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S. HAMMER

HINGE STRUCTURE

Filed July 27, 1921

Fig. 1

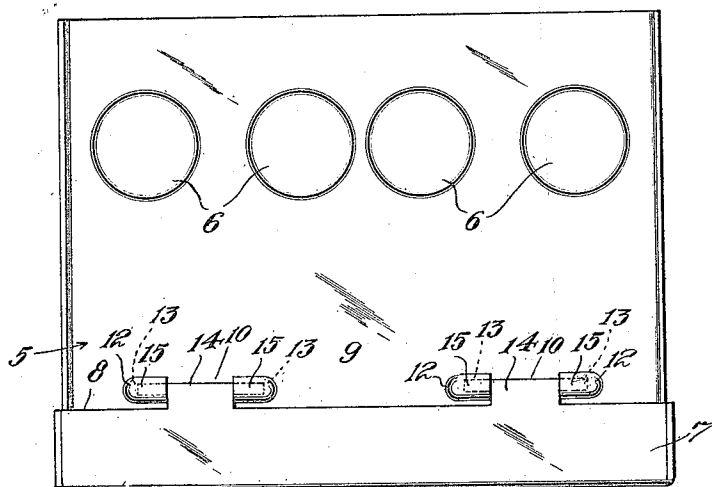


Fig. 2

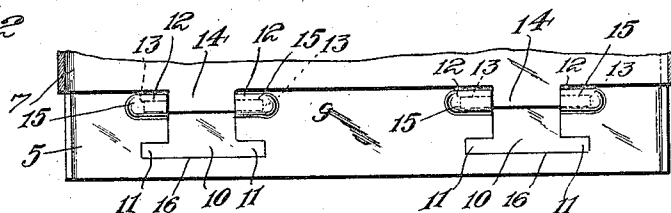


Fig. 3

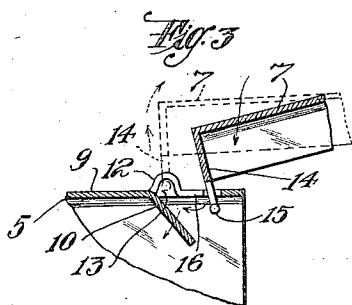


Fig. 4

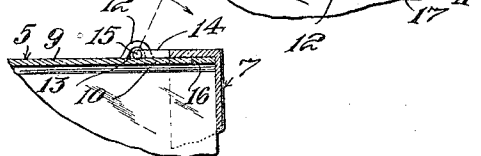
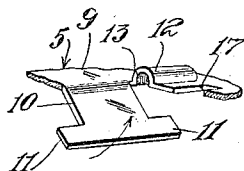


Fig. 5



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HINGE STRUCTURE.

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To all whom it may concern:

Be it known that I, SAMUEL HAMMER, citizen of the Republic of Russia, and resident of the borough of Bronx, city and State of New York, have invented certain new and useful Improvements in Hinge Structures, of which the following is a specification.

This invention relates to hinge structures and has for its primary object to provide an improved hinge construction primarily designed for use in connection with switch boxes and the like for hinging the cover at one of its ends upon the body of the box so as to obviate the possibility of unauthorized persons attaining access to the interior of the box by detaching the cover at the hinges.

More particularly, my present improvement comprehends a hinge of simple and durable construction wherein the hinge pintles on the box cover are securely locked in the sockets on the box wall by a section of the wall itself, said wall section being covered and concealed by one of the marginal flanges on the cover when the latter is closed, thus precluding the possibility of displacement of the said wall section by the engagement of a tool or implement therewith.

In one construction of the improved hinge, one wall of the box is provided with spaced sections integral at one of their ends with the box wall and adapted to be forced out of the plane of said wall, said sections at their other ends having lateral extensions, the box wall being further provided with outwardly pressed portions at opposite sides of each of said bendable sections to form sockets.

The box cover is provided at one end with spaced pairs of hinge pintles adapted for engagement through the openings in the box wall and movable along the inner sides of the wall into the sockets formed by the outwardly pressed portions of the wall. Upon then returning the bendable wall sections to their normal positions in the plane of the box wall, the hinge pintles are securely held or retained within the sockets while permitting of their free pivotal movement. The wall of the box cover, when the latter is closed, overlies the bendable sections of the box wall so that they cannot be displaced from their locking positions and the hinge pintles removed from the sockets. A hinge construction of this character may be readily produced in a few simple mechanical op-

erations and therefore particularly lends itself for use in connection with switch or fuse boxes, though obviously the present invention might also be advantageously employed for various other purposes.

With the above and other objects in view, the invention consists in the improved form, construction and relative arrangement of the several parts as will be hereinafter more fully described, illustrated in the accompanying drawing, and subsequently incorporated in the subjoined claims.

In the drawing wherein I have illustrated one desirable and practical embodiment of the invention and in which similar reference characters designate corresponding parts throughout the several views;

Fig. 1 is a top plan view of a switch box with the cover in its closed position and showing my new hinge construction.

Fig. 2 is a fragmentary plan view partly in section, with the cover in its full open position.

Fig. 3 is a fragmentary sectional view through the hinge showing the initial relative position of the parts in connecting the cover to the box wall.

Fig. 4 is a similar section showing the completed connection and the cover in closed position.

