

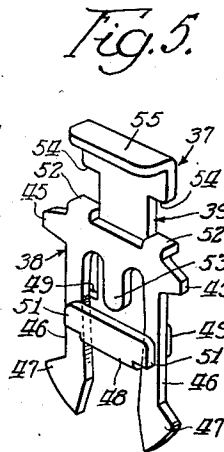
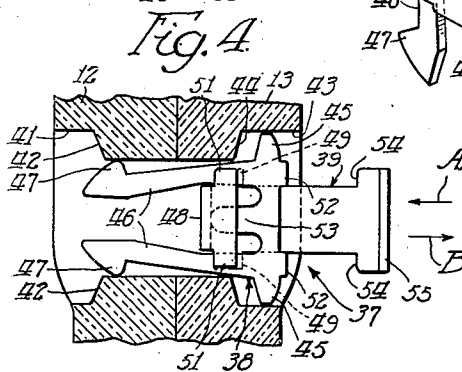
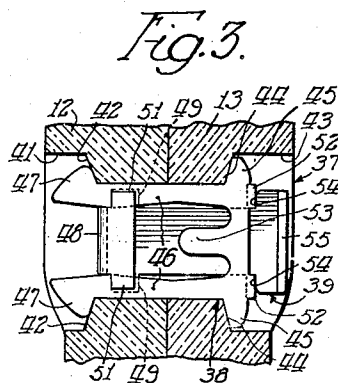
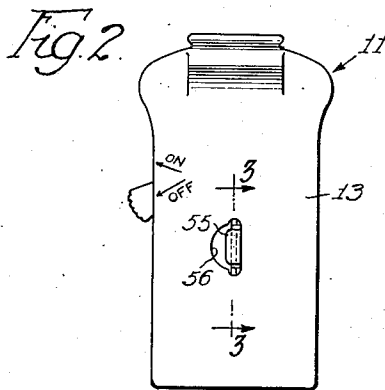
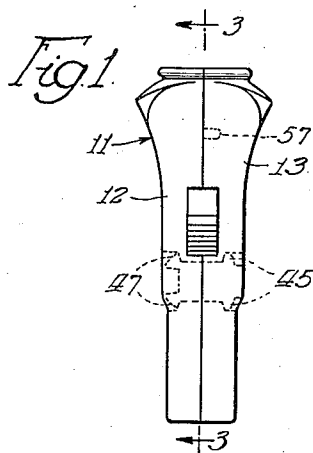
Dec. 3, 1935.

T. L. PARKER

2,023,095

FASTENING DEVICE FOR ELECTRICAL APPLIANCES

Filed Sept. 15, 1933



Witness
V. Siljander

Inventor
Thomas L. Parker
Hill & Hill, Attys

UNITED STATES PATENT OFFICE

2,023,095

FASTENING DEVICE FOR ELECTRICAL APPLIANCES

Thomas L. Parker, Chicago, Ill.

Application September 15, 1933, Serial No. 689,574

7 Claims. (Cl. 85—5)

This invention relates to fastening devices, and particularly to a device well adapted for securing the separable parts of a housing or casing for electrical appliances together, as, for example, the housing members of an electric switch.

One object of the present invention is to provide novel fastening means for securing the parts of a housing for electrical appliances together to provide suitable protection for a switch mechanism, or the like.

A further object of the invention is to improve devices of the character described in sundry details hereinafter referred to and particularly pointed out in the appended claims.

One embodiment of the present invention is shown for illustrative purposes in the accompanying drawing, in which

Fig. 1 is a side view of a toggle switch housing to which the present invention is applied;

Fig. 2 is a front view of the device shown in Fig. 1;

Fig. 3 is an enlarged sectional elevational view taken substantially as indicated by the line 3—3 of Fig. 2, and illustrates the fastening means for securing the various portions of the switch housing together;

Fig. 4 is a view similar to Fig. 3 illustrating portions of the fastening means in changed position; and

Fig. 5 is a perspective view of the fastening means illustrated in Figs. 3 and 4.

In the illustrative embodiment of the invention shown in the drawing, a housing, indicated as a whole by the numeral 11, and in which a switch mechanism is mounted, comprises a base member 12 and a cover member 13.

