M. ZIEGLER.

AUTOMOBILE RADIATOR COVER.

APPLICATION FILED DEC. 12, 1919.

1,375,198. **Patented Apr. 19, 1921.**

2 SHEETS—SHEET 1.

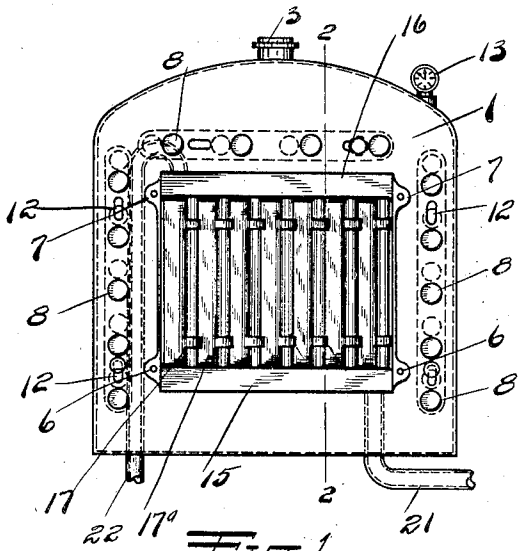


Fig-1

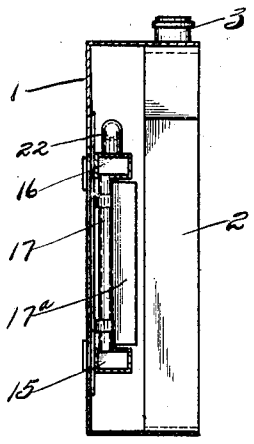


Fig-2

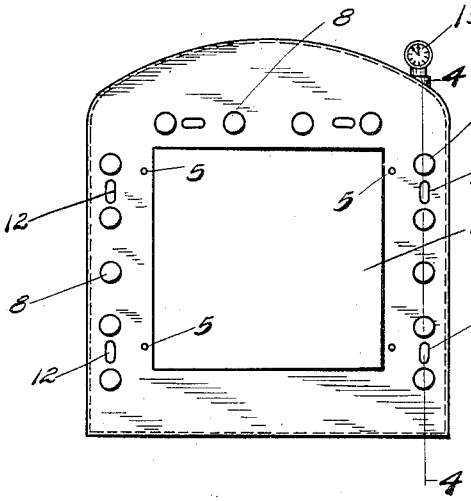


Fig-3

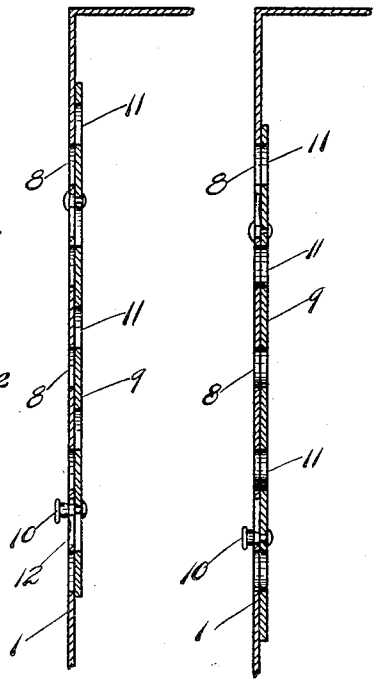


Fig-4

Fig-5

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2 SHEETS—SHEET 2.