Fig. 5 is a fragmentary perspective view of the hinge parts on the box wall and the cover.

Fig. 6 is a similar view of a fragment of the box wall showing the locking section thereof pressed out of the plane of said wall.

Referring in detail to the drawing in which I have illustrated a conventional type of switch box, which is of the usual sheet metal construction, 5 designates the body of the box, the walls of which may be provided with any desired number of separable discs or cutouts 6, through which the current conducting wires may be led to the interior of the box.

The box cover 7 is provided with the usual marginal flanges indicated at 8 along each of its end and side edges, said flanges, when the box cover is closed, extending exteriorly upon the corresponding body walls of the box.

I have herein illustrated the box cover as being hingedly connected to the top wall of the box body. This, however, is not essential as the cover might as well be hinged to the

bottom wall or either of the side walls of the box.

As shown, the top wall 9 of the box in spaced relation to each of its side edges and adjacent to the open side of the box, is cut to provide bendable sections 10. These sections are of general T-shape form and at one of their ends remain integrally connected with the wall 9. At their other ends, each of the sections 10 has oppositely extending lateral projections 11. At each side of each of the sections 10 and at the end thereof which is connected to the body wall of the box, said wall is pressed or forced outwardly as at 12 to provide inwardly opening sockets 13. The parts 12 at their outer ends are integral with the wall of the box to close said ends of the sockets 13, the inner ends of which are open.

One of the end flanges 7 of the box cover is provided with spaced lugs or extensions 14, each of which is formed on its opposite side edges with the laterally projecting pintles 15.

In connecting the box cover to the wall of the box body 5, the sections 10 of said wall are first forced inwardly under pressure out of the plane of said wall into an angular position with respect thereto as clearly seen in Fig. 3 of the drawing. The hinge pintles 15 on the cover flange 7 may now be passed through lateral extensions 17 at the outer end of the opening 16 which is thus produced by the displacement of each of the wall sections 10. The cover is then shifted, the pintles 15 moving along the inner side of the box wall until said pintles are seated in the sockets 13. The wall sections 10 are then returned to their former positions in the plane of the box wall 9 so that they completely close the openings 16 and the extensions 17 thereof. When the box cover is in its closed position as shown in Fig. 4, it will be noted that the lugs 14 and the cover flange 7 overlie the respective bendable sections 10 of the box wall and completely cover the same. Thus when the box cover is locked in its closed position, a tool or implement cannot be engaged with the wall sections 10 so that they might be forced inwardly or displaced from the plane of the wall to a sufficient extent in order to permit of the removal of the hinge pintles from the sockets 13 and the detachment of the cover from the body wall of the box. It is further to be noted that this hinge construction practically eliminates openings or crevices of any appreciable size through which dust and dirt might find its way into the interior of the box. At the same time, however, this construction provides for a free and easy swinging movement of the cover upon the box wall whenever it is necessary to adjust the switch parts or make repairs.

From the foregoing description considered

in connection with the accompanying drawing, the construction and several advantages of the improved hinge will be clearly understood. The several hinge parts can be readily produced in the desired form by very simple mechanical operations so that the manufacturing cost of the box as a whole will not be materially increased. Thus in the present instance I have succeeded in combining simplicity of structure with extreme strength and durability and have also provided means which will prevent the undetected opening of the switch box by the disconnection of the cover from the box body at the hinges thereof.

As all parts of the hinge are integral with the cover and body of the box and no separate or additional elements are employed, it will be apparent that a hinge of this construction will not be likely to get out of order or require repairs.

I have herein shown a construction which I have found to be very practical and highly satisfactory in use, but it will be understood that the device is susceptible to certain modifications in the form, proportion and arrangement of its several parts and I accordingly reserve the privilege of adopting all such legitimate changes that may be fairly embodied within the spirit and scope of the invention as claimed.

I claim:

1. In a hinge structure, complementary parts to be hingedly connected, one of said parts having a lug provided with hinge pintles, the other of said parts including a wall having a slot cut therein through which said tongue and pintles are adapted to be inserted, said wall being provided at one end of the slot at its opposite edges with seats to receive said pintles, and means adapted to be positioned in said slot and located wholly in the plane of said wall to completely close the slot and retain the pintles in said seats.

2. In a hinge structure, complementary parts to be hingedly connected, one of said parts having a lug provided with hinge pintles, the other of said parts including a wall having a slot cut therein through which said tongue and pintles are adapted to be inserted, said wall being provided at one end of the slot at its opposite edges with seats to receive said pintles, and a bendable closure projecting from said wall at the latter end of the slot and adapted to be bent with respect to said wall and positioned within said slot wholly in the plane of the wall to completely close the slot and retain the pintles in said seats.

3. In a hinge structure, complementary parts to be hingedly connected, one of said parts having a lug provided with hinge pintles, the other of said parts including a wall having a tongue struck therefrom and in-

tegral at one of its ends with said wall to thereby provide a slot through which said tongue and pintles are adapted to be inserted, said wall being further provided at
5 opposite edges of the slot and adjacent the connection of the tongue to said wall with seats to receive said pintles, said tongue adapted to be bent and positioned in said slot wholly in the plane of said wall to completely close the slot and retain the pintles 10 in said seats.

In testimony that I claim the foregoing as my invention, and I have signed my name hereunder.

SAMUEL HAMMER.