

W. W. GUY.
 DOME FOR FIREPLACES.
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1,105,651.

Patented Aug. 4, 1914.

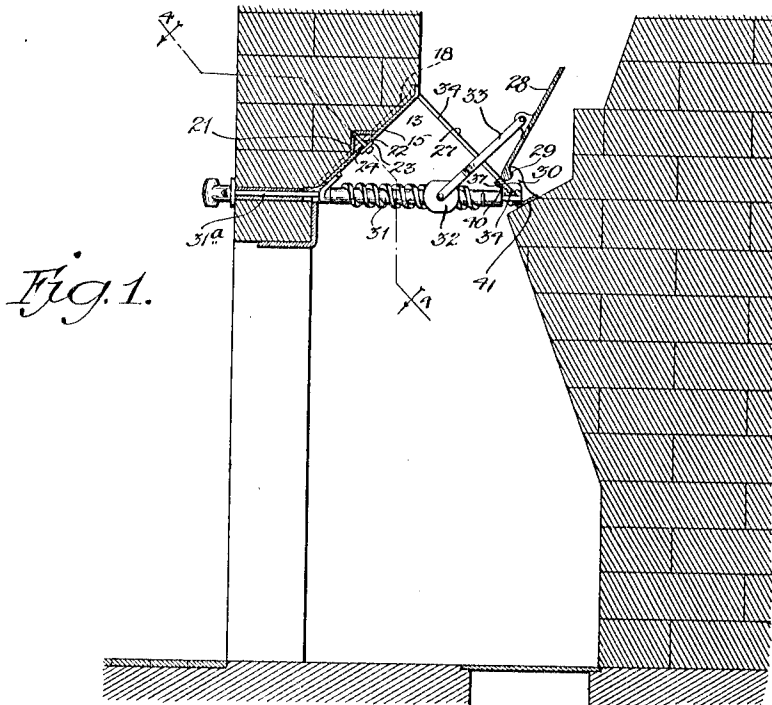


Fig. 1.

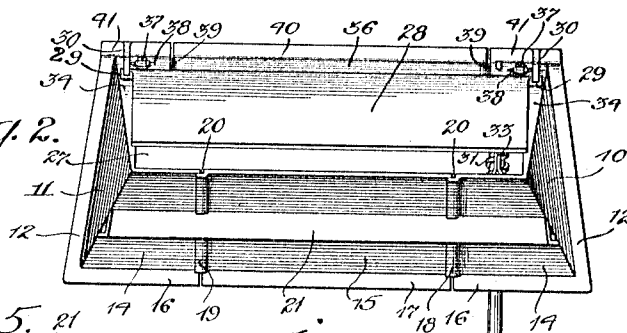


Fig. 2.

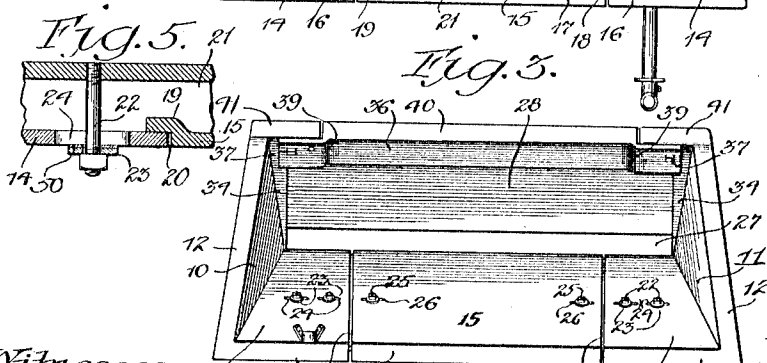


Fig. 3.

Fig. 3.

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UNITED STATES PATENT OFFICE.

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DOMES FOR FIREPLACES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER W. GUY, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Domes for Fireplaces, of which the following is a full, clear, and exact description.

The invention relates to domes for fireplaces.

In practice it has been found that where the lintel of the dome, which is usually placed under the brick work of the arch, is formed in one piece, and the end walls are bricked in solid, the lintel is subjected to the intense heat, so that the expansion of the metal causes the lintel to bulge upwardly and loosen the brick work, or spreads the end walls apart and loosens the brick work adjacent the end walls, or bulges downwardly, leaving the arch unsupported by the lintel.

The primary object of the present invention is to provide an improved dome in which provision is made for the expansion of the metal of the dome, and particularly the lintel which is subjected to the most intense heat, in such manner that expansion of the metal will not cause displacement of the brickwork around the dome and so that there will be no tendency of the lintel to bulge either upwardly or downwardly.

