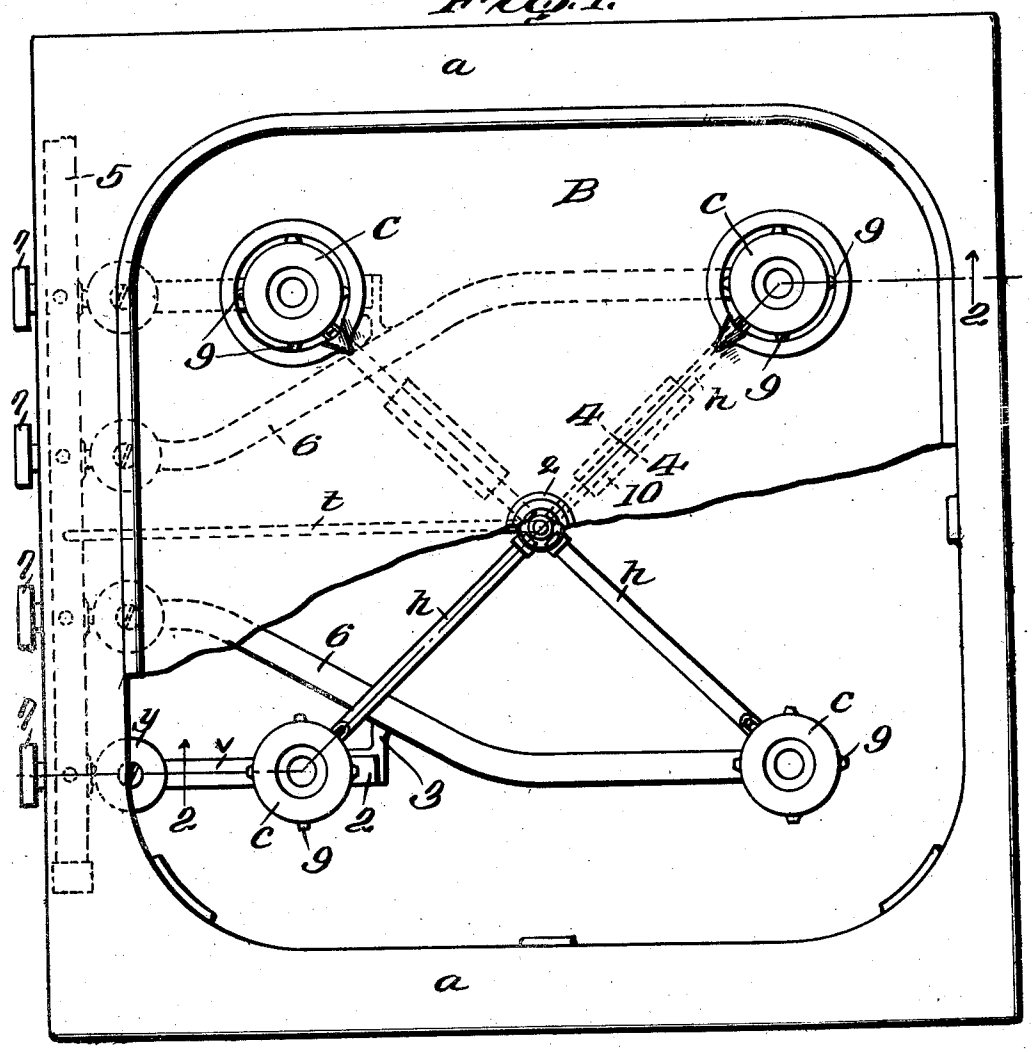
May 25, 1937. L. S. KAUFFMAN 2,081,819

AUTOMATIC LIGHTER CONSTRUCTION FOR GAS RANGES

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FIG. 1.



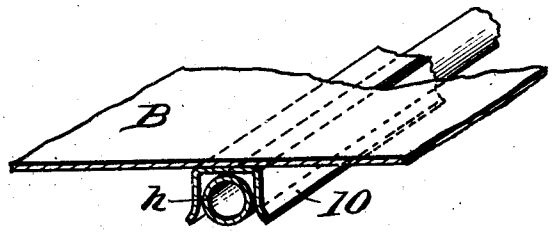


FIG. 4.

