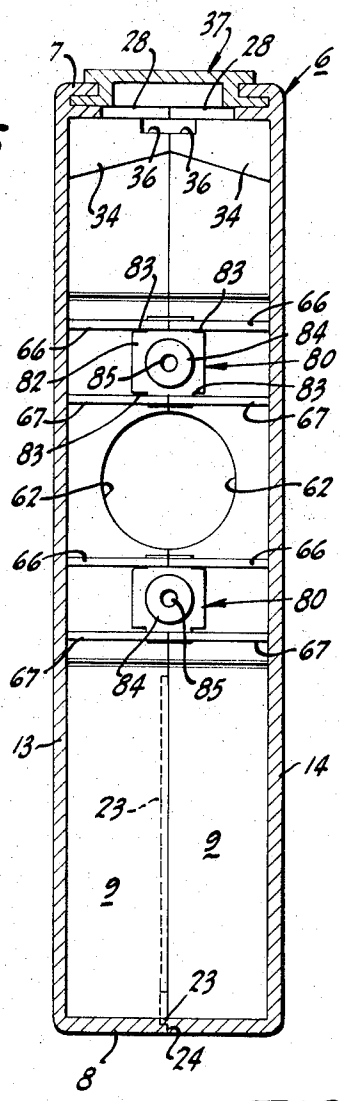

61
71
104
101
106
62
67
76
72
73
46
111
68
80
47
91
82
72
73
67
76
68
81
41
62
46
61
71
103

