M. T. BURKE.

FUEL MIXER FOR EXPLOSIVE ENGINES.

APPLICATION FILED FEB. 6, 1912.

1,212,013. Patented Jan. 9, 1917.

FIG. 1

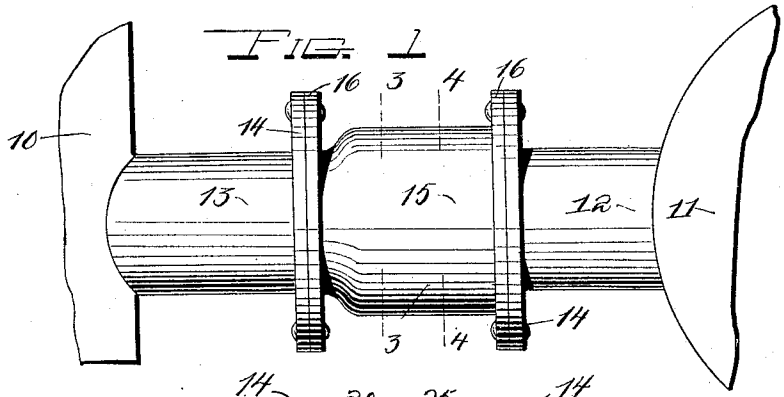


FIG. 2.

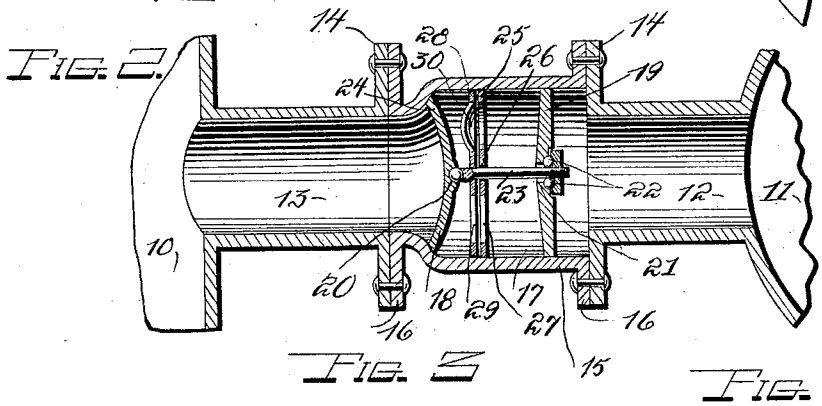


FIG. 3

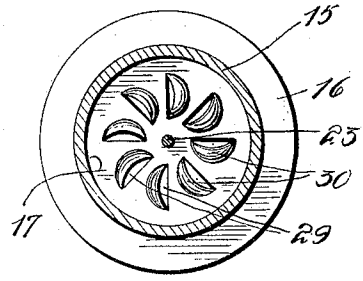


FIG. 5

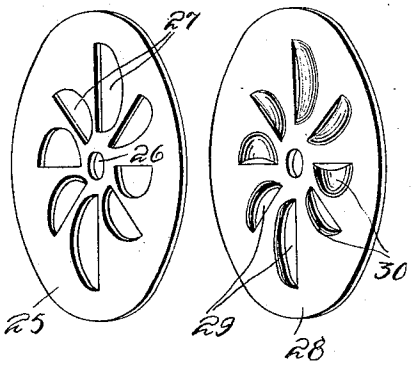
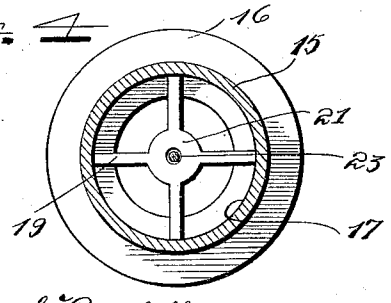


FIG. 4



Witnesses

Frank S. Ratcliffe.

Chas. L. Pierson

Inventor

M. T. Burke.

By Thomas & Reynolds

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MIKE THOMAS BURKE, OF KALISPELL, MONTANA, ASSIGNOR OF ONE-HALF TO MARGUERITE GORHAM, OF BUTTE, MONTANA.

FUEL-MIXER FOR EXPLOSIVE-ENGINES.

1,212,013. Specification of Letters Patent. **Patented Jan. 9, 1917.**

Application filed February 6, 1912. Serial No. 675,765.

