

F. M. SIZEMORE.
 COOLING DEVICE FOR EXPLOSIVE ENGINE CYLINDERS.
 APPLICATION FILED MAY 20, 1908.
 952,148.
 Patented Mar. 15, 1910.
 2 SHEETS—SHEET 1.

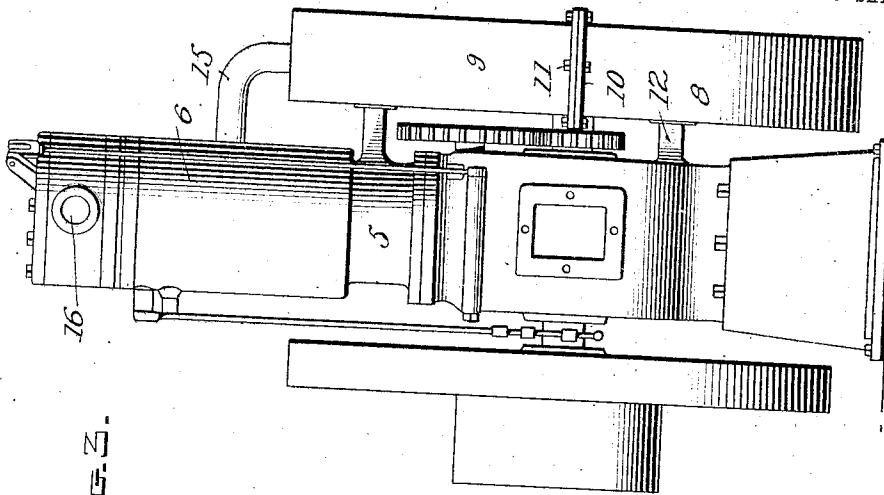


FIG. 2.

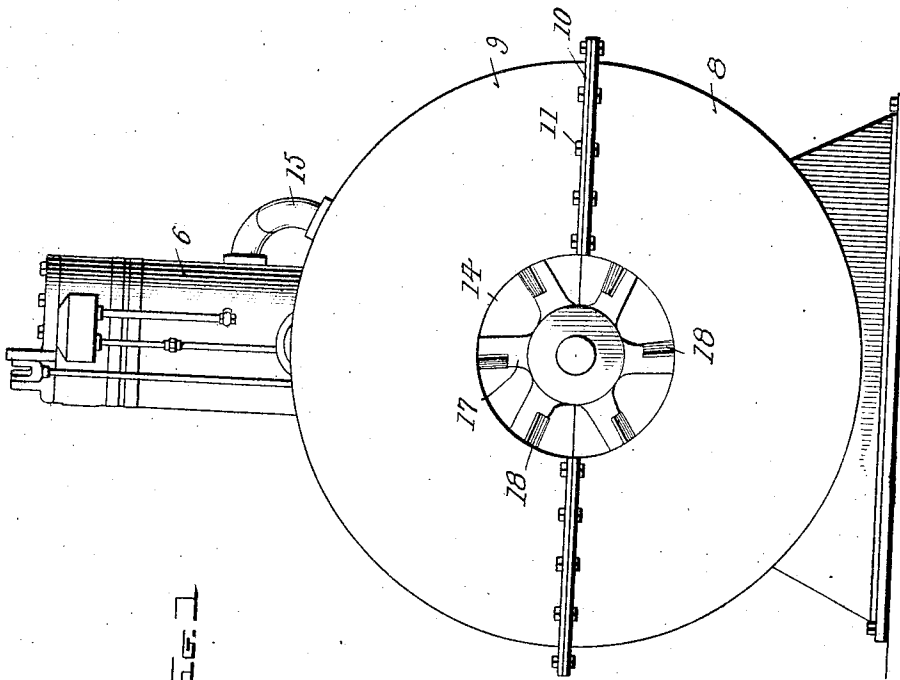


FIG. 1.