FIG-6



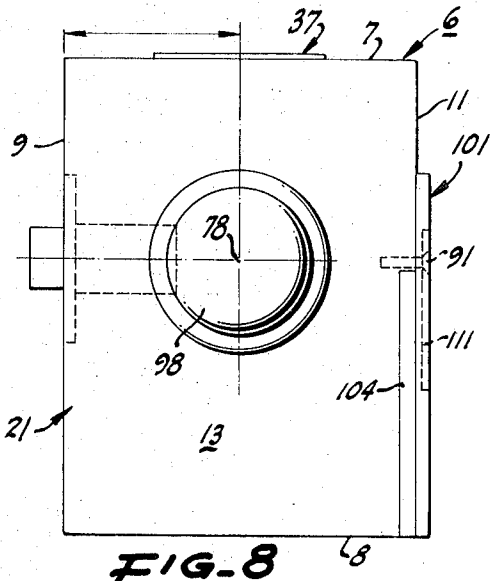


FIG-8

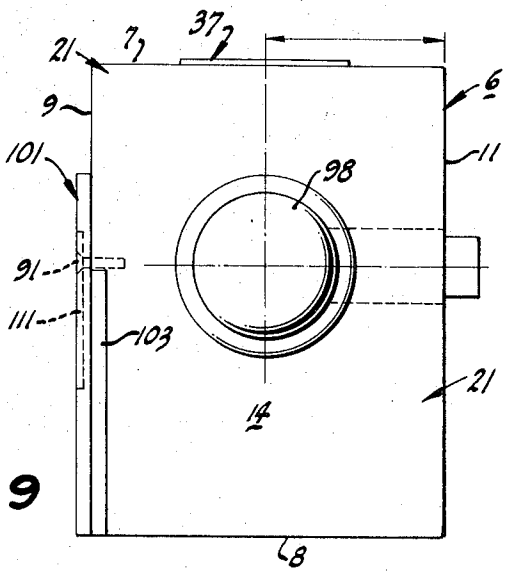


FIG-9

FIG-10

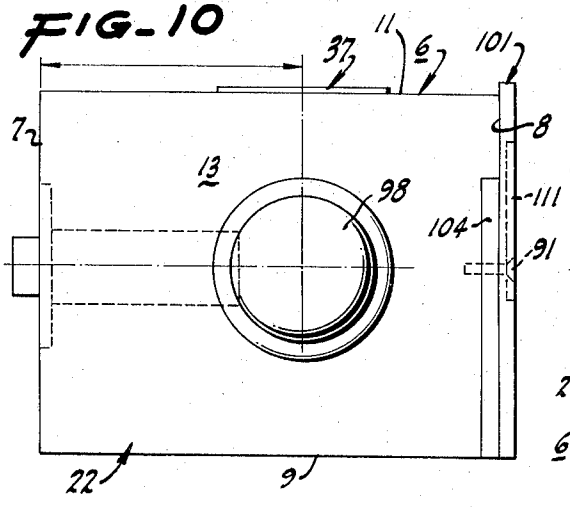


FIG-11

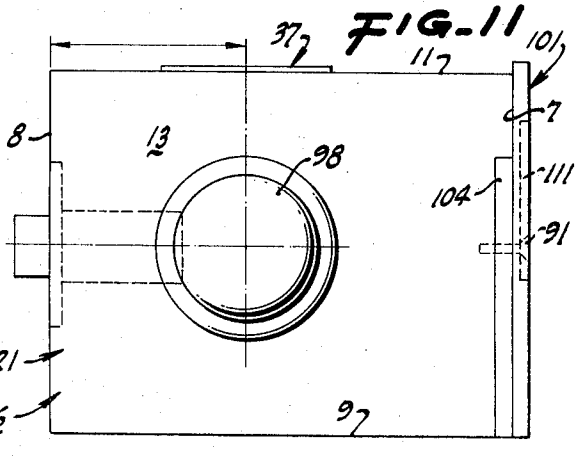
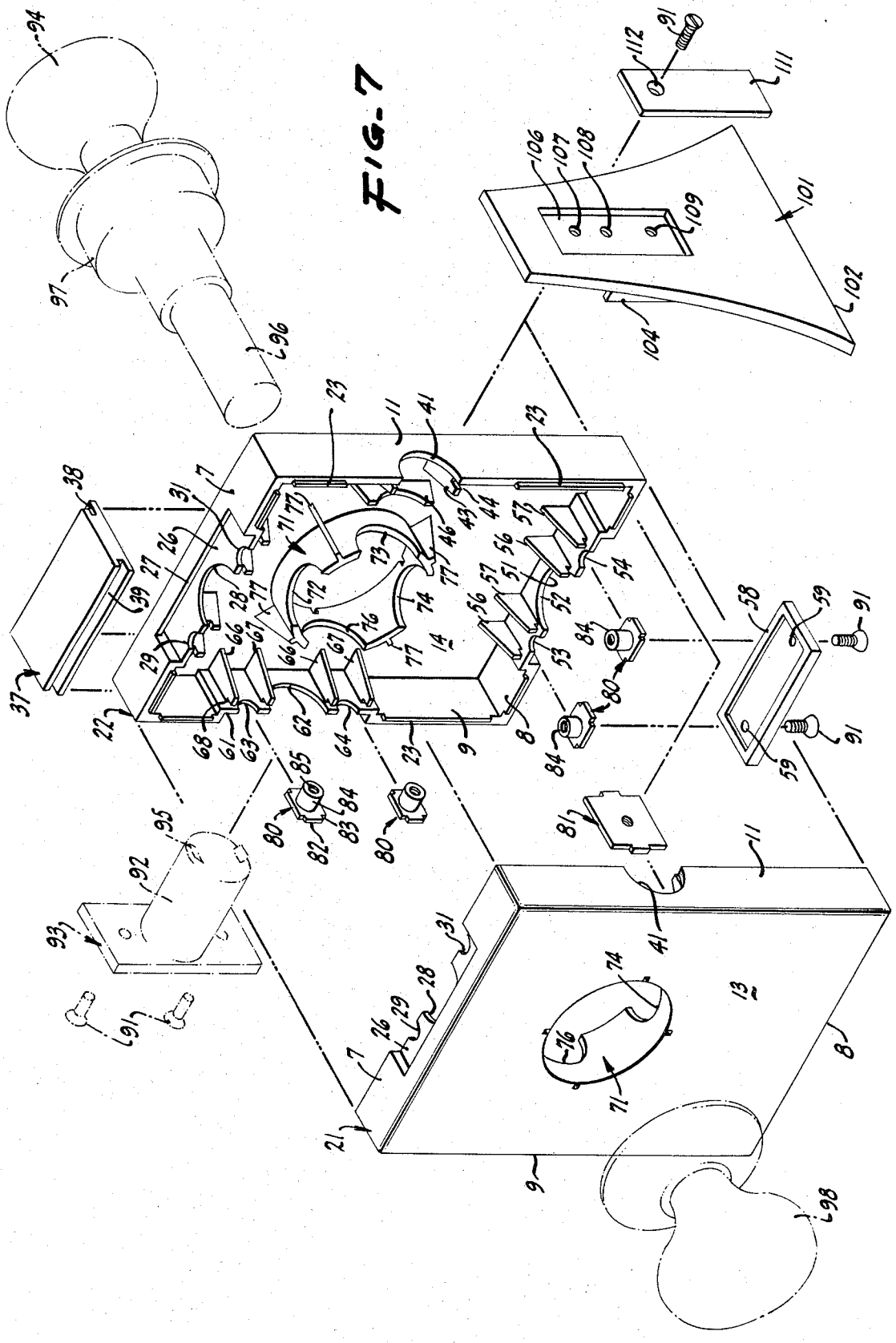