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AUTOMATIC LIGHTER CONSTRUCTION FOR GAS RANGES

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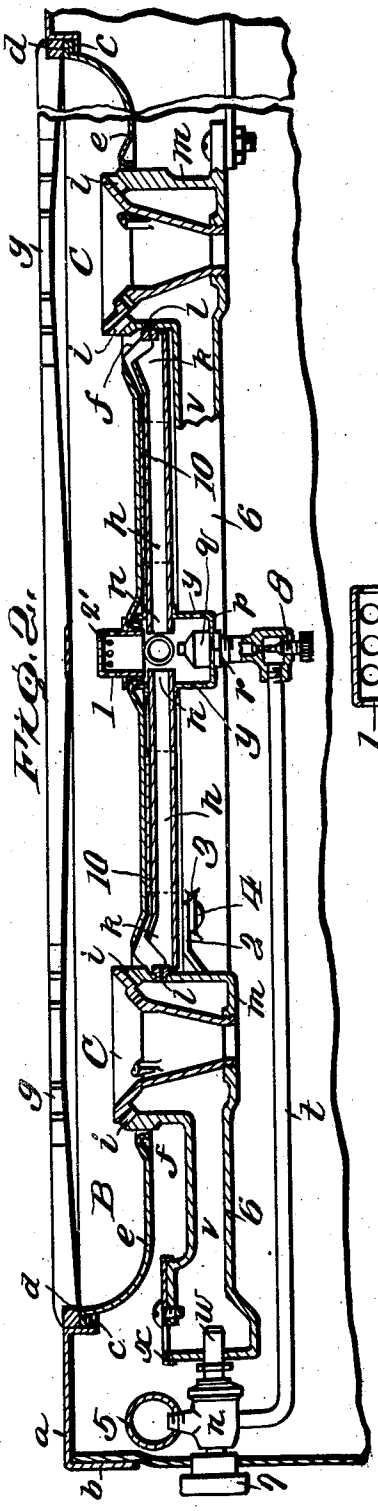


Fig. 2.

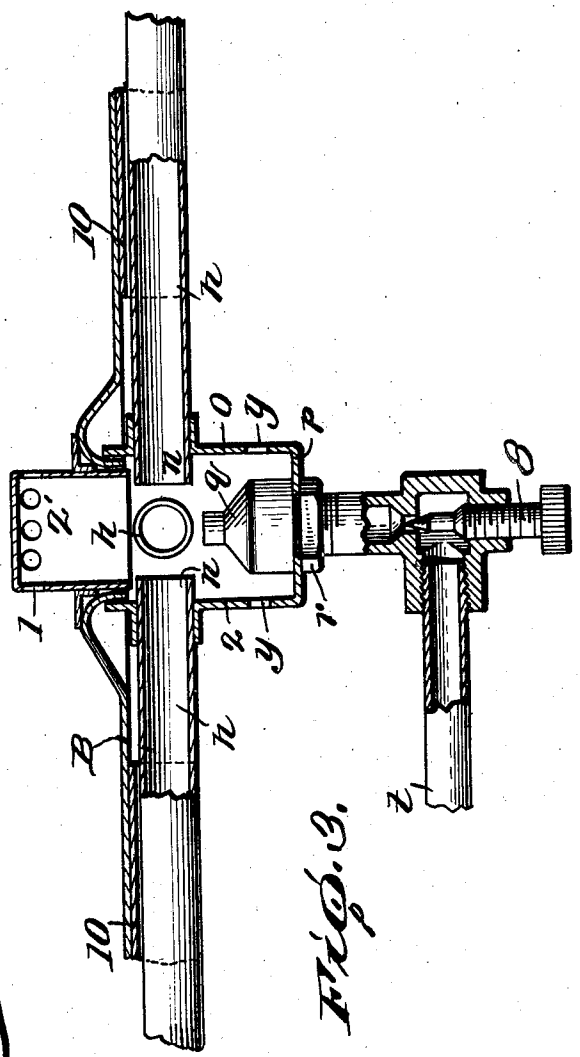


Fig. 3.

