W. H. KUTSCHER.

COMBINED STARTING AND GASOLENE SAVING DEVICE FOR EXPLOSIVE ENGINES.

APPLICATION FILED AUG. 11, 1913.

1,099,504. Patented June 9, 1914.

FIG. 1.

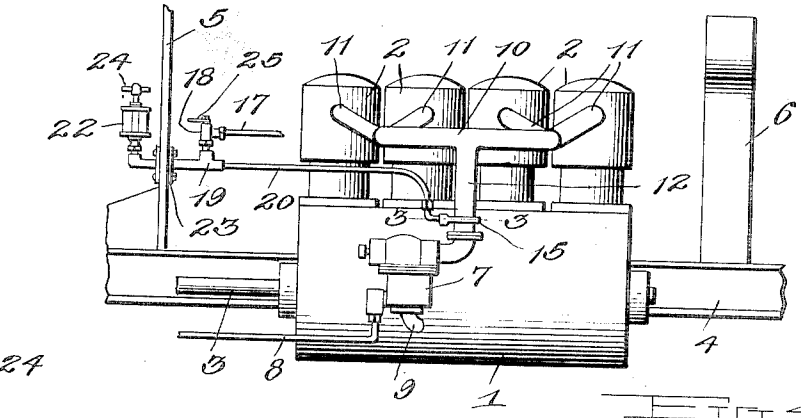


FIG. 2.

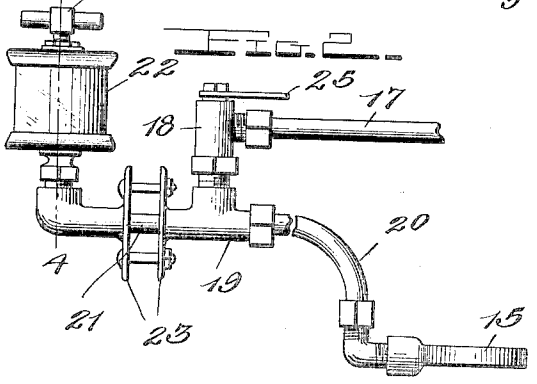


FIG. 4.

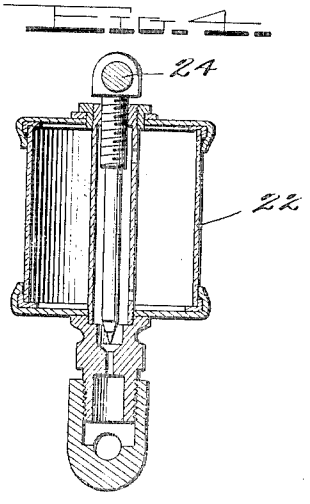


FIG. 3.

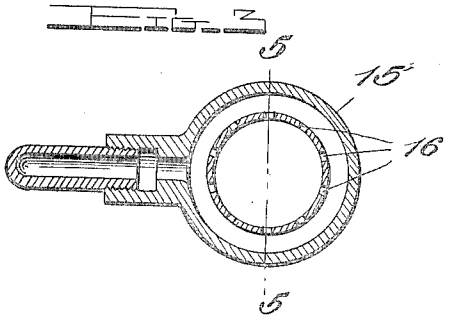
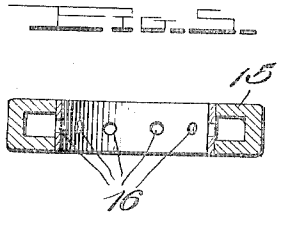


FIG. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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COMBINED STARTING AND GASOLENE-SAVING DEVICE FOR EXPLOSIVE-ENGINES.

1,099,504. Specification of Letters Patent. **Patented June 9, 1914.**

Application filed August 11, 1913. Serial No. 784,284.

To all whom it may concern:

Be it known that I, WILLIAM H. KUTSCHER, a citizen of the United States, residing at Bloomington, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Combined Starting and Gasolene-Saving Devices for Explosive Engines; and I do 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.

This invention relates to explosive engines and more particularly to means for facilitating the starting of the engine and for economizing in the gasolene required to run the machine.

The object of the invention is to provide a device which may be used to increase the speed and efficiency of the engine without tapping the manifold and which may be employed either with or without a starter.