FIG. 7



DISPLAY MOUNT FOR LOCKS

In the sale and demonstration of locks it is desirable to afford the prospective purchaser an example of any one or more of several different kinds of locks. Such locks often vary in the amount of backset and the nature and style of the faceplate accompanying the bolt. These faceplates are sometimes rectangular and of different dimensions and sometimes are small circular bands. For display purposes it is the custom to have lock mounts resting on a table or counter top. The prospective customer can then turn the knobs or otherwise actuate the mechanism to observe its functioning. It is sometimes advisable to have the display structure fastened to a wall or post so that otherwise usable counter space is not occupied.

It is therefore an object of the invention to provide a display mount for locks which in one unit can readily accommodate any one of several different locks; that is, those having different backsets or different faceplate constructions, or both.

A further object of the invention is to provide a display mount for locks that is quite durable, has a permanent finish, yet is light and inexpensive.

Another object of the invention is to provide a display mount for locks that can easily be changed from the reception of one lock to the reception of a different lock.

A further object of the invention is to provide a display mount for locks appropriate to free display on a table or to rigid mounting on a wall.

A further object of the invention is to provide a display mount for locks in which the display mount is fabricated of a number of individual parts that readily can be assembled by a dealer for display of his locks.

Another object of the invention is to provide a display mount for locks of an improved and advanced character.

Other objects of the invention, together with the foregoing, are attained in the embodiment of the invention described in the accompanying description and illustrated in the accompanying drawings, in which:

FIG. 1 is an isometric perspective view showing the lock mount as assembled for support on a table, certain lock parts being illustrated in broken lines;

FIG. 2 is a view similar to FIG. 1 but showing the display mount arranged for hanging on a wall;

FIG. 3 is a cross-section, the plane of which is indicated by the line 3—3 of FIG. 2, certain portions being broken away to reduce the size of the figure;

FIG. 4 is a cross-section, the plane of which is indicated by the line 4—4 of FIG. 1, some lock parts being shown by broken lines;

FIG. 5 is a cross-section, the plane of which is indicated by the line 5—5 of FIG. 4;

FIG. 6 is a cross-section, the planes of which are indicated by the line 6—6 of FIG. 4;

FIG. 7 is an exploded view of the display mount showing the various parts thereof in full lines and some parts of a lock in broken lines; and

FIGS. 8, 9, 10 and 11 are side elevations of the lock mount assembled in different ways with different locks mounted thereon.

