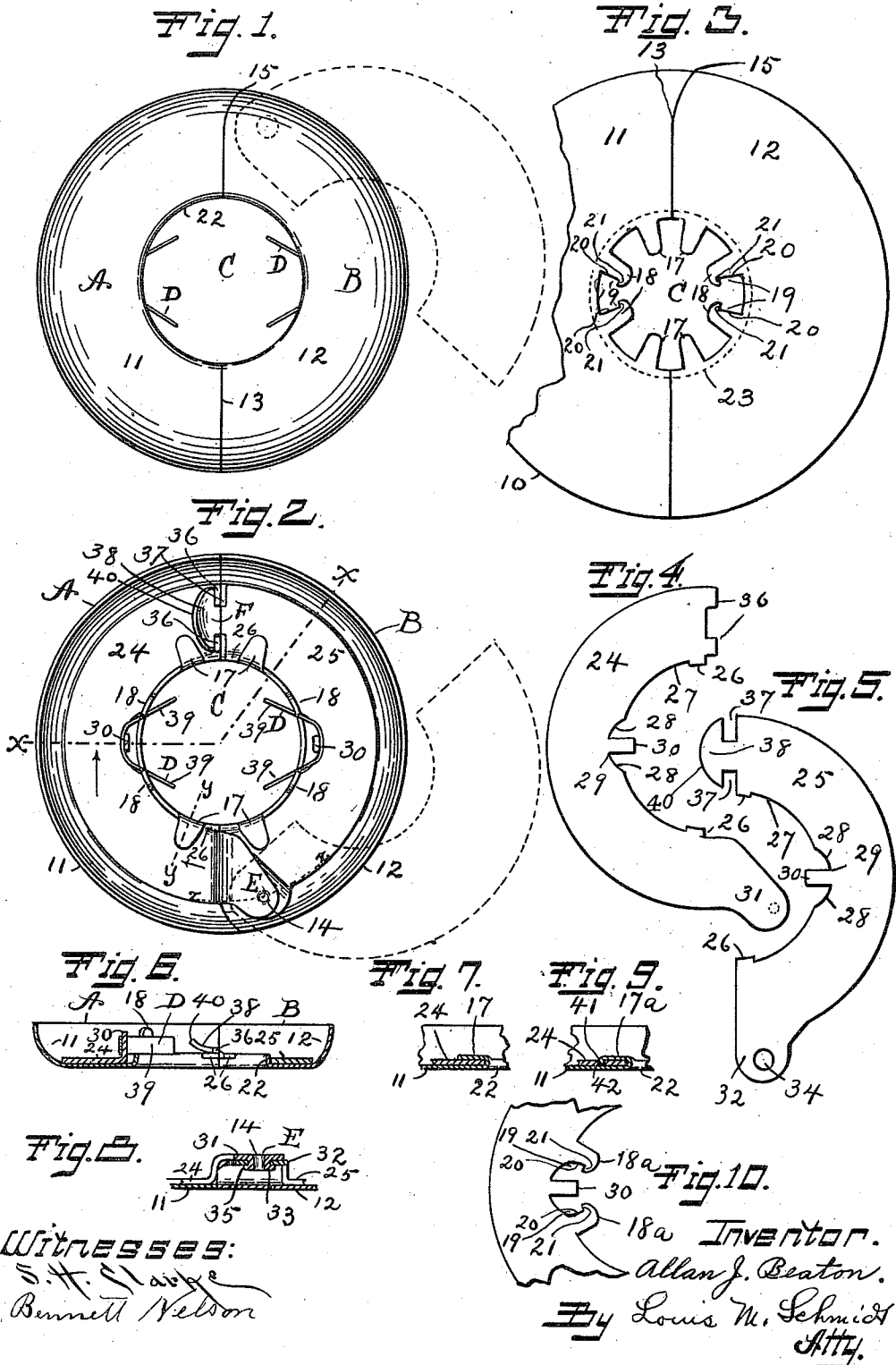


A. J. BEATON.
FLOOR AND CEILING PLATE.
APPLICATION FILED JULY 14, 1909.

983,115.

Patented Jan. 31, 1911.



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FLOOR AND CEILING PLATE.

983,115.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALLAN J. BEATON, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Floor and Ceiling Plates, of which the following is a specification.

My invention relates to improvements in floor and ceiling plates and the objects of my improvements are simplicity and economy in construction and convenience and efficiency in use.

