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Handle for a door or a lid of electrical cabinets

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Abstract:

Handle for a door or a lid of electrical cabinets

A handle for a door or a lid of an electrical box or cabinet consists of a main body (1) latched into the door or lid, with a pivotable handle element (6). The hinges (5) of handle element (6) are located on the edge of handle element (6). On the main body (1) a spring-loaded latch (20) with latch fingers (2) is provided, which acts in conjunction with a module (frame) holding the door or lid for the purpose of fixing the door or lid in locked position. A lock (12) installed into the main body (1) has a locking bolt (30) which when in lock position prevents the latch (20) from springing away. The handle element (6) covers the lock (12) when flipped down onto main body (1).



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**ORIGINAL
COMPLETE SPECIFICATION
STANDARD PATENT**

Application Number:

Lodged:

Invention Title: HANDLE FOR A DOOR OR A LID OF ELECTRICAL CABINETS

The following statement is a full description of this invention, including the best method of performing it known to us :-

HANDLE FOR A DOOR OR A LID OF ELECTRICAL CABINETS

The invention relates to a handle for a door or lid of electrical cabinets or boxes.

A door handle, respectively lid handle, for electrical cabinets or boxes is described
5 in AT 551 U1.

With this known door handle, a flap is provided which is of semicircular shape on one side of the axis, on the other side of the axis it is of rectangular shape. The pivot axis of the flap is mostly in the centre of the flap. The flap can be raised into its grip position by pushing the rectangular section down against the force of a spring. The disadvantage
10 of this embodiment is that it is projecting quite high, due to the part of the flap pivoting to the inside, and thus requires a lot of space. Another disadvantage with the known door handle, respectively lid handle, is that it has no function for holding the door or lid in closed position, thus requiring additional arresting devices.

It would be desirable to provide a handle of the type described above, which may,
15 if required, have an integrated lock, without alteration of the outward appearance of the door handle. In addition, the installed lock should preferably be protected from environmental damage.

According to the present invention, there is provided a handle for a door or lid of electrical cabinets or boxes, including a handle element in the form of a flap located on a
20 planar main body in such a manner that it may be pivoted, wherein the main body can be attached in a punched recess in the door or lid by means of latch fingers wherein a spring-loaded latch being aligned perpendicularly to the plane of the main body is rigidly fixed on the main body in the area of attachment of the handle element and wherein the latch includes a latch projection which acts in conjunction with a part of the cabinet or box to
25 hold the door or lid in a closed position.

"Comprises/comprising" when used in this specification is taken to specify the presence of stated features, integers, steps or components but does not preclude the presence or addition of one or more other features, integers, steps, components or groups thereof

30 The handle according to the invention may be of flat shape, because no part of the handle plunges into the body when the handle is flipped up.

It is of advantage for an embodiment of a door handle according to the invention that a pre-punched recess is provided on the main body on which the handle is to be



mounted such that it can be pivoted, where, if a lock is required, it can be inserted into the recess. When the handle is flipped down on the main body, an installed lock is covered and thus protected from contamination even under extreme conditions.

In one embodiment of the invention it is provided that in the region where the
 5 handle is mounted, a spring loaded arresting latch is provided perpendicularly to the plane of the main body, where the arresting latch has a arresting projection which acts in conjunction with a (frame) part of the cabinet or box to fix the door or lid in its closed position. If according to an advanced embodiment of the invention the lock attached to
 10 the main body has a locking bolt which, when in a locked position, makes contact with a latch surface facing it in such a way that the latch cannot be pivoted, then the result will be that the door to which the handle according to the invention is attached cannot be opened with the locking bolt in the locked position, when the handle is pulled. Thus the cabinet or box is protected from unauthorised access in a simple manner.

Further details, advantages and features of the invention can be seen in the
 15 following description of a preferred embodiment of the invention.

Figure 1 shows a handle without lock in flipped-up position,

Figure 2 shows the handle with lock installed and flipped up,

Figure 3 shows the handle from Figure 2 as seen at an angle from below, with the
 lock installed, in locked position,

20 Figure 4 shows the handle as seen at an angle from above with the handle flipped down onto the main body.

The handle according to the invention consists of the main body 1 which can be mounted in a correspondingly shaped recess in a door or a lid. To this end, several latch
 fingers 4 are provided under a projecting border 3 on one side wall 2 of the main body 1,
 25 where the latch fingers 4 engage underneath the rim of the punched recess and where the projecting border 3 of the main body 1 makes contact with the top of the border of the punched recess in the door.