While the display mount pursuant to the invention can be incorporated in various differant ways to display locks of various different kinds, it has been commercially embodied as disclosed herein. The disclosed device is for the particular purpose of displaying locks of the sort having one or more actuators in the form of knobs, levers, thumb turns, key receivers or the like; for example, including a pair of rotatable knobs disposed on the opposite portions of one or two rotatable spindles. One or both of the actuators may be temporarily demountable. The lock also usually includes a dead or latch bolt assembly detachably engageable with the knob assembly. The bolt assembly is of any of the several predetermined lengths and includes a housing around and a trim for the projectable bolt. The trim may be a thin, circular rim or may be any of several rectangular faceplates having different dimensions. Locks of this general type are shown in Schlage U.S. Pat. Nos. 2,831,336 and 3,072,427.

Particularly as shown in FIGS. 1 and 7, we preferably provide a display mount housing, generally designated 6, having a pair of opposite end faces 7 and 8 as well as a pair of opposite side faces 9 and 11 and a pair of opposite lateral faces 13 and 14. The rectangular structure so provided is preferably made up of a pair of complementary, nearly identical shells 21 and 22 conveniently molded of a relatively thin, durable, highly finished plastic material. Since these shells 21 and 22 are substantially identical except for some edge tongues 23 and mating grooves 24 (FIG. 6), the description of one applies equally to the other.

Taking the shell 22, bearing the tongues 23, as an example, there is provided in the upper end 7 a recess 26 of generally rectangular contour countersunk below the general plane or surface of the end 7 and having along its side below the surface thereof a key or bead 27 extending end to end thereof. Centrally of the recess 26 there is provided an aperture 28 of a size to receive the customary latch bolt housing with a reasonable amount of clearance. On opposite sides of the aperture 28 there are provided openings 29 and 31 of a size and in position to receive the customary fastening screws for one form of latch plate accompanying the latch bolt.

As particularly illustrated in the FIG. 4 the individual openings 29 and 31 are straddled by a pair of hook retainers 33 and 34. Each of the retainers is like others used throughout the structure. Each includes a notch 36 open to the interior of the shell and disposed near the adjacent wall thereof.

Adapted to be seated in the recess 26, particularly when the two shells are brought together, is a finish plate 37 having longitudinal inturned grooves 38 and 39 along the sides of the plate adapted to receive the keys or beads 27. The changeable plate 37 serves to overlie and close the various openings 28, 29 and 31 projects slightly to afford a good site for a designation such as a trademark or model number. The interlocking character of the closure plate 37 also tends to hold or position the two shells.

In a somewhat comparable fashion there is provided in one of the side walls 11, for example, a semi-circular opening 41 flanked on opposite sides by a pair of retainers 42 and 43 preferably molded integrally with the shell 22 and having notches 44 therein adjacent the side wall. In addition there is a positioning support 46 having an arcuate contour 47 of substantially the same curvature as the opening 41.

In the nether end wall 8 there is provided a depressed, rectangular panel 51 pierced by an opening 52 of a predetermined size and flanked on opposite sides

by related openings 53 and 54. These openings, like the openings 29 and 31, are straddled by hook retainers 56 and 57. In this instance the dimensions of the panel 51 are the same as the dimensions of the recess 26 to accommodate latch plates or closures of the same size. The openings 52, 53 and 54 can be temporarily closed by a plate 58 somewhat thinner than the finish plate 37 but adapted to fill the recess when lodged therein.

Similarly, there is afforded in the side face 9 a depressed panel 61 interrupted by a central opening 62 and lateral openings 63 and 64, each of which is provided with flanking pairs of hook retainers 66 and 67 provided with notches 68 therein adjacent the wall of the panel 61.

At a particular predetermined location with respect to the central portions of the various openings 28, 41, 52 and 62 there is provided an annular collar 71. The collar has a number of openings 72, 73, 74 and 76 therein arranged at 90 degrees to each other and in alignment axially with the respective openings 28, 41, 52 and 62. Buttress walls 77 reinforce the collar between the various openings. The dimensions of the structure are such that the distance from the center 78, or central axis, of the collar 71 to the wall panel 61 is different than the distance from the axis 78 to the recess 26 and is again different than the distance to the panel 51.

