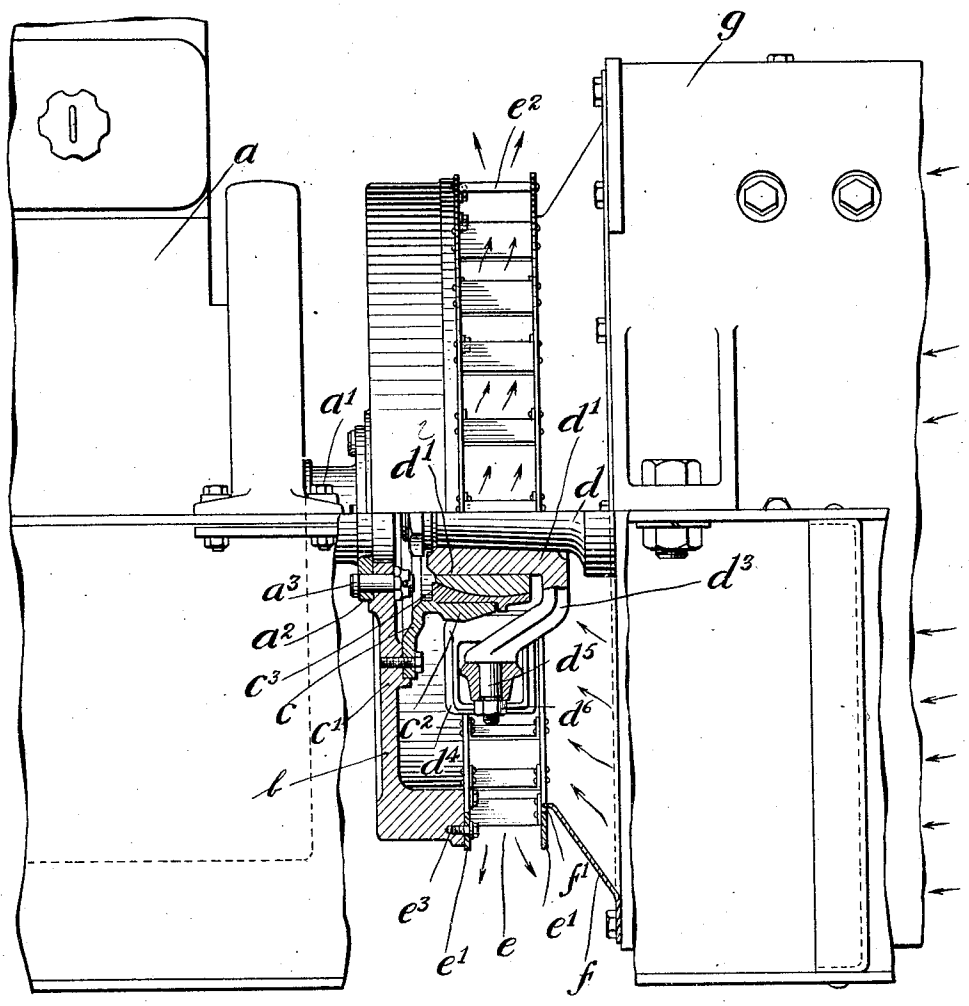
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GENERATOR FAN CONSTRUCTION

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GENERATOR FAN CONSTRUCTION.

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The present invention relates to power units wherein a prime mover is employed to drive an electric generator or other apparatus and it is necessary to effect the cooling of one or both of the machines. It particularly concerns units to be mounted in locations where the available space is designed as small as possible and it is necessary to conserve as much room as possible.

More particularly, the present invention relates to power units for use on vehicles where the generator is to be cooled through forced ventilation and it is highly desirable to consume as little space as possible by the over-all length of the unit.

An object of the present invention is to provide a construction wherein the floor length required by the unit is considerably reduced without removing any parts or reducing the size thereof.

More particularly, the invention relates to constructions of the above character wherein the width of the fan and fly wheel is taken off the length of the unit by forming the web of the fly wheel at one side thereof, that is, form the inertia rim on one side of the web and secure the annular fan rotor to the outer face of the fly wheel. This construction provides a portion within the fly wheel and fan which is just large enough to accommodate the universal joint connection between the units, the latter being, of course, a necessary element.

Further objects will appear as the description proceeds and reference will now be had to the accompanying drawings for a more detailed description of the invention wherein:—

The single figure in the accompanying drawings is an elevation, partly in section, showing a preferred form of the fan construction and connection between the engine and the generator.

Referring to the above figure, a indicates an internal combustion engine of any desired type, the crank shaft thereof being designated by reference character a'. Bolted to the end flange a^2 on the crank shaft, is fly wheel b. The bolts which secure these two elements are designated by reference character a^3.

As pointed out above, it is highly desirable to conserve as much room as possible and in pursuance thereof, the fly wheel is flanged outwardly so that the inertia portion thereof extends over a portion of the universal joint between the engine and the generator. It has been found that a fan, of the squirrel-cage type when constructed to give the desired flow of air through the generator, and connected to the fan as described later, is of a size sufficiently small, to be secured to the outer rim of the fly wheel and not require the space between the fly wheel and the generator to be increased over the amount necessary for the proper universal joint connection therebetween.

This construction, therefore, includes an annular disc c secured to the interior of the flywheel b at c', and carrying in its restricted neck portion c^2 the centering portion of a universal joint connection c^3. The generator shaft d has keyed thereto a collar d', on the outer surface of which is a bearing surface d^2. Suitable arms d^3 are formed on d' and carry, at their outer extremities, seats d^4. These seats may be removable through the connection comprising a stub shaft d^5 and nut d^6. Arms d^3 extend outwardly from the collar d' at spaced intervals to form a spider. Similar arms co-operating therewith, are secured to the disc member c which is mounted on the fly wheel and the outer extremities of the arms mounted on the disc are adapted to lie between the respective arms d^3. Between the adjacent arms, rubber blocks or other cushioning means are mounted. In this manner, the irregularities in the torque of the driving shaft are dampened.

To the outer rim of the fly wheel b, a squirrel cage fan e is secured by means of bolts e^3. The fan comprises two annular discs e', spaced by vanes e^2 which are formed and positioned to force air outwardly upon rotation of the crank shaft a' in the proper direction. A shroud f is secured to the outer shell of the generator g and extends into the fan rotor. At the extremity of the shroud f a circumferential lip f' is formed providing a relatively tight connection, as far as the flow of air is concerned between the shroud and fan. It will be apparent that as the fan rotates, the air will be sucked through the generator as indicated by the arrows, and forced outwardly from the fan, thus cooling the generator.

The connection described above requires scarcely no more room than the old form of connection which did not mount the fan

and fly wheel. It will be seen, therefore, that the room previously occupied by the fan and fly wheel is conserved by the above construction.

Although the invention has been described with reference to the accompanying drawings, it is not to be limited save as defined by the appended claims.

What I claim is:

1. In combination, two units, connecting means therebetween, a flywheel formed with a web and an inertia portion offset with respect thereto and projecting toward one of the units, a fan secured to the face of the inertia portion of the flywheel adjacent said last named unit, and means to secure the connecting means within the inertia portion and the fan.

2. In combination, two units, connecting means therebetween, a flywheel formed with a web perpendicular to the axis thereof and an inertia portion offset with respect thereto and projecting toward one of the units, a squirrel cage fan secured to the outer face of the inertia portion of the flywheel adjacent the last named unit, and means to secure the connecting means within the inertia portion and the fan.

This specification signed this 17th day of August, A. D. 1927.

WILLIAM B. JUPP.