(No Model.) 2 Sheets—Sheet 1.

W. J. BALDWIN.

FLOOR PLATE.

No. 490,094. Patented Jan. 17, 1893.

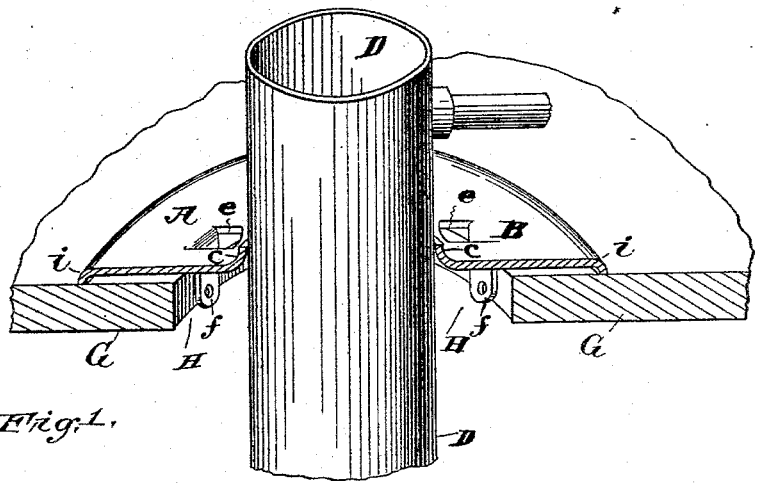

Fig. 1.

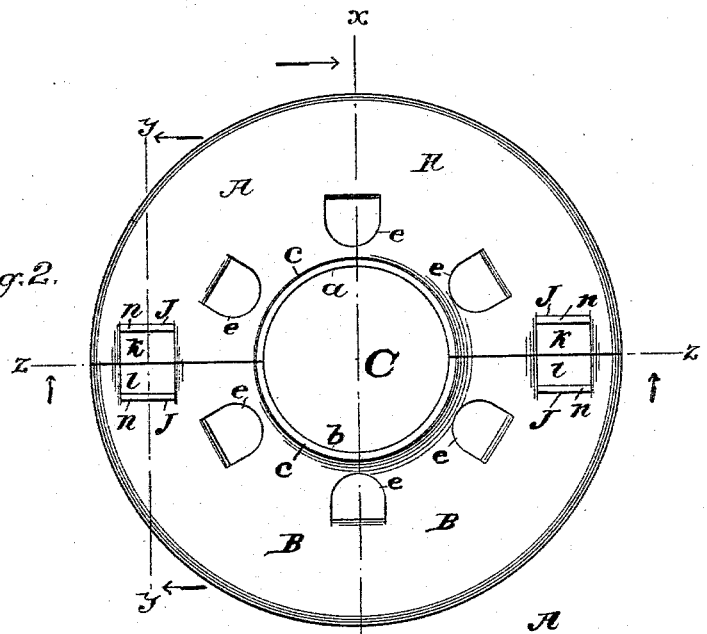

Fig. 2.

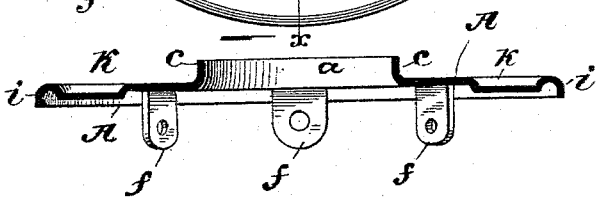

Fig 3

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Inventor;
William J. Baldwin
by Walter Brown
Attorney

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W. J. BALDWIN.

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Fig. 4.

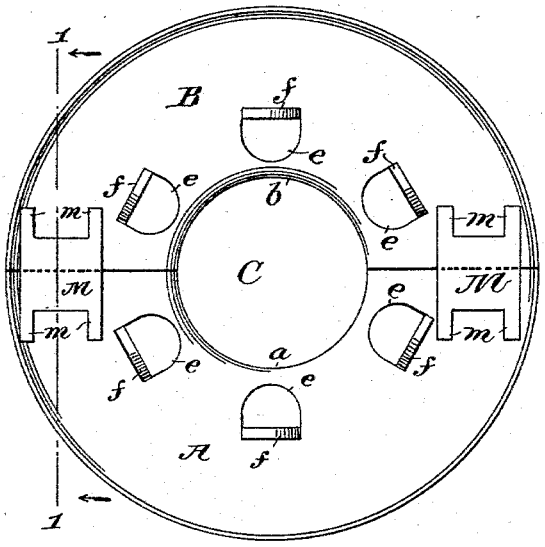


Fig. 5.

