W. R. WHITNEY.

VALVE.

APPLICATION FILED FEB. 19, 1913.

1,116,187.

Patented Nov. 3, 1914.

2 SHEETS—SHEET 1.

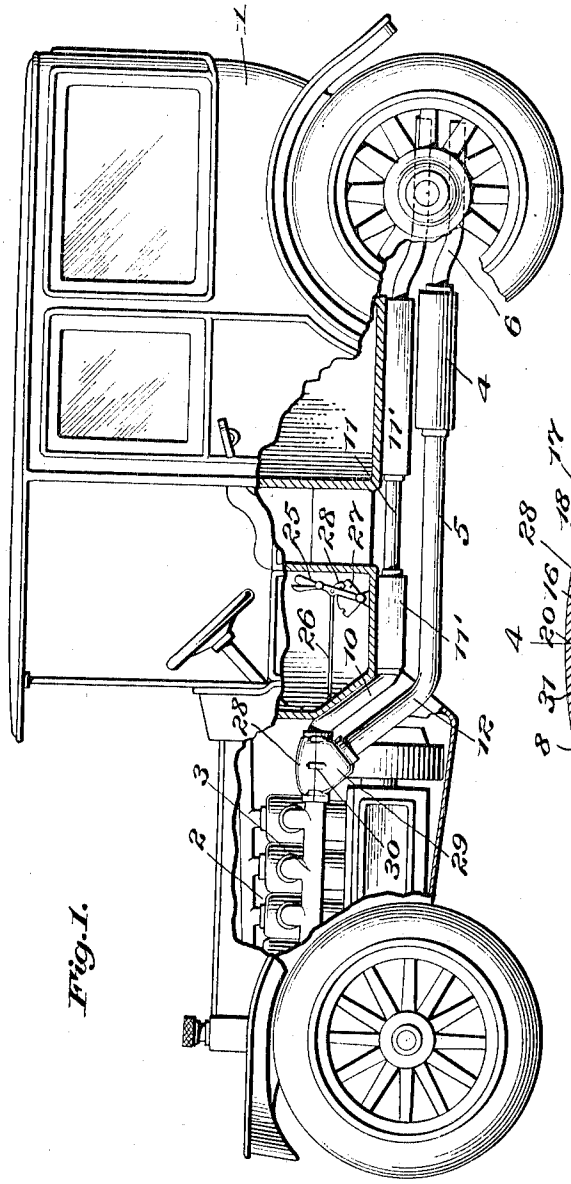


Fig. 1.

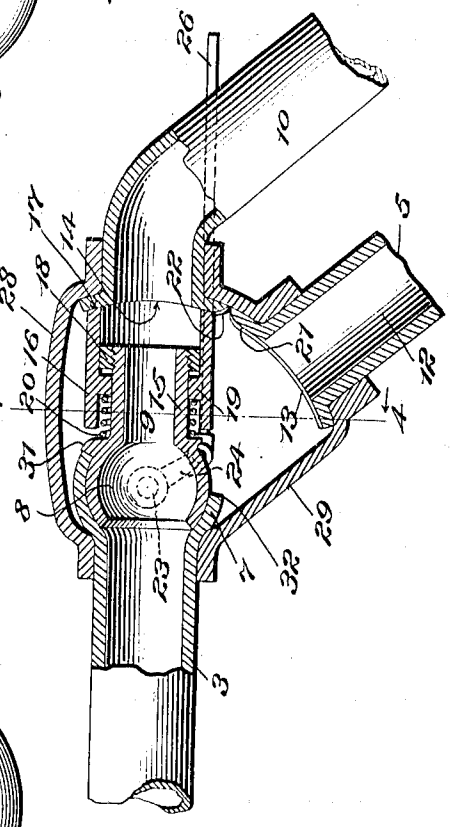


Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

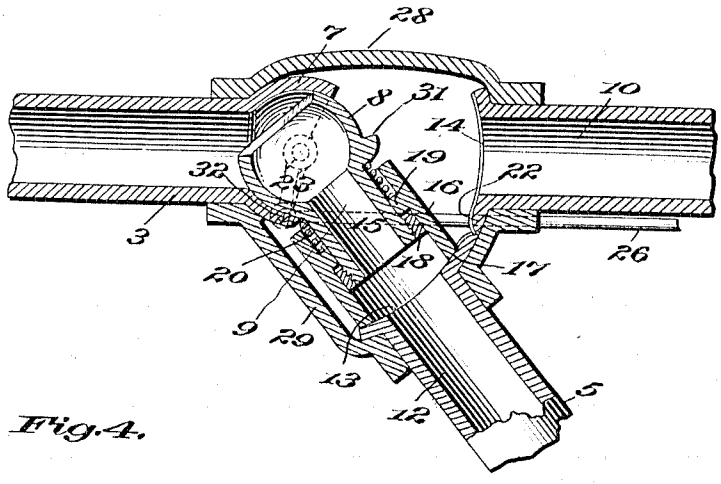


Fig. 4.

