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DEMOUNTABLE BAFFLE STRUCTURE FOR FURNACE COMBUSTION CHAMBERS

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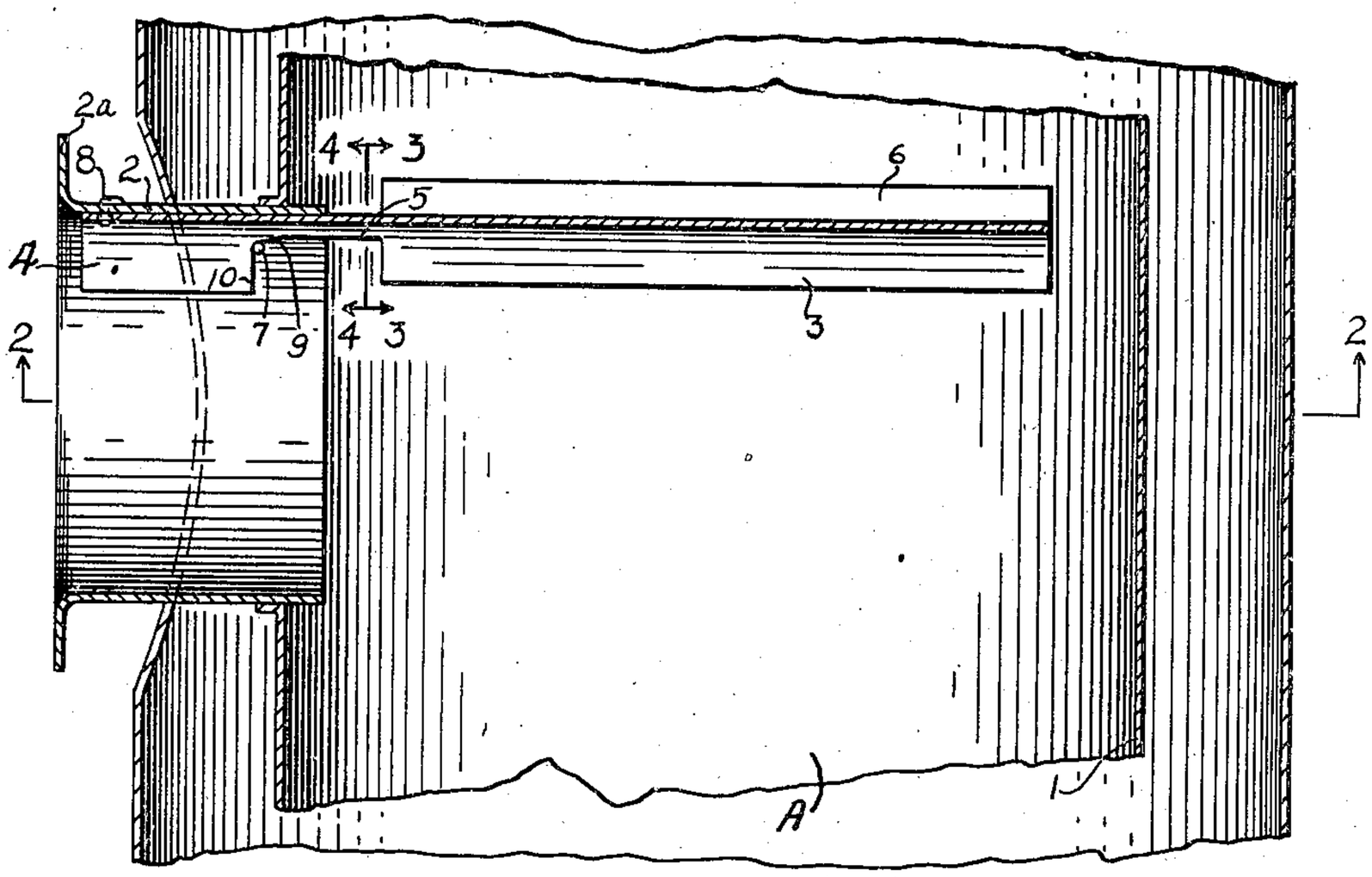

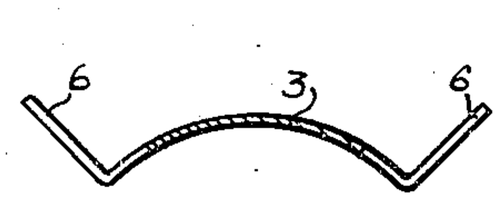

Fig. 1.