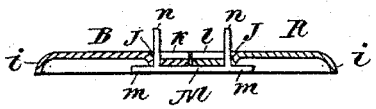
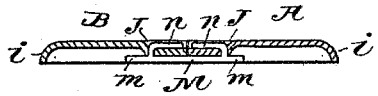


Fig. 6.



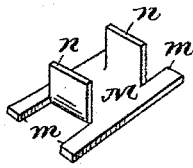


Fig. 7.

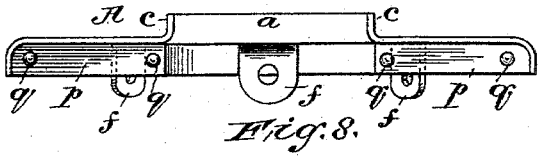


Fig. 8.

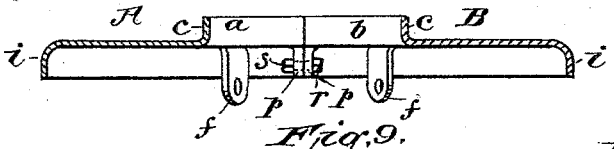


Fig. 9.

Attest

C. F. Benjamin

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Inventor:

William J. Baldwin,

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his attorney.

UNITED STATES PATENT OFFICE.

WILLIAM J. BALDWIN, OF BROOKLYN, NEW YORK.

FLOOR-PLATE.

SPECIFICATION forming part of Letters Patent No. 490,094, dated January 17, 1893.

Application filed May 29, 1891. Serial No. 394,600. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. BALDWIN, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Floor-Plates, of which the following is a specification.

My invention relates to improvements in floor plates for maintaining heating pipes in their proper place in openings in floors and ceilings or walls, through which openings the heating pipes pass. Since the fire ordinances of many cities and towns provide that there must be a minimum of space, as specified in the several ordinances, between the outer surface of the heating pipes and the surrounding wood work of the floor or ceilings, some device which will retain the heating pipe at its specified distance from the wood work when the pipe passes through floors and ceilings is necessary; and for practical reasons it is also necessary that this device should be easily applied, and cheap, and should allow for the expansion and contraction of the branch lines of heating pipe. Hitherto the common method of making such floor plates has been to cast them in annular plates with a central opening of proper size to fit around the heating pipe. Then when the floor plates are to be used, they are broken diametrically into two halves by the workman, and the two halves are placed around the pipe and screwed to the floor. But this is not a neat and workmanlike proceeding, and the plates being screwed to the floor, can not accommodate themselves to the expansions and contractions of the branch lines of pipe.

My improvement, therefore, consists in forming the floor plate in two halves in combination with simple means for securing the two halves together after they are placed around the heating pipe, and also in combination with devices which will compensate for the expansion and contraction of the branch lines of pipe, while always holding the heating pipe that passes through the floor or ceiling at its proper distance from surrounding wood work.

Referring now to the drawings which accompany the specification to aid in the description, Figure 1 is a view showing a heating pipe and branch line in elevation, and the floor plate in section, on the line X—X of Fig. 2. Fig. 2, is a plan view from above of the two halves of the floor plate, as in position around a pipe, not shown. Fig. 3, is an edge view of one half of a floor plate on the diameter Z—Z. Fig. 4, is a view, looking up, of the bottom of the two halves of the floor plate, and showing one of my devices for securing the two halves of the plate together. Fig. 5, is a section of the two halves of the floor plate on the line Y—Y, of Fig. 2, or I—I of Fig. 4, showing the device for securing the two halves together before it is riveted or clinched. Fig. 6, is a similar section, but showing the device for securing the two halves of the floor plate after it is riveted down or clinched. Fig. 7, is a perspective view of the device for securing the two halves of the floor plate together before it is riveted or clinched. Fig. 8, is an edge view as on the line Z—Z of Fig. 2, showing another means of securing the two halves of the floor plate together, and Fig. 9, is a section of the same on the line X—X of Fig. 2.