Witnesses

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Inventor

Francis M. Sizemore

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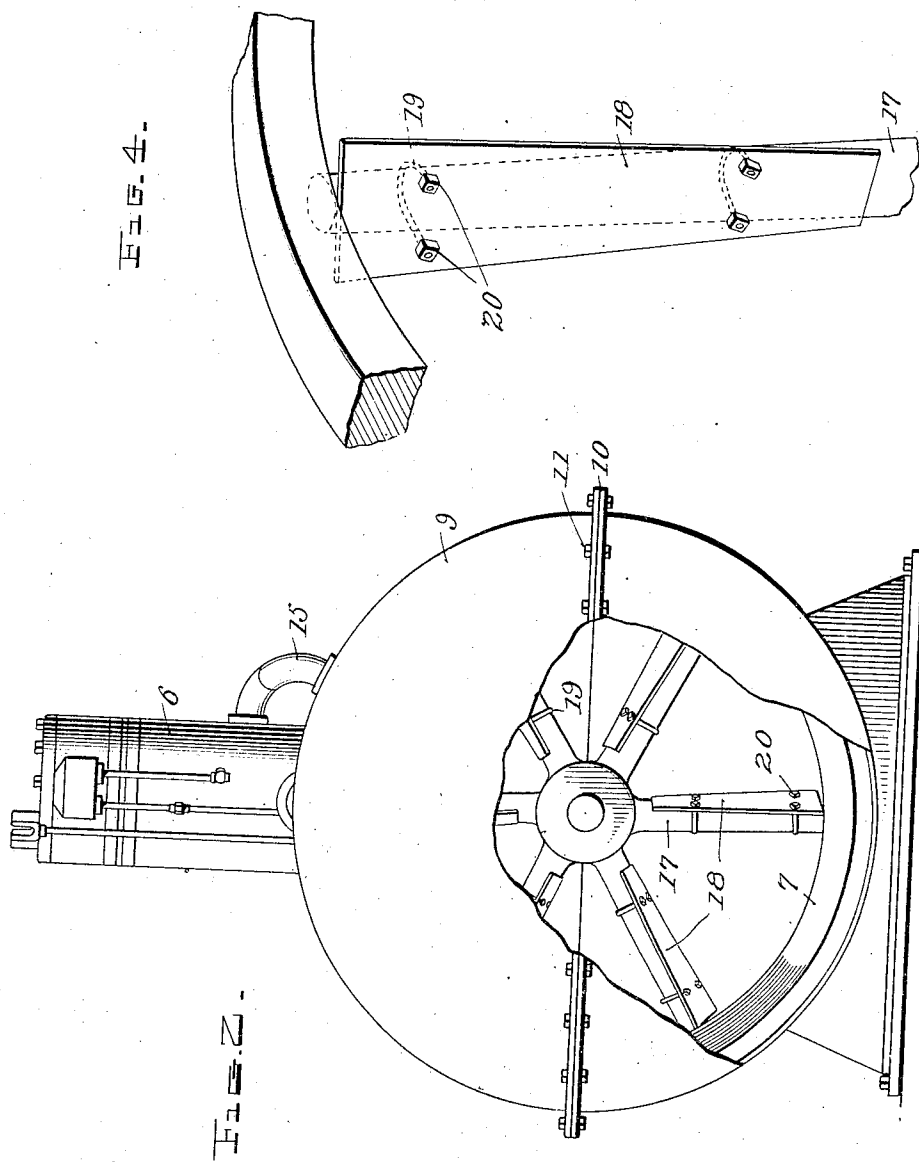
Attorneys

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UNITED STATES PATENT OFFICE.

FRANCIS M. SIZEMORE, OF STEWARDSON, ILLINOIS.

COOLING DEVICE FOR EXPLOSIVE-ENGINE CYLINDERS.

952,148.

Specification of Letters Patent. Patented Mar. 15, 1910.

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To all whom it may concern:

Be it known that I, FRANCIS M. SIZEMORE, a citizen of the United States, residing at Stewardson, in the county of Shelby, State of Illinois, have invented certain new and useful Improvements in Cooling Devices for Explosive-Engine Cylinders; 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.

This invention relates to cooling devices for engines and more particularly to cooling devices for explosive engines, the object of the invention being to provide a device of this character which may be applied to any ordinary engine now in use.

