Feb. 20, 1934. L. KLEINHOFFER 1,947,854

COMBINATION INSULATOR AND PRESSURE RELIEF DEVICE FOR CARBURETORS

Filed Dec. 24, 1932

Fig. 1.

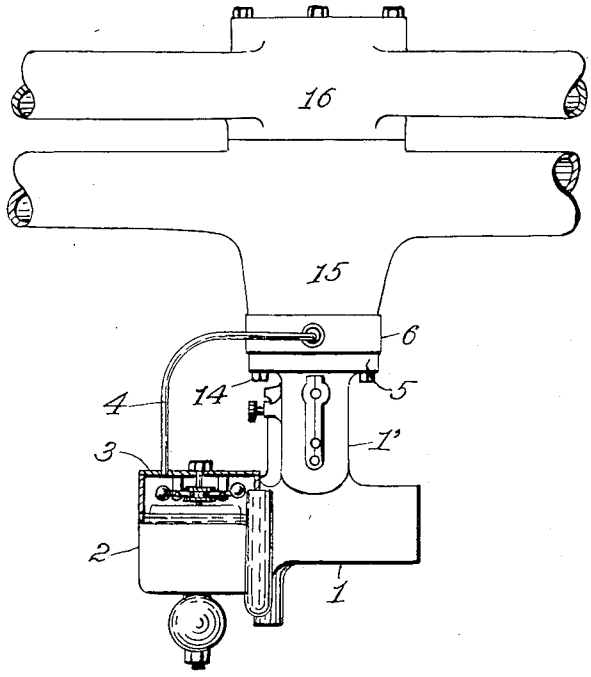
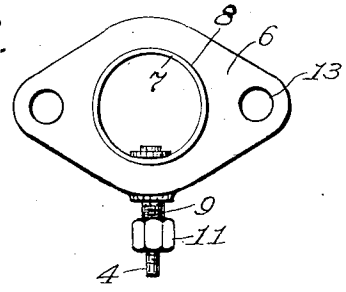


Fig. 2.



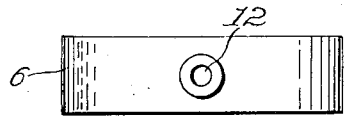
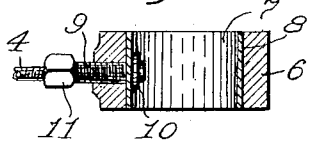


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE

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COMBINATION INSULATOR AND PRESSURE RELIEF DEVICE FOR CARBURETORS

Louis Kleinhoffer, Joliet, Ill.

Application December 24, 1932
Serial No. 648,732

4 Claims. (Cl. 261—72)

My invention relates to improvements in carburetor communications to inlet manifolds of internal combustion engines, and the objects of my improvements are first, to supply an apertured gasket in the joint connection of a carburetor to the inlet manifold of such an engine, the gasket being made of relatively incompressible porous heat-non-conducting material to prevent the excessive communication of heat from the engine to the carburetor in thus causing bubbling and imperfect gasifying of the liquid fuel therein, and in lining the inner wall of the gasket with a non-combustible covering to prevent charring of the wall. Second, my invention includes a means of communication from the carburetor reservoir above the level of the liquid fuel therein and to and through said gasket to permit gas which may have formed above said fuel to be exhausted into the connection which leads a pocketed mixture of gas and air into the manifold, thus reducing pressure in the reservoir, and perfecting the functioning of the carburetor.

I have accomplished these objects by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawing, in which Fig. 1 is an elevation showing the combination of a carburetor with an inlet manifold, parts being shown in vertical longitudinal section or broken away. Fig. 2 is a plan view of the insulating gasket with its lining and its connection for communication with the reservoir of the carburetor. Fig. 3 is a side elevation of the gasket, and Fig. 4 is a transverse section thereof.

Referring to said Fig. 1, the numeral 1 denotes a generalized type of carburetor, while 16 indicates the inlet manifold of a gasoline engine, which as shown, however, has a communicating part not shown and in common use, through the exhaust manifold 15 of the engine. The carburetor 1 has the usual reservoir 2 which may contain the usual float controlling the delivery of liquid fuel into the mixing chamber 1'. The top end of the part 1' has an outer annular flange 5, and the numeral 6 denotes my improved gasket which is mounted between this flanged part 5 and the abutting connection or pipe above which leads through the exhaust manifold 15 and into the inlet manifold 16. As shown in said Fig. 2, the gasket 6 is of the commonly used lozenge shape and has end holes 13 to mate with like ones in the abutted members applied thereto secured by screws 14.

The numeral 4 denotes a relatively small bore pipe which leads from the top 3 of the reservoir 2 above the liquid fuel therein and into a side of the gasket 6, by means of its communication with an interiorly and exteriorly threaded nipple tube 9 and by an intermediate connector element 11, as shown in said Figs. 2 and 4.

The gasket 6 has a central circular aperture 8 therethrough, the inner wall thereof having a heat non-conducting liner consisting of a short fitting pipe section 7 of iron or other suitable substance for preventing charring of the inner wall of the gasket, which latter is preferably constructed of relatively hard wood such as oak or maple having many air-filled minute pores, the hardness of the wood preventing yielding under compression as compared with softer woods or other soft or compressible material such as asbestos or the like. The connecting tube 9 from the pipe 4 has its inner end within the apertured liner 7 secured by the nut 10.

The gasket 6, being a poor conductor of heat, serves to prevent nearly all of the heat contained in the connection or nipple of the inlet manifold from passing into the mixing chamber 1' and the reservoir 2 of the carburetor. Especially when the engine is in rapid action, much heat is generated therein, and if allowed to permeate the carburetor by way of the inlet manifold connection thereto, the liquid fuel in the reservoir 2 is caused to bubble and emit particles of liquid vapor which are insufficiently mixed with air because of their large size, so that the improperly mixed gas in a combustion chamber is not properly consumed or used. This excessive heating of the carburetor is avoided by my insulating gasket device, while there is a reduction of gas pressure in the upper part of the reservoir by the use of the pipe 4 to exhaust it into the inlet manifold. The conjoint actions of the release pipe 4 and the insulating gasket 6 is to render the carburetor normally cool enough to properly function and mix the fuel with entering air in right proportion. The sleeve or liner 7 prevents the charring of the inner wall of the gasket, but as the liner is thin, it cannot appreciably communicate heat to the carburetor in any way.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. An apertured non-metallic cellular gasket of the class described, composed of a material non-conductive to heat, and a tubular connection between the upper portion of a carburetor reservoir and the interior of the gasket, the latter being removably secured between the gas and air outlet of the carburetor and the inlet manifold of an internal combustion engine, whereby the heat of

said manifold is prevented from passing into the carburetor, while gas pressure in the top of the reservoir is relieved by exhausting into said gasket and manifold.

2. An apertured gasket mounted between a carburetor and the inlet manifold of an internal combustion engine, said gasket being constructed of relatively non-heat-conducting porous compact cellular substance, and a non-combustible inner covering for the inner wall of the gasket.

3. An apertured gasket of porous hard wood mounted contactingly sealingly between a carburetor and the inlet manifold of an internal combustion engine, a non-combustible lining for the inner wall of the gasket, the gasket and its lining being apertured in alinement, and a tubular communication between the top of the carburetor reservoir and the interior of the gasket by way of the alined apertures therethrough.

4. An apertured gasket made of hard wood and mounted between a carburetor and the inlet manifold of an internal combustion engine, and a non-combustible lining for the inner exposed part of the gasket and flush with the alined parts of the inner walls of said carburetor and inlet manifold to prevent charring of the gasket.

LOUIS KLEINHOFFER.