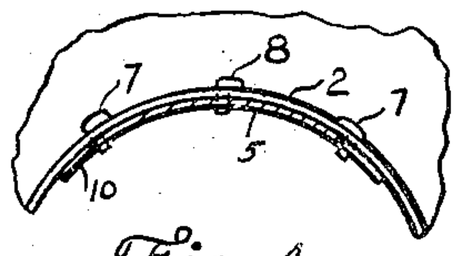

Fig. 3.

Fig. 4.

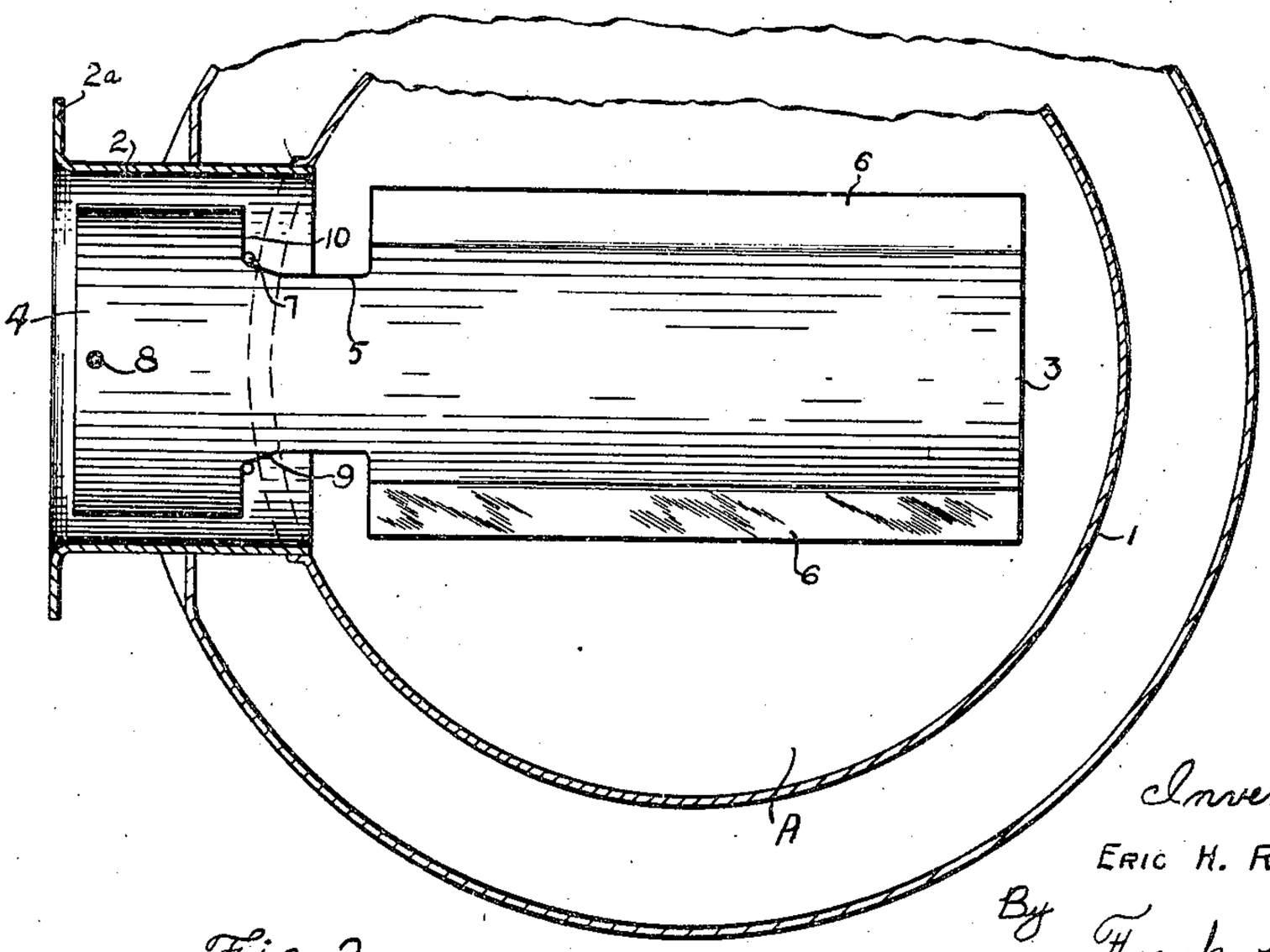

Fig. 2.

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DEMOUNTABLE BAFFLE STRUCTURE FOR FURNACE COMBUSTION CHAMBERS

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4 Claims. (Cl. 110—97)

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This invention relates to furnaces of the type characterized by an upright heating element providing or served by a combustion chamber and serving as a heat exchanger, as for example in the usual warm air furnace employed in domestic heating services.

More particularly, the invention has to do with baffle means for the furnace combustion chamber, and removable mounting of such baffle means in the front opening which provides the usual lateral access to the chamber, as for ignition, inspection, and cleaning.

Objects of the invention are to provide simple and inexpensive baffle means and mounting means therefor, the baffle means being of ample strength with light weight, and its mounting means providing simple installation and removal, yet positively positioning the baffle means when installed, and substantially without obstructing the opening.

Further objects and advantages will be apparent from the following description taken in connection with the accompanying drawings which show baffle means and mounting means therefor as applied to a typical warm air furnace, pertinent parts of which appear in the drawings,

Fig. 1 being a sectional elevation showing the baffle means as installed,

Fig. 2 is a horizontal section through the same as in the plane of line 2—2, Fig. 1, looking upwardly, and

Figs. 3 and 4 are detail sections as in the plane of line 4—3, 4—3, Figs. 1 and 2, viewed respectively right and left.

With reference now to the drawings, 1 represents the furnace heating element, here indicated as of sheet metal in the form of an upright cylinder, providing a chamber A which may be a combustion chamber or confine products of combustion provided by a suitable burner means therebelow and not illustrated, being well known in the art, as for example the usual pot type oil burner.