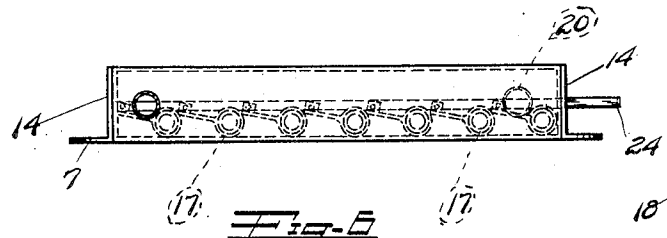


Fig-5

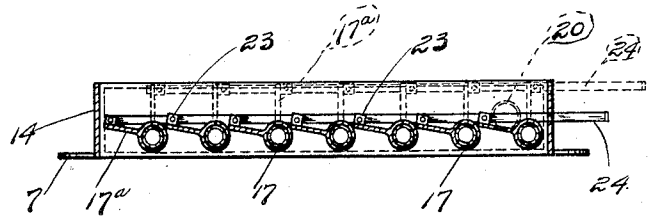


Fig-7

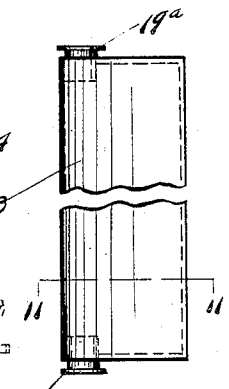


Fig-10

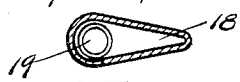


Fig-11

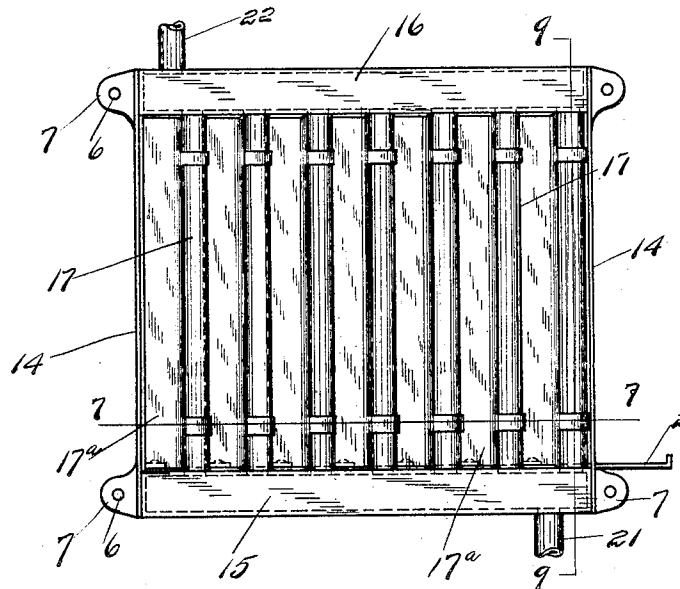


Fig-8

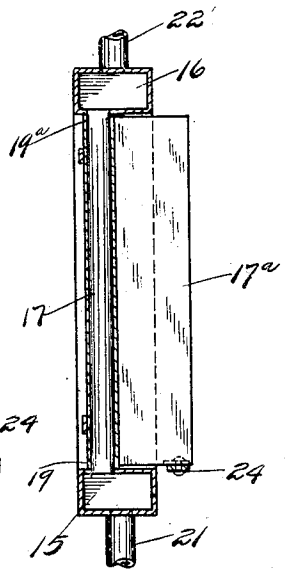


Fig-9

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UNITED STATES PATENT OFFICE.

MICHAEL ZIEGLER, OF BAY CITY, MICHIGAN.

AUTOMOBILE RADIATOR-COVER.

1,375,198. Specification of Letters Patent. Patented Apr. 19, 1921.

Continuation of application Serial No. 282,815, filed March 15, 1919. This application filed December 12, 1919. Serial No. 344,453.

To all whom it may concern:

Be it known that I, MICHAEL ZIEGLER, a citizen of the United States of America, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Automobile Radiator-Cover, of which the following is a specification.

This invention relates to detachable covers for radiators of automobiles and constitutes a continuation of application Serial No. 282,815, filed March 15th, 1919, and entitled Automobile radiator hoods.

One object of the invention is to provide a detachable radiator cover having a plurality of dampers for regulating the supply of air striking the radiator, and a thermometer attachment for registering the temperature of the air in the space between the detachable cover and the radiator.

A still further object is to provide a radiator cover so that the shutter arrangement can be used either as a heating damper, or as an ordinary air deflector, and which can be detachably secured in place in the front of the machine by use of but four bolts or screws.

Another object of the invention is to provide a number of hand operated dampers which can be operated or closed to further control the supply of air admitted to the radiator.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Figure 1 is a front view showing the heating shutters in place in the front of the machine.

Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1.

Fig. 3 is a front view of the radiator cover proper showing the shutters removed therefrom.

Fig. 4 is an enlarged vertical section taken on the line 4—4 of Fig. 3 and showing the hand operated dampers in closed position.

Fig. 5 is another vertical section taken on the same line and showing the dampers in open position.

Fig. 6 is a top plan view of the heating shutters, and

Fig. 7 is a section thereof taken on the line 7—7 of Fig. 8, and showing the shutters in two different positions.

Fig. 8 is a front enlarged view of the heating shutters, and

Fig. 9 is a section thereof taken on the line 9—9 of Fig. 8.

Fig. 10 shows an alternate form of heating shutter.

Fig. 11 is a section thereof taken on the line 11—11 of Fig. 10.

In the annexed drawings in which I have shown the preferred embodiment of my invention, I have indicated the cover proper by the numeral 1, and which comprises a preferably sheet metal casing formed to fit the radiator of the ordinary automobile, the top thereof having a suitable opening to fit the water pipe 3 of the radiator, sufficient space being allowed between the cover and the front of the radiator to allow for the insertion of the heating shutters in a manner to be presently described.

The cover is provided with an opening 4 in the front thereof into which the shutter attachment is adapted to be detachably secured, a plurality of openings 5 being also provided therein and adapted to register with openings 6 provided in the ears 7 of the attachment for securing the shutters in place. The member 1 is further provided with a plurality of openings 8 located in spaced relation around the opening 4 and which are adapted to be controlled by hand operated dampers 9 held in position on the inner surface of the cover 1 by means of the nut attachment 10, and being further provided with a series of openings 11 adapted when in open position to register with the openings 8 in the cover proper, the cover being provided with suitable elongated slots 12 to allow the said dampers to be raised or lowered in the cover by means of this wing nut attachment.

