Nov. 3, 1925. 1,559,909

C. A. PAUL

STOVE ATTACHMENT FOR AUTOMOBILES

Filed July 18, 1923 2 Sheets-Sheet 1

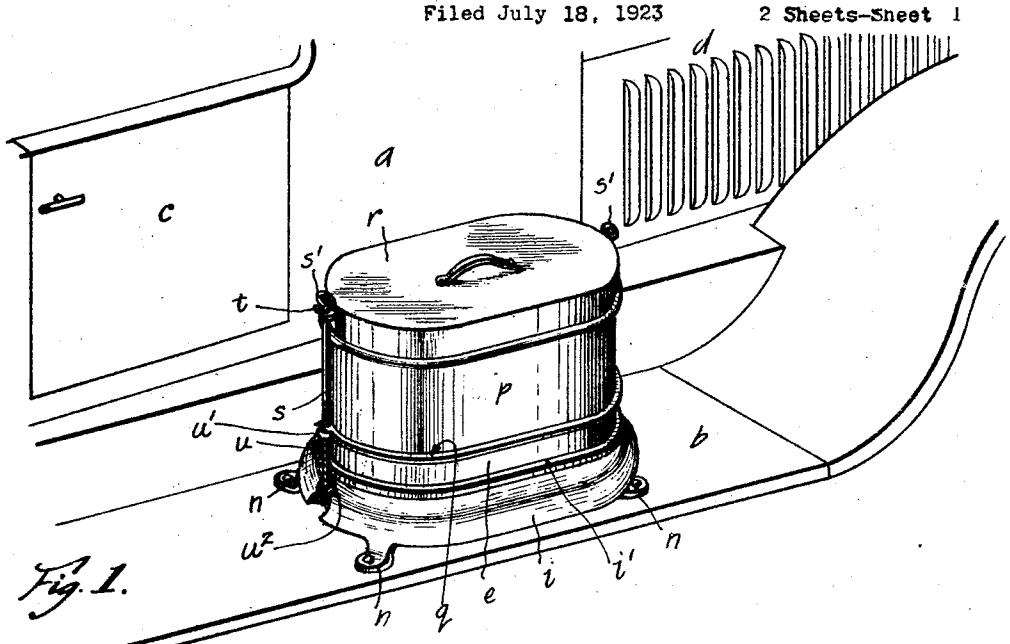


Fig. 1.

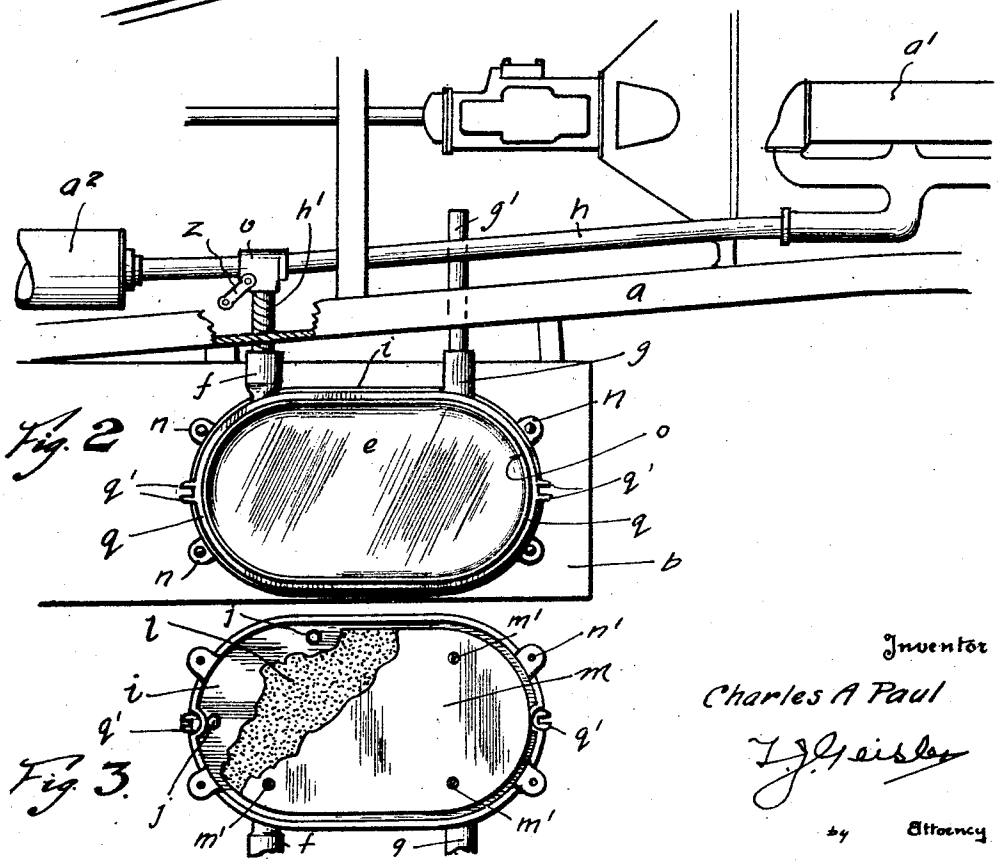


Fig. 2

Fig. 3.