In the use of the device as so far described, the two shells 21 and 22 are placed together and are slightly forced so that the various tongues 23 engage in the grooves 24 and the parts are lightly held together by friction. Preferably the finish plate 37 is prepositioned so that it is entrapped when the two shells are mutually approached. This assists in the assembly. If the frictional engagement is tight enough, the parts can serve in the indicated fashion, but it is preferred to afford extra holding means not only for the mount itself, but also for anchoring the lock to be displayed.

For that reason there are provided several retainer nuts, generally designated 80 (FIG. 7), of a relatively small size and a retainer nut 81 of a similar construction but of a larger size. The retainer nuts 80, for example, each include a generally rectangular, flat plate 82 having notched corners 83 and having an integral boss 84 of generally circular-cylindrical configuration. Extending through the plate 82 and the boss 84 is a central aperture 85. This can be initially threaded or is of a size to be threaded by a self-tapping screw upon first encounter. The size of the retainer nuts 80 is such that the plates 82 drop neatly into the notches such as 36 in all positions in the shells, straddling the parting line between them and are disposed with the bosses 84 extending inwardly. The construction and use of the larger retainer nut 81 are just as described except for the dimensions of the plate 82, the boss portion 84 thereof being substantially the same as in the smaller retainer nuts.

For added retention therefore, just prior to the assembly of the shells, retainer nuts such as 80 and 81 are dropped into various of the hook retainer pairs such as 33 and 34. They are frictionally seated as well as may be in the notches 36 and in the notches 44. When the shells are then pushed together and are lightly retained by frictional forces, the various retainer nuts 80 and 81 are in position to receive fasteners from the outside.

If, for example, the structure is to be assembled as shown in FIG. 7 then it is in order to position the plate 58 against the panel 51 and to insert standard screw fasteners 91 through the openings 59 in the plate and threadedly to engage the bosses 84 of the associated retainer nuts 80. This serves to clamp or pinch the two shells tightly between the retainer nuts and the plate 58 and thus not only closes the apertures in the bottom of the mount, but likewise grips the two shells in assembled position.

Again assuming that the assembly is as shown in FIG. 7, a latch bolt assembly including an appropriate latch bolt housing 92 having a latch plate 93 of a predetermined dimension is disposed through the opening 62 and extends through the opening 76 and into the collar 71. The plate 93 seats against the panel 61. Screws 91 are then introduced through the latch plate 93 and extend into the adjacent retainer nuts 80 to secure the latch bolt assembly in place in the correct position. The adjacent portions of the combined shells are also pinched together. Thereupon the knob assembly 94 (less one knob) is inserted transversely with the spindle extension 96 extending through the two openings defined by the collars 71. As part of the assembly motion, the casing 97 portion of the knob assembly is interengaged with projections 95 on the latch bolt housing and lock parts are functionally interconnected. Rotation of the knob spindle 96 then affords corresponding action of the latch bolt in the usual way. At assembly the other knob mechanism 98 is mounted on the spindle 96. The two portions of the knob assembly are urged toward each other in the customary way to clamp against the opposite sides of the mount, stiffened by the abutting collars 71 so that the knob assembly is appropriately held.

Following this there remains but to dispose of the opening 41. Conveniently that opening is covered by a stand 101 of approximately truncated, triangular form having a base 102 designed to support the structure on a table. The stand includes a pair of side wings 103 and 104 (FIG. 5) designed to embrace the assembled side walls of the two shells and to assist in clamping them together and steadying the stand 101. Depressed into the outer face of the stand is a panel 106 having various openings 107, 108 and 109 therein. When the stand 101 is positioned as particularly shown in FIG. 4, one of the openings 107 is in alignment with the boss 84 of the larger retainer 81. A fastening 91 passed through the opening and engaging the boss will draw all of the parts together. This not only secures the stand to the mount, but likewise assists in pinching the shell sides together.