The invention further designs to provide a dome for fire-places of improved construction.

The invention consists in the several novel features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings Figure 1 is a central vertical section of a fire-place embodying the invention. Fig. 2 is a plan of the dome of the fire-place, the damper being shown partly open. Fig. 3 is an inverted plan. Fig. 4 is a section taken on line 4—4 of Fig. 1. Fig. 5 is a detail section through one of the bolt-and-slot connections for a section of the lintel.

The improved dome comprises end-walls 10 and 11, each provided with a base-flange 12 adapted to extend into the brick work or structure around the fire-place and these end-walls converge rearwardly and slope upwardly to the peak of the dome. A lintel of the dome forming the front-wall of the throat of the fire-place is inclined upwardly,

and serves as a support for the arch above the front opening of the fire-place. The end-portions 14 of the lintel are integrally formed with the end walls 10 and 11 respectively, and a central portion 15 of the lintel is formed by a plate 15 which extends between the end-portions 14. The said end portions 14 and plate 15 are also provided with base flanges 16 and 17, adapted to be built into the arch of the fire-place. One of the end-portions 14 of the lintel is provided with a flange 18 overlapping the plate 15 and the latter is provided with an angular flange 19 overlapping the other end-portion 14 of the lintel. A space 20, usually about a quarter of an inch, is left between the contiguous edges of plate 15 and portions 14 of the lintel and the flanges 18 and 19 form an over-lapping between the contiguous ends to close the space, but permit the metal forming the several portions of the lintel to expand, that is the end-portions may expand inwardly and the plate 15 may expand outwardly, to the extent permitted by the spaces 20. Resultantly, when the lintel is subjected to intense heat, there will be no tendency of the lintel to bulge and loosen the brick work above the lintel or to expand outwardly to force the brick-work adjacent the end-walls 10 and 11 outwardly. The structure, thus exemplifies a dome for a fire-place which is formed of sections which permit the metal forming the lintel to expand and contract under the variation of heat, without disturbing the brick work surrounding the lintel and end-walls or without destroying the efficiency of the lintel in supporting the dome.

A bar 21 formed of angle-iron extends longitudinally across the top of the lintel and is disposed about mid-way between the peak and the base flange of the dome. This bar 21 is connected to each of the end-portions 14 of the lintel, by bolts 22, which extend through washers 23 and slots 24 in said portions and are screw-threaded into the bar, and said bar is connected to plate 15, by bolts 25, which extend through slots 26 in said plate and are screw-threaded in the said bar. These bolts and slots connect the bar to the end portions and plate of the lintel, and serve as a stiffening element for the lintel and also as a ledge for the brick work of the arch. In practice a paper washer 50 is placed between each of the

washers on bolts 22 and 25 and the lintel when the domes are made, and when they are set into the fire-place, the fire will burn away the paper washers and leave sufficient play between the bolts and the lintel to permit the metal of the lintel to expand without hindrance from the bolts.

The invention thus exemplifies a dome for a fire-place in which the lintel is formed of sections and provided with a bar and connections which permit the metal of the lintel to expand so that the sections of the lintel will be firmly held in alinement by the bar which in practice is usually made of wrought metal.

An opening 27 is formed in the dome which is adapted to be closed by a damper 28 which has pivoted lugs 29 held in open seats in lugs 30 integrally formed with the end-walls 10 and 11 respectively. Any suitable mechanism may be provided for operating the damper, such as a screw 31, on a shaft 31^a and a runner 32 sliding on the screw which is connected to the damper by a link 33.

Inward extensions 34 are integrally formed with the end-walls 10 and 11 respectively, to form seats for the ends of the damper when it is closed, and these extensions are connected by a rear bar 36 which has each of its ends respectively connected by bolts 37 which extend through slots 38 in the extension, the ends of the bar being offset, as at 39, to underlie the extensions 34. A space is formed between the inner edges of the extension and the ends of the bar, which permit the metal of the bar to expand without affecting the end-walls or their extensions 34. Bar 36 and extensions 34 are formed with flanges 40 and 41 respectively, which are adapted to rest on the projecting portion of the rear wall of the fire-place. Paper washers such as are used for the bolts between bar 21 and the lintel are also used on bolts 37 to prevent the bolts from being tightened to retard expansion. By means of these bolt-and-slot connections between the rear bar 36 and the extensions on the end-walls of the dome, provision is made for the expansion and contraction of metal forming the rear bar in such manner that this may freely occur without exerting any outward pressure upon the end-walls or causing the bar to bulge from heat. Furthermore, this construction permits the rear bar to be readily replaced if it should become necessary. A further resultant advantage of employing the sectional construction of the dome is that different widths of domes may be formed by merely employing rear bars 36 and lintel-plates 15 of different lengths.