To all whom it may concern:

Be it known that I, MIKE THOMAS BURKE, a citizen of the United States, residing at Kalispell, in the county of Flathead, State of Montana, have invented certain new and useful Improvements in Fuel-Mixers for Explosive-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to new and useful improvements in devices for homogenizing the mixtures of explosive engines.

An object of this invention is the provision of a device of the class described which will thoroughly mingle the air and fluid during their passage from the carbureter to the engine cylinder.

Another object of this invention is the provision of a device such as described which makes use of a stationary disk and rotatable disk mounted adjacent said stationary disk, the rotatable disk being provided with a plurality of openings through which the mixture passes and also with a plurality of wings, which upon the rotation of the disk thoroughly homogenizes the air and gases during their passage through the openings.

A further object of this invention is to improve and simplify devices of this character rendering them comparatively simple and inexpensive to manufacture, reliable and efficient in use and readily operated.

With the above and other objects in view, this invention resides in the novel features of construction, formations, combinations and arrangements of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which:

Figure 1 is a side elevation of my invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1, and Fig. 4 is a similar view taken on the line 4—4 of Fig. 1, and Fig. 5 is a view showing the disks in perspective.

Referring to the accompanying drawing, by similar characters of reference throughout the several views, the numeral 10 designates generally a fragment of an engine cylinder adjacent to which is located a carbureter a portion of which is shown and designated by the numeral 11. The usual outlet extension 12 is formed upon the carbureter 11, while extending from the cylinder 10 is an intake extension 13.

The extensions 12 and 13 are formed at their adjacent terminals with circumscribing flanges 14, the inner sides of which lie in parallel planes, flush with the ends of the said extensions. A casing 15 is interposed between the flanges 14 and is formed at its opposite ends with parallel flanges 16 similar to the before mentioned flanges 14 to which the said flanges 16 are bolted or otherwise secured to hold the interior bore 17 of the casing 15 in registration with the bores of the extensions 12 and 13. A pair of spiders 18 and 19 are secured in the opposite ends of the casing 15 and are formed with central bearings 20 and 21 in which is supported by a plurality of ball-bearings 22 a longitudinally extending concentrically mounted shaft 23.

The legs of the spider 18 are extended outwardly at their terminals as indicated by the numeral 24 while secured adjacent thereto is a stationary disk 25 formed with a central aperture 26 through which the said shaft 23 passes. The disk 25 is provided with a plurality of equi-spaced semi-circular openings 27, the straight sides of which extend radially from the central openings 26 formed therein. A rotary disk 28 is keyed to the shaft 23 and contacts at one side with the disk 25, it being understood however that there is enough space between the said disks 25 and 28 to prevent any friction which should retard the rotary movement of this said disk 28.

The disk 28 is provided with a plurality of equi-spaced U-shaped clefts 29 which extend radially with respect to the shaft 23. The material located within the said clefts 29 is bent outwardly producing a plurality of semi-circular concaved wings 30 for a purpose to be later disclosed.

As the mixture of air and gas passes from the carbureter 11 through the outlet extension 12 and bore of the casing 15, the same will contact with the angularly disposed concaved wings 30 which causes the rotation of the disk 28 and shaft 23 upon which it is keyed which obviously owing to the position of the wings thoroughly mingles

the air and fuel contained within the casing 15 prior to its entrance to the cylinder 10 through the inlet extension 13.

From the foregoing disclosure it will be readily seen that by the peculiar arrangement of the described parts the mixture prior to its entrance to the cylinder 10 will be so thoroughly mingled that the power derived from the engine will be materially increased. It should be understood in this connection that various minor changes in the details of construction may be resorted to within the scope of the appended claim without departing from or sacrificing any of the advantages of the invention.

Having thus fully described this invention what I claim as new and desire to protect by Letters Patent, is:

The combination with a gas engine, a carbureter and a pipe arranged to convey a mixture of air and hydrocarbon from the carbureter to the engine, of means for increasing the mechanical output of the engine in response to its quantity of supply of explosive mixture delivered from the carbureter, said means consisting of fixed spaced spider frames mounted transversely within the pipe, a shaft rotatably mounted in said frames, a stationary disk provided with openings and secured within the casing in encircling relation to the shaft, a rotatable disk keyed on the shaft and provided with openings adapted to pass into and out of registration with the openings in the first named disk during the rotation of the shaft, and wings extending from the edges of the openings of the rotatable disk and disposed at an angle to the latter so as to partially cover the openings in the rotatable disk.

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

MIKE THOMAS BURKE.

Witnesses:
J. F. SCHWIERS,
JOHN LUDWIG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."