The heating element 1 is provided with a lateral opening of circular form and having an associated cylindrical collar 2 leading from the opening, as to the front wall of the furnace and there having a flange 2*a*, the arrangement providing access to the chamber A as for ignition of the burner, inspection of its operation, and cleaning.

According to this invention, baffle means are provided for control of the flue products within the chamber A. As here illustrated, the baffle means includes a baffle member 3 located within the chamber A, a base member 4 located within

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the collar 2, and a neck member 5 interconnecting the baffle and base members.

The baffle means is of sheet metal, as of stainless steel, with a central portion extending integrally throughout its length of arcuate section and uniform curvature conforming to that of the upper portion of the inner face of the collar 2.

The baffle member 3 may include a pair of upwardly extending laterally spaced wings 6, to improve its baffling effect and increase its rigidity, and the neck member 5 supports the baffle member 3 on the base member 4, its reduced width relative to that of the baffle member 3 permitting flow of flue products within the chamber A adjacent the front portion of the heating element 1.

For mounting of the base member 4 of the baffle means within the collar 2, for consequent positioning and support of the baffle member 3 within the chamber A, the collar 2 is provided with a pair of laterally spaced studs 7 adjacent the heating element 1 and a third stud 8 adjacent the flange 2*a*, all three of the studs having slight radial extent into the hollow of the collar 2.

The neck member 5 has lateral edge portions located to be received between and engaged by the pair of studs 7 as indicated Figs. 1, 3, and 4. Inwardly beyond the studs 7 the neck member 5 has lateral edge portions divergently related as at 9 to provide cam or wedge effect relative to the studs 7 as will appear; and outwardly beyond the studs the base member 4 is provided with shoulders 10 to act as stops against the studs.

