

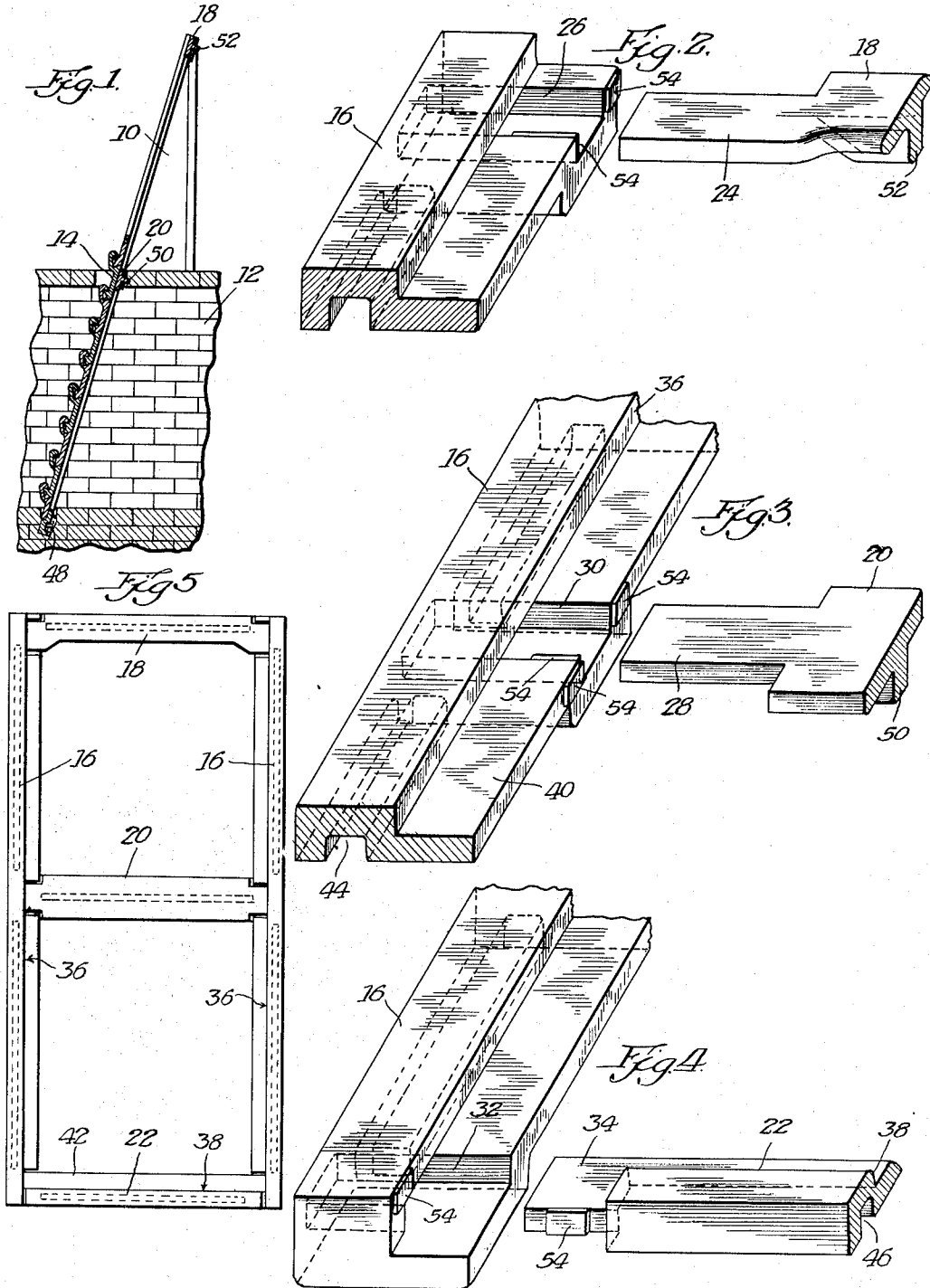
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HEAT RESISTING SEAT FOR DAMPERS

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HEAT RESISTING SEAT FOR DAMPERS

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5 Claims. (Cl. 126—285)

This invention relates to damper seats. In the illustrated form it comprises a sectional metallic damper frame, the various sections of which are connected by slip joints having sufficient play to permit full expansion. When originally installed shims of wood or other material destructible by heat are provided to properly space the parts and to prevent the masons from bricking the frame in too tightly. The vertical members are keyed so that they may be secured rigidly in place without any expansion.

Various objects are accomplished by this invention. Buckling due to expansion by heat is entirely prevented as the parts are so constructed and assembled that full expansion is prevented. Nevertheless the parts are laid in such a position that no movement is necessary except for expansion of the particular part. In other words, no member is bodily thrust aside by the expansion of another member. This permits a more secure and permanent mounting of the various individual members.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation, as will be more fully described and particularly pointed out in the specification, drawing and claims appended hereto.

In the drawing, which illustrates an embodiment of the device and wherein like reference characters are used to designate like parts,

Figure 1 is a sectional view illustrating the damper seat as installed in the flue with the damper in closed position;

Figures 2, 3 and 4 are perspective views showing the upper, middle and lower joints of the frame, respectively; and

Figure 5 is an elevation of the assembled frame or seat.