Inventor

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by Attorney

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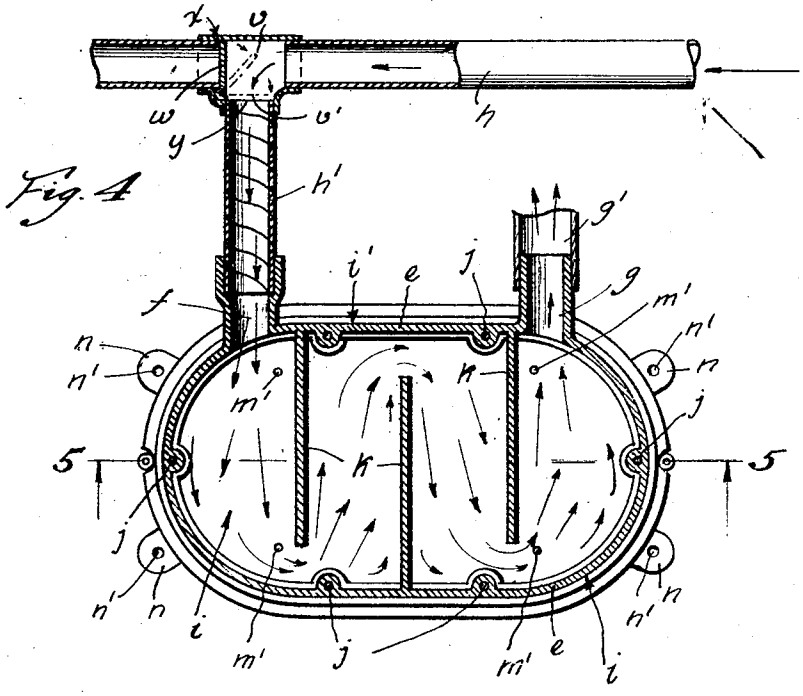


Fig. 4

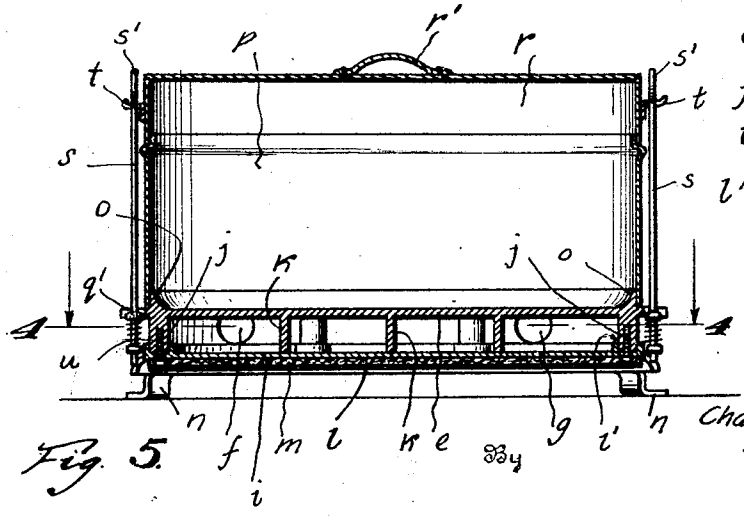


Fig. 5

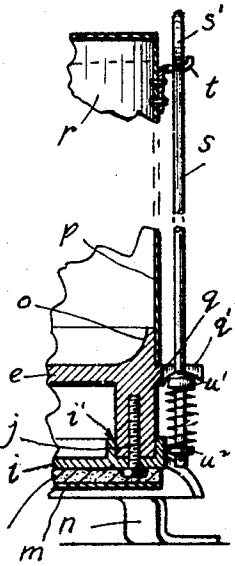


Fig. 6.

Inventor

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Patented Nov. 3, 1925. 1,559,909

UNITED STATES PATENT OFFICE.

CHARLES AUGUSTA PAUL, OF PORTLAND, OREGON, ASSIGNOR OF ONE-THIRD TO JOHNSTON WILSON, OF PORTLAND, OREGON.