The base member is provided with an opening to receive the third stud 8 when the parts are positioned as in the drawings, this being the mounted position of the baffle means.

It will be apparent that the baffle means is positively secured when so mounted, its base member 4 being positioned by the three studs, and the baffle part 3 having support therefrom by way of the neck part 5 with cantilever effect, the weight of the baffle means having support by the two studs 7 and the baffle means being secured against lateral displacement by the third stud 8 acting with the other two.

It will also be apparent that by the disclosed arrangement, the opening through the collar 2 is practically unobstructed by either baffle or mounting means.

In mounting the baffle means, the baffle member 3 is inserted through the collar opening, then the baffle means is raised to position its neck member 5 between the studs 7. Thereafter the baffle means is slid inwardly, one or the other of the cam edge portions 9 engaging the cor-

responding stud 7 until the parts are seated as indicated in the drawings, the baffle means finally being tilted on the studs 7 to provide seating relation between the stud 8 and its opening in the base member 4.

Demounting and removal of the baffle means is had by reversal of these steps.

Withal, the invention will be seen to provide for easy mounting of the baffle means in initial installation of the furnace, and as easy removal and replacement on any subsequent occasion, with positive positioning whenever mounted; without materially obstructing the opening through which it is inserted and within which it is mounted.

What I claim is:

1. In a furnace having an upright heating element providing a combustion chamber, with a circular opening providing lateral access to said chamber, and a cylindrical collar associated with said opening, sheet metal baffle means including a baffle member, a base member of arcuate section to fit within said collar, and a neck member interconnecting said baffle and base members, and means for removably mounting said base member in said collar, to position said baffle member in said chamber, said mounting means including a pair of studs inwardly projecting from said collar adjacent said chamber and spaced to engage therebetween lateral edge portions of said neck member.

2. In a furnace having an upright heating element providing a combustion chamber, with a circular opening providing lateral access to said chamber, and a cylindrical collar associated with said opening, sheet metal baffle means including a baffle member, a base member of arcuate section to fit within said collar, and a neck member interconnecting said baffle and base members, and means for removably mounting said base member in said collar, to position said baffle member in said chamber, said mounting means including a pair of studs inwardly projecting from said collar adjacent said chamber and spaced to engage therebetween lateral edge portions of said neck member, said neck member edge portions having divergent relation toward said base member for wedge effect between said studs.

3. In a furnace having an upright heating element providing a combustion chamber, with a circular opening providing lateral access to said chamber, and a cylindrical collar associated with said opening, baffle means including a baffle member, a base member of arcuate section to fit within said collar, and a neck member interconnecting said baffle and base members, and means for removably mounting said base member in said collar, to position said baffle member in said chamber, said mounting means including a pair of studs inwardly projecting from said collar adjacent said chamber and spaced to engage therebetween lateral edge portions of said neck member, said neck member edge portions having divergent relation toward said base member for wedge effect between said studs, and said mounting means also including a third stud inwardly projecting from said collar remote from said chamber, said base member having an opening to receive said third stud.

4. In a furnace having an upright heating element providing a combustion chamber, with a circular opening providing lateral access to said chamber, and a cylindrical collar associated with said opening, baffle means including a baffle member, a base member of arcuate section to fit within said collar, and a neck member interconnecting said baffle and base members, and means for removably mounting said base member in said collar, to position said baffle member in said chamber, said mounting means including a pair of studs inwardly projecting from said collar adjacent said chamber and spaced to engage therebetween lateral edge portions of said neck member, said neck member edge portions having divergent relation toward said base member for wedge effect between said studs, and said mounting means also including a third stud inwardly projecting from said collar remote from said chamber, said base member having an opening to receive said third stud, and said base member also having shoulder means adjacent said lateral edge portions, adapted to engage said first mentioned pair of studs and locate said base member opening to receive said third stud in mounting said baffle means.

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