Dec. 17, 1935. P. A. HENTSCHEL 2,024,359

DEFLECTOR FOR GAS STOVES AND THE LIKE

Filed Feb. 24, 1933 2 Sheets-Sheet 1

Fig. 1.

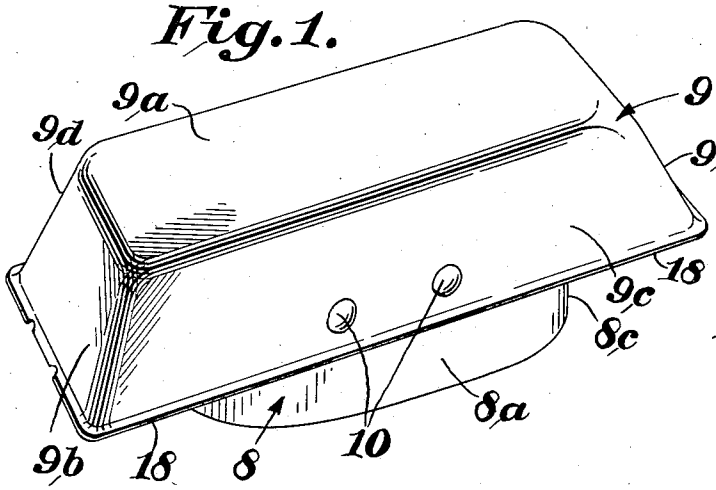


Fig. 5a.

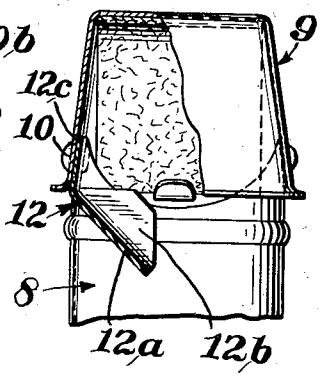


Fig. 2.

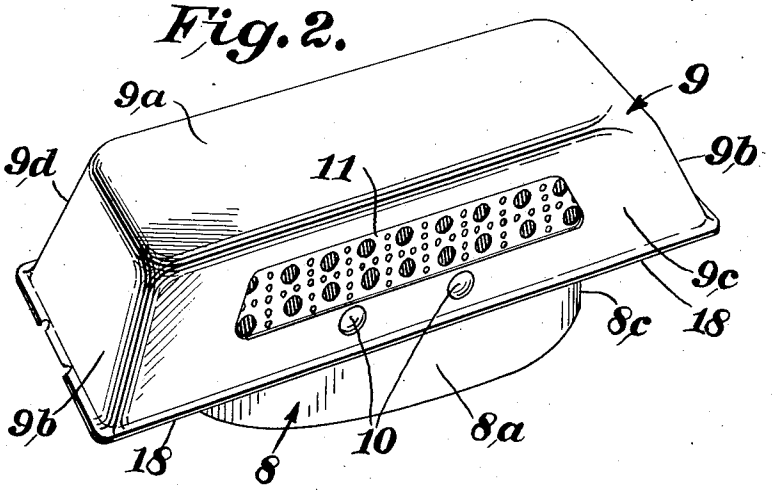
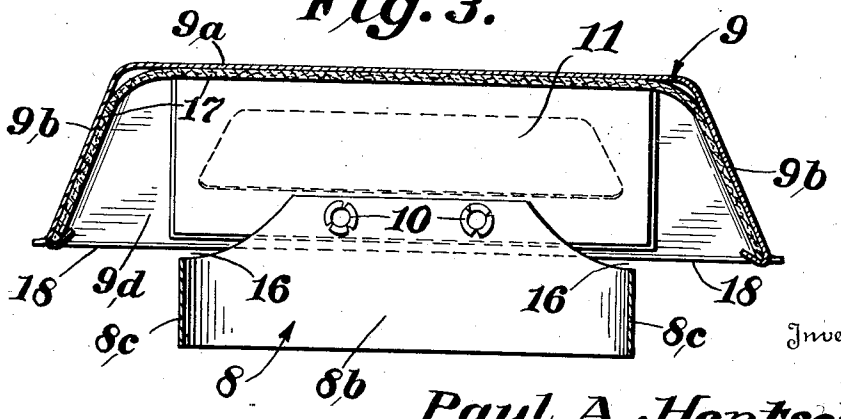


Fig. 3.



