

March 16, 1965

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3,174,077

CIRCUIT BREAKER LOAD CENTER

Filed April 28, 1959

5 Sheets-Sheet 1

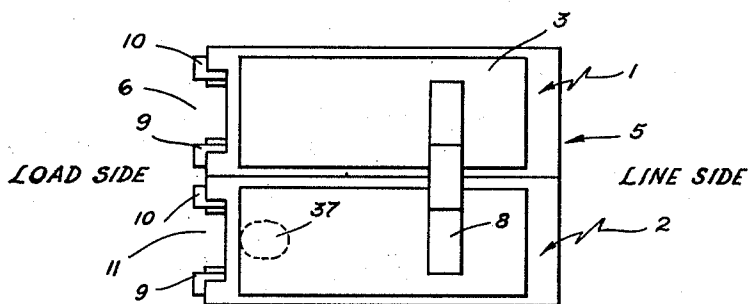


Fig. 1

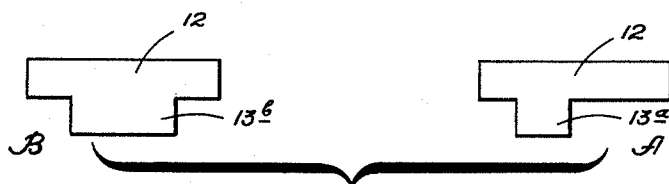


Fig. 2

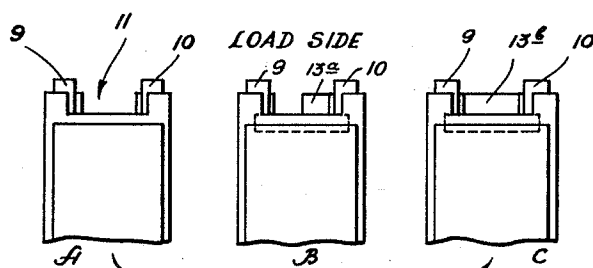


Fig. 3

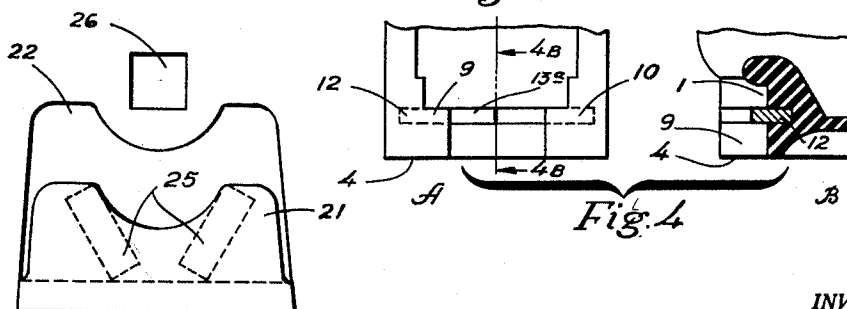


Fig. 4

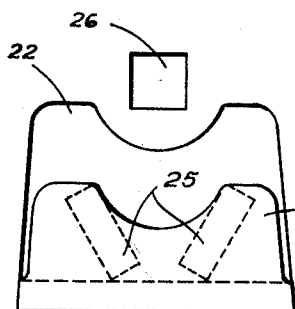


Fig. 9

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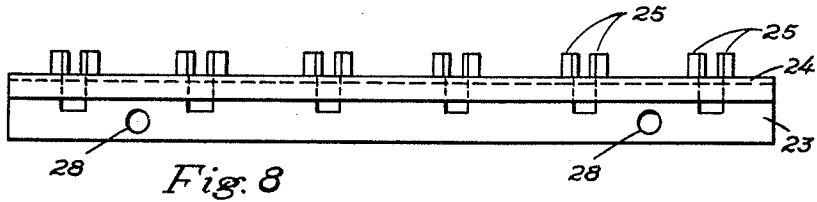
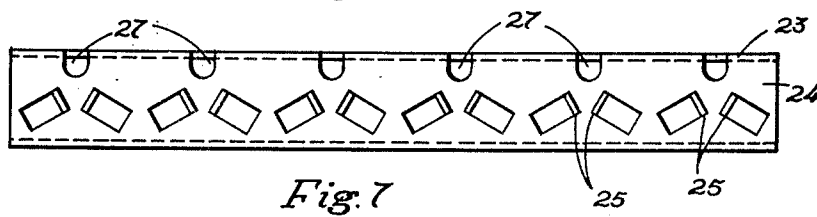
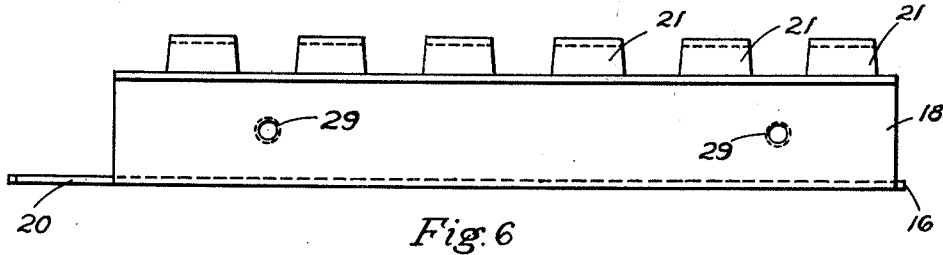
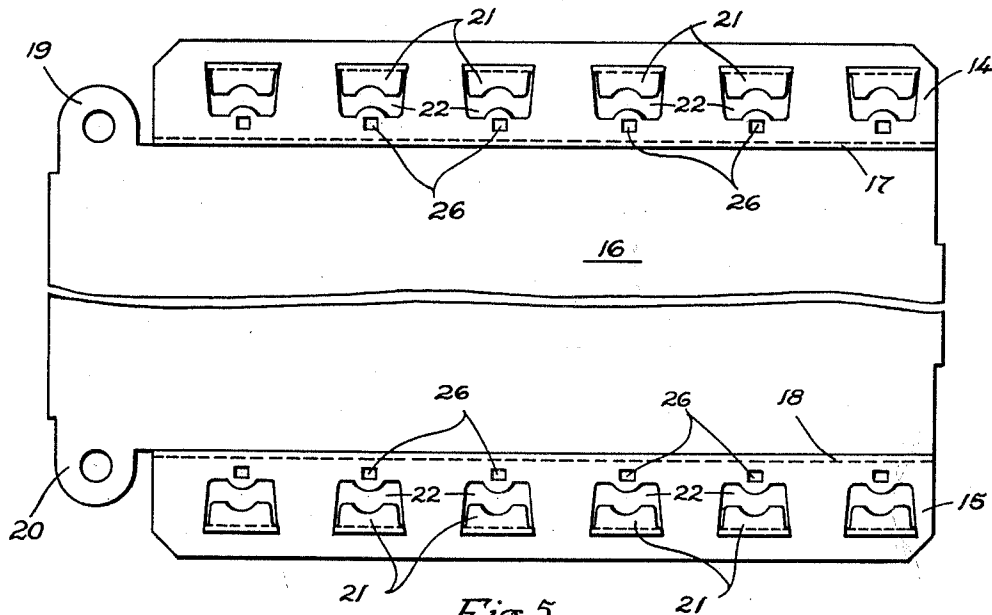
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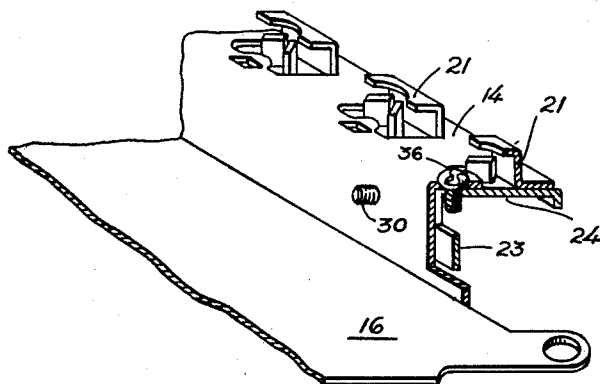


