

F. J. MANTEL.
HINGE CONSTRUCTION.
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1,212,792.

Patented Jan. 16, 1917.

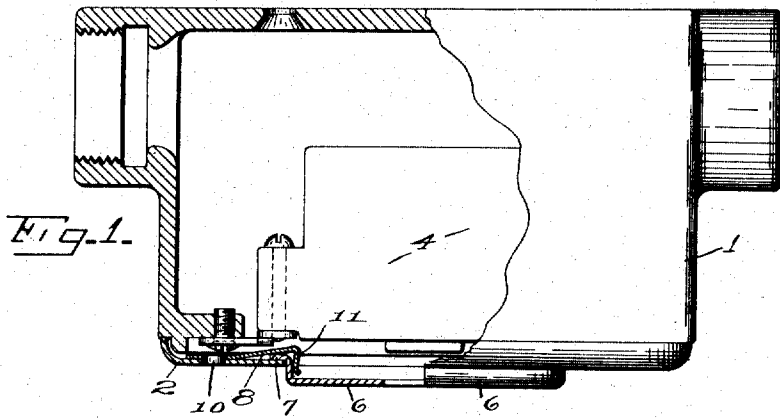


Fig. 2.

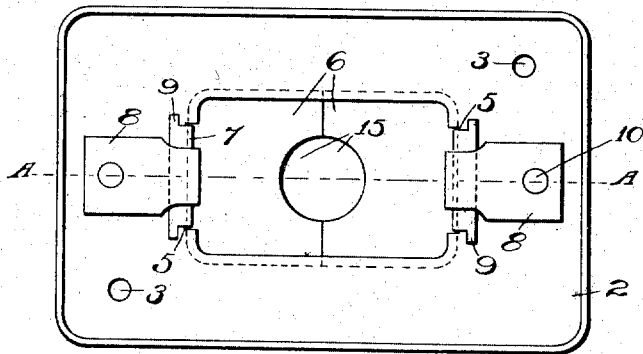


Fig. 3.

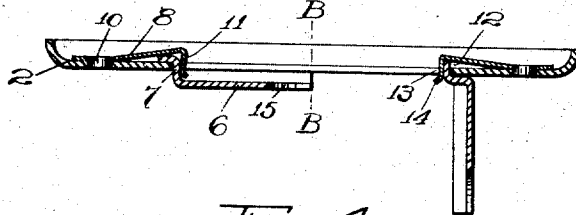
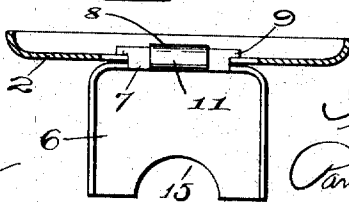


Fig. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

FLORIAN J. MANTEL, OF SYRACUSE, NEW YORK, ASSIGNOR TO CROUSE-HINDS COMPANY,
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HINGE CONSTRUCTION.

1,212,792.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FLORIAN J. MANTEL, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Hinge Construction, of which the following is a specification:

This invention has for its object a hinge construction for the covers of boxes, particularly applicable for the lids or covers or the cover plates of conduit outlet boxes.

One of the objects of the invention is to provide a hinge in which no hinge or pivot pin is used, and another object is to provide a hinge which is out of sight; and the invention consists in the novel features of construction hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings, in which like characters designate corresponding parts in all the views.

Figure 1 is a sectional view, partly in elevation, of a conduit outlet box provided with my invention, a portion of an electrical appliance located within the box being also shown. Fig. 2 is an inverted plan of the cover plate provided with my invention. Fig. 3 is a sectional view taken on line A—A, Fig. 2, the cover plate being here shown as being provided with a sectional cover or lid and one of these covers or lids being shown in closed position and the other in open position. Fig. 4 is a sectional view on line B—B, Fig. 3.

This invention comprises generally, a plate having an opening therethrough, a cover or lid for the opening, the cover or lid having a hinge leaf overlapping the margin of the plate around the opening and bearing on the edge of the wall around said opening, and a spring secured to the plate and engaging the hinge leaf to press and hold the same against said edge and hence hold the cover from removal. Usually the opening includes a notch in the margin of the wall around the opening into which notch the hinge leaf seats.

1 designates the conduit outlet box which may be of any desirable form, size and construction.

2 is the cover plate which is usually formed up out of sheet metal and secured to the box in any suitable manner, as by screws extending through openings 3 in the

cover plate, and into suitable threaded openings in the box.

4 is an electrical appliance within the box.

The cover plate 2 is formed with an opening through which the electrical appliance is accessible, as for the purpose of inserting or removing a plug, the margin of the wall around the opening being formed with a notch 5, which is here shown as wide compared with its depth.

6 is a cover or lid which is hinged to the plate 2, the cover having a hinge leaf 7 which extends into the notch and normally overlaps the inner face of the cover plate.