For securing the base 12 and cover member 13 together, novel fastening means indicated as a whole by the numeral 37 is provided and comprises a pair of relatively movable elements shown in the present instance as a locking member indicated as a whole by the numeral 38 and a cam member indicated as a whole by the numeral 39.

For adapting the base and cover member for the reception of the present fastening means, the base 12 is provided with an aperture 41 and a pair of preferably inclined shoulders 42 formed therein, and the cover member 13 is provided with an aperture 43 having a shoulder 44 adjacent thereto.

The locking member 38 of the fastening means 37 is provided with laterally extending portions 45 adapted to engage the shoulders 44 formed on the cover member 13 and is provided also with

relatively movable leg portions 46 normally inclined toward each other and adapted to extend through the reduced portions of the apertures 41 and 43, the said leg portions having outwardly extending projections 47 adjacent their outer or free ends adapted to engage the shoulders 42 formed on the base 12.

The cam member 39 is slidably related to the locking member 38 and is bent upon itself adjacent one of its end portions to provide a cam portion 48 adapted to engage the inner or adjacent inclined faces of the legs 46 in a manner to move them in opposite directions to position the projections 47 in engagement with the shoulders 42, the said cam-end of the member 39 being provided with laterally extending ears 49 and 51 positioned on the respective opposite sides of the legs 46 for maintaining the members 38 and 39 against lateral relative displacement in one direction, and the locking member 38, in the present instance, is provided with guide lugs 52 positioned adjacent the opposite longitudinal edges of the cam member 39 for maintaining the elements or parts of the fastening means against relative displacement in the opposite transverse direction. For limiting the relative longitudinal movement of the members 38 and 39 in one direction, a stop lug 53 is formed on the member 38 and adapted to engage the inner side of the cam portion 48, and for limiting the relative longitudinal movement of the members 38 and 39 in the opposite direction, the cam member 39 is provided with shoulders 54 adapted to engage the lugs 52 formed on the locking member 38.

It will be observed from the foregoing description that for locking the base 12 and cover member 13 together, the fastening means 37 may be inserted in the apertures 41 and 43 in the direction indicated by the arrow A of Fig. 4, and that when the laterally extending portions 45 of the locking member 38 have engaged the shoulders 44 of the cover member 13, a further movement of the cam member 39 in the same direction will act through the cam portion 48 to move the legs 46 outwardly away from each other in a manner to position the projections 47 in engagement with the inclined shoulders 42 of the base 12, and position the outer end of the cam member 39 within the aperture 43 in the cover member 13, all as clearly illustrated in Fig. 3, thereby securely locking the base and cover members together and protecting the cam member 39 against accidental displacement with respect to the locking member 38.

It will be observed also that by moving the cam

member 39 in the direction of the arrow B of Fig. 4, that upon engagement of the inner side of the cam portion 48 with the stop lug 53, the locking member 38 may be drawn outwardly, and, owing to the inclination of the shoulders 42, the free ends of the legs 46 may be moved inwardly toward each other and the projections 47 forced out of engagement with the shoulders 42, thereby permitting complete withdrawal of the fastening means 37 from engagement with the base 12 and cover member 13, it being understood that the locking member 38 will be constructed of suitable yieldable material which will permit of the required relative movement of the legs 46.

For facilitating the removal of the fastening means 37 from engagement with the base 12 and cover member 13, the cam member 39 is provided with a finger piece 55 which may be engaged by suitable means to withdraw the cam member from the aperture 43, and to facilitate such engagement, the cover member 13 is recessed at 56 as illustrated in Fig. 2.

For securing the base 12 and cover member 13 against angular displacement with respect to each other when the fastening means 37 is positioned in the apertures 41 and 43 of the respective housing members, a stud 57 (Fig. 1) is mounted on the base 12 and adapted to engage a depression or recess formed in the cover member 13.

Obviously, the present invention is not limited to the precise construction and arrangement shown and described as the same may be variously modified. Moreover, all the features of the invention need not be used conjointly as the same may be used to advantage in various different combinations and sub-combinations.

What I claim as new and desire to secure by Letters Patent is:

1. A fastening device for securing the base and cover members of a switch housing together comprising a clip having laterally extending portions formed thereon, relatively movable legs on said clip having their inner sides normally inclined toward each other, projections on said legs adjacent the free ends thereof, a cam member mounted on and slidably movable with respect to said clip, said cam member being engageable with said legs for moving the free ends of the legs and said projections in opposite directions, and relatively spaced means mounted on said clip and cam member respectively for maintaining said clip and cam member against lateral displacement with respect to each other.