Fig. 10

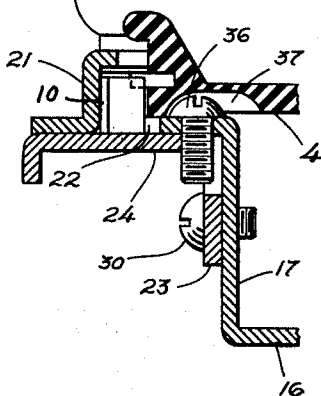


Fig. 11

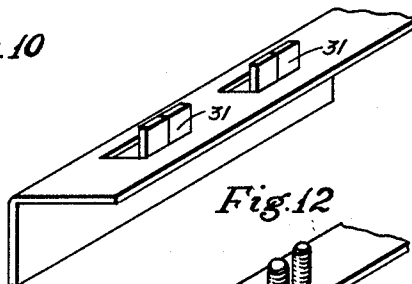


Fig. 12

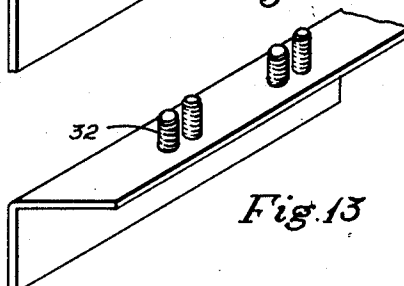


Fig. 13

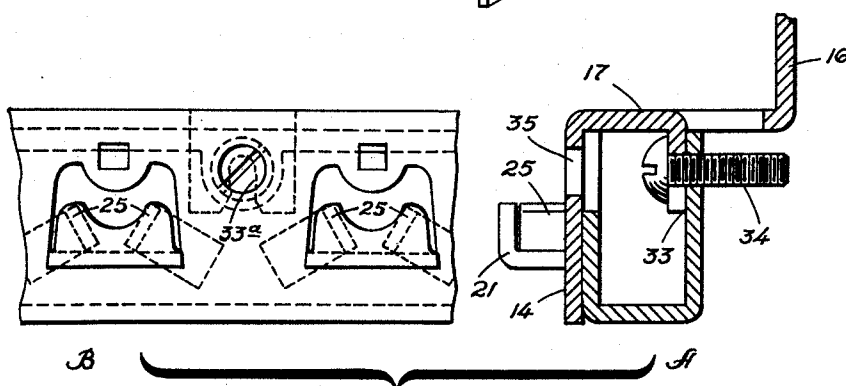


Fig. 14

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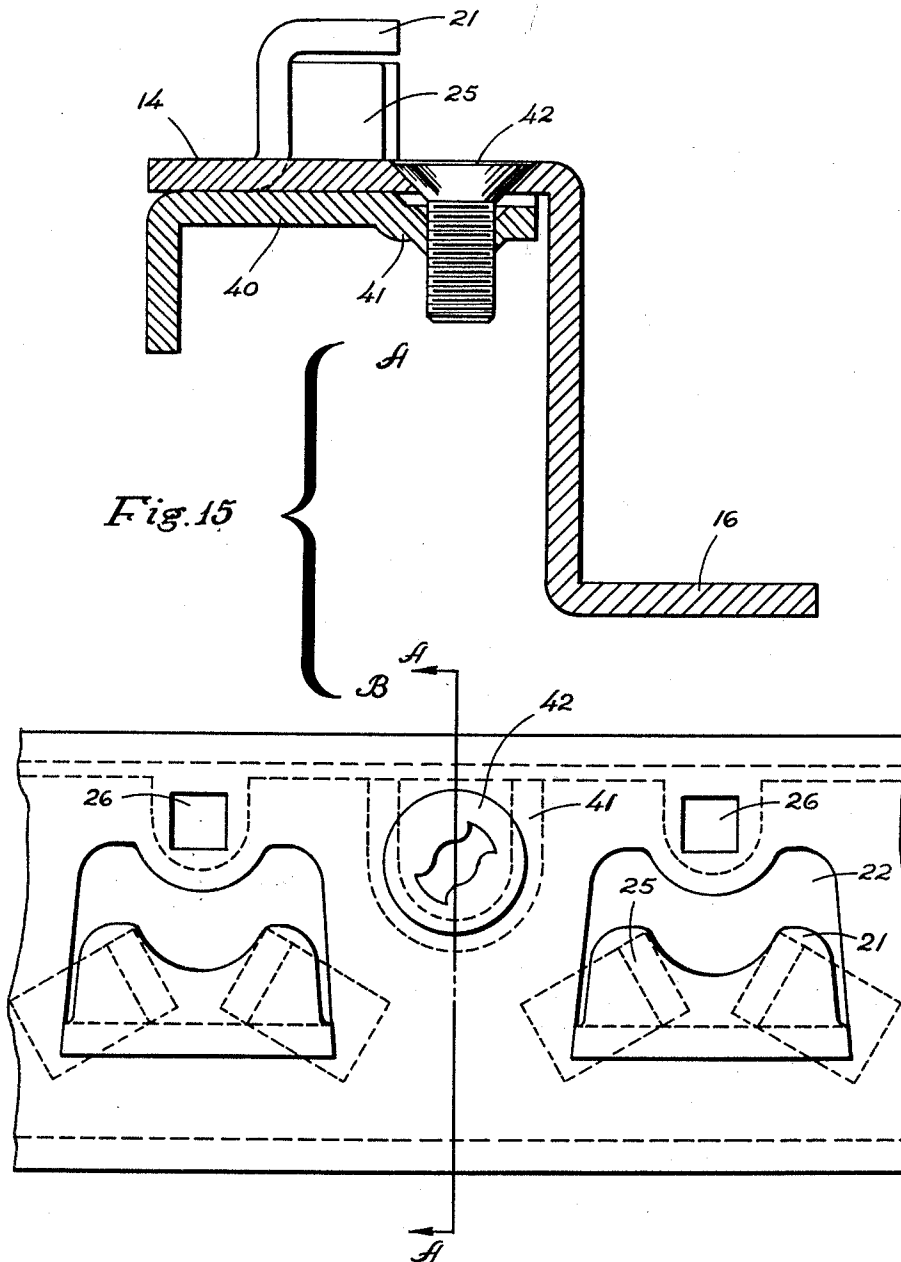
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CIRCUIT BREAKER LOAD CENTER

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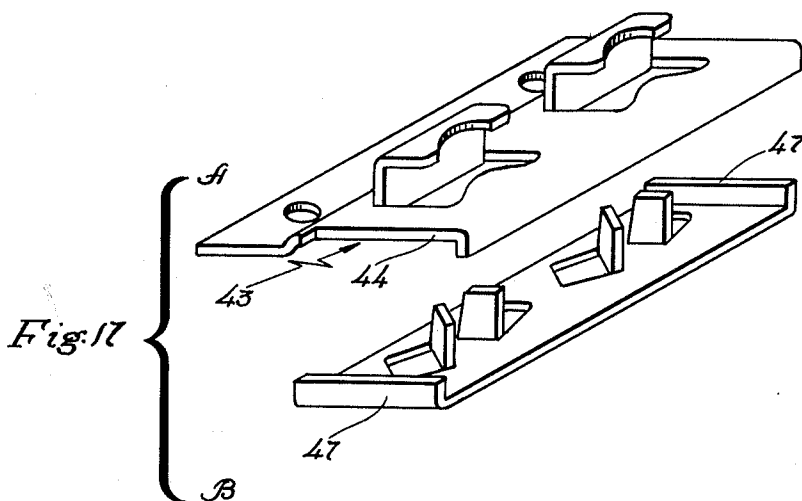
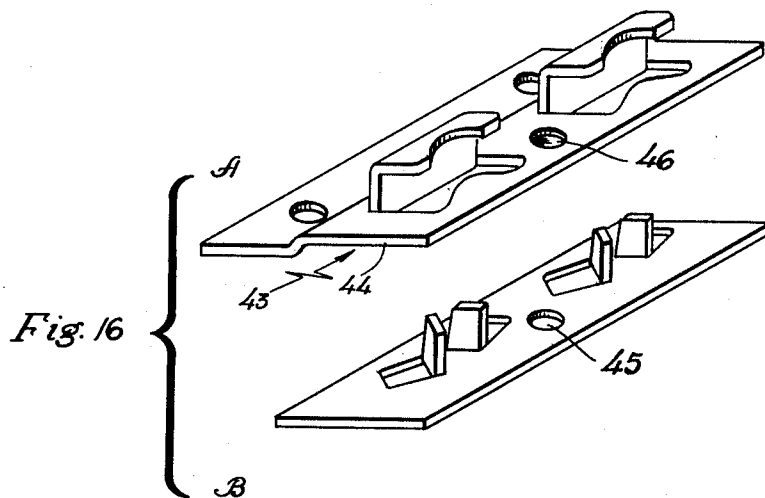
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5 Sheets-Sheet 5



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3,174,077

CIRCUIT BREAKER LOAD CENTER

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Filed Apr. 28, 1959, Ser. No. 809,547
16 Claims. (Cl. 317-119)

This invention relates to a circuit breaker load center, and more particularly to a unique arrangement for rendering difficult the interchangeability of circuit breakers of different rating classifications.