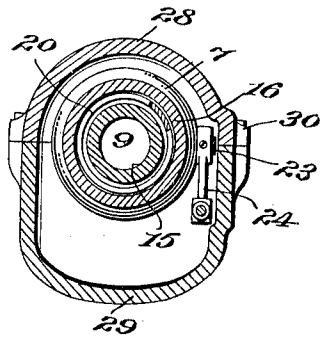


Fig. 5.

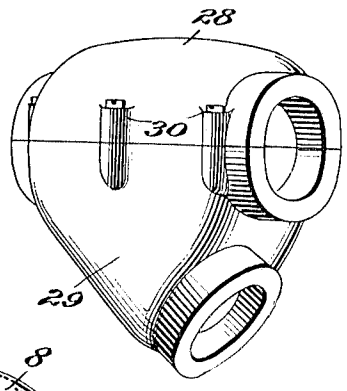
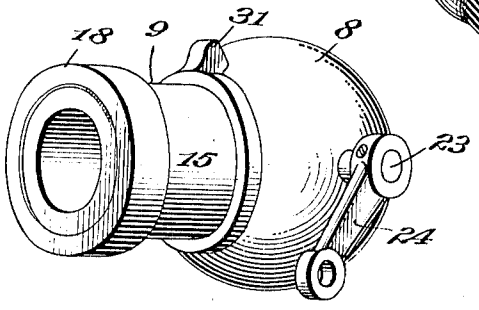


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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VALVE.

1,116,187. Specification of Letters Patent. Patented Nov. 3, 1914.

Application filed February 19, 1913. Serial No. 749,494.

To all whom it may concern:

Be it known that I, WILLIAM R. WHITNEY, a citizen of the United States, residing at Courtenay, in the county of Stutsman and State of North Dakota, have invented new and useful Improvements in Valves, of which the following is a specification.

This invention relates to automobile heaters; and it has for its object the provision of means for utilizing the waste heat as it exhausts from the motor.

Another object of the invention is the provision of a valve which may be associated with a muffler and a heating conduit, the latter being associated with relation to the former and disposed in the direct path of adjustment of the distributing nozzle whereby either the muffler or the heat distributing conduit may be connected with the nozzle at the will of the operator.

Another object of the invention is the provision of means for effecting an operative fluid-tight connection between the nozzle and the pipe with which it is associated.

A further object of the invention is the provision of means for limiting adjustments of the nozzle, so that the latter may be accurately associated with either the muffler or the heat distributing conduit.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is a side view of an automobile, showing parts in section and illustrating the application of the invention thereto; Fig. 2 is a horizontal section through the device, showing the nozzle connected with the heat distributing conduit; Fig. 3 is a similar view, showing the nozzle connected with the intake end of the muffler pipe; Fig. 4 is a section taken on line 4—4 of Fig. 2; Fig. 5 is a perspective view of the casing; and Fig. 6 is a perspective view of the male member of the nozzle.

The automobile 1 herein conventionally illustrated is provided with a suitable form of gasolene engine 2, an exhaust pipe 3 which leads from the engine in the usual well known manner, a muffler 4 which may be of any suitable well known construction and which is preferably provided with an intake pipe 5 and a discharge pipe 6, the latter opening to the atmosphere in the usual manner.

The exhaust pipe 3 is provided with a female portion or socket 7, in which is mounted the male or substantially spherical portion 8 of a nozzle 9. The nozzle, through the fact that it is connected in the female element 7 of the exhaust pipe, is free for vertical swinging movements for a purpose to be hereinafter explained. The female portion 7 of the discharge pipe 3 is alined with a heating conduit 10 having branch pipes 11, one only being shown, which may be distributed or extended to suitable points in the automobile and connected in the floor thereof with radiators 11′ of any approved well known construction. The intake end of the pipe 5 of the muffler is provided with an angularly disposed extension 12 having a surface 13 which is preferably radially disposed with relation to the axis of rotation of the nozzle 9. The surface 14 of the heating conduit 10 is also radially-disposed with relation to the axis of rotation of the nozzle 9 so that the nozzle may be adjusted to a position where it will conduct the waste gases into either the heating conduit 10 or the muffler intake 5.