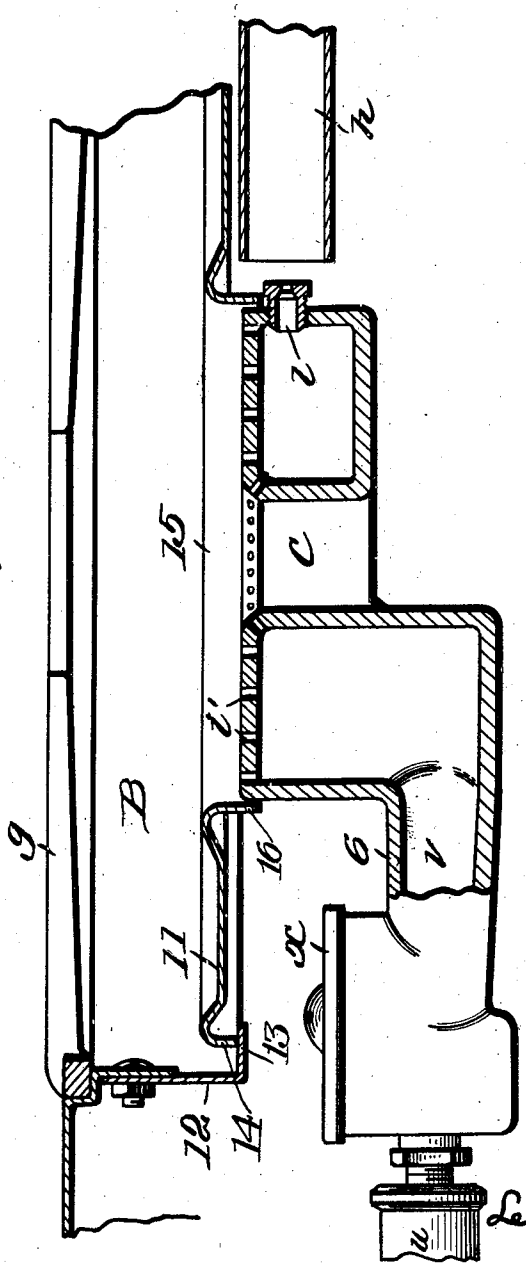
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AUTOMATIC LIGHTER CONSTRUCTION FOR GAS RANGES

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Fig. 5.



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Patented May 25, 1937 2,081,819

UNITED STATES PATENT OFFICE

2,081,819

AUTOMATIC LIGHTER CONSTRUCTION FOR GAS RANGES

Lester S. Kauffman, St. Louis, Mo., assignor to American Stove Company, St. Louis, Mo., a corporation of New Jersey

Application April 20, 1934, Serial No. 721,600

1 Claim. (Cl. 158—115)

This invention relates to certain improvements in automatic lighter construction for gas ranges and it pertains in part to a construction shown in a concurrent joint application Serial No. 526,538 of Isaac V. Brumbaugh, Douglas D. Burnside and Lester S. Kauffman, filed March 30, 1931, which has resulted in Patent No. 1,957,442 issued May 8, 1934, for improvements in Flash lighter construction for gas ranges.

One object of the present improvement is to provide an open top gas range with a plurality of burners located wholly in a horizontal plane below the open top of the range combined with a tray having its intermediate or central portion depressed below the upper ends of the burners, the tray having openings through which the burners extend, combined with a flash light construction composed of tubes located below the said tray and concealed by the tray having their outer open ends located adjacent the outer wall or walls of the burners and communicating with an opening or openings in their walls and a pilot light located below the said flash light tubes and supporting the said tubes.

A further object of the invention is to produce a flash light construction involving what is set forth in the above object and in which construction the pilot light is supported and in turn supports the flash light tubes and in which construction a pilot burner cap is supported by the tray independently of the flash tubes whereby the said burner tray is detachable independently of the flash light tubes and the said burners and leaving the said flash light tubes in their secured positions.

Further specific objects of the invention will appear from the following description of the parts defined in the foregoing objects.

In the accompanying drawings:

Figure 1 is a plan view of a flash light construction and its cooperating parts, part of the tray element being removed to fully disclose some of the elements beneath it.