STOVE ATTACHMENT FOR AUTOMOBILES.

Application filed July 18, 1923. Serial No. 652,322.

To all whom it may concern:

Be it known that I, CHARLES A. PAUL, a citizen of the United States, and resident of Portland, county of Multnomah, State of Oregon, have invented a certain new and useful Improvement in Stove Attachments for Automobiles, of which the following is a specification.

The object of my invention is to provide a stove which may be carried about as an attachment for an automobile, for example being fastened on the running-board of the latter, which will be heated by the exhaust gases of the motor of the automobile.

A further object is to so construct this stove that it may be used as an open plate to broil or fry, and also that it may be used as an oven.

A still further object of my invention is to provide a stove which may be readily attached to the exhaust pipe of an automobile and in combination therewith to provide means by which the flow of the exhaust gases through the exhaust pipe may be controlled, so that the same may be deflected in whole or in part into the stove.

A still further object of my invention is to construct the stove so that the exhaust gases will be retained therein for as long a period as possible without unduly retarding their rate of flow therethrough, and to provide means for this purpose which at the same time will adapt the stove to serve as a muffler and in this way eliminate any increase in back pressure to the exhaust of the motor relatively to the back pressure of an ordinary muffler, as used at the present time.

A still further object of my invention is to provide a stove which is inexpensive to manufacture and easy to assemble being made with a demountable body section which when removed provides a flat heating plate which is suitable for frying and broiling and when the demountable body section is placed on the heating plate it constitutes therewith an oven which incidentally provides an enclosure for the food protecting the same from the wind and dust while it is being cooked and also serves, when disconnected from the exhaust pipe, as a storing place for food while on a journey.

I attain the foregoing objects in an automobile attachment for automobiles comprising a hollow base adapted to be supported on the automobile running board having an inlet at one end and connected with the exhaust pipe of the automobile and provided with an outlet at the opposite end. I provide a flexible conduit which connects the exhaust pipe with said inlet and a valve which controls the flow of the exhaust gases through said exhaust pipe and which is adjustable to deflect the same in whole or in part into said hollow base. The base is provided with transverse baffles spaced alternately from the opposite sides of the base which form a circuitous passageway of substantially uniform cross section from said inlet to said outlet, and I also provide an open top body section demountable on the base and provide a cover which seats on this body which has spring controlled locking means for fastening the cover and therewith the body, to said base.

I illustrate the construction and operation of my device in the accompanying drawings, in which:

Fig. 1 is a perspective view of my stove carried on the running board of an automobile;

Fig. 2 is a plan view of the base of my improved stove with the body removed and shows diagrammatically the connection with the exhaust pipe of the automobile;

Fig. 3 is a view of the under side of my improved stove with a portion of the sheeting broken away to show the heat insulating material contained thereunder;

Fig. 4 is a plan section of my improved stove connected with a section to the exhaust pipe of an automobile and the arrows in this figure show the approximate path of the gases therethrough. This section is taken approximately on the line 4—4 of Fig. 5;

Fig. 5 is a vertical section taken approximately on the line 5—5 of Fig. 4 with the body in place and held by a spring controlled locking device; and

Fig. 6 is an enlarged sectional view showing details of construction.

My improved automobile stove is adapted for use on any standard automobile as *a*, and is preferably carried on the forward part of the running board *b*. The stove placed in this position will permit the full opening of the front door *c* and also easy access under the hood *d*.

My stove is made up with an integral casting e which forms the upper portion of the base and which is provided with an inlet duct f and an outlet duct g. The inlet duct is connected with the exhaust pipe h of the automobile, which connects the motor a' with the muffler a^2, by a section of tube h' which is preferably flexible so as to pass under the mechanism without necessitating its rearrangement. The exhaust duct has a short section of pipe g' which leads the gases away from the stove and preferably downwardly, so that it will not affect the mechanism of the automobile.

I provide a lower base i on which the casting e seats which has a channel portion or peripheral groove i' around its edge which is substantially the same width as the thickness of the walls of the casting e. The walls of the casting e thus can seat inside of this channel and form a tight seal for the stove. Screws j fasten the casting e to the lower base i and hold the side walls in the channel. The casting e is provided with a number of baffles k which are spaced from the side walls at alternate ends. These baffles are substantially parallel and thus the gases in passing the ends of the baffles must travel along a circuitous path.

The spacing between the baffle plates and the ends of the baffles and the side walls is substantially equal, and thus the passageway for the gases is substantially uniform in cross section throughout its entire length. The pulsating effect of the separate explosions of the exhaust, therefore, will be expanded gradually and thus the sound of the explosion is materially decreased. The stove thus performs the same function as the muffler, which can be eliminated from the end of the section of pipe g'.