The nozzle 9 is provided with an extension 15, on which is slidably mounted a head 16, the edge 17 thereof being adapted to seat against the conduit 10 when the nozzle is adjusted in one position and to seat against the surface 13 of the exhaust pipe 5 when the nozzle is in another position. The extension 15 of the nozzle is provided with a stop flange 18, with which is adapted to be engaged the similar stop flange 19 on the sliding head 16. The extension 15 of the nozzle is embraced by a spring 20, which is adapted to hold the head 16 extended so as to effect an operative contact thereof against the seating surfaces of the pipes 5 and 10, as will be understood. The portion 12 of the pipe 5 is provided with a flared guide 21, which is adapted to initially engage with the head 16 and guide the same onto the sur-

face 13. The pipe 10 is provided with a similar flared surface 22, which is adapted to engage the head 16 to guide the same onto the surface 14 in the opposite adjustment of the nozzle.

The male member 8 is provided with a fixed shaft 23, which has connection with a crank arm 24. This arm is connected to the lower end of the controlling lever 25 through the medium of a rod 26. The controlling lever is preferably located adjacent to the driver's seat of the automobile, and it is operatively associated with a rack member 27, the teeth of which being adapted to receive the locking pawl 28 of the lever, whereby adjustments of the nozzle may be effectually retained. The teeth of the rack member are preferably located at the opposite ends of the member and disposed adjacent to indicating marks or words such as the word "Off" and "On", not shown. When the lever is adjusted to the position where the dog thereof is engaged with the teeth of the "On" indication, the nozzle 9 will operatively connect with the heat distributing conduit 10, so that the waste heat may be conducted to the radiators hereinbefore described. When the lever is adjusted to the position whereby the pawl thereof will engage within the rack teeth at the "Off" indication, the nozzle will be in operative registration with the intake end of the pipe 5 of the muffler structure, so that the waste heat may be conducted to the muffler in the usual manner. This construction is desirable in that in the summer months, the waste heat may be positively held against being distributed to the radiators.

The structure as herein described may be completely housed through the medium of the casing which is shown to include companion sections 28 and 29 which may be bolted at 30 to the alined pipes 3 and 10, as clearly illustrated in Fig. 2.

The member 8 is provided with a stop 31 which is adapted to engage against the female portion 7 of the pipe 3, whereby to limit the adjustment of the nozzle in one direction. The portion 32 of the female portion 7 of the pipe 3 is disposed in the path of the extension 15 of the nozzle, so as to engage the same and limit the adjustment of the nozzle in another direction.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as claimed.

Having thus described my invention, what I claim is:—

1. A structure of the character described, comprising a pipe having a socket at one end, a casing secured to the socket end of the pipe and provided with a wall lying concentric with the said socket, and provided with spaced port-ways, and means for causing registration of either of said port-ways with said pipe and comprising an adjustable nozzle having a spherical head mounted in said socket, the socket having portions lying in the path of adjustment of the nozzle and serving to cause effective registration of the nozzle with the said port-ways, a movable cylindrical portion on the nozzle, and means for advancing said portion against the concentric wall of said casing.

2. A structure of the character described, comprising a pipe having a socket at one end, a casing secured to the socket end of the pipe and provided with a wall lying concentric with the said socket and provided with spaced port-ways, and means for causing registration of either of said port-ways with the said pipe and comprising an adjustable nozzle having a spherical head mounted in said socket, the socket having portions lying in the path of adjustment of the nozzle and serving to cause effective registration of the nozzle with said port-ways, a movable cylindrical portion slidable on the nozzle and held in engagement with said concentric wall, and means on said concentric wall for guiding said cylindrical portion from one port-way to the other on adjustment of said nozzle.

3. In a structure of the class described, a pipe, a sectional casing removably fitted to and extending beyond one end of said pipe, said casing having port-ways therein, a nozzle movable in the casing and mounted on said pipe and provided with a threaded portion, a stop-flange removably fitting said threaded portion, a cylindrical member slidable on said nozzle and having a stop flange adapted to engage the stop flange on the nozzle upon the sliding of the cylindrical member in one direction, means on the nozzle for moving the member in the direction of the stop flange and the wall of the casing, and means for moving the nozzle to cause the cylindrical member to traverse the inner ends of said port-ways.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM R. WHITNEY.

Witnesses:

WILLIAM H. PADDEN,

GILBERT TEANGSEND.