In cold climates and especially in climates where the temperature is below freezing for a certain period of the year, it is very desirable to know the temperature of the air in the space between the cover and the front of the radiator, and I have there-

fore provided the thermometer attachment 13 which can be placed in any desired position and by means of which the temperature can be indicated.

As shown the heating attachment is composed of the side members 14 having the outwardly extending ears for securing it in place in the cover, the top and bottom of the frame being composed of the chambers 15 and 16 in which the heating shutters are adapted to be secured, the said shutters having an outwardly extending flat portion 17ª pivotally connected to the tube member 17 so that when the shutters are in closed position they will completely close the space in the front of the cover, and when in open position as shown in dotted lines in Fig. 7 they will allow a maximum volume of air to strike the radiator, this is my preferred construction but it will be readily understood that the member 17ª can be made integral with the members 17 which can be pivoted in any suitable manner in the chambers 15 and 16. Should the maximum heating surface be desired, the shutter 18 which is shown in Figs. 10 and 11 can be used. For pivoting this form of shutter to these chambers I provide the short tubes 19 and 19ª which can be flanged in the chambers, or any other suitable method for pivoting these dampers can be employed which is found to be most economical for the manufacture and installation, thereof.

An opening 20 is provided in the lower chamber 15 and to which is connected the pipe member 21 leading to the exhaust pipe of the engine, suitable means being provided for diverting the exhaust gases to the pipe or into the air as desired, and can be controlled from the dash of the car by the driver. The gases enter the chamber 15 flowing upwardly through the tubes 17 and into the top chamber 16, thence flowing through another pipe 22 which leads down beneath the radiator, the gases then bring exhausted into the air, and it will be obvious that the exhaust gases for heating need be supplied but a portion of the year, the shutters being sufficient to regulate the temperature at other times.

For opening and closing the shutters I provide a small clip member 23 which I pivotally attach to the control rod 24, this control rod being preferably extended to the interior of the car to be operated by the driver in any desired manner, and it will be obvious that the shutters can be opened or closed to regulate the supply of air admitted to the radiator the said air being heated if desired.

From the foregoing description it will be apparent that I have perfected a simple and inexpensive detachable cover for automobile radiators, which will prevent the water freezing in the radiator, and whereby the exhaust gases from the engine can be utilized for the said heating purposes.

What is claimed is:—

1. A temperature regulating attachment for automobile radiators including a cover for attachment to the front of the radiator and forming a compartment thereat and having an opening in its front wall, shutters pivotally mounted on the hood for controlling the passage of air through the opening, said shutters having passages therethrough, and means for conducting a heating medium through said shutters.

2. A temperature regulating attachment for automobile radiators including a cover for attachment over the front of a radiator and having an air inlet opening in the front wall thereof, and means for controlling the passage of air through said inlet opening, said means comprising opposed headers, inlet and outlet conductors carried by the respective headers, and hollow shutters pivoted to the headers and communicating therewith, said conductors being adapted to receive exhaust gases from the engine of the automobile and conduct the same through the headers and the shutters for heating air passing therebetween.

3. An automobile radiator cover having a central opening therein, adjustable shutters carried by the cover controlling passage of air through said opening, and means for conducting a fluid through said shutters to regulate the temperature of air passing through the opening.

4. A radiator cover for automobiles having a central opening and marginal openings, air heating means controlling the passage of air through the central opening, independent means controlling the passage of air through the marginal openings, and temperature indicating means extending into the cover for indicating the temperature of the air admitted to the radiator.

5. A radiator attachment for automobiles comprising a cover adapted to be secured over the front of a radiator and having a central opening, a frame detachably mounted in the opening and having upper and lower chambers, shutters pivoted between the chambers at one edge and having hollow portions communicating with the chambers, means for circulating a heating medium through the chambers and shutters, and means for opening and closing the shutters to regulate the flow of air to the radiator.

6. A cover for attachment to automobile radiators comprising a body adapted to be secured over the front of a radiator and having a central opening, a frame detachably fitting in the central opening and having upper and lower hollow portions forming headers and hollow elements intercommunicating the headers, said hollow elements having shutter portions adapted for

operation to open and close the opening, and means for circulating a temperature changing medium through said frame and elements.

7. A cover for attachment to automobile radiators having a central opening to admit air to the radiator, a frame fitting in said opening and having opposed headers, hollow shutters pivoted in the frame and communicating with the headers, means for circulating a temperature changing medium through the headers and shutters, and means for operating the shutters to control the passage of air through said central opening.

8. A cover for application to automobile radiators, having a central opening, a plurality of shutters of relatively flat construction having passage ways therethrough pivoted in the opening of the cover, means for circulating a temperature changing medium through the shutters, and operating means for opening and closing the shutters.

In testimony whereof I affix my signature.

MICHAEL ZIEGLER.