8 is a spring secured to the inner face of the cover plate 2 and engaging the hinge leaf to retain the same in the notch and also hold the cover or lid 6 in either its open or its closed position. The hinge leaf 7 is in the form of a tongue having an angle between its ends, the inner side of the angle adjoining the cover being arranged at substantially a right angle to the plane of the cover, and the other or outer side of the angle at the free end of the leaf extending outwardly substantially parallel to the plane of the cover or lid 6 and to the inner side of the cover plate 2.

The portions of the tongue at and on opposite sides of the apex of the angle movably fit the notch 5, and the outer side of the angle of the leaf is formed with laterally extending lugs 9 which prevent the withdrawal and displacement of the hinge leaf when the cover is in open position, as said lugs 9 project beyond the sides of the notch 5. The leaf 7 seats at the apex of its interior angle against the bottom of the notch 5 during the opening and closing of the cover or lid 6.

The spring 8 is a flat spring fixed at 10 near one end to the cover plate 2 and having at its free end an angular flange 11 opposed to the open side of the notch and bearing, when the cover is closed, against the inner face of the leg or side of the angle of the hinge leaf contiguous to the cover 6, as seen on the left of Fig. 3.

The angle of the spring 8 extends around the exterior angle of the hinge leaf and the interior angle of the spring forms a seat for the end edge 12 of the hinge leaf when the cover is open, as seen at the right end of Fig. 3.

The end margin of the flange 11 of the

spring is usually bent slightly toward the hinge leaf, as at 13, and formed with an out-turned lip 14, the portion 13 bearing against the hinge leaf during the opening and closing of the cover or lid 6.

The body of the spring 8 bears against the outer end of the hinge leaf to hold the cover 6 closed, and during the opening and closing of the cover or lid, the flange 11 presses against the hinge leaf and holds the interior angle thereof against the bottom of the notch. Also during the opening or closing of the cover or lid 6, the end edge of the hinge leaf bears against the body of the spring 8 which exerts tension thereon tending to hold the cover or lid 6 open, and also tending to close the same after the cover or lid 6 has been started toward its closed position. The cover plate 2 and the lid or cover 6 with its hinge leaf 7 are usually stamped from sheet metal and the cover is also provided with an angular marginal bead which seats against the cover plate 2. The hinge projects from this margin.

In the box here shown, a sectional cover or lid 6 is shown formed in two parts which open in opposite directions to permit the withdrawal and insertion of a plug out of and into the electrical appliance 4, and the meeting edges of the lids are formed with registering cutouts 15 for the electrical cords attached to the plug.

This cover and hinge construction is particularly advantageous in that no hinge pin is employed, and in that the parts are cheaply manufactured and easily assembled.

What I claim is:

1. The combination of a plate having an opening therethrough, a cover or lid for the opening, the cover or lid having a hinge leaf extending under the margin of the plate around the opening, and bearing on the edge of the wall around said opening, and a spring secured to the inner side of the plate and engaging the hinge leaf to press and hold the same against said edge and hence hold the cover or lid from removal, substantially as and for the purpose described.

2. The combination of a plate having an opening, and a notch in the margin of the wall around the opening, and a cover or lid for the opening having a hinge leaf formed with an angle between its ends, the hinge leaf being seated at the apex of its interior angle against the bottom of the notch, and a spring secured to the inner side of the plate and having a flange opposed to the open side of the notch and engaging the hinge leaf, substantially as and for the purpose specified.

3. The combination of a plate having an

opening and a notch in the margin of the wall around the opening, a cover or lid for the opening having a hinge leaf formed with an angle between its ends, the hinge leaf being seated at the apex of its interior angle against the bottom of the notch, and a spring secured to the plate and bearing against the outer side or leg of the angle of the leaf and having an angular flange engaging the inner side or leg of the angle of the leaf adjoining the cover or lid for holding the leaf in the notch with the apex of the interior angle thereof seated against the bottom of the notch, substantially as and for the purpose set forth.

4. The combination of a plate having an opening and a notch in the margin of the wall around the opening, a cover or lid for the opening having a hinge leaf formed with an angle between its ends, the hinge leaf being seated at the apex of its interior angle against the bottom of the notch, a spring secured to the inner side of the plate and having a flange opposed to the open side of the notch and engaging the hinge leaf, the portion of the hinge leaf near the apex of the angle therein movably fitting the notch and the leaf being formed with laterally extending lugs extending beyond the sides of the notch, substantially as and for the purpose described.

5. The combination of a plate having an opening and a notch in the margin of the wall around the opening, a cover or lid for the opening having a hinge leaf formed with an angle between its ends, the hinge leaf being seated at the apex of its interior angle against the bottom of the notch, and a spring secured to the inner face of the plate and bearing against the outer side or leg of the angle of the leaf and having an angular flange, the angle of the spring extending around the exterior angle of the leaf and the flange engaging the inner side of the angle of the leaf adjoining the cover or lid for holding the leaf in the notch with the apex of the interior angle thereof seated against the bottom of the notch, the leaf being formed with laterally extending lugs at its free ends extending beyond the ends of the notch, substantially as and for the purpose specified.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 2nd day of March, 1914.

FLORIAN J. MANTEL.

Witnesses:

WM. CORNELL BLANDING,
C. C. SCHOENECK.