Oct. 20, 1953 L. H. McCAMMANT 2,655,913

PILOT BURNER HEAT DISSIPATOR

Filed Dec. 30, 1949

Fig. 1

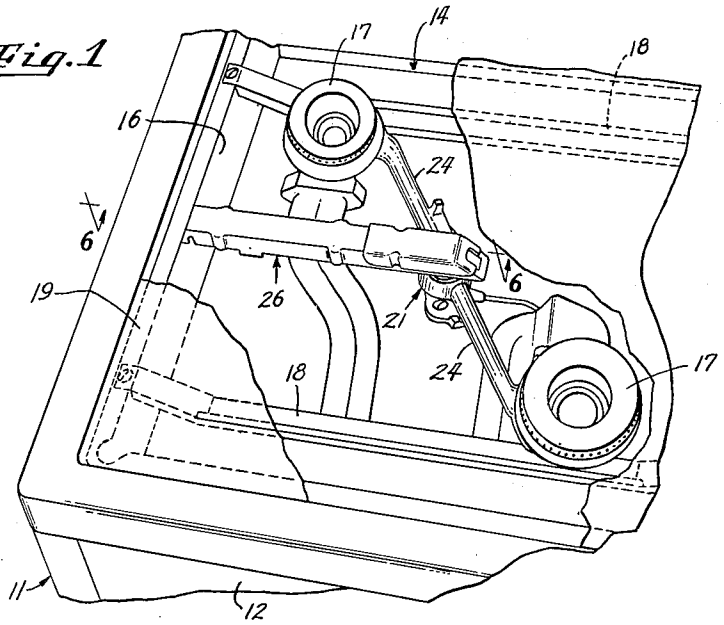


Fig. 4

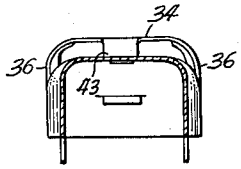


Fig. 5

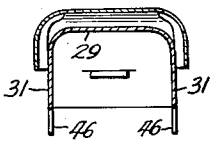


Fig. 2

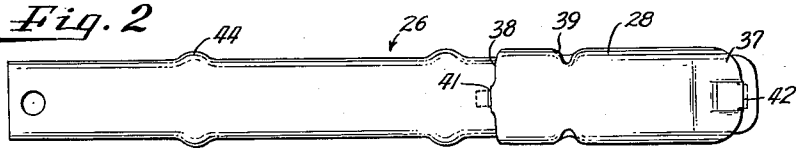


Fig. 3

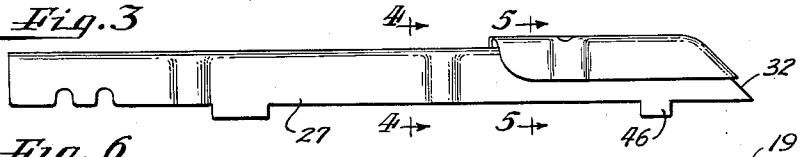


Fig. 6

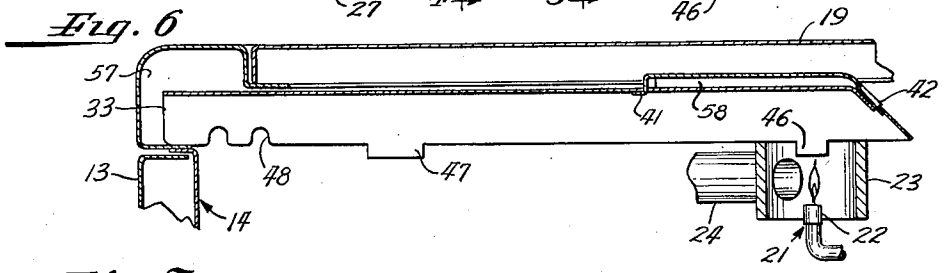
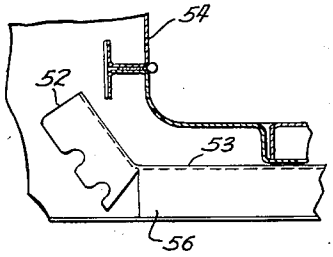


Fig. 7



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PILOT BURNER HEAT DISSIPATOR

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5 Claims. (Cl. 126—39)

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This invention relates to heat deflectors or dissipators and more particularly to heat deflectors or dissipators for pilot burners and the like.