Although my invention may take many forms, only one has been chosen for illustration. The damper frame or seat 10 which is installed in the flue 12 preferably at an inclination, as shown in Figure 1, carries a damper 14 which may be of the metallic sectional type shown, though obviously the damper seat may be used in other positions, in other types of flues and with different forms of dampers.

The damper comprises the longitudinal vertical members 16, the top transverse or horizontal member 18, the central or horizontal member 20 and the bottom member 22 all formed preferably of a heat resisting metal. Each of the joints between the parts is formed by a loose tongue and socket construction. Thus in the upper corners

a tongue 24 of the horizontal top member 18 is inserted into the socket 26 of the vertical member 16. At the center the tongue 28 of the center member 20 is received in the socket 30 of the vertical member 16. Likewise the socket 32 at the bottom corners of the vertical member 16 is formed to loosely receive the tongue 34 of the bottom member 22. When the frame has thus been assembled, a sunken seat for the reception and sliding of the damper is bounded by the shoulders 36 on the vertical members 16 and by the shoulder 38 on the bottom member 22. The damper seats and slides on the vertical ledges 40 and the bottom ledge 42, as well as on the face of the central member 20 and the top member 18. The tongues are preferably sufficiently snug fitting, front and back, to prevent twisting of the frame.

Each of the members is provided with either a flange or a groove by which it is splined in its position. Thus the vertical members have at their under side the grooves 44. If desired, this may be so laid in the fire-resisting clay or other bonding material that the latter is swelled up into the groove 44 and splines the vertical members against horizontal movement. The bottom member 22 is provided with a similar groove 46, and in Figure 1 this has been shown filled with the clay packing 48. As the central member 20 and the top member 18 do not have the depth to receive deep grooves, they may be provided with flanges 50 and 52, respectively, as illustrated.

These splines do not in any case interfere with the expansion of the members, as they extend longitudinally and are uninterrupted in extent. Thus, since only the lower half of the vertical member 16 is in the flue, the key formed of the clay or other binding material is located entirely within the groove 44 so that when the vertical member 16 expands, the portion thereof which moves merely slides along the spline of the binding material. In spite of the expansion, the spline remains intact and so the vertical member 16 continues to be held securely in its proper position. The bottom member 22 may be similarly held in place by groove 46. The central member 20 is keyed in place by its flange 50 which forms a corresponding groove in the binding clay and which extends longitudinally in said groove without so weakening it that the member 20 becomes too loose.

It should be borne in mind that the splining of the various members is not essential as they may be sufficiently held in place in the ordinary manner, that is, merely by the contacting bricks.

When the frame is installed it is provided with the shims 54 of wood or other material destructible by heat, located in the positions shown. These shims not only aid the proper initial relative location of the parts of the damper, so as to allow for expansion, but more important still, they prevent the masons from crowding the parts together in the process of laying the brickwork. When the furnace is fired the wooden shims 54 very quickly burn away so that the proper amount of play is allowed for expansion of the metal. Thus, if the central member 20 is keyed in place, the shim below it and between it and the vertical members 16 will leave spaces which permit both the vertical expansion of the member 16 and the horizontal expansion of the member 20. If the central member 20 is not keyed it will rest on the bottom of the sockets 30 after the shim has been burned out and so the provision of the shim in that case would not be essential.

Although either the shims or the rigid mounting of the various members may be omitted, it is very desirable to include both features. By so doing a frame is provided in which all the parts are dependably retained in their proper positions and yet in which full expansion is permitted without any danger of buckling.

It is to be understood that many other embodiments of the invention, including some in improved form, will be apparent, and in the course of time more will be devised by those skilled in the art. It is not desired that this invention be limited to the details described, for its scope includes all such forms or improvements as come within the spirit of the following claims, construed as broadly as the prior art will permit.

What is claimed is:

1. In combination with a flue, a damper seat comprising a plurality of sections fitted together with sufficient play therebetween to permit cus-

tomary maximum expansion, and means splining some of said sections to said flue against transverse movement.

2. In combination with a flue, a damper seat comprising a plurality of sections fitted together with sufficient play therebetween to permit customary maximum expansion, and means splining some of said sections to said flue against transverse movement, said means being so constructed as to permit longitudinal movement of said sections.

3. In combination with a flue, a damper seat comprising a plurality of sections fitted together with sufficient play therebetween to permit customary maximum expansion, means for splining some of the sections in said flue in position, said means being substantially unaffected by longitudinal expansion of the sections, and heat destructible shims for maintaining the proper spacing of the parts during installation.

4. In combination with a flue, a damper seat comprising a plurality of sections fitted together with sufficient play therebetween to permit customary expansion, means splining some of said sections to said flue against transverse movement, said means being substantially unaffected by longitudinal movement, and heat destructible shims for maintaining the proper spacing of the sections during installation.

5. In combination with a flue, a damper seat comprising a plurality of heat resisting metallic sections fitted together with sufficient play therebetween to permit customary expansion, means splining some of said sections to said flue against transverse movement, said means being substantially unaffected by longitudinal movement, and heat destructible shims for maintaining the proper spacing of the sections during installation.

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