Fig. 2 is a central transverse vertical section on the line 2—2 of Figure 1 looking in the direction indicated by arrow.

Fig. 3 is an enlarged vertical transverse section through the inner ends of the flash light tubes and adjacent parts of the said tray and showing the particular construction of said parts more clearly.

Fig. 4 is a section taken on the line 4—4 of Figure 1 showing the position of the flash light tubes and also a preferred construction of a positioning device carried by the under side of the tray.

Fig. 5 is a vertical section showing a modification in part of the present invention.

Referring now to the accompanying drawings it will be observed that the top *a* of the stove is in the form of a horizontal portion somewhat ring shape in plan view having its outer periphery *b* extending downward and located at its inner periphery with a suitable number of inwardly projecting lips *c*. What I term as a tray B has its upper and outer periphery *d* extending outward around its edge and adapted to rest on the plurality of said lips or projections *c*, the outwardly extending portion *d'* fitting in the inner edge of the ring portion *a*. As to this tray portion B particular attention is directed to the fact that it is depressed as shown at *e*. Said depressed portion *e* extends substantially from its outer edge as shown and it extends all around the said tray. In addition this tray portion has a plurality of openings *f* through which openings the burners C extend as shown. It will be seen also particularly from Figure 2 that the upper ends of the burners C are located some considerable distance below the upper and outer edge of the tray. This arrangement is for a specific purpose combined with the flash light tubes that will be pointed out presently. Fitting also in the rim portion *a* is a grate or grill portion *g* and this grill portion is likewise located a substantial distance above the tops of the burners C. The purpose of this grill *g* is to act as a support for the utensils placed upon it to be acted upon by the flames from the burners C.

The flash light tubes *h* are located beneath the tray B for a purpose that will be presently explained. It will be noted also that the peripheries of the openings *f* through which the burners extend are located below the gas or burners openings *i* of the burners so that the operation of the burners is not interfered with by the peripheries *f* of the walls of the openings which surround the projecting portions of the burners. The open outer ends *k* of the tubes *h* are located in line with auxiliary openings or nipples *l* which pass through the outer walls *m* of the burners while the inner ends of these tubes *h* are connected and supported independently of the said tray. The inner open ends *n* of the flash light tubes *h* are permanently connected to and supported by a downwardly extending member *o* which has its inner periphery *p* surrounding and supported by the upper portion of the pilot light *q*. This member *o* is clamped by a nut *r* which surrounds a

screw threaded portion of the said pilot and engages the inwardly extending portion *p* and clamps it between the said nut *r* and the under side of the pilot light proper. The object of this is to have these flash light tubes supported by the pilot light which is connected by means of a suitable tube *t* that has its outer end connected with a gas manifold or conveying member **5**.

These burners C are provided with extending gas and air mixing portions *v* with which a suitable nipple *w* communicates, the opposite ends of the nipples communicating with the gas conveying member *n*. Air is admitted to the mixing tube *v* and is controlled by the ordinary form of shutter *x*. From the above construction as shown in the drawings it will be understood that the burners C are annular in form and that secondary air passes through the central portion in the ordinary manner for supporting combustion of the gas issuing from their upper ends.

In this construction it is pointed out that the member *o* forms the lower portion of a housing for the pilot light *q*, the vertical walls of this member having air passages *y* for supporting combustion within this housing. Particular attention is directed to the fact that the upper portion of the pilot housing *z'* which is of inverted cup shape, is carried by the tray B and the vertical wall of this housing *z'* is provided with a plurality of passageways *l* for the products of combustion from the pilot light *q*.

The said burners C are provided with projecting supporting members **2** that rest on members **3** and interlock with said members **3** by means of a suitable projection **4**.

Suitable members *n* connect the gas manifold **5** with the mixing tubes **6** that extend from the said manifold to the burners C located at the opposite side of the top *a*, while *v* are the mixing tubes that extend from said gas manifold to the burners C at that side adjacent the manifold **5**. Suitable handles **7** for controlling the flow of gas to the respective burners are shown in Figures 1 and 2. Preferably a valve **8** is provided to regulate the amount of gas flowing to the said pilot light from the tube *t*.