Circuit breakers are now well known and in many areas are gradually replacing the fuse. There are several different forms of circuit breakers, hereinafter referred to simply as breakers, one of the most popular being the "plug-in" type. The "plug-in" type breaker usually comprises a rectangularly shaped box of relatively narrow width. A pair of spring clip contacts are exposed at one end of the breaker housing for engaging a blade extending from a bus-bar. The opposite end, or load end, of the breaker comprises a foot portion for fitting under a tab raised from a load center panel. The frictional engagement between the breaker spring clip and bus-bar blade, and the tight fit between the foot of the breaker and panel tab, securely support the breaker in position. For a detailed description of a "plug-in" type breaker, reference may be made to Patent No. 2,890,306, issued June 9, 1959, and assigned to Murray Manufacturing Corporation.

One of the problems in the circuit breaker load center is that the circuit breaker design and load center panel design are standardized for breaker ratings between 15 and 100 amperes. This permits indiscriminate substitution of higher-rated breakers for lower-rated breakers in circuits designed for the lower-rated breakers. In other words, a home owner who is annoyed with a breaker tripping frequently as a result of overloaded circuits can substitute, for example, a 50 ampere breaker for a 15 ampere breaker. Thus, this ability of interchanging one breaker for another of a lower rating classification is a dangerous hazard.

Accordingly, it is a primary object of this invention to provide means for rendering difficult the interchangeability of breakers of different rating classifications.

It is a further object of this invention to provide interchangeability prevention means which is not amenable to tampering for the purpose of removing such means.

It is a further feature of the invention to provide means on a load center panel, and complementary means on a breaker, for preventing interchangeability of breakers of different rating classifications.

It is another feature of this invention to provide such means which is simple to fabricate and attach to the load center panel and breaker.

It is another object of the invention to provide means for preventing interchangeability of breakers of different rating classifications and in addition to provide means for establishing mounting positions for double pole circuit breakers.

It is still another feature of the invention to provide interchangeability prevention means which may be installed and removed easily by the qualified electrician, but with extreme difficulty by one tampering with the load center.

In accordance with an aspect of the invention, one end of the breaker includes a foot portion at the bottom thereof, which includes a pair of projections separated by a recessed portion. The circuit breaker is characterized by means fastened to the foot portion and alternatively

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shaped to cover a greater or lesser area of the recessed portion depending on the rating classification of the breaker. The circuit breaker is adapted to be mounted on a load center panel having one or two supporting surfaces depending on the number of circuit breaker positions. For example, two and six circuit panels have only a single supporting surface. The supporting surface has a plurality of raised tabs, each of the tabs including a retaining portion extending parallel to the supporting surface and towards the location of the bus-bars. The height of the retaining portion is approximately equal to the height of the foot portion, whereby the pair of projections fits snugly thereunder. The panel is characterized by keying means mounted under the tab and shaped to cover alternatively greater or lesser areas in front of the respective tabs, the alternative areas covered by the keying means corresponding to the alternative areas covered by the rating indicating means.

In accordance with another aspect of the invention, means are provided for properly locating two pole circuit breakers. This aspect of the invention is characterized by shaping one-half of the double pole breaker so as to include a cavity in the bottom thereof and providing a complementary projection on the supporting surface of the panel. The projection is located in front of the raised tab and is of sufficient height to prevent a breaker, not having a cavity, from being seated under the retaining portion of the tab.

The above-mentioned and other features and objects of this invention and the manner of attaining them will become more apparent and the invention itself will be best understood by reference to the following description of an embodiment of the invention taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a top view of a two pole circuit breaker; FIGS. 2A and 2B are top views of inserts for breakers of different rating classifications;

FIGS. 3A, B and C are top views of three breakers, two of which include the inserts shown in FIG. 2;

FIGS. 4A and B are end and side views respectively, of the end of the breaker containing an insert such as shown in FIG. 2A;

FIG. 5 is a top view of a load center panel base assembly;

FIG. 6 is a sideview of FIG. 5;

FIG. 7 is a top view of a keying strip adapted to be connected to the load center panel of FIG. 5;

FIG. 8 is a side view of the keying strip of FIG. 7;

FIG. 9 is a plan view of a tab and a pair of keys in position;

FIG. 10 is a partial perspective view of one side of the load center panel including the keying strip of FIG. 7 secured in position;

FIG. 11 is a partial end view of a portion of a double pole breaker mounted in position;

FIGS. 12, 13, 14A and B and 15A and B are alternative embodiments of keying strips; and

FIGS. 16A and B and 17A and B are views of a panel base supporting surface and keying strips suitable for a two circuit load center.