2. A fastening device for securing the base and cover members of a switch housing together comprising a clip having laterally and oppositely extending portions formed thereon, relatively movable legs on said clip having their inner sides normally inclined toward each other, outwardly extending projections on said legs adjacent the free ends thereof, a cam member slidably mounted on said clip, said cam being engageable with the inner sides of said legs for moving the free ends of the legs and said projections outwardly, relatively spaced means mounted respectively on said clip and cam member for maintaining the clip and cam member against lateral displacement and in slidable relationship with respect to each other, and means on said clip extending inwardly between said legs for limiting the relative sliding movement of said clip and cam member.

3. A fastening device comprising a locking member having laterally extending portions formed thereon, a pair of spaced legs mounted

on said member and normally inclined toward each other, projections on said legs adjacent the free ends thereof, a cam member having a laterally extending cam portion adjacent one of its ends positioned between said legs and having a plurality of ears positioned on opposite sides of said legs for maintaining said members against lateral displacement with respect to each other in one direction, and a plurality of guide lugs mounted on said locking member and positioned on opposite sides of said cam member for maintaining the members against lateral displacement in another direction.

4. A fastening device comprising a locking member having laterally extending portions formed thereon, a pair of spaced legs mounted on the said member and normally inclined toward each other, projections on said legs adjacent the free ends thereof, a cam member having a laterally extending cam portion adjacent one of its ends positioned between said legs and having a plurality of pairs of oppositely disposed ears positioned on opposite sides of the respective legs for maintaining said members against lateral displacement with respect to each other in one direction, a plurality of guide lugs mounted on said locking member extending substantially transversely to said ears and positioned on opposite sides of said cam member for maintaining the members against lateral displacement in a direction substantially transverse to said one direction.

5. A fastening device comprising a locking member having laterally extending portions formed thereon, a pair of spaced legs mounted on the said member and normally inclined towards each other, projections on said legs adjacent the free ends thereof, a cam member having a laterally extending cam portion adjacent one of its ends positioned between said legs and having a plurality of pairs of oppositely disposed ears positioned on opposite sides of the respective legs for maintaining said members against lateral displacement with respect to each other in one direction, a plurality of guide lugs mounted on said locking member and positioned on opposite sides of said cam member for maintaining the members against lateral displacement in a direction substantially transverse to said one direction, and a stop lug on said locking member between said legs and engageable with said cam portion for limiting the relative longitudinal movement of said members in one direction.

6. A fastening device comprising a locking member having laterally extending portions formed thereon, a pair of spaced legs mounted on the said member and normally inclined toward each other, projections on said legs adjacent the free ends thereof, a cam member having a laterally extending cam portion adjacent one of its ends positioned between said legs and having a plurality of pairs of oppositely disposed ears positioned on opposite sides of the respective legs for maintaining said members against lateral displacement with respect to each other in one direction, a plurality of guide lugs mounted on said locking member and positioned on opposite sides of said cam member for maintaining the members against lateral displacement in a direction substantially transverse to said one direction, a stop lug on said locking member between said legs and engageable with said cam portion for limiting the relative longitudinal movement of said members in one direction, and shoulders formed on said cam member and co-

operable with said guide lugs for limiting the relatively longitudinal movement of said members in the opposite direction.

7. A fastening device comprising a substantially flat locking member having outwardly extending portions and a pair of spaced legs formed thereon, outwardly extending projections on said legs adjacent the free ends thereof, a substantially flat cam member adjacent one side of said locking member and slidable relatively thereto, said cam member having a laterally extending cam portion adjacent one of its ends positioned between said legs and having a plurality of pairs of oppositely disposed ears positioned on the respective opposite sides of the respective legs for maintaining said members against lateral

displacement with respect to each other in one direction, a plurality of guide lugs on said locking member extending substantially transversely to said ears and positioned on opposite sides of said cam member for maintaining the members against lateral displacement in a direction substantially transverse to said one direction, a stop lug on said locking member between said legs and engageable with said cam portion for limiting the relative sliding movement of said members in one direction, and shoulders on said cam member co-operable with said guide lugs for limiting the relative sliding movement of the members in the opposite direction.

THOMAS L. PARKER.