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Dec. 17, 1935. P. A. HENTSCHEL 2,024,359

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Filed Feb. 24, 1933 2 Sheets-Sheet 2

Fig. 4.

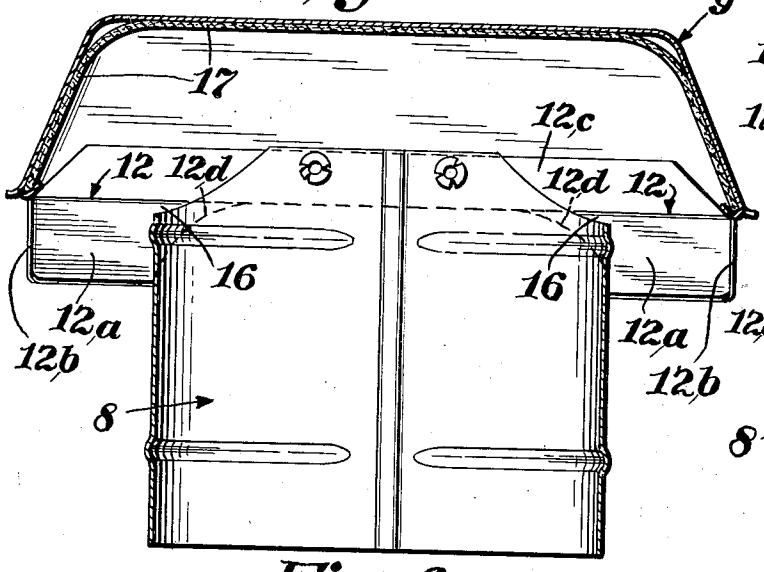


Fig. 5.

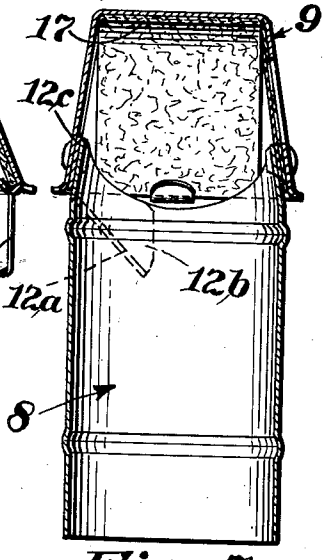


Fig. 6.

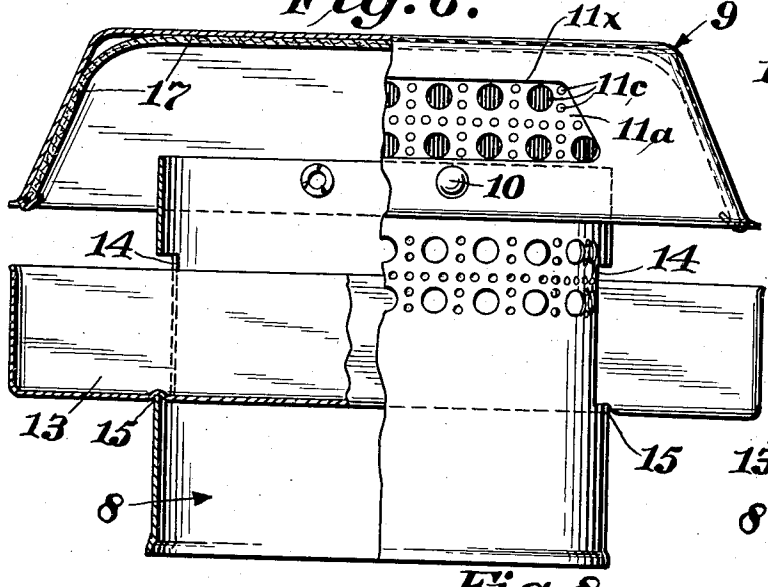


Fig. 7.