Referring now to FIG. 1, there is illustrated a two pole circuit breaker of the "plug-in" type. The two pole circuit breaker comprises essentially a pair of single pole breakers 1, 2 mechanically coupled together side-by-side, and includes a common trip means for tripping both breakers simultaneously in response to an overload condition. The common trip means is not shown in FIG. 1; however, a detailed description of such a double pole breaker is contained in U.S. Patent No. 2,875,289, granted February 24, 1959, and assigned to Murray Manufacturing Corporation. Each of the breakers is generally in the shape of a box having a top 3, bottom 4 (FIG. 4), line side 5 and

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load side 6. The line side of the circuit breaker includes a pair of spring clips for engaging a contact blade extending from a bus-bar, which is not shown. The load side of the breaker includes a connector, not shown, to which a circuit wire is connected. A handle 8 for operating the breaker extends through the top of the breaker for manual operation.

At the load side of the breaker and along the bottom thereof there is provided a foot portion comprising a pair of projections 9, 10 separated by a recessed portion 11.

In accordance with the first aspect of the invention, means are provided in the recessed portion 11 for indicating the rating classification of the breaker. This means also contributes toward preventing the interchanging of breakers of different rating classifications as will become clear later in the discussion.

Generally, breakers for domestic use are divided into three classifications, namely 15 to 20 amperes, 21 to 50 amperes and 51 to 100 amperes. Since this invention is directed primarily to load centers for domestic use, the means for preventing interchangeability is designed to prevent the substitution of a breaker in the 51 to 100 ampere class for breakers in either of the two lower classifications, or a breaker in the 21 to 50 ampere class for breakers in the 15 to 20 ampere class. Further, since there are three classifications of ratings, the means for preventing interchangeability must distinguish between these three classifications.

Since breakers in the 15 to 20 ampere classification are most widely used, advantageous use is made of the recessed portion 11 as an indication of this classification. This is illustrated in FIG. 3A. For the other two classifications, an insert, as shown in FIGS. 2A or B is employed. The insert is essentially a rigid metal bar 12 made, for example, from $\frac{1}{16}$ th inch hardened steel, and includes an identification lug 13a (FIG. 2A) or 13b (FIG. 2B). The lug 13b is seen to be approximately twice the width of the lug 13a. The narrower lug 13a is used to identify a breaker of any rating within the range of 21 to 50 amperes and the wider lug 13b is used to identify breakers of any rating within the range of 51 to 100 amperes.

As best seen in FIGS. 3 and 4, the insert is secured to the foot portion by being forced into slots provided in the recessed portion 11 and in the opposite sides of the housing for the breaker. The housing is generally made of plastic material and is divided into halves, one being a case for containing the several components of the breaker, and the other half being a cover for the case. The cover and case, which are molded forms, include the desired slots for accommodating the inserts of FIG. 2. As shown in FIGS. 3B and 3C, the breakers rated within the range of 21 to 50 amperes include the insert with lug 13a which occupies about half the area between the projections 9 and 10. The insert 12 is preferably located at about the same height as the foot projections 9, and the lug extends approximately to the ends of the projections.

One type of load center panel base assembly, for eight or more circuits, is shown specifically in FIGS. 5 and 6 and comprises supporting surfaces 14, 15 at opposite sides thereof, bridged together by a recessed portion 16. Panel base assemblies for two and six circuits have only a single supporting surface. The supporting surfaces 14 and 15 are formed by stamping and extend parallel to the recessed portion 16. The parallel surfaces are joined by side walls 17, 18. Ears 19, 20 are provided at one end of the panel for mounting to a box, not shown. In the interests of simplicity, the bus-bars which would extend along the bottom of the panel have been omitted from the drawing. Suffice it to say, however, that the bus-bars would be mounted longitudinally of the panel and the contact blades would extend upwardly from the base 16 to a height somewhat above the mounting tabs 21.

The plurality of tabs 21 are formed on the opposite supporting surfaces 14, 15 of the panel. The tabs 21 are preferably formed by stamping, as suggested by outline

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22, which represents the area from which the raised tabs 21 were punched-up. The tabs are similarly shaped and comprise raised portions extending perpendicularly to the supporting surface and a retaining portion extending parallel to the supporting surface. In other words, the tab is in the form of an inverted L with the base of the L extending parallel to the supporting surface and towards the recessed portion of the panel. If desired, the tabs may be contoured to increase its resistance to bending.

It was explained earlier that the inserts shown in FIG. 2 contributed to the desideratum of the invention of non-interchangeability of breakers of different rating classifications. The cooperating means on the panel which contribute to prevent interchangeability of breakers of different rating classifications comprises a keying strip such as shown in FIGS. 7, 12, 13, 14, or 15. The keying strip shown in FIG. 15 is preferred for reasons which will be explained later.

Referring now to FIG. 7, the keying strip is in the form of an angle-shaped member comprising legs 23 and 24. A plurality of keys 25 are formed-up, preferably by stamping, from the legs 24 of the keying strip. The keys 25 are formed in pairs, and the keys of each pair form an acute angle with respect to each other. The number of key pairs on a strip corresponds to the number of tabs on a side of the panel. The keys are dimensioned and spaced on the keying strip so that each pair fits through the opening 22 in the supporting surface of the panel, and when the leg 23 of the keying strip is brought into contact with the side wall 17 or 18 of the panel, the converging ends of the keys are approximately abutting the raised perpendicular portion of the tabs 21. The position of the keys relative to the raised tab wall is best illustrated in FIG. 9. The keying strip of this embodiment is secured to opposite sides of the panel by means of screws passing through holes 28 (FIG. 8) in the keying strip and threaded into tapped holes 29 in the side wall of the panel. FIGS. 5, 7 and 9 also show a square hole 26 in front of each of the tabs 21 and a complementary slot 27 in the keying strip 24. The purpose of the holes and slots will be explained later.

