Aug. 9, 1960 C. A. VAHLSTROM 2,948,141

MEANS FOR RETAINING A LOCK CYLINDER IN A PANEL

Filed May 31, 1957

Fig. 1.

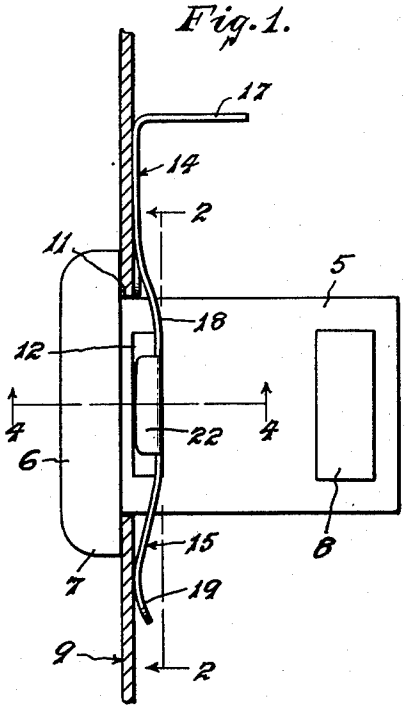


Fig. 2.

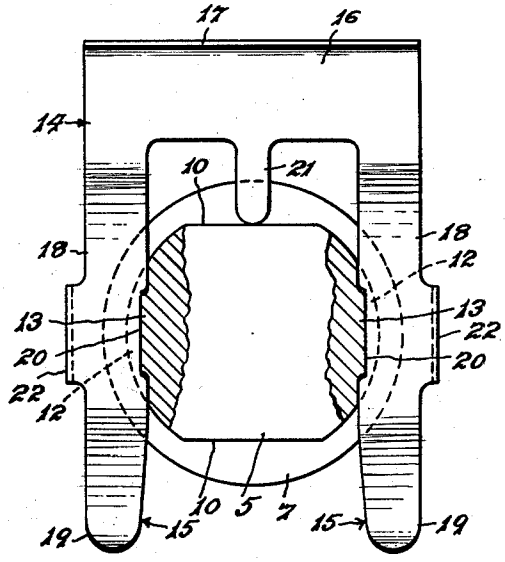


Fig. 3.

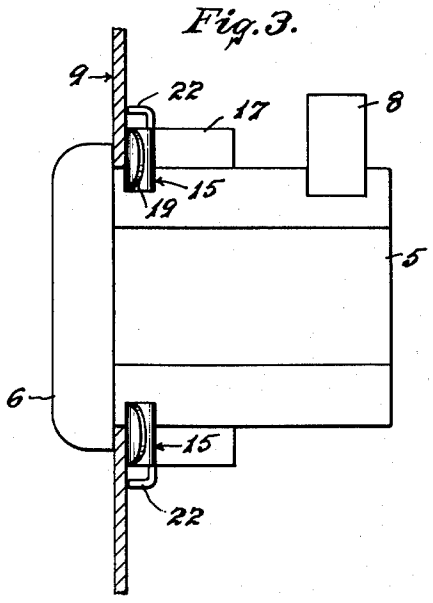
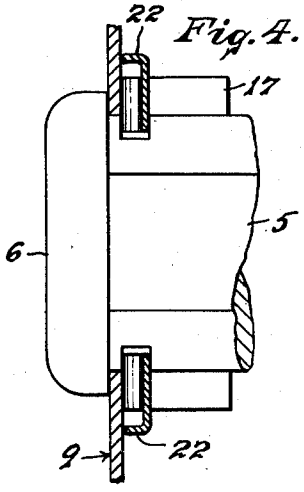


Fig. 4.



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MEANS FOR RETAINING A LOCK CYLINDER IN A PANEL

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6 Claims. (Cl. 70—370)

This invention relates to locks and more particularly to means for retaining a lock cylinder in assembled position on a panel such as a drawer front, cabinet door or other like member.

An object of the present invention is to provide improved means for quickly mounting a lock cylinder and securely retaining it in mounted position.

A further object is the provision of an improved retaining clip for such locks.

A still further object of this invention is the provision of improved means for securing the retaining clip to a lock cylinder in such a manner that it will not become accidentally detached therefrom.

Further objects and advantages of the present invention will be more clearly understood from the following description and the accompanying drawings in which:

Fig. 1 is a plan view of a lock cylinder and a retaining clip constructed in accordance with this invention and showing same in assembled position.

Fig. 2 is an end view with portions in section on line 2—2 of Fig. 1.