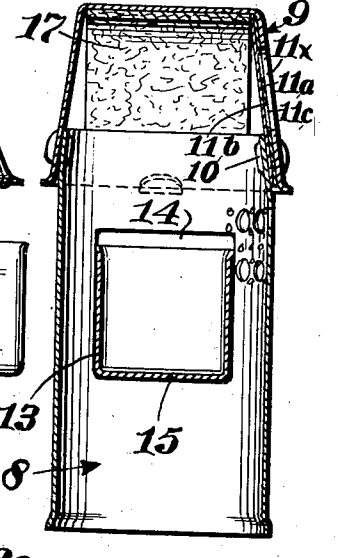
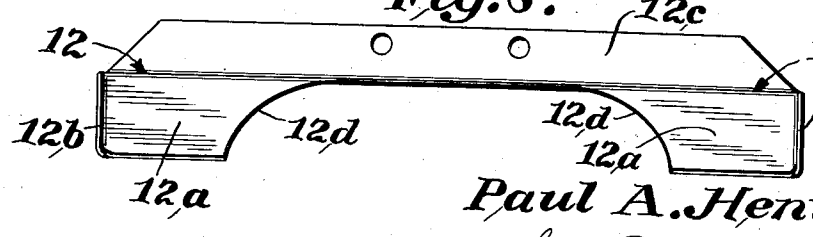


Fig. 8.



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Patented Dec. 17, 1935 2,024,359

UNITED STATES PATENT OFFICE

2,024,359

DEFLECTOR FOR GAS STOVES AND THE LIKE

Paul A. Hentschel, Baltimore, Md., assignor to The Ventflector Company, Inc., Baltimore, Md., a corporation

Application February 24, 1933, Serial No. 658,464

15 Claims. (Cl. 126—299)

The invention concerns deflectors for use on gas stoves of the general type in which a hood surmounts a chimney which is adapted to be slipped onto the collar surrounding the outlet opening at the top wall of the gas stove. An object of the invention is to provide a construction in which all the fumes when being discharged are directed downwardly from the end portions of the hood which reach beyond the chimney.

A further object is to provide means whereby the fumes issuing downwardly from the overhanging ends of the hood will be again deflected in a general forward direction after leaving the hood proper. A further object is to provide means for holding a body of water in the path of the fumes which will humidify and cool the gases, hasten condensation of the vapors, the precipitation of grease, catch and retain soot or solids, and thus prevent said elements from being discharged into the atmosphere. This application is a continuation in part of the applicant's application for patent Serial No. 456,249, filed May 27, 1930, for Flue deflectors for gas stoves.

In the drawings:

Figure 1 is a perspective view of one form of the invention looking from the front.

Fig. 2 is a perspective view of a modified form of the invention looking from the front.

Fig. 3 is a longitudinal vertical section of the hood looking from the rear.

Fig. 4 is a modification showing a longitudinal section of the hood, looking towards the rear.

Fig. 5 is a vertical sectional view from the front to rear of the form of Fig. 4.

Fig. 5*a* is a fragmental end elevation, partly in section of Fig. 4.

Fig. 6 is a modification showing a water containing vessel mounted beneath the hood.

Fig. 7 is a transverse vertical sectional view of Fig. 6.

Fig. 8 is a detail view of a deflector element.

In these drawings **8** indicates a sheet metal chimney adapted to be slipped over the collar surrounding the outlet for the fumes, which outlet is located in the top plate of the stove. This chimney is of elongated form in cross section, having front and rear walls **8***a*, **8***b*, which are substantially parallel with each other, and are connected by continuous rounded end wall portions **8***c*. Surmounting this chimney is a hood **9** formed of a one piece sheet metal stamping. This hood has a horizontal top wall **9***a*, end walls **9***b* inclining downwardly and outwardly, and front and rear depending walls **9***c*, **9***d*, which walls diverge downwardly and outwardly in relation to each other. The hood is connected with the chimney by fastening devices or rivets **10** passing through the front and rear walls of said parts. The hood is considerably longer than the major diameter of the chimney so that the end portions of the hood extend a substantial distance beyond the ends of the chimney. This construction provides at each end of the overhanging portions of the hood a downwardly directed discharge passage **18** for the fumes. The cross sectional area of these discharge openings **18** is calculated to take care of the greatest volume of fumes at maximum operation of the stove. The front, rear, top and end walls of the hood are imperforate, hence all the fumes are discharged downwardly in two streams, one at each end of the hood beyond the ends of the chimney. No discharge of fumes takes place through the front wall of the hood. The back wall of the hood is also imperforate so that there will be no discharge of fumes against the wall of the kitchen.

In Fig. 2 a false or dummy grating is shown at **11**. This presents the appearance of an open grating but actually no discharge of fumes takes place at this point because this wall is imperforate.