My floor plate may be either of cast or of wrought or malleable iron. When it is made of wrought or malleable iron, I form the two halves A, B, as semi circles of equal diameter, and with a semi-circular opening, *a*, *b*, in each so that when the two are placed together edgewise on their diameters, as in Fig. 2, they will form a circular plate with a central opening, C, of a size to admit of the passage of the heating pipe D, and around the semi-circular openings *a*, *b*, will be formed semi-circular collars or flanges, *c*, *c*, which will fit around the heating pipe, D. When the two halves, A, B, of the floor plate are of wrought or malleable iron, I punch semi-circular or elliptical slits, *e*, *e*, in each plate, equidistant from the semi-circular openings, *a*, *b*. Thus I form tongues, or prongs, *f*, *f*, which are then bent downward, as seen in Figs. 1 and 3, so that there are formed a number of such prongs, *f*, *f*, equidistant from the pipe-openings, *a*, *b*, a sufficient distance to comply with local ordinances, and which prongs, *f*, *f*, are formed sufficiently long to project below the half plates, A, B, to engage with the flooring, G, which

flooring, G, will be cut out with a circular hole, H, somewhat larger than the circle of the prongs, *f*, *f*. Now the heating pipe, D, being set up through the floor, G, the workman takes the two halves of the floor plates, A, B, and places them around the pipe, D, and secures them by my devices in the manner to be immediately herein described.

In each half, A, B, of the floor plate, I punch or otherwise form slots *j*, *j*, parallel to the diametrical abutting edge of said plates, A, B. Said plates, A, B, will preferably have a rim, *i*, *i*, bent downward to form a flange about three times as deep as the floor plate, A, B, is thick, and from the aforesaid slots, *j*, *j*, to the diametrical abutting edges of each half of the floor plate, A, B, there will be a depression, *k*, *l*, of a depth equal to the thickness of the half floor plates, A, B.

My fastener is a plate, M, of wrought iron, or other pliable metal, of a thickness equal to the thickness of the floor plates, A, B, and of a square or rectangular shape, and of area greater than the rectangle formed by joining the slots *j*, *j*. Parallel slits, *m*, *m*, are cut into opposite edges of the plate, M, forming prongs, *n*, *n*, and the slits *m*, *m*, are cut into the plate, M, so deep that when the prongs *n*, *n*, are bent up, as in Fig. 7, they will just correspond to the slots, *j*, *j*, in adjoining halves, A, B, of the floor plate, and that the prongs *n*, *n*, will be long enough to just about meet when bent down, as in Fig. 6.

The workman will proceed as follows: After he has placed the two halves, A, B, of the floor plate around the heating pipe, D, he will raise first one and then the other half, A, B, a little and place one of the aforesaid fasteners underneath so that the prongs, *n*, *n*, will project up through the slots, *j*, *j*. Then he will lower the halves of the floor plate, A, B, to the floor, when by reason of the depth of the rims, *i*, *i*, being equal to the sum of the thickness of the half floor plates, A, B, and of the fasteners, and the depth of the depressions, *k*, *l*, the underside of said depressions, *k*, *l*, will rest on the fasteners. Thus by a riveting hammer, or pliers, the workman can bend down and draw the prongs, *n*, *n*, of the fasteners, as seen in Fig. 6, whereby the two halves, A, B, of the floor plate will be firmly fastened together.

It is evident that this fastener provides a very simple means both for connecting and for disengaging the two halves of the floor plates, A, B, should it be desired to separate the said two halves. By reason of the hole, H, in the wood-work being somewhat larger than the circle of the prongs it is evident that the pipe D may move a little in the floor to accommodate itself to the expansions and contractions of the branch lines O. The two halves of my floor plate, A, B, may be cast, and then the prongs, *f*, *f*, will be formed at the casting of the plates, A, B, or a flange may be substituted for the prongs.

In place of fasteners, as hereinbefore described, I may use the device shown in Figs. 8 and 9, for uniting the two halves of my plates. This is especially adapted to cast iron plates, and consists of diametrical ribs, *p*, *p*, which are formed on the underside of the plates, A, B, with eyes, *q*, *q*, for bolts. The ribs *p*, *p*, do not extend entirely across the under side of the plates A, B, but stop at the opening for the heating pipe, as seen in Fig. 8. When the two halves, A, B, of the floor plate are placed around a heating pipe, the ribs, *p*, *p*, of one half plate come against the corresponding ribs of the other half plate; a bolt *r*, is then passed through the edges, *g*, *g*, and a nut, *s*, is turned up to place on the bolt, as seen in Fig. 9.

Having thus described my device, I claim:

1. A floor plate formed in two semi-circular annuli each of which has a rim substantially three times as deep as the thickness of the annulus and a depression parallel to the diameter in depth equal to the thickness of the annulus, slots in said depressions, and fasteners passed through the slots and riveted down into the depressions, as and for the purpose described.

2. A floor-plate formed of two semi-circular annuli, each of which has a depression parallel to its diameter, slots in the said depressions, and fasteners passed through the slots and riveted down into the depressions, as described.

Signed at New York, in the county of New York and State of New York, this 20th day of April, A. D. 1891.

WILLIAM J. BALDWIN.

Witnesses:

EDWD. W. STARR,

SIDNEY M. TEETER.