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J. J. FREEMAN

GAS BREAKER

Filed Jan. 27, 1922

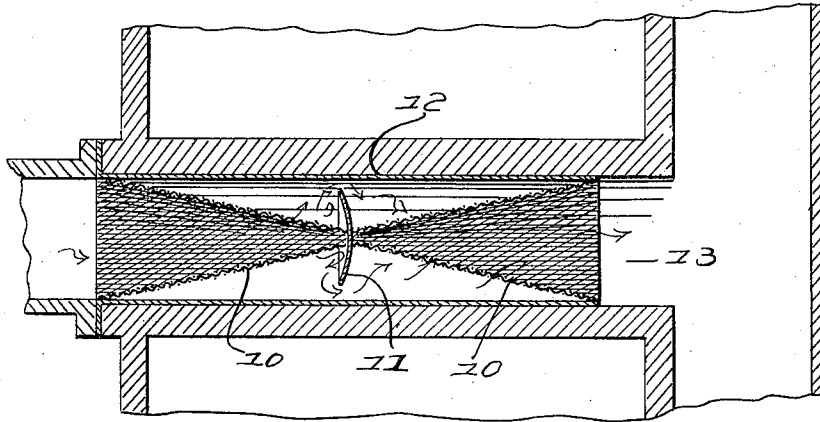


*Fig. 1.*

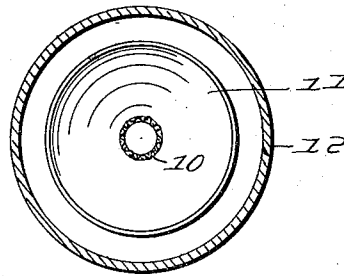


*Fig. 2.*

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## UNITED STATES PATENT OFFICE.

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## GAS BREAKER.

Application filed January 27, 1922. Serial No. 532,174.

*To all whom it may concern:*

Be it known that JAMES JAY FREEMAN, a citizen of the United States of America, residing at Bradford, in the county of McKean and State of Pennsylvania, has invented new and useful Improvements in Gas Breakers, of which the following is a specification.

The object of the invention is to provide means in the line of feed of fuel between a carbureter and the cylinders of an internal combustion engine whereby a uniform mixture of the gas and air, and a substantially uniform distribution of the gas in the air column may be effected to increase the efficiency of the mixture by insuring a more complete combustion of the fuel; and furthermore to provide an apparatus for this purpose which may readily be interposed in the feed line without substantially affecting other parts of the apparatus or necessitating any reorganization or rearrangement thereof; and with this object in view the invention consists in a construction and combination of parts of which a preferred embodiment is shown in the accompanying drawings, wherein:

Figure 1 is a sectional view of a mixing apparatus or attachment embodying the invention arranged in the feed line of an automobile engine.

Figure 2 is a transverse sectional view of the same.

The mixer consists essentially of a plurality of reversely disposed conical wire gauze screens 10 secured together or arranged in juxtaposition at their apexes with a baffle disk 11 arranged transversely at the junction of the screens, together with an enclosing tubular sleeve or shell 12 of an interior diameter somewhat in excess of the diameter of said disk.

This device should be arranged in the gas line or path of the fuel in its passage from the carbureter or source to the cylinders, as for example in the passage 13 to the end that the explosive mixture in approaching the cylinders must pass therethrough longitudinally, and preferably the disk is of concavo-convex form with its concaved face disposed in opposition to the flow of the mixture so that as the mixture after passing through the first screen comes in contact with the disk it is forced to rebound or recoil in order to pass around the periphery of the latter and thence must pass through the walls

of the second cone in order to reach its destination.

This action in passing through the reversely disposed conical screens and immediately encountering the baffle disk insures an intimate mixture of the gas and air and a uniform distribution of the former in the volume of the latter, with the result that a more complete or approximately perfect combustion of the fuel is secured with a corresponding increase in the mileage secured from a given quantity of fuel.

Having described the invention, what is claimed as new and useful is:—

1. A gas breaker for internal combustion engines adapted for arrangement in the feed line or path of fuel from the source to the cylinders which consists of foraminated elements having converging side walls disposed in juxtaposition at the points of conversion, and a transversely disposed baffling disk interposed between said elements.

2. A gas breaker for internal combustion engines, adapted for arrangement in the feed line or path of fuel from the source to the cylinders, which consists of reversely disposed conical gauze screens arranged in axially aligned relation with their apexes in juxtaposition, and a transversely disposed baffling disk disposed adjacent to the apexes of the screens.

3. A gas breaker for internal combustion engines, adapted for arrangement in the feed line or path of fuel from the source to the cylinders, which consists of reversely disposed conical gauze screens arranged in axially aligned relation with their apexes in juxtaposition, and a concavo-convex baffling disk adjacent to the apexes of the screens and in transverse relation to the axes thereof.

4. A gas breaker for internal combustion engines, adapted for arrangement in the feed line or path of fuel from the source to the cylinders, which consists of reversely disposed conical gauze screens arranged in axially aligned relation with their apexes in juxtaposition, and a baffling disk arranged in transverse relation to the axes of the screens and adjacent to the apexes thereof and having a concaved face directed in opposition to the path of fuel.

In testimony whereof he affixes his signature.

JAMES JAY FREEMAN.