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

In the accompanying drawings: Figure 1 represents a side elevation of a four cylinder engine equipped with this improvement; Fig. 2 is a side elevation of the device detached; Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1; Fig. 4 is a transverse vertical section taken on the line 4—4 of Fig. 2; Fig. 5 is a vertical section taken on line 5—5 of Fig. 3.

In the embodiment illustrated a crank case 1 is shown and four cylinders 2 with the usual crank shaft 3 and a portion of the supporting frame 4 of the engine. The dash board of an automobile is shown at 5 between which and the radiator 6 it is usual to locate the engine in automobiles as generally constructed. A carbureter 7 having a gasolene supply conduit 8 leading thereto is mounted on one side of the crank case 1 and has the usual air intake 9. A manifold 10 having branched conduits 11 leading to the respective cylinders is connected with the carbureter 7 by means of a conduit 12.

The parts above described do not in themselves constitute this invention and are those commonly used in propelling automobiles.

While the above parts of an automobile engine have been illustrated and described as consisting in certain specific structures, it is to be understood that the invention is not limited in its application to any particular form of specific engine or to its constituent parts but is applicable to explosive engines generally whether employed to propel automobiles or for other purposes.

This invention comprehends an attachment in the form of a ring sprayer 15 disposed on the conduit 12 between the carbureter 7 and the manifold 10 and which communicates with said conduit and discharges thereinto through a plurality of perforations 16 arranged on the inner face of said sprayer hot air for the purpose of producing a perfect mixture of the fuel before it enters the engine cylinder. The hot air supplied to the sprayer 15 is conducted from the exhaust pipe of the engine, (not shown), through a pipe 17 equipped with a valve 18 for controlling said supply. This valve 18 is shown arranged in a casting 19 from which a pipe 20 leads to the ring sprayer 15. A pipe 21 also communicates with the pipe 20 and is provided with a priming cup 22 for a purpose to be described. This casting 19 is preferably provided with suitably spaced disks or clamping plates 23 which are designed to support the attachment on the dash board 5 of an automobile. The priming cup 22 may be of any desired construction and is adapted to contain gasolene to be used for priming the car in cold weather without necessitating the raising of the hood of the engine. It may also be used to contain a solution or mixture adapted to remove the carbon from the cylinder valve and spark plugs and the contents thereof is controlled by the usual valve operated by a handle 24 disposed in suitable position accessible to the driver of the car. The valve 18 is also equipped with a suitable operating handle 25 for cutting off or supplying the hot air to the pipe 20 when it is desired to supply hot air to the manifold as above described. The valve 18 is arranged between the pipes 17 and 20 which latter is connected with the pipe 21 leading from the priming cup 22 so that the hot air may be cut off entirely from the spraying ring when desired, or it may be used in connection with the gasolene supplied from the priming cup, if desired, and, if desired, the priming cup may be cut off by means of

the valve actuated by the handle 24 and the hot air alone supplied to the manifold.

By arranging the ring sprayer 15 between the carbureter and the manifold it is not necessary to tap the manifold which is required in other devices of like character. It will be obvious that this device may be employed as a gasolene saver alone or it may be combined with a starting device according to the wishes of the purchaser.

By spraying hot air into the manifold a perfect mixture is produced which when taken into the engine cylinder produces an increase of power in the engine and thereby greatly economizes in the consumption of the gasolene used.

I claim as my invention:

1. A gasolene saving device for combustion engines comprising a ring sprayer adapted to be disposed between the carbureter and manifold of an engine, a pipe leading to said sprayer, a pipe adapted to connect with the exhaust pipe of the engine, and a valve arranged between said pipes, and means for connecting said device to a suitable support.

2. In a gasolene saving device, a sprayer comprising a casting having means for securing it to a suitable support, a spraying device, a pipe connecting said spraying device with said casting, a priming cup having a valve, a pipe connecting said cup with said first mentioned pipe, a valve in said casting, and a conduit leading from said casting and adapted to be connected with the exhaust pipe of an engine.

3. A gasolene saving device for explosive engines comprising a ring shaped sprayer having apertures on its inner face, a pipe leading from said sprayer, a casting connected with said pipe, another pipe also connected with said casting and adapted to be connected with the exhaust pipe of an engine, and a valve arranged in said casting between said pipes for controlling the communication between them.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. KUTSCHER.

Witnesses:

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A. H. HUMES.