In carrying out my invention, I utilize the fly wheel of the engine as a support for fan blades, which during the rotation of the fly wheel, draw cold atmospheric air into a casing which surrounds the fly wheel and force this air to the air jacket which surrounds the cylinder of the engine.

In the accompanying drawings, Figure 1 is a side elevation of a stationary engine showing the application of my invention thereto. Fig. 2 is a similar view but with the near side of the fly wheel casing broken away. Fig. 3 is a front elevation of the engine, and, Fig. 4 is a segmental view in perspective of the fly wheel showing the manner of attaching the fan blades to the spokes thereof.

In the drawings, there is shown in a general way an upright engine of the explosive type, the cylinder of which is indicated by the reference numeral 5, the air jacket which surrounds the cylinder by the reference numeral 6, and one of the fly wheels by the numeral 7.

In carrying out my invention, I inclose the fly wheel 7 in a casing which is preferably of sheet metal and is formed of two sections, one indicated by the numeral 8 and the other by the numeral 9, each of the sections being substantially semi-circular in outline and being formed along their connected edges with right angularly extended flanges 10 through which bolts or rivets 11 are passed. In applying the casing to the fly wheel, the sections are bolted together in the manner stated, surrounding or inclosing the fly wheel and the entire casing is supported from the crank casing of the engine

or from some other convenient part thereof by means of brackets 12. The side walls of the two sections at their connected edges are cut away in a semi-circle so that when the sections are connected, circular openings will result in each side wall. The circular opening in the side wall which is presented toward the engine is merely of sufficient diameter to permit passage of the shaft on which the fly wheel is mounted. The other opening which is indicated by the numeral 14 is of considerably greater diameter and serves as an air intake. The section 9 is formed at its upper side with a laterally directed air discharge or conducting spout 15 which is secured at its ends by bolting or riveting or in any other suitable manner through the near side of the air jacket 6 for the engine cylinder, it being understood of course that the said jacket is formed with an opening at the point of connection of the spout 15 therewith; the jacket is provided at its upper end with exhaust openings 16.

The spokes of the fly wheel of the engine are indicated by the numeral 17 and fixed to each of the spokes is a fan blade 18, this attachment of the blades to the spokes being had by means of U-clip bolts 19 which are engaged with the spokes adjacent the inner and outer ends thereof and at their ends or in other words the ends of their arms, through the corresponding portions of the fan blades, there being nuts 20 fitted upon the said ends of the arms of the bolts to confine the blades to the spokes. As is clearly shown in the drawings, the blades are fixed to the spokes in such a manner as to extend obliquely across the fly wheel and it will be readily understood that by providing an attaching means such as the clip bolts, the angle of extent of the blades may be readily varied by loosening the nuts, turning the blades to the proper degree and again tightening the nuts so as to increase or decrease the force of blast of air.

It is preferable that the blades 18 be of greater width at their outer ends than at their inner ends but their dimensions may be varied in any suitable manner as will be readily understood, without departing from the spirit of my invention.

From the foregoing description of my invention, it will be seen that while the engine is in operation, the fly wheel 7 and the blades 18 attached thereto will act effectually as a blower and air will be drawn in through

the intake opening 14 in the casing and will be directed through the conducting spout 15 to the air jacket for the cylinder.

This construction of cooling device presents advantages over other constructions inasmuch as but a very slight extra load is placed upon the engine by its attachment thereto and certainly much less than where a water pump is connected with the engine and operated thereby to force the water around the engine cylinder.

What is claimed, is:—

The combination of a cooling jacket of a gas engine and the fly wheel thereof; a circular casing inclosing the said fly wheel and centrally provided with an inlet opening and a pipe having its lower end connected

to the upper end of said casing and its upper end connected to the lower end of the cooling jacket, fan blades arranged longitudinally of the spokes of the fly-wheel and U bolts engaged with the spokes and having their ends projecting through the said blades, whereby the fan blades are adjustable to various angles with relation to the axis of the wheel in order to regulate the blast through the said pipe to the said cooling jacket.

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

FRANCIS M. SIZEMORE.

Witnesses:

CHAS. W. WILSON,
MARY H. MIETZNER.