In the accompanying drawings:—Figure 1 is a plan view of my floor and ceiling plate. Fig. 2 is a reverse plan view of the same. Fig. 3 is a plan view of the punched and slitted blank for the body portion of my plate. Figs. 4 and 5 are reverse plan views of the blanks for the left and right locking plates for my plate. Fig. 6 is a sectional view on the line *x x* of Fig. 2. Fig. 7 is a sectional view on the line *y y* of Fig. 2. Fig. 8 is a sectional view on the line *z z* of Fig. 2. Fig. 9 is a sectional view of a modification, on the line *y y* of Fig. 2. Fig. 10 is a plan view of a portion of a blank of a locking plate of modified form.

My floor and ceiling plate comprises two parts, respectively a left part A and a right part B, united to form an annular ring inclosing a central opening C adapted to receive the pipe, provided with lateral supporting springs D projecting into the said central opening C, hinged together by means of a hinge E at one end and locked together by means of a latch F at the other end. The two part blank 10 shown in Fig. 3 is made up of the blanks from which the two body parts of my plate are formed, respectively the left body 11, constituting the body for the said left part A and the right body 12 constituting the body for the right part B and is divided along the line 13, the two parts of the said blank 10 being generally similar, the said line 13 following generally a diameter, up to the said hinge E, where the said shearing line 13 follows along in a plane essentially concentric with the hinge axis 14, as shown at 15, Figs. 1 and 2. The said bodies 11 and 12 are each provided on the inner edge appreciably remote from the ends and projecting inwardly in the blank within the said central opening C with main lugs 17, two to each body, and adjacent the center,

also on the inner edge, and appreciably spread apart with a pair of spring holding lugs 18, also projecting inwardly in the blank, having a spring receiving space 19, comprising a back wall 20, and a top overhanging edge 21, directed toward the center. Between the said main lugs 17 and spring holding lugs 18 the blanks for the said bodies A and B are provided on their inner edges with material for a turned edge 22, the line of bend in forming the same being indicated at 23, Fig. 3. The blank 10, as described, is shaped or formed as a unit, in one operation, involving dishing to whatever shape or contour of exterior may be desired and turning inwardly the said main lugs 17, spring holding lugs 18, and turned edges 22. The bodies A and B, as described present an unbroken exterior surface so that when they are put together the finished plate presents a surface that is complete and unbroken except for the said shearing cut or line 13.

24 and 25 are respectively left and right locking plates which are attached respectively to the left and right body parts 11 and 12 to make up the respective left and right parts A and B of my floor and ceiling plate, and are shown in the blank in Figs. 4 and 5, and comprise on one end hinge members to form the said hinge E and at the other end latch members to form the said latch F, and intermediate thereto are generally formed to fit the interior of the said body parts 11 and 12, particularly along the inner edge, being provided near the outer ends with stop lugs 26 adapted to bear against the outer edges of the said main lugs 17 of the body parts 11 and 12, the edge 27 adjacent said stop lugs 26 adapted to fit against the back side of the said main lugs 17 and the said turned edge 22 for an appreciable distance, the edge 28 remote from the said stop lug 26, and essentially at the center of the plates receding away from the line of the said central circular opening or pipe space C, to a point 29 at which is located an integral back spring lug 30, projecting inwardly toward the said central space C in the blank and adapted to be bent upward at right angles to the general surface of the plate. The said stop lugs 26 are adapted to have the under sides of their inner ends overhang and rest on top of the said upturned flange 22.

The hinge members comprise engaging

ears adapted to be bent upward from the general surface of the plate into position for engagement, the ear 31 on the left locking plate 24 overhanging the ear 32 of the right locking plate 25, the means of pivotal attachment comprising a hollow rivet 33, formed integral with the left hand member, the location of the same being indicated in dotted lines in the blank, adapted to fit a hole 34 in the right hand member 32 and to be headed over as shown at 35, Fig. 8. The latch members comprise stop lugs 36 on the end of the left hand locking plate 24, shown projecting beyond the end in the blank, Fig. 4 and adapted to be bent upwardly to form rigid stops for engaging the notches 37 in the spring member 38 integral with and overhanging the end of the said right locking plate 25.