Fig. 3 is an elevational view of the lock shown in Fig. 1.

Fig. 4 is a similar view with the retaining clip shown in section on line 4—4 of Fig. 1.

In the embodiment illustrated in the drawing, the numeral **5** denotes a lock cylinder body of conventional form having a head **6** which provides an annular flange **7** around said cylinder, and the numeral **8** denotes a lock bolt which is slidable in said cylinder and is operated by a key plug, not shown, that is rotatably mounted therein.

The said lock cylinder is adapted to be installed in a panel member **9** which may be a drawer front, a cabinet door or other like member. It is preferably provided with flats **10—10** at its opposite sides and extends through a hole **11** in the member **9** which is of corresponding shape whereby rotation of the said cylinder is prevented.

In accordance with the present invention, opposed slots **12—12** are formed in the periphery of the cylinder **5** adjacent the flange **7**, said slots being angularly disposed ninety degrees from the flats **10—10**. The bottoms of the said slots are formed with radially extending projections **13—13** for a purpose hereinafter described.

In order to retain the said lock cylinder in position, my invention further provides a retaining clip **14** which is preferably stamped from sheet metal and heat-treated to render it resilient. The clip includes spaced leg portions **15—15**, extending from a connecting portion **16**, and a grip portion **17** that extends perpendicularly from and stiffens the connecting portion **16**. The said leg portions **15—15** are preferably curved, as shown in Fig. 1, to provide raised central portions **18—18** and foot portions **19—19** which lie substantially in the plane of the connecting portion **16**. The inner edges of the said leg portions **15—15** are provided with notches **20—20** which

receive the projections **13—13** and thereby secure the retaining clip to the lock cylinder.

A positioning finger **21** extends from the connecting portion **16** to engage the lock cylinder and thereby locate the clip in proper position with relation to the lock cylinder and also prevent forcing of the clip beyond the position in which the projections **13—13** are in register with the notches **20—20**.

The said retaining clip is so made that when it is forced into the position shown in Fig. 1, it is deformed and therefore applies a spring force against the inner sides of the slots **12—12** which biases the lock cylinder inwardly in the member **9** and forces the flange **7** against the outer surface of said member. The lock cylinder is thus securely retained in assembled position relatively to the said member **9**.

If the lock cylinder were permitted to move outwardly relatively to the member **9**, such as would occur if the drawer or door upon which it is carried was forcibly closed with the bolt **8** in locking position, the legs of the retaining clip might possibly be permanently bent and looseness of the lock cylinder would result. In order to prevent such outward movement of the lock cylinder, the leg portions **15—15** are provided with flanges **22—22** that are bent perpendicularly therefrom and terminate adjacent the inner surface of the member **9** so as to provide abutments on the said leg members which will engage said surface and prevent outward movement of the lock cylinder.

In mounting the lock cylinder in accordance with this invention, the cylinder **5** is first inserted through the hole **11** until the flange **7** is brought into contact with the outer surface of the member **9**. The leg portions **15—15** of the retaining clip are then inserted into the slots **12—12** and the said clip is pushed over the cylinder until the finger **21** strikes said cylinder, at which time the projections **13** are in register with the notches **20—20** and the leg portions will spring inwardly into engagement with the said projections.

It will be noted that the inner edges of the lower portions of the leg members are tapered outwardly and downwardly so that they will slide over the projections **13** and cause the said leg members to spread as the clip is being pushed into position.

I claim:

1. A lock structure including in combination a lock cylinder having a body portion insertable through an opening in a panel member and a flange on said body portion engageable with the outer surface of said panel member for locating the lock cylinder thereon, the said body portion having slots in its opposite sides with inner edges facing said flange and spaced therefrom a distance greater than the thickness of said panel member, a resilient retaining clip for securing said lock cylinder to said panel member, said clip having spaced legs insertable through said slots and engageable with the inner surface of said panel member at opposite sides of said lock cylinder, the intermediate portions of said legs being bowed inwardly and adapted to press against the said inner edges of the slots whereby force is exerted inwardly on said lock cylinder to retain it in proper position, and abutments extending outwardly from the intermediate portions of said legs and engageable with the inner surface of said panel member to prevent excessive outward bending of said legs upon the application of an outwardly directed force to said lock cylinder.

2. The subject matter set forth in claim 1 wherein said abutments comprise flanges extending perpendicularly from the outside edges of the intermediate portions of said legs.

