July 27, 1965 J. CLIFFORD 3,197,581

TWO PIECE HANDLE LOCKING DEVICE EACH WITH PORTIONS INTERLOCKABLE WITH THE OTHER

Filed June 6, 1962

Fig. 1.

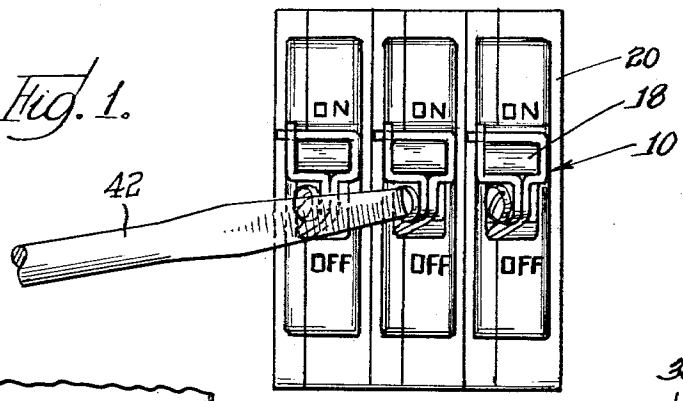


Fig. 2.

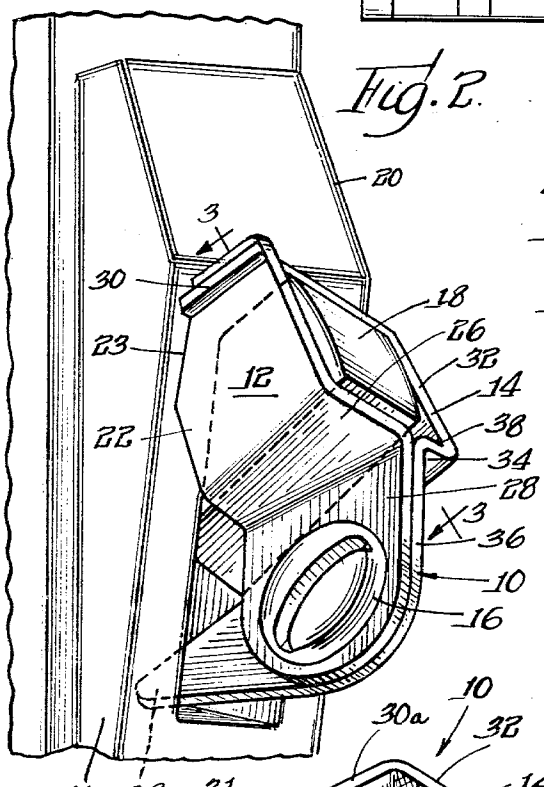


Fig. 3

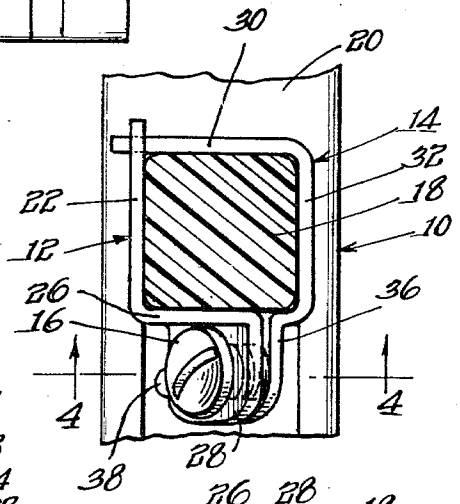


Fig. 4.

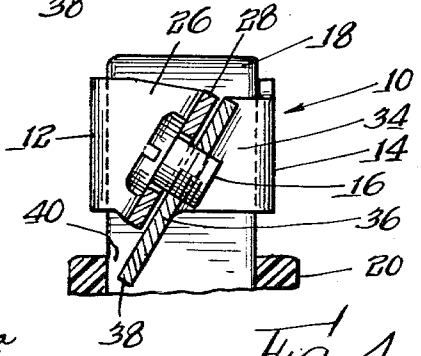
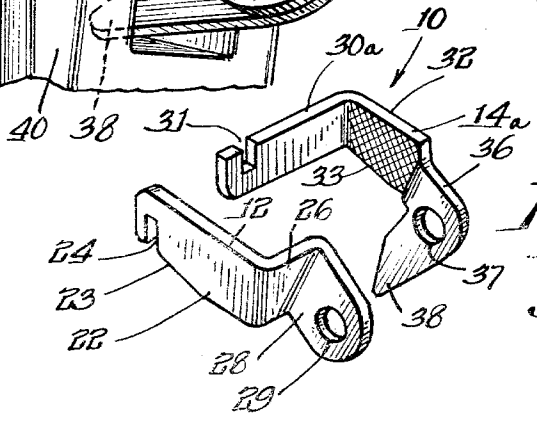


Fig. 5.