The assembled panel and keying strip is best shown in FIGS. 10 and 11. The keying strip is shown in its operative position, with the legs thereof abutting the side walls and supporting surface of the panel. A screw 30 is shown in the figures for securing the keying strip to the panel. In FIG. 11 a portion of a circuit breaker of the lowest rating classification is shown in seated position. It is evident that the breaker is of the lowest rating because of the absence of an insert. Thus, in this type of breaker, the projections 9 and 10 fit snugly under the retaining portion of the tab 21.

It should now be apparent that the keying strip 24 together with the insert on the breaker provide a very simple and practical arrangement for preventing interchangeability of breakers of a higher rating for breakers of a lower rating. The electrician before assembling and connecting the keying strip to the load center panel decides the mounting position of breakers in the panel, being cognizant, of course, of the load requirements and, therefore, the breaker ratings. In those positions where 15 or 20 ampere breakers are to be mounted, the electrician does not interfere with either of the pair of keys, since those breakers are devoid of inserts. In those positions where the load requires a breaker having a rating in the range of 21 to 50 amperes, one of the pair of keys is broken off so that the lug 13a may fit into the area left by the removed key. In those positions requiring a breaker having a rating in the range of 51 to 100 ampere ratings, both keys are broken off so that the lug 13b may pass under the retaining portion of the tab 21. Thus, it is seen that if subsequently an unauthorized person wished to substitute a 100 ampere breaker for a 50 ampere breaker, the remaining key in the 50 ampere breaker position would constitute an

obstruction to the lug 13b and would, therefore, prevent the mounting of the breaker. Similarly, if one wished to substitute a 50 ampere breaker in a position designed for a 20 ampere breaker, the lug 13a would be obstructed by one of the pair of keys, and again it would be impossible to mount the breaker in position. Thus, by means of the keys on the panel and the insert in the breaker, improper interchangeability is positively prevented.

The reason for forming the keys 25 at an acute angle with respect to each other, and disposing the keys so that the converging ends practically abut the raised perpendicular walls of the tab, is to prevent unauthorized persons from tampering with the keys after the keying strip is mounted in position. It is evident that this invention is designed to prevent incompetent and uninformed persons from tampering with the load center equipment. It can be assumed that the initial installation was made by an authorized electrician and that appropriate keys were removed to accommodate breakers correctly rated for the load. Further, it can be assumed that most, if not all, of the tabs would be occupied by circuit breakers. The screws 30, therefore, would not be conspicuous to the tampering individual, so that, presumably, he will have no way to knowing how the keying strip is connected to the panel. Furthermore, the heads of the screws 30, being obstructed by the supporting surface of the panel, are not easily reached by ordinary household tools. The tamperer, therefore, would probably attempt to break off the keys after the keying strip has been assembled. However, by forming the keys so that keys of a pair form an acute angle with respect to each other, and disposing them so that pairs abut against the perpendicular wall of the tabs 21, it is extremely difficult to bend the key back and forth so as to break it off. At most, the key can be moved forward only a small amount before it abuts the other key of the pair. It would, therefore, be an extremely arduous and discouraging job for the tamperer to break off a key.

The inserts as shown in FIG. 2 are fixedly mounted in the housing of the breaker so that if one attempted to break off the inserts, he would first break the plastic housing and destroy the breaker. The inserts are made of hardened steel and not amenable to sawing by the ordinary saw.

FIGS. 12 and 13 illustrate alternate embodiments of keying strips but which do not enjoy the advantages of the preferred keying strip, for obvious reasons. The keys in the embodiment shown by FIG. 12 are initially formed as a single key and scored as shown at 31, so that one-half may be broken away. In this arrangement, when the keys are positioned on the panel, they are located close to the end of the retaining portion of the tabs so as to prevent the insertion of an unsuitable breaker. A tool might be inserted, therefore, between the rear surface of a key and the tab wall, to bend the key away from the wall and eventually hammer it down flat into the stamped-out space.

In the embodiment of FIG. 13, the keys are in the form of screws 32 and suffer the disadvantages of suggesting to the tamperer the means for removing a key; i.e., by simply using a screw driver. Alternatively, instead of using a keying strip, the screws may be threaded directly through the back of the raised tabs. In each of the embodiments of FIGS. 12 and 13, the keying strip is attached to the panel, in the same manner as the keying strip in FIG. 7.

Another embodiment of a suitable keying strip is illustrated in FIGS. 14A and B. In this embodiment the keys are formed as in the preferred embodiment. However, the keying strip is in the form of a C-shaped channel. This embodiment serves to obscure completely the means which secures the keying strip to the panel. To accommodate the keying strip of this embodiment, the side walls of the panel are formed to include a

turned-up tag 33, provided with a slot 33a (FIG. 14B). The lower portion of the C-shaped channel extends to the side wall of the panel and under the tag 33. The upper portion of the C-shaped channel abuts the underside of the supporting surface of the panel, and the end thereof is shorter than the lower portion by approximately the length of the turned-up tag 33; this is shown in FIG. 14A. The channel is secured to the panel by a screw 34 which passes through the slot 33a and is threaded in a tapped hole in the lower portion of the channel. The screw is held captive by turning up the extreme ends thereof. The depth of the C-shaped channel and the length of the screw are such that when the screw is fully retracted to the position shown by dotted line, the keying strip and channel may be removed from the panel. Access to the screw 34 is through a hole 35 in the supporting surface of the panel. This hole 35 would not be visible when a breaker is mounted under the tab 21, and even in the absence of a breaker, the hole would have little significance to the uninformed.