On main body 1 a handle element 6 pivoted via a hinge 5, which in its flipped-down position shown in figure 4 will enter a recess 7 provided on the external wall of main body 1, is provided, where the external, respectively top side of handle element 6 is flush with the edge 3 surrounding recess 7.

In order to flip up the handle element (see fig. 1 to 3) the edge strip 3 is interrupted by a recess 8. Further, the edge 9 opposite the hinge 5 is interrupted by a chamfer 10, so that the handle element 6 can easily be gripped and flipped up.

In main body 1, a pre-punched recess or hole 11 for the installation of lock 12 is provided on edge 3.

In the area of the hinged attachment of handle element 6 to main body 1, the main body is thicker, and in walls 13 vertical to the main body plane, mounting recesses are provided which open to the bottom, so that handle element 6 can be inserted from below so that its hinges are positioned in the mounting recesses. The handle element 6 is held in place via holding fingers 14 which are provided on spring-loaded latches 15 of main body 1 and engage with the hinges 5 from below. Oblique surfaces 16 located on the latches 15 and pointing outwards can be used as latch fingers to fix the main body 1 in the recess of a door. Due to the friction between the hinges 5 and the holding fingers 14, the handle element 6 is "braked" such that it cannot be pivoted unintentionally. Flat areas are provided on hinges 5 which act in conjunction with holding fingers 14 and hold the handle element 6 in its locked position.

In the area where the handle element is mounted, a latch 20 projects down with a latch rib 21 which latches into the back of the edge of the door opening or door frame or a part of the electrical box when the door (lid) is closed, thus holding the door in its closed position. When handle element 6 is pulled, the latch 20 springs away, so that the door can be opened.

If a lock 12 has been installed into the handle, an embodiment is preferred where a locking bolt 30 of lock 12 blocks the latch 20 in locked position, so that it cannot spring away to the inside and release the door (fig.3).

The example of an embodiment described shows that a lock 12 can be installed in the handle according to the invention without altering the outward appearance of the handle. The installed lock 12 is protected by the handle element from contamination even under extreme conditions.

The handle according to the invention consists, in this example of an embodiment, of only two components, the main body 1 and the pivotable handle element 6. Due to the indentation 10 on the handle element edge 9 opposite the mounting location and the recess 8 in the border 3 of main body 1, the handle element can easily be gripped to open it (pivot it away from main body 1). The flip-up handle element thus not only serves the purpose of being the cover for a lock, if installed, but also of being a handle for opening a door or lid.

A further advantage of the handle construction described lies in the fact that no additional slot or groove is required in the door frame to lock the door, because locking bolt 30 does not enter the door frame but simply blocks the spring loaded latch 20 of main body 1. Therefore it is also not required, even if a lock is retro-fitted, to provide an edge or a slot acting in conjunction with locking bolt 30 of lock 12 in the frame of a door or another part of the electrical cabinet which is fitted with the handle according to the invention.

A further advantage of the handle according to the invention is its flat shape and the fact that the built-in lock 12 is only visible once the handle element 6 has been opened.

In summary, a preferred embodiment of the handle according to the invention can be described as follows:

A handle for a door or a lid of an electrical box or cabinet consists of a main body 1 latched into the door or lid, with a pivotable handle element 6. The hinges 5 of handle element 6 are located on the edge of handle element 6. On the main body 1, a spring-loaded latch 20 with latch fingers 21 is provided, which acts in conjunction with a module (frame) holding the door or lid for the purpose of holding the door or lid in locked position. A lock 12 installed into the main body 1 has a locking bolt 30 which, when in locked position, prevents the latch 20 from springing away. The handle element 6 covers the lock 12 when flipped down onto main body 1.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. Handle for a door or lid of electrical cabinets or boxes, including a handle element in the form of a flap located on a planar main body in such a manner that it may be pivoted, wherein the main body can be attached in a punched recess in the door or lid by means of latch fingers wherein a spring-loaded latch being aligned perpendicularly to the plane of the main body is rigidly fixed on the main body in the area of attachment of the handle element and wherein the latch includes a latch projection which acts in conjunction with a part of the cabinet or box to hold the door or lid in a closed position.

2. Handle according to claim 1, characterised in that the handle element is held in recess in wall sections of the main body perpendicularly to the plane of the latter, by means of hinge pins.