It is sometimes desired to conceal some of the holes, such as 108 and 109 if they are not in use. For that reason the depressed panel 106 is filled with a removable closure plate 111 having an opening 112 therein designed to register with either the opening 107 or the opening 109, depending upon the inversion of the plate. In the present instance, the plate 111 is inserted upright, and then the fastening 91 is driven home to secure the stand and position the plate 111 for a smooth, finished appearance.

As an alternate of this assembly, as particularly shown in FIG. 2, the screw 91 can be removed and the finish plate 111 withdrawn. In place thereof an upper hook 116 is placed within the panel 106. This is a generally rectangular block having an opening 117 symmetrically therethrough. The block has a narrow, rail-like portion 118 designed to interfit with the corre-

sponding rail portion **119** of a similar block **121.** This latter has an opening **122** therethrough for the reception of a screw **123** for fastening the block **121** to the wall. In fact, the hook members **116** and **119** may be identical but simply turned over.

When the hook **119** has been mounted on a wall, then the entire mount can be moved slightly above it with the hook **116** in substantially the sampe lane, the hook **119** occupying a part of the recessed panel **106.** The mount can then be lowered. This engages the depending hook **116** with the upstanding hook **119.** Since these two hooks are slightly tapered, there is a wedging engagement enhanced by the effect of gravity upon the entire mount. A wall support is thus easily provided if it is desired.

As shown particularly in FIGS. **8, 9, 10** and **11,** a structure substantially as heretofore described is disclosed. The arrangement of FIG. **8** discloses the lock and mount in substantially the same fashion as is illustrated in FIG. **7.** This has a typical latch bolt housing provided with a faceplate measuring 1 inch by 2 ¼ inches and having a backset or spacing from the axis **78** of 2 ⅜ inches.

For a comparable but different setting, the mount is left just as before except that the stand **101** and its appurtenances are moved to the opposite side, as shown in FIG. **9,** and the different latch bolt assembly is mounted from the opposite face of the mount using the opening **41.** In this instance the latch bolt housing does not have a rectangular faceplate but has a small ring-like or annular faceplate that does not require any particular recess. This is mounted appropriately as shown in FIG. **9.**

In FIG. **10** there is provided a rearrangement of the parts of the mount with the various cover plates rearranged and the stand **101** fastened at one end instead of the side. A latch bolt assembly having a 1 ⅛ inches by 2 ¼ inches latch plate and also having a 3 ¾ inches backset may thus be displayed. Quite comparably, the parts are rearranged as shown in FIG. **11** to accommodate an instance in which the latch bolt assembly has a 1 ⅛ inches by 2 ¼ inches faceplate with a 2 ¾ inches backset. The mounting stand and the cover plates are appropriately reassembled in each of the several different locations.

From the foregoing, it will be observed that we have provided a lock mount which can be displayed either on a table or on a wall and which permits actual operation of any one of several different locks with different styles and dimensions of latch plates and different amounts of backset.

What is claimed is:

1. A display mount for locks having a knob assembly and a bolt assembly normal thereto comprising a housing having a pair of abutting shells defining a pair of opposite lateral faces, a pair of opposite end faces and a pair of opposite side faces; means on said housing defining openings in said lateral faces for receiving said knob assembly, said openings being at a predetermined distance from one of said side faces and at a selected distance from one of said end faces; means on said housing defining an aperture in one of said side faces for receiving said bolt assembly; and means for holding said shells in abutment.

2. A display mount as in claim **1** including means on said housing defining a port in one of said end faces for alternatively receiving said bolt assembly.

3. A display mount as in claim **2** in which said port and said aperture are at different distances from said openings.

4. A display mount as in claim **2** including a plate adapted alternatively to overlie said aperture and said port.

5. A display mount as in claim **1** including a support bracket, means on said support bracket for embracing both of said shells, and means for securing said support bracket to said housing.

6. A display mount as in claim **1** including means engaging both of said shells for removably holding said shells in abutment.

7. A display mount as in claim **6** in which said engaging means is adapted also to engage said bolt assembly.

* * * * *