In conventional ranges and stoves, main burners are in general mounted to be accessible from the top of the range and are arranged to be ignited from a single constantly burning pilot burner disposed in lighting proximity to all of the burners. To provide a compact assembly the pilot burner is disposed substantially centrally of the burners immediately below the top of the range. As a consequence there is an area on the top of the range immediately above the pilot burner that is extremely hot; and should a person accidentally come in contact with this area on the top of the range he would be severely burned. From a safety standpoint and hazard to the operating personnel this is a very undesirable feature.

Accordingly, an object of this invention is the provision of a range having novel means for dissipating the heat of the constantly burning pilot burner so as to prevent the formation of hot spots on the top of the range.

Another object of the invention is the provision of novel means for dissipating the heat from a concentrated heat source, that is highly efficient, rugged, simple and that is relatively inexpensive.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which—

Figure 1 is a fragmentary perspective view of a top of a range with portions cutaway to show the heat dissipator embodying the present invention;

Fig. 2 is a plan view of the heat dissipator;

Fig. 3 is a side view of a heat dissipator;

Figs. 4 and 5 are sectional views taken substantially along the lines 4—4 and 5—5 respectively of Fig. 3;

Fig. 6 is a longitudinal sectional view taken along the line 6—6 of Figure 1, and

Fig. 7 is a modification of the invention with one end of the dissipator deformed to project upwardly in a back rail of the range.

Referring now to the drawings, the invention is shown embodied in a conventional gas range. For purposes of simplifying the drawings only the upper part of the range is shown. As shown the range includes a body 11 having a front 12 and ends 13, one only being shown. A burner box 14, defined by spaced side and end walls 16, is mounted at the top of the body to receive main

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burners 17. The burners are supported by strips 18 suitably mounted on the body and are connected to a gas supply in a conventional manner by means not shown. A cooking top 19, provided with apertures through which the main burners 17 may project, is mounted on the top of the body and a constantly burning pilot burner assembly 21 is suitably mounted in the burner box between the front and back of the range for lighting the main burners 17. As shown, the pilot burner assembly is of conventional construction and includes a burner 22, a shield 23 encircling the burner 22, and flash tubes 24 effecting communication between the pilot burner 22 and the main burners 17 for flashing the flame from the pilot burner 22 to the main burners 17.

One phase of the invention is concerned with the provision of means in a gas range for preventing hot spots or areas of concentrated heat on the top 19 of the range above the pilot burner. To accomplish the foregoing a heat dissipator 26 is disposed between the pilot burner 22 and the top 19 to carry off the products of combustion and dissipate the heat gradually as the products of combustion flow away from the pilot burner.

In this embodiment of the invention the dissipator 26 comprises a pair of inverted channel-shaped members 27 and 28 mounted in spaced relation as shown. The channel member 27, which is the bottom member shown in Figs. 3, 4 and 5, comprises a bridging portion 29 and spaced sides 31. The channel member 27 is sufficiently long so that one end thereof overlies the pilot burner 22 and the opposite end rests on the side wall 16 of the burner box 14. An end 32 of the channel member 27 is closed while the opposite end 33 is open. The channel member 28, which is the top member shown in Figs. 3, 4 and 5, comprises a bridging portion 34 and spaced sides 36. The end 37 of the channel member 28 is closed and the end 38 is open. The sides 31 and 36 of the channel members are maintained in spaced relation by crimps 39 formed in the sides 36 of the channel-shaped member 28. The bridging portion 29 is maintained in spaced relation with the bridging portion 34 by tabs 41 and 42 formed at opposite ends of the channel-shaped member 28. As best shown in Fig. 6 the extreme end of the tabs 41 and 42 are shaped to extend into openings formed in the bridging portion 29 of the channel-shaped member 27 so that the tabs can be bent back to engage the underside of the bridging portion and thereby secure the member 28 thereto. The tab 41 is formed with spaced shoulders 43 that engage the top of the bridging

portion 29 and the end 42 is depressed inwardly of the plane of the end 37 so that the ends 32 and 37 of the channel members are in spaced relation.