The passing of the gases through the stove in this manner causes them to give up a great portion of its heat content and this heat given off to the stove, of course, is utilized in cooking food. The upper surface of the lower base i fits tightly against the transverse baffle k so that the stove is enclosed on both sides of the baffles and thus all of the gas is caused to pass along the circuitous path, in the manner previously described.

I preferably place a sheet of asbestos l or other similar heat insulating material on the under surface of the base i, so that the heat given off from the stove will not radiate downwardly and thus injure the running board or other portion of the car to which the stove is fastened. The asbestos or other heat insulating material is preferably held in place by a section of metal sheeting, which is fastened to the base i by studs m'.

The base is provided with legs n which space the same from the running board and the legs are provided with holes n' through which bolts or screws may be placed so as to hold the stove firmly in position. The upper surface of the main casting e is substantially flat and has a continuous upstanding flange o around its edge so that the surface of the stove is substantially a basin like surface, which will thus hold the food, and will prevent it from falling off the stove in case the automobile, and therefore the stove, is standing at a slight angle.

I provide a substantially dust proof covering body p which fits on top of the casting e and which seats on the outside of the casting e as shown in Fig. 4 and rests upon the ledge q. The body p is provided with a removable cover r which has a handle r' for readily removing the same. I also provide locking rods s which are held in operative position between the bifurcated lugs q' on the main casting e and the similar registering lugs t on the cover p. The locking rods s are provided with springs u which bear against the slidable nut u' on one end and the flange u^2 on the other, which is a part of the rod u'. When the locking rods are placed in the bifurcated lug t it is necessary to compress the spring u so that the lower end of the rod can be caught under the concave bifurcated lug q' on the base e. The slidable nut u', the upper face of which is convex, is then caught under the lug q' and the handle s' of the locking rod s is caught over the lug t on the cover and thus holds the cover tightly in position.

I provide a valve v in the exhaust pipe h which has a side opening v' which opens into the flexible section of tube h'. This has a pivoted gate w inside, which controls the passage of the gases through the exhaust pipe and to the stove. In one position, as shown in Fig. 4, this gate w seats against the end of one section of the exhaust pipe h, as at x, and in its other position, as shown in dotted line, it seats against the end of the pipe h' as at y. This gate is controlled by a handle z, so that it may cause all of the gas to pass through the stove or it may prevent any of the gas from passing through, or it may be at any point in between the complete closure or opening of the pipe.

This gate thus serves as a means for regulating the heat of the stove because it regulates the amount of gases which are permitted to pass through the stove. If only a small portion of the gases are permitted to pass through the stove the heat content will not be very great, and therefore, the stove will not be heated to a very high degree. If all of the gases, however, are permitted to pass through the stove the resultant heat will be increased proportionately.

I claim:

1. A stove to be heated by the exhaust gases of an engine, comprising an integral

casting including a top plate having a depending edge wall, and baffles extending from the top plate for the full height of the edge wall and alternately projecting from and terminating short of opposing portions of such edge wall, a bottom plate having an edge channel to snugly receive the edge wall of the top plate, and means to secure the bottom plate to said edge wall, said bottom plate when in place directly contacting with the lower edges of the baffles to thereby define a tortuous passage in the space between the top and bottom plates, said passage having an inlet and outlet at the respective ends thereof.

2. A stove to be heated by the exhaust gases of an engine, comprising an integral casting including an imperforate top plate having a depending edge wall and an upstanding edge flange to form a basin-like surface with the top plate, baffles depending from the top plate and extending from the edge wall, and a bottom plate removably secured in sealing relation with the free edge of the depending edge wall of the top plate to form with the baffles a tortuous exhaust gas passage within said edge wall and between the top and bottom plates, the edge wall being formed with openings at the respective ends of such passage to provide for the inlet and outlet of the exhaust gases.

3. A stove to be heated by the exhaust gases of an engine, comprising an integral casting including an imperforate top plate having a depending edge wall, and an upstanding flange at the edge of the top plate, with the inner surface of the flange merging into the surface of the top plate, said top plate being formed with a ledge immediately beyond said upstanding flange, baffles secured to the top plate and to the edge wall, a removable bottom plate secured to the edge wall to define with the baffles a tortuous exhaust gas passage within the edge wall and between the top and bottom plates, and a cover removably seated on said ledge and bearing against the outer surface of the upstanding flange of the top plate.

CHARLES AUGUSTA PAUL.