The said supporting springs D comprise U shaped flat springs, of width to fit the said spring receiving space 19, and having arms 39 of length sufficient to overhang the said central space C with the inside of the apex in abutment with the said back spring lug 30 and the said arms within the said receiving space 19, in abutment with the said spring holding lugs 18. Accordingly, the shaping of the said locking plates from the punched blanks shown in Figs. 4 and 5 comprises as regards the left locking plate 24 giving right angle upward bends to the said stop lugs 36 of the latch, and to the said back spring lug 30, and upsetting the ear 31 of the hinge, the integral rivet 33 being formed either before or after the shaping as described, and as regards the right locking plate 25 comprises a similar bending of the said back spring lug 30 and the stop lugs 26 on the inner periphery, upsetting the ear 32 of the hinge and giving a slight upward bend to the outer extremity 40 of the said spring member 38 of the latch so as to be self engaging with the said stop lugs 36.

The assembling of the locking plates comprises the completion of the hinge connection E by inserting the said integral rivet 33 of the left plate 24 within the hole 34 of the right plate 25 and heading over the said rivet 33, to form the said head 35, forming essentially an eyelet connection. The assembly of the locking plates 24 and 25 hinged as described with the said body parts to the interior, the said edge 27 of the locking plates inside the said body parts, so as to form essentially a lining or reinforcement to the interior, the said edge 27 of the locking plates abutting the said turned edges 22 of the body parts, the said top lugs 26 abutting the said main lugs 17 and turning the said main lugs 17 over against the face of the said locking plates 24 and 25.

In the modification shown in Fig. 9, the main lugs 17^a have ends 41 turned over into receiving holes 42 of the locking plate.

In the modification shown in Fig. 10 the said lateral spring holding lugs 18^a are formed integral with the locking plate 24, and the corresponding lugs 18 shown in Fig. 3 as integral with the said body part 11 are omitted.

The supporting springs D are slipped over the back spring lug 30, with the arms 39 within the spring receiving space 19 of the spring holding lugs 18 retained against said back wall 20 by the resiliency of the spring D, and restrained against displacement upwardly and downwardly by the face of the plate and the said overhanging edge 21.

As described the parts that compose my floor and ceiling plate comprise the two body parts, two locking plates, and two supporting springs.

The locking plates are punched from a blank of sheet metal, and the forming of the same involves bending up of the hinge ears, latch members, and spring lugs.

As described I have produced a divided floor or ceiling plate that may be opened out and slipped onto a pipe in any position and at any point and brought together again with the line of division as inconspicuous as possible with a divided plate; and which plate is made up and put together without a break in the exterior surface of the body part.

I claim as my invention:—

1. A floor and ceiling plate comprising two parts combined to form an annular ring having a convex exterior and composed of a pair of outer body parts comprising shell-like members having a suitable formation to give the desired outward appearance and the said body parts mounted on a pair of inner members which latter comprise complete hinge members, latch members and spring holding lugs.

2. In a floor and ceiling plate comprising two parts consisting each of a body member and a locking plate and means for rigidly securing together the said member and plate, the said locking plates united at one end by a hinge joint and at the other end by latch members and forming when so united a complete and self contained collar, and the said hinge joint comprising a hollow rivet on one plate and an eye on the other plate.

3. In a floor and ceiling plate comprising two parts consisting each of a body member and a locking plate, and having integral means of being secured together, the said locking plates provided with hinge members and latch members engaging with one another, and when so engaged uniting the said locking plates so as to form a complete and continuous collar.

4. In a floor and ceiling plate having two parts united at one end by a hinge joint composed of hinge members, and at the other end by a latch composed of latch members,

the said parts each comprising a body member and a locking plate, and having integral means for holding together said member and plate and the said hinge members and latch members formed integral with the said locking plates.

5 5. In a floor and ceiling plate comprising two parts united at one end by a hinge joint composed of hinge members and at the other
10 end by a latch composed of latch members, the said parts provided with supporting springs, and the said parts comprising each a body member and a locking plate, said
15 hinge members and latch members integral with the said locking plates, lugs on said body members and locking plates adapted to cooperate to fixedly unite said body members and locking plates and lugs on said
20 body members and on said locking plates adapted to cooperate to hold said supporting springs.

6. A floor and ceiling plate comprising two parts having each a body member and a

locking plate and the body member having integral means for securing said member 25 and plate and said plates united at one side by a hinge joint and on the other side by latch members, and when so united adapted to form an annular and generally convex
30 ring, and the said body members adapted to inclose and conceal the said locking plates.

7. A floor and ceiling plate comprising two body parts and two locking plates, said body parts having an inner short upturned edge and main lugs, said locking plates hav- 35 ing an inner edge adapted to fit said short upturned edge and stop lugs adapted to bear against the said main lugs, said main lugs adapted to be bent over against the face of the said locking plate and hold said stop 40 lugs in engagement with said main lugs.

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Witnesses:

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