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TWO PIECE HANDLE LOCKING DEVICE EACH WITH PORTIONS INTERLOCKABLE WITH THE OTHER

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2 Claims. (Cl. 200—42)

This invention relates to a locking device for locking a manual operating handle of an electrical control device in either "on" or "off" position against inadvertent operation. Although the locking device is readily removable and does not incorporate a padlock to fully prevent operation of a handle by unauthorized persons, it nevertheless does serve notice upon others that someone intended that the handle on which it is mounted remain in the position in which it is locked.

An object of the invention is to provide an improved handle locking device.

Another object is to provide an improved handle locking device which is economical to produce and which is easily attached to a manual operating handle of a circuit controlling device, such as a circuit breaker.

A further object is to provide a handle locking device having interchangeable parts for adapting it to fit handles of various widths.

A still further object is to provide an improved handle locking device which is readily attached to a handle of any one circuit breaker without interference from handles of adjacent circuit breakers on an electrical panelboard.

Other objects and advantages will appear when the following specification is considered along with the accompanying drawings in which:

FIGURE 1 is an elevational view of a plurality of circuit breakers as they might appear mounted on an electrical panelboard (not shown), a plurality of handle locking devices constructed in accordance with the invention being respectively mounted on the manual operating handles of the circuit breakers;

FIGURE 2 is a perspective view of a portion of a circuit breaker having the handle locking device of FIGURE 1 mounted on the operating handle thereof;

FIGURE 3 is a view taken in the direction of arrows 3—3 of FIGURE 2;

FIGURE 4 is a sectional view taken substantially along line 4—4 of FIGURE 3; and

FIGURE 5 is an exploded perspective view of the handle locking device.

A handle locking device 10 constructed in accordance with this invention consists of two stamped steel parts 12 and 14 which interlock at one end and are secured together by a screw 16 at the other end, the parts being so shaped that together they are adapted to surround an operating handle 18 of a circuit breaker 20.

The parts 12 and 14 are stamped and formed from thin sheet steel, and various portions thereof will be described as lying in planes, although technically a plane has no thickness.

The part 12 includes a portion 22 adapted to extend along a first side of the circuit breaker operating handle 18 and which is generally rectangular in shape but is cut away at a corner portion as at 23, as best shown in FIGURE 2, to clear the casing of the circuit breaker 20, and is provided with a rectangular slot 24 opening downwardly in FIGURE 5. A portion 26 extends substantially at right angles from the portion 22 and is adapted to extend partially across a second side of the handle 18. A tab portion 28 extends approximately perpendicularly from the free end of portion 26 oppositely from the portion 22 and is provided with an unthreaded hole 29. In actual practice, the tab portion 28 extends obtusely from the plane of

the portion 26 at an angle of about 103 degrees. In addition, the plane of the tab portion 28 is at an angle to the plane of the portion 22. In actual practice, this angle between the planes of the portions 22 and 28 is substantially 30 degrees.

The part 14 includes a portion 30 adapted to extend along a third side of the handle 18 and which is generally rectangular in shape and provided with a rectangular slot corresponding to a slot 31 opening upwardly in FIGURE 5 in a part 14*a* similar to the part 14 of FIGURES 1–4. A portion 32 extends substantially at right angles from the portion 30 and is adapted to extend along a fourth side of the handle 18. The portion 32 is generally rectangular in shape but is cut away at a corner portion as at 33 to clear the casing of the circuit breaker 20, similarly to the manner in which the portion 22 of part 12 is cut away at 23. A portion 34, shown best in FIGURE 4, extends substantially at right angles from the portion 32 and is adapted to extend partially across the second side of the handle 18 toward the portion 26 of part 12. A tab portion 36 extends approximately perpendicularly from the free end of the portion 34 oppositely from the portion 32 and is provided with a threaded hole corresponding to a threaded hole 37 in the part 14*a* and adapted to align with the unthreaded hole 29 in the tab portion 28. In actual practice, the tab portion 36 extends acutely from the plane of the portion 34 at an angle of about 77 degrees to supplement the angle of about 103 degrees by which the tab portion 28 extends from the portion 26 of part 12. In addition, the plane of the tab portion 36 is at an angle to the plane of the portion 32. In actual practice, this angle between the planes of the portions 32 and 36 is substantially 30 degrees.

The tab portion 36 is generally triangular in shape and includes a pointed portion 38 adapted to extend into a recess 40 in which the handle 18 of the circuit breaker 20 is pivotally mounted.