The invention thus provides an improved dome for a fire-place in which provision is made for permitting expansion and contrac-

tion of the metal of the lintel and the rear bar, which are subjected to the greatest heat, without causing contraction or expansion of which will loosen or affect the walls or brick-work in which the dome is built.

The invention is not to be understood as restricted to the details set forth since these may be modified by the skilled mechanic, within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:

1. In a dome for fire places, the combination of end walls, a lintel formed of slidably connected overlapping sections disposed in alinement, a back bar, bolt and slot connections between said back bar and sections which permit expansion of the lintel, and a damper sustained by said dome.

2. In a dome for fire places, the combination of end walls, a lintel comprising end sections integral with the end walls and an intermediate section slidably connected to the end sections, a back bar, bolt and slot connections between said back bar and sections which permit expansion of the lintel, and a damper sustained by said dome.

3. In a dome for fire places, the combination of end walls, a lintel comprising sections integrally formed with the end walls and a separately formed intermediate section, a back bar separately formed from the end walls, bolt and slot connections between the lintel sections and back bar which permit expansion of the parts, and a damper sustained by said dome.

4. A dome for fire places, comprising end walls, a lintel and a back bar, the central portion of the lintel being formed by a separate plate, and the end portions of said lintel being integral with said end walls, a sliding connection at the joints between said end portions and central plate, an angle bar on the lintel, bolt and slot connections between said bar and said end portions and central plate of the lintel which permit expansion, and a damper pivotally held on the dome.

5. A dome for fire places, comprising end walls and an inclined sectional lintel, an angle bar on the lintel, bolt and slot connections between said bar and lintel, a damper pivotally held on the dome, a longitudinally extending bar adjacent the lower edge of the damper, inward extensions on the end walls, and bolt and slot connections between said extensions and said latter bar which permit expansion.

6. A dome for fire places, comprising inwardly sloping end walls, an inclined lintel, the central portion of the lintel being formed by a separate plate and the end portions of said lintel being integral with said end walls,

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overlapping flanges at the joints between said end portions and central plate, an angle bar on the lintel, bolt and slot connections between said bar and said end portions and
5 central plate of the lintel which permit expansion, a damper pivotally held on the dome, a longitudinally extending bar adjacent the lower edge of the damper, inwardly extending flanges on the end walls, and bolt
10 and slot connections between said flanges and said latter bar.

7. A dome for fire places, comprising inwardly sloping end walls and an inclined lintel, a central portion of the lintel being
15 formed by a separate plate, and the end portions of said lintel being integral with said end walls, base flanges on the end walls, the end portions of the lintel and said plate overlapping flanges at the joints between said
20 end portions and the central plate, an angle bar on the lintel, bolt and slot connections between said bar and said end portions and the central plate of the lintel which permit expansion of the metal forming the lintel, a
25 damper pivotally held on the dome, a longitudinal extending bar adjacent the lower edge of the damper, inward extensions on the end walls, and bolt and slot connections between said extensions and said latter bar.

30 8. A dome for fire places, organized of sections forming a lintel and end walls, bolt and slot connections for the sections which permit expansion, combustible spacing means on the bolts, and a damper sustained
35 by said dome.

9. A dome for fire places, comprising relatively adjustable sections, adjustable connections for said sections, and spacing means associated with said parts and destructible under a relatively low heat for providing a
40 loose connection between the parts under the normal heat to which they are exposed.

10. A dome for fire places, organized of sections forming a lintel and end walls, bolt
45 and slot connections for the sections, which permit expansion, a destructible means placed between the bolts and lintel to furnish a loose connection between these elements when heat is applied, and a damper sustained by said dome.
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11. A dome for fire places, built up of sections forming a lintel, end-walls and a back bar, bolt and slot connections for the sections which permit expansion, and a destructible means for effecting a loose connection between the bolt and the lintel to provide for expansion of these elements when
55 heat is applied.

12. A dome for fire places organized of sections forming a lintel and end walls, bolt
60 and slot connections for the sections, and a destructible means on the bolts to furnish a loose connection between said bolts and the lintel to provide for expansion without hindrance from the bolts.

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