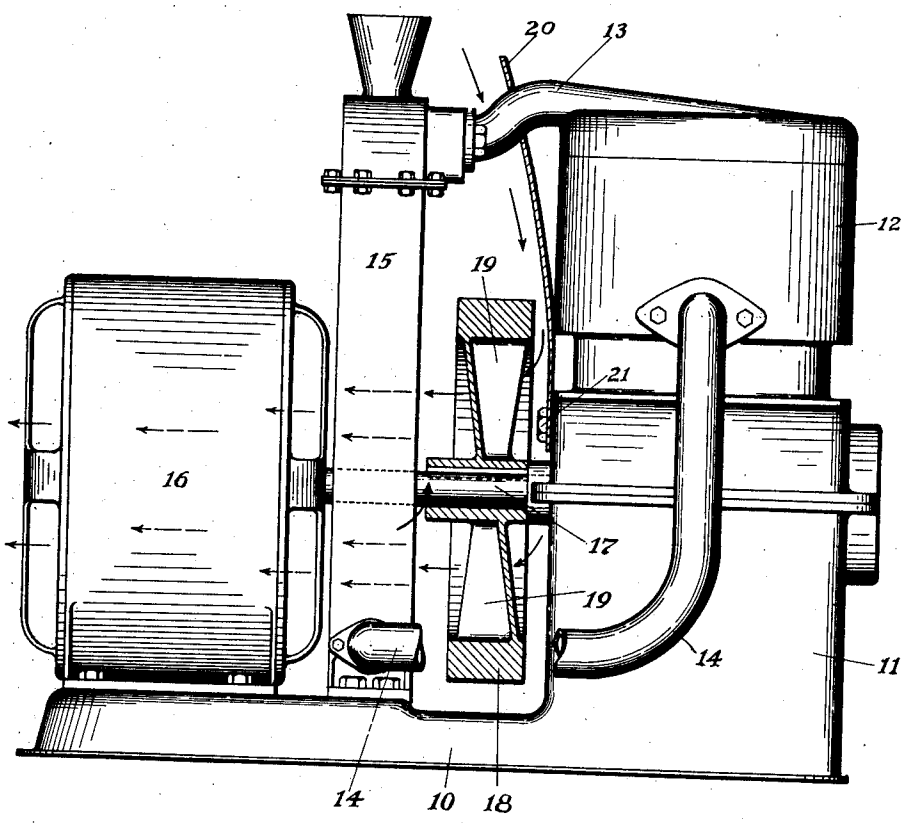
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ENGINE AND GENERATOR COOLING SYSTEM

Filed April 14, 1919



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ENGINE AND GENERATOR COOLING SYSTEM.

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This invention relates to improvements in cooling systems for electric generating plants, such as are frequently used in isolated places, an internal combustion engine being employed as a source of power for operating the electric generator.

The principal object of the invention is the provision of a common means for cooling both the engine and the generator, this object being accomplished by passing a strong current of air through the engine radiator and then through the casing of the generator.

A secondary object of the invention is the provision of means for preventing warm air from around the engine cylinder being drawn into the fan which creates the blast of air employed in the cooling system.

Other objects, and objects relating to details of construction and economies of manufacture will appear as I proceed with the description of that embodiment of the invention, which, for the purposes of the present application, I have illustrated in the accompanying drawing, which shows the invention in side elevation, one part being broken away, and other parts shown in section in order to more clearly illustrate the construction.

In the drawing, the base 10 of the complete machine is shown as integral with the lower part 11 of the engine casing. The engine is of the water cooled variety, having a water jacket 12 surrounding the cylinder or cylinders. The jacket is connected top and bottom by pipes 13 and 14, with the upper and lower ends respectively of a radiator 15. Hot water from the jacket 12 enters the radiator 15 through the pipe 13. It is there cooled and then returned through the pipe 14, to the cylinder jacket to perform again its heat absorbing function.

An electric generator 16, capable of acting as a motor to start the engine if desired, is mounted upon the base 10. A single shaft 17 serves both as the armature shaft for the generator, and as the crank shaft of the engine. It passes through an opening, not shown, in the radiator 15, and between the radiator and the engine it carries the engine fly-wheel 18, which in this instance has incorporated within itself blades 19, constituting a fan.

A sheet metal shield 20 is secured at its lower edge by fastenings 21 to the engine casing, forming a partition between the engine cylinder or cylinders and the fly-wheel fan.

The operation of my invention will be obvious from the drawing when taken with the foregoing description. When the gas engine is running under its own power and rotating the electric machine 16 to generate current, the fan blades in the fly-wheel 18 draw in cool air from above and to the left of the shield 20 and force it out through the radiator 15, and through the casing of the generator 16, all as indicated by arrows in the drawing. Thus a single blast of air cools the generator as well as the water in the radiator. The arrangement shown in the drawing of the three elements 15, 16 and 18, is not absolutely essential, as they might be located in some other order, but that illustrated is the preferred arrangement.

I am aware that the particular embodiment of my invention above described, and illustrated in the accompanying drawing, is susceptible of considerable variation without departing from the spirit thereof, and therefore I desire to claim my invention broadly as well as specifically, as indicated by the appended claims.

I claim as my invention:

1. In an electric generating unit, a water cooled gas engine, a radiator therefor, a generator, a fan, a common shaft for said engine, generator and fan, said generator and radiator being located on the positive side of said fan and one beyond the other respectively in the path of the air moved by the fan.

2. In combination, a water cooled gas-engine, a radiator therefor, a fly-wheel for said engine mounted between the engine and the radiator, said fly-wheel having a fan incorporated therein, and a shield located between said fly-wheel and the cylinder of said engine, whereby none of the air passing into said fan is drawn from the space surrounding said cylinder.

3. In an electric generating unit, a water

cooled gas engine, a radiator therefor, a generator operatively connected to said engine, a fly-wheel for said engine having a fan incorporated therein, said generator and radiator being located one beyond the other in the path of the air blast from said fan, and a shield located between said fly-wheel and the cylinder of said engine, whereby none of the air passing into said fan is drawn from the space surrounding said cylinder.

In testimony whereof, I affix my signature.

ALVIN E. BUCHENBERG.