The parts 12 and 14 are assembled by insertion of the portion 22 of the part 12 in the slot 31 of the part 14 and insertion of the portion 30 of the part 14 in the slot 24 of the part 12. The screw 16 is then inserted through the hole 29 in the tab portion 28 and threaded into the hole 37 in the tab portion 36. After placing of the assembly 10 over the handle 18 of the circuit breaker 20 with the pointed portion 38 in the recess 40, the screw 16 is tightened to secure the assembly on the handle and prevent operation of the handle. The dimensions of the parts 12 and 14 are such in relation to the width of the handle 18 that the portions 22 and 32 pinch the handle as the screw 16 is tightened. The inner surfaces of the portions 22 and 32 may be roughened if desired for better gripping of the handle, as indicated on portion 32 in FIGURE 5.

The angularity of the tab portions 28 and 36 orients the screw 16 in a direction for easy accessibility by a screw driver 42, shown partially in FIGURE 1, without interference from handles of other circuit breakers.

If desired, the part 14 may be made in different sizes to accommodate handles of different widths. Thus, in FIGURE 5, the part 14*a*, similar to the part 14 of FIGURES 1–4, may have a shortened portion 30*a* and a shortened portion corresponding to the portion 34 of the part 14 of FIGURES 1–4.

I claim:

1. For use with an electrical control device including a casing and a pivotally mounted operating handle extending outwardly of a recess in the casing and having a generally rectangular cross section defined by first, second, third, and fourth surfaces of said handle, a locking device mountable on said handle for locking the handle in either of two operative positions thereof, said locking device comprising a first part formed from flat stock and includ-

ing a generally L-shaped portion a first leg of which is engageable with said first surface and a second leg of which is engageable with said second surface, a second part formed from flat stock and including a generally L-shaped portion a first leg of which is engageable with said third surface and a second leg of which is engageable with said fourth surface, said first leg of the L-shaped portion of said first part and said second leg of the L-shaped portion of said second part respectively having free end portions interlockable with each other, said first part and said second part each including a tab portion extending substantially perpendicularly from said third surface at an acute angle to said second and fourth surfaces in spaced substantially parallel relationship to the tab portion of the other part and one of said tab portions projecting into said recess when said locking device is mounted on said handle, and a screw insertable through one of said tab portions and threadable into the other of said tab portions for drawing said second leg of said first part and said second leg of said second part toward each other into clamping engagement respectively with said second and fourth surfaces.

2. For use selectively with a first electrical control device including a first casing and a first pivotally mounted operating handle extending outwardly of a recess in the first casing and having a generally rectangular cross section defined by first, second, third, and fourth surfaces of said first handle and with a second electrical control device including a second casing and a second pivotally mounted operating handle extending outwardly of a recess in the second casing and having a generally rectangular cross section defined by first, second, third, and fourth surfaces of said second handle, said first handle having a greater thickness than said second handle in directions perpendicular to their respective paths of pivotal movement, a locking device mountable selectively on said handles for locking the respective handle in either of two operative positions thereof, said locking device comprising a first part formed from flat sheet stock and including a generally L-shaped portion a first leg of which is engageable with the first surface of said first handle and has a length sufficient to accommodate said greater thickness of said first handle and a second leg of which is engageable with the second surface of said first handle, a second part formed from flat stock and including a generally L-shaped portion a first leg of which is engageable with the first surface of said second handle and has a length shorter than the first leg of said first part and insufficient to accommodate the thickness of said first handle but sufficient to accommodate the thickness of said second handle and a second leg of which is engageable with the second surface of said second handle, a third part formed from flat sheet stock and including a generally L-shaped portion a first leg of which is engageable selectively with the third surface of said first handle and the third surface of said second handle and a second leg of which is correspondingly engageable selectively with the fourth surface of said first handle and the fourth surface of said second handle, said second leg of the L-shaped portion of said third part having a free end portion interlockable selectively with a free end portion of the first leg of the L-shaped portion of said first part and a free end portion of the first leg of the L-shaped portion of said second part, said first, second, and third parts each including a tab portion, the tab portions of said first and third parts extending substantially perpendicularly from the third surface of said first handle at an acute angle to the second and fourth surfaces of said first handle in spaced substantially parallel relationship to each other and one of said tab portions of said first and third parts projecting into the recess of said first casing when said first and third parts are mounted on said first handle, the tab portions of said second and third parts extending substantially perpendicularly from the third surface of said second handle at an acute angle to the second and fourth surfaces of said second handle in spaced substantially parallel relationship to each other and one of said tab portions of said second and third parts projecting into the recess of said second casing when said second and third parts are mounted on said second handle, and a screw selectively insertable through one and threadable into the other of the tab portions of said first and third parts and insertable through one and threadable into the other of the tab portions of said second and third parts in accordance with which of said first and second parts is interlocked with said third part and in accordance with which of said first and second handles is being locked.

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