As pointed out above the fumes are divided into two streams and issue at the lower openings of the end extensions of the hood beyond the ends of the chimney. These segregated streams of the discharge are susceptible of further control, and for this purpose supplemental deflecting means are provided to turn or direct the stream of fumes forwardly. These supplemental deflectors consist of flanges **12** located below the end portions of the hood. They are held in any suitable manner so as to extend downwardly and forwardly from the back wall of the hood so that the downward moving stream of fumes will be directed forwardly.

These deflectors **12** may be formed in one piece. They are shown in detail in Fig. 8. They provide the portions **12***a* inclining downwardly and forwardly, the end walls **12***b*, which extend vertically, and, when in place, substantially in line with the lower edges of the end walls of the hood, and there is a back strip, or portion, **12***c* which connects the portions **12***a*. This back portion, or strip, when the parts of the appliance are assembled lies against the inner side of the back wall of the hood along the lower edge portion thereof, and between said back wall

and the chimney, so that the same rivets which hold the hood and chimney together also hold this deflector member in place. The said member is curved at 12*d* to fit the curved end portion of the chimney.

A water container 13 is associated with the appliance. This consists of a vessel of elongated form composed of bottom, sides and end walls. This water container, or tray, is open at its top. It is so located that the gases passing through the appliance will be humidified and cooled thus hastening condensation of the grease vapors. The gases pass over the water in this tray in that portion in line vertically with the stack, and also when said gases are deflected downwardly at the end portions of the hood.

This water receptacle, or fume arresting tray, is conveniently supported by the chimney, for which purpose the end walls of the chimney are provided with openings for receiving the receptacle. This receptacle rests upon the edges of the chimney defining the lower margin of the said openings. The tray ends extend beyond the end walls of the chimney and underlie the downwardly directed discharge openings of the overhanging end portions of the hood. The tray may be retained in place by any suitable projecting portion 15 of the edge of the opening 14 extending up into a notch, or recess, of the bottom of the receptacle. This receptacle, while securely held against accidental displacement, readily can be removed when desired by lifting it slightly to disengage it from the projection, and then it can be withdrawn from its seat in the chimney.

In order that the discharge passage leading from the chimney may be of adequate size, the end walls of the chimney are cut down at 16 to about the level of the open under side of the hood. Thus no obstruction is offered at these points to the free flow of the fumes. A lining of asbestos is used at 17 for the inner side of the hood.

It will be observed that the straight, unbroken lower edges of the front and back walls of the elongated hood, or inverted, trough shaped member, are secured to the straight, unbroken upper edges of the front and back walls of the pipe section, collar, or chimney 8, and form substantially flush continuations, or extensions, of the said walls.

The hood, Fig. 2, has a dummy grid 11 at the opening 11*x* in its front wall formed by a plate 11*a* perforated at 11*c*, and an imperforate plate 11*b*, said plates being held by the rivets 10.

I claim:

1. The combination with a chimney forming a continuation of the fume outlet of a gas stove which is considerably longer in a plane parallel to the face of the stove than in a direction at right angles to said plane, of means for preventing the discharge from the chimney in advance thereof and effecting a discharge downwardly at opposite ends of the chimney, comprising a hood of inverted trough shape considerably longer than wide surmounting the chimney and having its ends extending beyond the ends of the chimney, the hood having imperforate top ends and side walls, the intermediate portions of the front and back walls of the hood being secured against corresponding portions of the contiguous walls of the chimney at the top thereof, substantially as described.

2. A deflector of the class described comprising a chimney, a hood at the top thereof having extensions laterally beyond the chimney and presenting openings at their lower sides for the unobstructed discharge of the fumes directly to the atmosphere, and deflecting means spaced from and underlying said openings leaving them free for directing forwardly the fumes issuing through said bottom openings.

3. A deflector according to claim 2 in which the said means for directing the fumes forwardly consist of flanges extending forwardly from the rear wall portions of the hood.

4. A device according to claim 2 in which the means for directing the fumes forwardly consist of flanges extending downwardly and forwardly from the back wall of the hood.

5. An appliance according to claim 2 in which said means for directing the fumes forwardly comprise flanges extending forwardly from the back wall and flanges extending substantially vertically at the ends of the forwardly extending flanges.

