

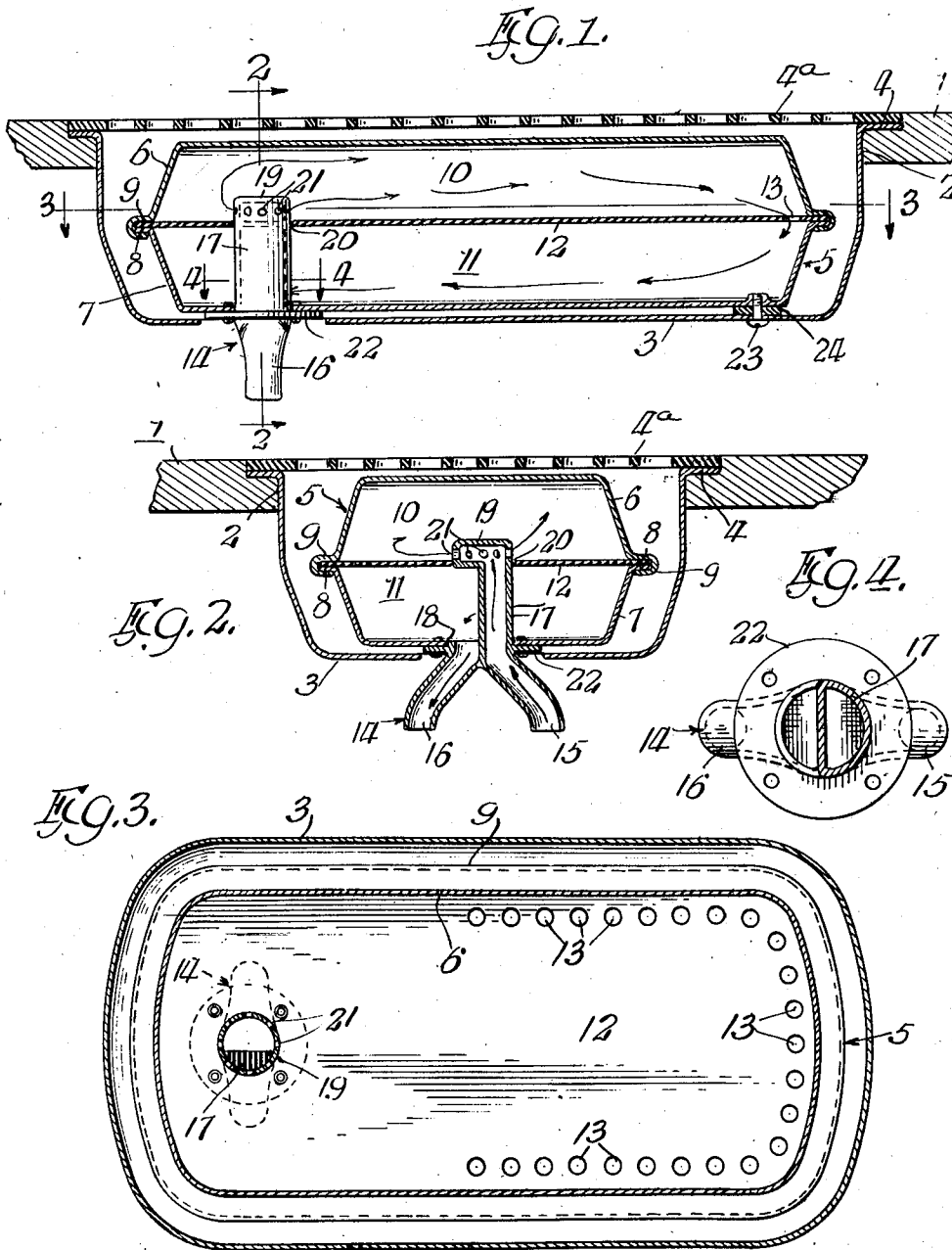
Dec. 1, 1925.

1,563,402

E. RYDER

MOTOR CAR HEATER

Filed March 13, 1924



Inventor
Elmer Ryder
by *Agnes Curran* Atty.

UNITED STATES PATENT OFFICE.

ELMER RYDER, OF BERWYN, ILLINOIS.

MOTOR-CAR HEATER.

Application filed March 13, 1924. Serial No. 699,079.

To all whom it may concern:

Be it known that I, ELMER RYDER, a citizen of the United States, residing at Berwyn, in the county of Cook and State of Illinois, have invented new and useful Improvements in Motor-Car Heaters, of which the following is a specification.

This invention relates to heaters for automobiles and other motor vehicles and more particularly to heaters of the flush type, that is those set in the floor of the car and heated by running the exhaust gases through hollow casings.

One object of my invention is to stamp the heater casings from sheet metal so that expensive castings, which require machining as heretofore, are avoided.

Another object of my invention is to make the heater casings in sections and connect them together where joined by crimp-like seams.