The C-shaped channel alternatively may be employed to accommodate a rotatable cam-lock mounted on the lower portion of the channel. The cam-lock would have a raised portion to fit over the turned-up tag 33 when rotated into the locked position. Access to the cam-lock may be had through a suitably shaped opening in the side wall of the channel.

FIG. 15 illustrates still another form of a keying strip which is the preferred embodiment. The strip comprises an angle shaped channel 40 provided with spaced depressed portions 41, each including a threaded hole. Complementary and countersunk holes are provided in the supporting surfaces of the panel base assembly. The keying strips are secured to the undersides of the respective supporting surfaces by clutch drive screws 42 which pass freely through the holes in the supporting surfaces and are threaded in the holes of the keying strips. Since a clutch drive screw is not adapted for adjustment by the ordinary screw driver, it is expected that the tampering individual will not be equipped with such a tool. Further, the screws are located between adjacent breaker positions, as shown in FIG. 15B, and when these positions are occupied, the screw is completely concealed. The primary reason for this being the preferred embodiment is because of the ease with which the qualified electrician may install and remove the keying strip.

In FIGS. 16 and 17, the keying strips and panel base assembly are illustrated for a two circuit load center. The panel base assembly is simply a rectangularly shaped bar of material 43, having a raised portion 44 which constitutes the supporting surface for a pair of breakers. The raised portion provides space for a keying strip such as shown in FIGS. 16 and 17. In FIG. 16 the keying strip is locked against movement relative to the supporting surface 44 by means of a hole 45 in the strip receiving an extruded depression 46. In FIG. 17, the strip is locked to the supporting surface by means of turned-up edges 47 abutting against the edges of the raised portion. Thus, in mounting, the keying strip is first coupled to the base assembly and then the base assembly is screwed to the base of the load center box, thereby fixing the keying strip in position.

In accordance with a second aspect of the invention, two pole breaker positions are uniquely established and identified by means which prevent the positioning of two single pole breakers in a two pole breaker position.

Referring now particularly to FIGS. 1, 10, and 11, the two pole circuit breaker comprises two pairs of projections 9, 10, which are adapted to fit under the retaining portions of two adjacent tabs 21. In order to establish a two pole breaker position, a one-way self-tapping screw 36 is screwed into a hole 26 located in front of one of the tabs 21, which are to accommodate the two pole circuit breaker. One half of the two pole breaker

—that is a half corresponding to a single pole breaker—is formed with a cavity 37, as shown in FIG. 11, to fit over the screw 36. The other half of the two pole breaker is formed without a cavity, so that the position of the two pole breaker may be positively fixed with respect to two tabs. For example, in FIG. 1 the circuit breaker half 2 is provided with a cavity and in FIG. 10 the screw 36 fixes the position of the two pole circuit breaker so that breaker half 2 is seated in the tab behind the screw 36. The screw 36 is of such height as to prevent a single pole breaker from being seated under the raised portion of the tab 21.

Since the screw 36 fixes the position of the two pole breaker, it is unnecessary to have inserts in both of the breakers. The insert, therefore, is omitted from the breaker containing the cavity, and the insert of the adjacent breaker and the keys in the cooperating tab indicate the rating of the two pole breaker.

The invention has been described in connection with circuit breakers as distinguished from other forms of circuit interrupters. It is to be understood, however, that the particular means for electrically interrupting the circuit is not essential to the invention and that other forms of devices may be employed. For example, a plug-in fusible switch may utilize the principles of the invention to prevent interchangeability between switches of different ratings without departing from the concept of the invention. Thus, although the term "circuit breaker" has been used in the specification and claims, the term is to be construed broadly to cover any circuit interrupter utilizing the claimed means to prevent undesired interchangeability.

While the foregoing description sets forth the principles of the invention in connection with specific apparatus, it is to be clearly understood that this description is made only by way of example and not as a limitation of the scope of the invention as set forth in the objects thereof and in the accompanying claims.

We claim:

1. A load center including means for preventing the interchangeability of circuit interrupters of different rating classifications, comprising a plurality of circuit interrupters, each having a mounting and including a foot portion at the bottom thereof, the foot portion including a pair of projections separated by a recessed portion, and a bar having an identification lug of such dimensions as to extend approximately to the end of said projections and to cover a greater or lesser area of said recessed portion depending on the rating of said interrupter, whereby a lug covering half of the recessed portion indicates a first rating classification and a lug covering substantially all of the recessed portion indicates a second rating classification; a load center base assembly having a supporting surface for said circuit interrupters, the supporting surface having a plurality of raised tabs, each of the tabs including a retaining portion extending parallel to the supporting surface base assembly, the height of the retaining portion being approximately equal to the height of said foot portion, whereby the pair of projections fit snugly thereunder, and keying means mounted under said tabs and shaped to cover alternatively greater or lesser areas in front of the respective tabs, the alternative areas covered by said keying means corresponding to the alternative areas covered by the rating classification indicating means.

2. The load center according to claim 1, wherein said tabs are formed-up from the supporting surface of said base assembly, whereby the area in front of each tab is an opening resulting from the raised tab, said keying means comprising a strip extending the length of said base assembly and including a plurality of removable keys on a surface thereof, said keys extending substantially perpendicular to the surface of said strip, and means mounting said keying strip to said base assembly so that

said keys extend through said openings in front of said tabs.