6. An appliance according to claim 2 in which the means for directing the gases forwardly consists of members extending under the downwardly opening extensions of the hood beyond the chimney, said members being connected together by a portion held by the rivets which secure the hood to the chimney.

7. A deflector for the fumes of gas stoves comprising a chimney elongated in cross section, and a hood surmounting said chimney and having its end portions extending laterally beyond the end walls of the chimney with discharge openings for the fumes only at the lower side of said extensions, the end walls of the chimney at their upper parts being cut down for the free escape of the gases, the central portion of the front and rear walls of the chimney being of substantially equal height and both reaching to a higher level than the cut down end portions, the front wall of the hood being attached to the front wall of the chimney, and the rear wall of the hood being attached to the rear wall of the chimney, said cut down end walls providing spaces for the flow of the gases to only the downwardly directed discharge opening at the overhanging ends of the hood.

8. A deflector according to claim 7 in which the front and rear walls of the chimney extend up within the hood and furnish a support therefor, and in which the top edges of the end walls where they are cut down lie substantially in the same horizontal plane with the lower edges of the hood.

9. A deflector for gas stoves having a chimney of elongated cross sectional form to be attached to the stove, a hood surmounting said chimney, and having a top wall and downwardly flaring end and front and rear walls, said hood having lateral extensions beyond the ends of the chimney, the said extensions being open below for the discharge of the flue gases, deflectors below the discharge openings in the extensions, the said chimney being cut down at its end portions and having its front and rear wall portions extending up into the hood and attached thereto, substantially as described.

10. A protector for flue outlets of gas stoves comprising a pipe section adapted for connection to the flue ring, and an elongated body of inverted trough shape surmounting the pipe section and having a closed top, and having its ends extending laterally beyond the opposite sides of said pipe section and constructed to provide therewith downwardly facing laterally

disposed outlet openings, and straight unbroken lower edges of the front and back walls of said elongated trough shaped body being secured to straight unbroken upper edges of the front and back walls of the said pipe section and forming substantially flush continuations or extensions of the said walls.

11. A protector for flue outlets of gas stoves comprising a pipe section of elongated cross section having substantially parallel front and back walls and curved side or end walls, and adapted for connection to the flue ring, and an elongated body of inverted trough shape surmounting the pipe section and having a closed top and having its ends extending laterally beyond the opposite curved sides of said pipe section and constructed to provide therewith downwardly facing laterally disposed outlet openings, and straight unbroken lower edges of the front and back walls of said elongated trough shaped body being secured to straight unbroken upper edges of the front and back walls of the said pipe section and forming substantially flush continuations or extensions of the said walls.

12. A protector for flue outlets of gas stoves comprising a pipe section adapted for connection to the flue ring, and an elongated body of inverted trough shape surmounting the pipe section and having a closed top and having its ends extending laterally beyond the opposite sides of said pipe section and constructed to provide therewith downwardly facing laterally disposed outlet openings, the lower edges of the front and back walls of said elongated trough shaped body being joined respectively to the upper edges of the front and back walls of said pipe section in a substantially flush union.

13. In combination, a collar relatively very narrow from front to rear and a hood symmetrically surmounting the same of substantially the same width as the collar from front to rear and attached at its front and rear walls to the corresponding walls of the collar, and materially longer from end to end than the collar, and providing large outlet openings between its ends and the adjacent walls of the collar.

14. The combination with a chimney member of a sheet metal hood member of inverted trough shape symmetrically surmounting the chimney member and considerably longer than the longer axis of the chimney member, whereby the end portions of the hood are separated considerable distances from the contiguous portions of the chimney for providing large, free, exit openings for discharging downwardly material entering the hood, marginal portions of the front and rear walls of the hood being substantially coextensive with portions of the chimney, and contiguous thereto to form closures at said contiguous front and rear walls, leaving discharge openings only at the lower parts of the spaced apart end portions of the hood.

15. The combination with a chimney adapted to form a continuation of the fume outlet of a gas stove of an inverted, elongated, trough-shaped hood surmounting the same and symmetrically arranged in reference thereto, means for rigidly securing the front and rear walls of said hood against the adjacent front and rear walls of the chimney, said rigid connections forming closures against the passage of gas at these points, and the end walls of the hood being spaced sufficient distances from the adjacent parts of the chimney to provide spaced apart exit openings through the bottom of the hood substantially equal in area to the cross-sectional area of the chimney.

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