Preferably the channel members 27 and 28 are made of aluminized steel, steel to which aluminum has been bonded, or other suitable material which forms a surface having good reflection characteristics. Outwardly projecting crimps 44 are provided on the sides of the channel member 27 for purposes of imparting rigidity thereto. Tabs 46 depending downwardly from the sides 31 are arranged to be disposed in the housing 23 of the pilot burner assembly for maintaining the dissipator in assembled relation with the pilot burner. Depending tabs 47 on the sides 31 are provided for mounting purposes while notches 48 formed adjacent the open end of the channel-shaped member 27 are formed for indicating to assemblymen positions at which the channel-shaped member 27 may be cut off to adapt it for different sizes of burner boxes.

Fig. 7 shows a modification of the invention in which the extreme end 52 of a channel-shaped member 53 of the dissipator is inclined upwardly within the confines of a back rail 54 of a range. To effect this deformation of the channel-shaped member the sides 56 are cut as shown in the drawings.

The dissipator 26 may be easily assembled in a range or removed therefrom to permit servicing of the components of the range. To install the dissipator the open end 33 of the channel-shaped member 27 is arranged to rest freely on the end wall 16 of the burner box 14. The closed end of the dissipator is arranged so that the tabs 46 project inwardly of the housing 23 and engage the sides thereof. In this position the dissipator rests in a substantially horizontal position. In its operation, products of combustion from the pilot burner 22 are carried along the inverted channel-shaped member 27 and are discharged at the open end 33 into a chamber 57 formed in the ends of the range adjacent the top. As the products of combustion flow between the walls of the channel-shaped member, heat is conducted through the walls and bridging portion thereof to be radiated outwardly therefrom. Due to chimney action, cooling air flows through a passageway 58 defined by spacing the channel-shaped members 27 and 28 which tends to carry the heat being radiated or otherwise dissipated by the channel-shaped member 27 and cools the latter. Concurrently with the cooling action of the air flowing through the passageway 58 heat passing upwardly to the bridging portion 34 is reflected back in the direction of the channel-shaped member 27 and is acted upon again by the flow of relatively cool air flowing through the passageway 58. Thus, heat from the pilot burner is dissipated over a relatively large area and is subjected to the effects of cooling air. Accordingly the heat does not concentrate to effect a "hot spot" as has been the case heretofore. Tests show that there are no "hot spots" on the stove top that can injure an operator of a range equipped with this construction. This dissipator is also extremely simple to make and assemble and is relatively inexpensive to produce. Another advantage of this construction is that the products of combustion, which in previous constructions, in some instances, caused discoloration of the tops, are now discharged into a space adjacent the ends of the range after they have been cooled to a temperature low enough not to cause discoloration of the enameled parts. Also the stability of the pilot burner in a range utilizing this dissipator is better since the flame is protected from drafts or other turbulent air conditions.

I claim:

1. In a gas range, in combination, a burner box having side walls, a main burner disposed in said burner box, a top mounted to extend across said burner box having an opening for said main burner, a pilot burner for said main burner mounted below said top, a first inverted channel-shaped member positioned below the top and overlying said pilot burner, means for supporting said channel-shaped member to have the latter extend from above said pilot burner to a position adjacent a side wall, and a second inverted channel-shaped member below the top and positioned in spaced relation above said first inverted channel-shaped member to define an air passage between said members for the passage of cooling air, said members being formed of metal having good heat reflection characteristics.

2. A heat dissipator for a concentrated source of heat, comprising an elongated inverted channel-shaped member comprising a bridging portion and spaced depending side members, means closing one end of said channel-shaped member, a second inverted channel-shaped member comprising a second bridging portion and second spaced depending side members, said second channel-shaped member overlying said first channel-shaped member with the respective bridging portions thereof in spaced relation to define an air passage between the channel-shaped members.

3. The combination recited in claim 2 in which the channel-shaped members have heat reflecting surfaces.

4. A heat dissipator for a concentrated source of heat, comprising an elongated channel-shaped member having an inverted U-shaped cross section comprising a bridging portion and spaced sides, means closing one end of said channel-shaped member, a second channel-shaped member having an inverted U-shaped cross section comprising a second bridging portion wider than the first bridging portion and second spaced sides, means closing one end of the second channel-shaped member, means between said bridging portions to space them apart and crimped portions formed on the sides of at least one of said members for spacing the sides of the first member from the sides of the second member to define an air flow passage between said members adjacent the closed ends of said members.

5. The combination recited in claim 4 in which the channel-shaped members are formed from aluminized steel.

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