3. The load center according to claim 2, wherein said keys are formed in pairs on the surface of said strip and each key of a pair is positioned so that upon removal of one of the keys the lug covering the lesser area of said recessed portion may pass under the retaining portion of a tab, and in the presence of both said keys neither lug may pass under said retaining portion, whereby the absence of said bar and the presence of both said keys indicates a first rating classification, a lug covering half of the recessed portion and one key indicates a second rating classification and a lug covering substantially all of the recessed portion and the absence of a pair of keys indicates a third rating classification.

4. The load center according to claim 3, wherein said tabs are shaped so that the wall joining said retaining portion is substantially perpendicular to said supporting surface, and said pairs of keys are formed so that the keys of each pair are disposed at an acute angle with respect to each other, the keys being positioned so that the converging ends thereof approximately abut said tab wall, whereby after the keying strip is mounted in position it is difficult to remove the keys.

5. The load center according to claim 3, wherein each of said pairs of keys comprises a pair of cylindrical projections.

6. The load center according to claim 3, wherein each of said pairs of keys comprises a turned-up ear scored along a line dividing the ear into two parts each being attached to the strip along the bottom thereof.

7. A load center including means for preventing the interchangeability of circuit interrupters of different rating classification, comprising a plurality of circuit interrupters, each having a mounting and including a foot portion at the bottom thereof, the foot portion including a pair of projections separated by a recessed portion, and means fastened to said foot portion and alternatively shaped to cover greater or lesser areas of the recessed portion for indicating different rating classifications; a load center base assembly having two supporting surfaces along the opposite sides thereof bridged by a recessed portion, each of the supporting surfaces having a plurality of raised tabs, each of the tabs including a retaining portion extending parallel to the supporting surface and towards the recessed portion of the base assembly, the height of the retaining portion being approximately equal to the height of said foot portion, whereby the pair of projections fit snugly thereunder, keying means comprising a strip extending the length of said base assembly and including a plurality of removable keys arranged in pairs on a surface thereof, the pairs being equal in number to the number of tabs on a supporting surface, said keys extending substantially perpendicular to the surface of said strip, and means mounting said keying strip to said base assembly so that said keys extend through said openings in front of said tabs, said keys being shaped to cover alternatively greater or lesser areas in front of the respective tabs, the alternative areas covered by said keys corresponding to the alternative areas covered by the rating indicating classification means.

8. The load center according to claim 7, wherein said keying strip is in the form of an angle-shaped channel, said keys being formed on one leg of said channel, and the other leg of said channel including means for connecting said channel to the wall of said panel between said supporting surface and said recessed bridged portion.

9. The load center according to claim 7, wherein a keying strip is mounted to the underside of each of said supporting surfaces by fastening means extending through said supporting surface and said keying strip.

10. The load center according to claim 9, wherein the leg of said C-shaped channel abutting the underside of said supporting surface is shorter than the other leg of said channel by approximately the length of said

turned-up tags, whereby the head end of the captive screw may be retracted to a position adjacent the underside of the supporting surface.

11. The load center according to claim 7, wherein said fastening means comprises a clutch drive screw.

12. A load center including means for preventing the interchangeability of circuit interrupters of different rating classifications, comprising a plurality of circuit interrupters each having a mounting and including a foot portion at the bottom thereof, the foot portion including a pair of projections separated by a recessed portion, and means fastened to said foot portion and alternatively shaped to cover greater or lesser areas of the recessed portion for indicating different rating classifications; a load center panel having two supporting surfaces along the opposite sides thereof bridged by a recessed portion, a side wall joining each supporting surface and said bridge portion, a plurality of turned-up tabs extending from the respective side walls under said supporting surfaces, a plurality of formed-up tags on said supporting surfaces, the area in front of each of said tabs and tags being opened as a result of the tabs and tags being formed out of the supporting surface, each of the tabs including a retaining portion extending parallel to the supporting surface and in the direction of the recessed portion of the panel, the height of the retaining portion being approximately equal to the height of said foot portion, whereby the pair of projections fit snugly thereunder, a keying strip in the form of a C-shaped channel, a plurality of removable keys extending perpendicularly on one leg of said channel, the keys being disposed on said channel so as to fit into respective openings in front of the respective tabs, the depth of said channel being such as to abut the undersides of said supporting surface and turned-up tags respectively, and means securing said channel to said turned-up tags comprising screws passing through slots in said tags and threaded in aligned tapped holes in the abutting portion of said channel, access being had to the screw through an aligned hole in the supporting surface, and the distance between said tags and said

supporting surface being selected so that when the screw is at an extreme retracted but secured position the keys may be withdrawn from the supporting surface and the screws slid out of the slots in said tags.

13. The load center according to claim 12, wherein said keys are arranged in pairs and the keys of each pair being disposed at an acute angle with respect to each other, and said tabs including a wall joining said retaining portion and perpendicular to the supporting surface, the keys being located on said channel so that pairs of keys extend through said openings respectively with the converging ends of each pair of keys approximately abutting said perpendicular wall of said tab.

14. The load center according to claim 1, wherein at least one of said circuit interrupters is of the two pole type comprising a pair of foot portions fitting under a pair of adjacent tabs, projection means in front of one of said adjacent tabs, a cavity in the bottom of said interrupter overlying said projection, the projection being of such height as to prevent the foot portion of an interrupter not provided with a cavity from fitting under said raised tab, whereby single pole interrupters are prevented from being positioned in locations reserved for two pole interrupters by said projection means.

15. The load center according to claim 14, wherein said projection comprises a screw threaded into a tapped hole in said supporting surface.

16. The load center according to claim 14, wherein only one of said foot portions contains rating indicating classification means.

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