3. Handle according to claim 2, characterised in that the recesses in the main body for the hinge pins holding the handle element are open towards the inside of the main body and in that the hinge pins are held in the recesses, which are open to one side, by means of latches.

4. Handle according to any one of claims 1 to 3, characterised in that on the main body, in the area covered by the handle element, when the latter is flipped down, a punched recess or hold is provided for the installation of a lock

5. Handle according to any one of claims 1 to 4, characterised in that an edge of the handle element opposite the pivotal axis of the latter is chamfered and in that a border of the main body is indented at that place.

6. Handle according to claim 4, or claim 5 when appended to claim 4, characterised in that the lock mounted to the main body has a locking bolt which makes contact with a surface of the latch facing the locking bolt when in a locked position, so that the latch cannot be pivoted.



7. Handle according to any one of claims 3 to 6, characterised in that the latches which hold the hinge pins in their recesses are located on latches which hold the main body in the punched recess of the door or lid.
8. Handle according to any one of claims 1 to 7, characterised in that the pivotal axis of the handle element is provided on the edge of the handle element.
9. Handle for a door or lid of electrical cabinets or boxes substantially as herein described with reference to the accompanying drawings.

DATED this 1st day of March 2001

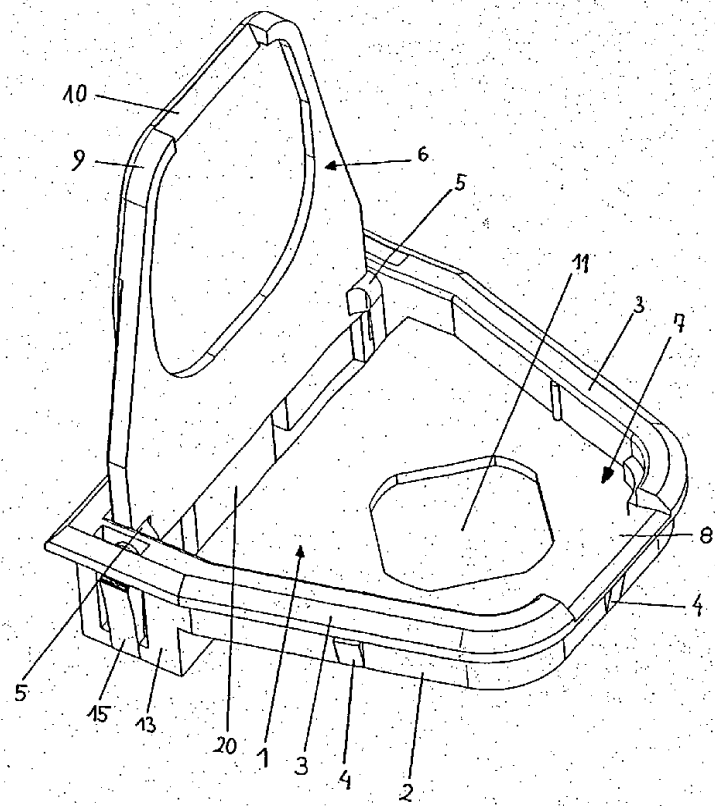
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Fig. 1