3. A lock structure comprising in combination a lock cylinder having a body portion insertable through an

opening in a panel member and a flange on said body portion engageable with the outer surface of said panel member for locating the lock cylinder thereon, the said body portion having slots in its opposite sides whose inner edges face said flange and are spaced therefrom a distance greater than the thickness of said panel member; a resilient retaining clip for securing said lock cylinder to said panel member comprising a transverse connecting portion having spaced legs extending therefrom which are insertable through said slots and engageable with the inner surface of said panel member at opposite sides of said lock cylinder, the intermediate portions of said legs being bowed inwardly and adapted to press against the said inner edges of the slots whereby force is exerted inwardly on said lock cylinder to retain it in proper position, a flange extending outwardly from the intermediate bowed portion of each leg, said flanges being engageable with the inner surface of said panel member to limit outward bending of said legs upon the application of an outwardly directed force to said lock cylinder, a projection extending from the bottom of each of said slots, the inner edges of the intermediate bowed portions of said legs having notches therein for receiving said projections to thereby lock said retaining clip to said lock cylinder in a position wherein said flanges are located substantially centrally of said body portion.

4. A resilient retaining clip for securing a lock cylinder to a panel member, said lock cylinder having a body portion insertable through an opening in said panel member and a flange on said body portion engageable with the outer surface of said panel member for locating the lock cylinder thereon, the said body portion having slots in its opposite sides whose inner edges face said flange and are spaced therefrom a distance greater than the thickness of said panel member; said clip comprising a transverse connecting portion having spaced parallel legs extending therefrom which are insertable through said slots and engageable with the inner surface of said panel member at opposite sides of said lock cylinder, the intermediate portions of said legs being bowed inwardly and adapted to press against said inner edges of the slots whereby force is exerted inwardly on said lock cylinder to retain it in proper position, a flange extending perpendicularly from the outside edge of the intermediate portion of each of said legs, said flanges being engageable with the inner surface of said panel member to limit outward bending of said legs upon the application of an outwardly directed force to said lock cylinder, and a stop finger extending from said connecting portion between said legs and engageable with said body portion to locate the retaining clip in a position wherein said flanges are disposed substantially centrally of said body portion.

5. A lock structure including in combination a lock cylinder having a body portion insertable through an opening in a panel member and a flange on said body portion engageable with the outer surface of said panel member for locating the lock cylinder thereon, the said body portion having slots in its opposite sides whose inner edges face said flange and are spaced therefrom a distance greater than the thickness of said panel member, a resilient U-shaped retaining clip for securing said lock cylinder to said panel member comprising a transverse connecting portion having spaced parallel legs extending therefrom which are insertable through said slots and engageable with the inner surface of said panel member at opposite sides of said lock cylinder, portions of said legs being bowed inwardly and adapted to press against the said inner edges of the slots whereby force is exerted inwardly on said lock cylinder to retain it in proper position, the inside edges of the intermediate portions of said legs having notches therein, projections in said slots receivable in said notches for locking said clip to the lock cylinder, said legs being longer than the diameter of said body portion to allow them to flex laterally when passed over said projections, and a stop finger extending from said connecting portion and engageable with the lock cylinder for locating the retaining clip in a position wherein said notches are in alignment with said projections.

6. A lock structure comprising in combination a lock cylinder having a body portion insertable through an opening in a panel member and a flange on said body portion engageable with the outer surface of said panel member for locating the lock cylinder thereon, the said body portion having slots in its opposite sides whose inner edges face said flange and are spaced therefrom a distance greater than the thickness of said panel member, a resilient U-shaped retaining clip for securing the lock cylinder to said panel member comprising a transverse connecting portion having spaced parallel legs extending therefrom which are insertable through said slots and engageable with the inner surface of said panel member at opposite sides of said lock cylinder, the intermediate portions of said legs being bowed inwardly and adapted to press against the said inner edges of the slots whereby force is exerted inwardly on said lock cylinder to retain it in proper position, a flange extending outwardly from the outside edge of the intermediate portion of each leg, said flanges being engageable with the inner surface of said panel member to limit outward bending of said legs upon the application of an outwardly directed force to said lock cylinder, a radial projection extending from the bottom of each of said slots, the inside edges of the intermediate portions of said legs having notches therein for receiving said projections to thereby lock said retaining clip to said lock cylinder, said legs being longer than the diameter of said body portion to permit them to flex laterally as they are forced over said projections, and a stop finger extending from said connecting portion and engageable with said lock cylinder to locate said clip in a position wherein said notches are in alignment with said projections.

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