Attention is also called to the functions of inverted U-shaped members **10** carried by the tray B. These U-shaped members detachably position and detachably hold the flash light tubes *h* in respect to the other parts of the construction and therefore provide the proper operation of the parts.

In Figure 5 I show a modification in part of the invention described herein. The parts modified relate to the tray and the burner. This modification relates to making the said tray B into two parts **11** and **12** instead of one part as shown in Figure 2. It will be understood of course that this construction in effect depresses the said tray B a substantial distance below the grate *g*. As here shown when making the tray in the two parts the part **12** has its lower edge **13** formed into an inwardly extending flange and preferably, though not necessarily, the edge of the part **11** is bent as shown at **14**. This construction however may be modified or changed so long as the tray is in a plane below the said grate. It will be observed that the tray B as constructed in Figure 5 has the burner opening **15** constructed substantially as it is in Figures 1 and 2. The burner C in this modified form will be provided with the lugs **9** of Figure 1, though they are not shown in Figure 5. The burner C is also slightly different from that shown in Figures 1 and 2. This difference consists in making the burner a somewhat different shape in cross section as shown in Figure 5, and in having its burner openings *i'* located as shown in said Figure 5 instead of as shown in Figure 2. The margin of the opening **15** in the tray has a surrounding depending flange **16** substantially as in Figure 2. Also in this modified form the top of the burner does not protrude through the opening **15** as shown in Figure 2.

From the foregoing construction it will be observed that the several parts described are arranged in their particular positions to produce a flash tube construction having its tubes so located that the flow of any material from a cooking utensil above to the open outer ends of the tubes is prevented; that the arrangement and construction of the several elements is such as to permit the removal of the tray B for any purpose whatever without interfering with the necessary positions of the flash light tubes in respect to the openings from the burner housings; that the upper part of the pilot burner housing is supported by the said tray whereby it is removable with the said tray without interfering in any manner with the relative positions of the pilot light and the inner ends of the flash tubes and without interfering in any manner with the relative positions of the outer ends of the flash light tubes in respect to the gas nipple or opening in the wall of the burners. All of these arrangements are found to be of extreme utility in the combination of a tray and the flash light tubes beneath it; that the spacers **9** carried by the burners C properly position the burners in the openings *f* to provide for the proper feeding of secondary air which surrounds the flames from the said burners and that the flash light tubes are prevented from being in a position which would prevent the gas mixture issuing from the ports *i* into the respective flash light tubes.

While I have shown and described the preferred form for carrying out the present improvement I desire it to be understood that variations may be made in the construction without departing from the spirit of the invention as defined in the attached claim. Certain variations may be made in the form and the manner of supporting the tray portion so long as the spirit of the invention is not departed from.

I am aware that various constructions of flash light devices have been made and have been patented, some of them working on the principle that gas from a burner travels laterally to a pilot light where it is lighted and flashes back to the burner to be lighted, and others of them are constructed so that on pushing a valve a flame or flames flash from this pilot light burner to the other burners from which gas is flowing and the gas is lighted by these flashes of flame. So far as I am aware however in none of these devices is there a construction which corresponds with that disclosed in this application, viz. the use of a tray made of a dimension that will fill in an annular horizontal upper portion and having a depressed portion provided with openings through which a burner housing projects and provided with openings located above the depressed tray and a flash tube or tubes located below this tray with all of the advantages which have been enumerated herein.

I claim:

In a gas stove the combination of an open top portion, a burner housing surrounded by said top portion, said burner housing located in a horizontal plane below the said top portion, the upper

portion of the burner housing provided with main gas passages, a flash light tube having both ends open, one open end of said tube located adjacent said burner housing in a horizontal plane below said main gas passages, said burner housing provided with a gas passage opposite said adjacent open end of said tube, a pilot light housing comprising co-operating upper and lower parts communicating with the other open end of said tube, a tray portion depressed below the first said gas passages but above said second mentioned gas passage, said depressed portion provided with an opening through which said burner housing projects, said tray portion supported independently of and removable independently of the lower part of the pilot light housing and said flash light tubes, said tray portion carrying the upper part of the pilot housing, whereby the parts operate as described.

LESTER S. KAUFFMAN.