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Fig. 2

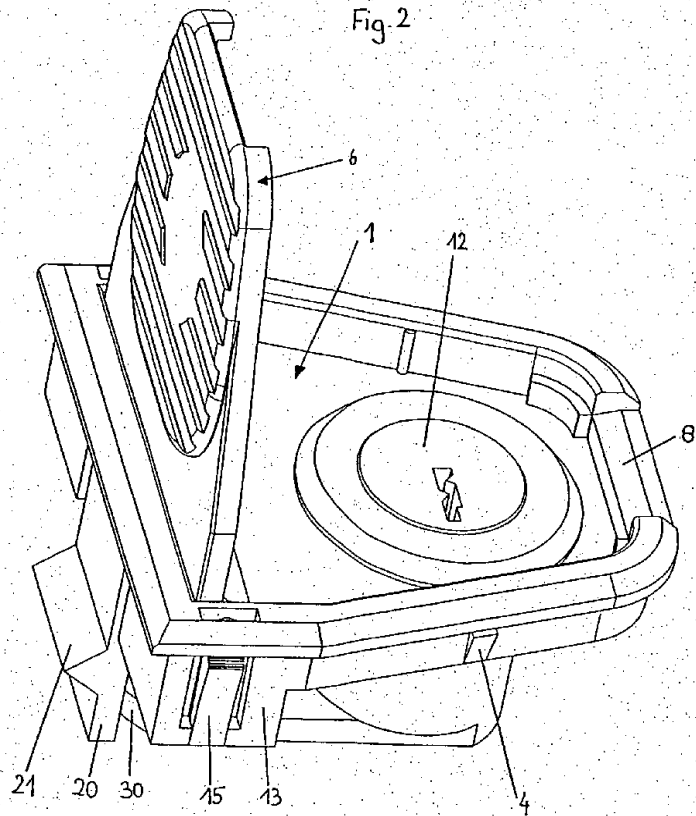
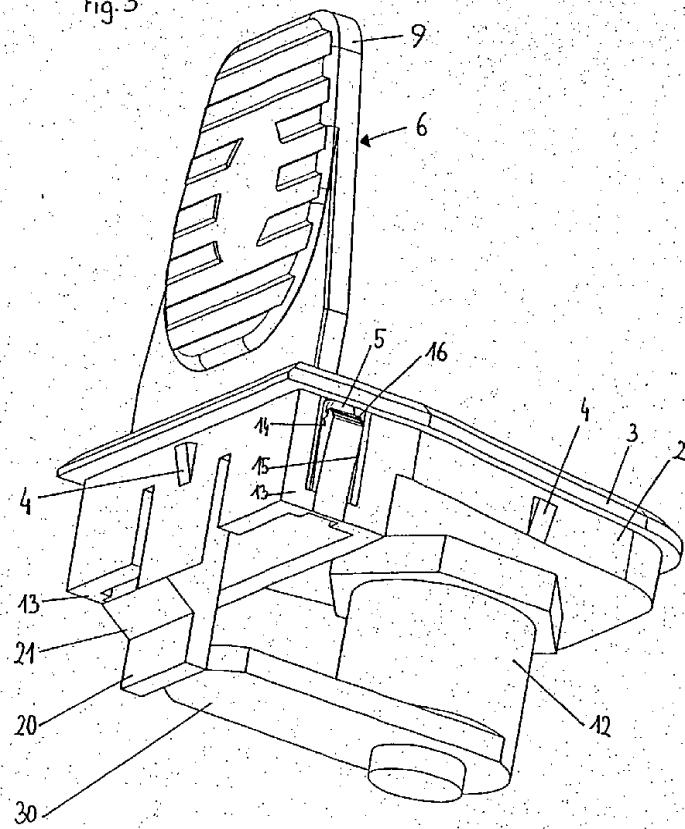


Fig. 3



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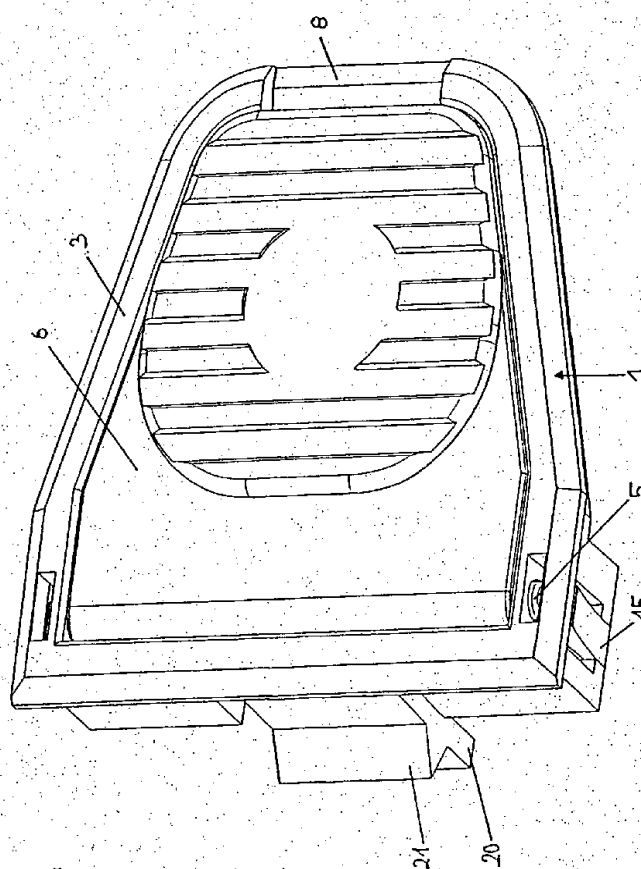


Fig. 4