A further object of my invention is to combine in a single fitting the inlet and outlet for the exhaust gases, and moreover construct the inlet part of the fitting that direct impact of the incoming gas against the sheet metal heater is avoided to prevent rumbling.

Other and further objects of my invention will appear from the following specification taken in connection with the accompanying drawings, in which—

Fig. 1 is a vertical longitudinal sectional view taken through a heater assembly of my invention;

Fig. 2 is a transverse vertical sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a horizontal sectional view taken on line 3—3 of Fig. 1; and

Fig. 4 is a horizontal sectional view on line 4—4 of Fig. 1.

In the drawings, 1 indicates the floor of an automobile, cut out to provide a rectangular opening 2 to receive the heater assembly of my invention. This device comprises a metal pan 3 having a marginal flange 4 secured to the floor 1 about the opening 2. Extending over the top of the pan 3 is a register plate 4^a having its edges resting on the flange 4, as shown, and secured in place in any suitable manner.

Located in the pan 3 is a heater casing 5 stamped from sheet metal and consisting of upper and lower sections 6, 7 secured together. Each section, as shown, forms half of the casing and the lower section 7 has an

outwardly projecting flange 8 about its upper margin. The upper section 6 has a flange 9 seating on the flange 8 and turned and clamped about the same to secure the sections together. The joint is made gas tight by crimping or clamping the flanges together.

The casing 5 is divided into upper and lower compartments or chambers 10, 11 by a horizontal partition wall 12. The margin of this wall extends to the flanges 8, 9 and is clamped between them. As shown in Fig. 3, the partition wall 12 is provided with a plurality of holes or apertures 13, 13 extending in a row about half way around one end of the same.

At the opposite end of the casing 5 is a fitting 14, preferably a casting and made to have a gas inlet extension 15 and a gas outlet extension 16. These extensions are below the bottom walls of the casting and pan and are connected by flexible metal tubing with the exhaust pipe of the car when completely installed.

The inlet extension 15 continues into a tubular section 17, which extends upward across the lower chamber 11 through a hole 18 in the bottom wall of the casing 5. This section 17 terminates at its upper end into a drum-like portion 19, which drum has a closed end and projects into the upper chamber 10 through a hole 20 in the partition wall 12, as shown in Fig. 2. The drum has a plurality of holes 21 in its side wall to discharge exhaust gases into said upper compartment 10. By discharging in this way, the gases are not directed into immediate and abrupt contact with the relatively thin top wall of the heater casing, thus avoiding rumbling.

The drum 19 practically fills the hole 20, so the exhaust gases must pass to the lower chamber 11 through the holes 13 in the partition wall 12. The outlet from this lower chamber is through the extension 16, as shown in Fig. 2.

The fitting 14 is cast with a circular flange 22 to be secured to the bottom of the heater casing 5 over the hole 18. The pipe extension 17 is substantially semicircular in cross-section, with its flat wall dividing the passages 15 and 16 at the flange 22, as shown in Figs. 2 and 4. By removing the fitting 14, the heater casing 5 may be cleaned on its removal from the pan 3.

The casing 5 may be secured in the pan 3

in any suitable way, as by screws 23 in Fig. 1, with an asbestos gasket 24 interposed between the pan and casing. The structure shown and described may be variously changed and modified without departing from the spirit and scope of my invention.

I claim as my invention:

1. An automobile heater comprising a hollow heating chamber, said chamber being formed of two sheet metal sections, one of said sections having a marginal extension bent over and clamped against a marginal extension of the other section to secure the two sections together, a partition plate having its marginal portions secured between the marginal portions of the two sections and spaced from the top and bottom walls of the heating chamber to divide said chamber into two compartments, an exhaust inlet communicating with one of said compartments, an outlet communicating with the other compartment, and means in the said partition plate permitting communication between the two compartments.

2. A motor vehicle heater, comprising a hollow casing of sheet metal, a sheet metal partition wall dividing the casing into upper and lower chambers communicating by holes in the partition wall, and a combined inlet and outlet fitting applied to said casing and having its outlet section opening into the lower chamber and its inlet sec-

tion opening into the upper chamber by extending through the lower chamber and said partition wall.

3. A motor vehicle heater, comprising a hollow casing of sheet metal, a sheet metal partition wall dividing the casing into upper and lower chambers communicating by a row of holes around one end of the partition wall, and a combined inlet and outlet fitting applied to the opposite end of the casing and having its outlet section opening into the lower chamber and its inlet section opening into the upper chamber by extending through the lower chamber and said partition wall.

4. A motor vehicle heater, comprising a hollow casing, a horizontal partition wall dividing the casing into upper and lower chambers communicating by holes in the partition wall, and a combined inlet and outlet fitting applied to said casing with its outlet section opening into the lower chamber and its inlet section extending through the lower chamber and said partition wall and opening into the upper chamber through a drum like portion having discharge openings in the side wall thereof.

In testimony that I claim the foregoing as my invention, I affix my signature this 12th day of March, 1924.

ELMER RYDER.