Oct. 10, 1939. H. LEDWINKA 2,175,533

AIR-COOLED INTERNAL COMBUSTION ENGINE

Filed Sept. 14, 1936

FIG. 1.

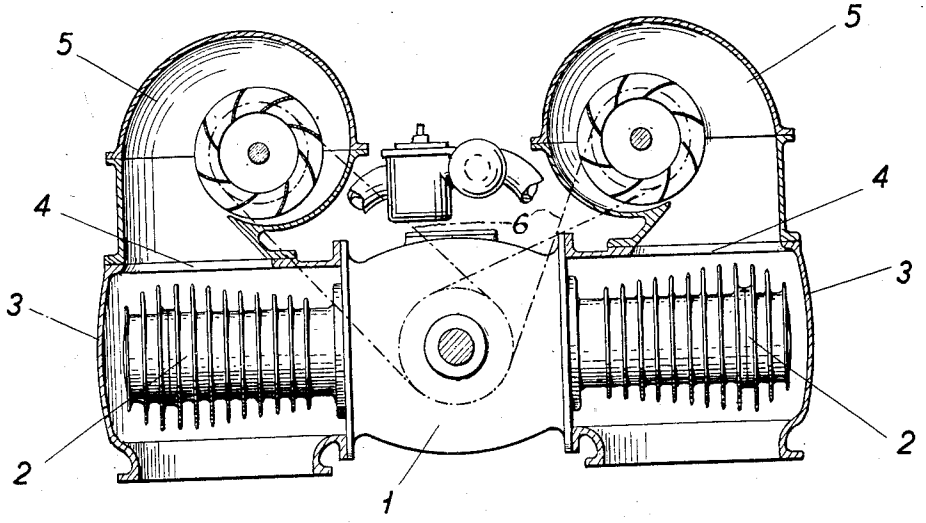


FIG. 2.

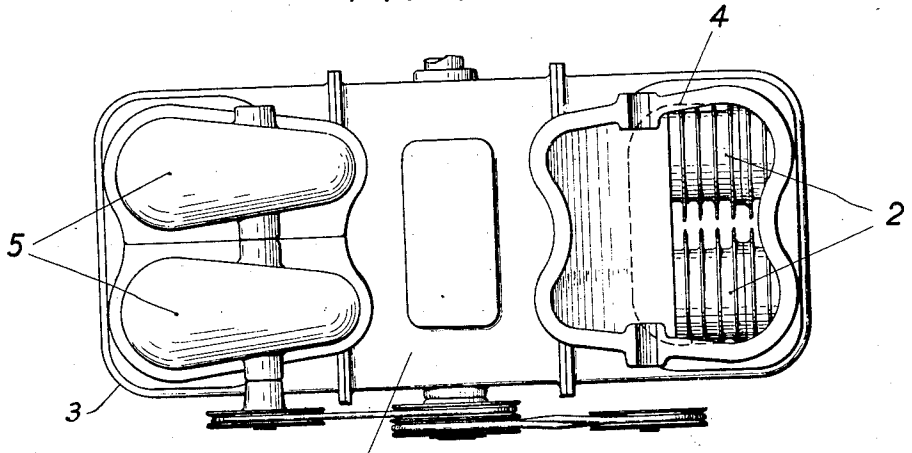
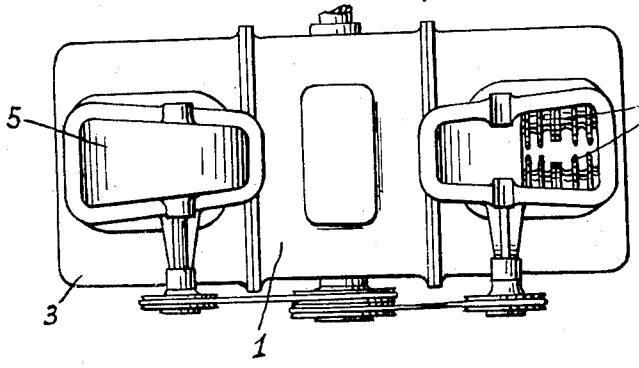


FIG. 3.



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AIR-COOLED INTERNAL COMBUSTION ENGINE

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1 Claim. (Cl. 123—171)

In air-cooled internal combustion engines with horizontally opposed cylinders it has been usual to arrange the fan or blower for the cooling air directly on the crankshaft and often on the fly-wheel.

The present invention provides an air cooling arrangement for internal combustion engines, in particular those with horizontally opposed cylinders, and consists more particularly in that the cylinders are arranged in a housing which is open at the bottom and has an opening at the top leading to one or more blowers. Preferably a separate blower is provided for each cylinder and is so arranged that the main air stream sweeps over the hottest part of the cylinder. According to a feature of the invention, the carburetter can be arranged in the space between the blowers on the crank case, the blowers being driven by belts from the crankshaft.

The arrangement according to the invention has, inter alia, the following advantages:

The main stream of the cooling air can be directed over the cylinder heads. Each cylinder receives its own cooling air. Repairs to the cylinders as well as to the blowers are easily carried out. The length of the engine and the diameter of the fly-wheel housing can be kept small, which is very important for a low-built chassis. Large curved air conduits from the blowers arranged on the crankshaft to the cylinders are avoided, so that the weight and the space taken up by the engine and the blowers are substantially reduced. In view of the fact that the drive of the blowers is effected by belt pulleys, the blowers can be driven at as high a speed as desired, so that the diameter of the blowers can be correspondingly reduced. A displacement of the centre of gravity of the engine to above its previous height is not inevitable, owing to the possibility of using small blowers. The belt drive can be simultaneously employed for driving the dynamo or other auxiliaries.

An embodiment of the invention is shown, by way of example, in the accompanying drawing, wherein

Figure 1 is a partial transverse section through an arrangement according to the invention, and

Figure 2 is a plan view corresponding to Figure 1 but with certain parts removed.

Fig. 3 is a view similar to Fig. 2 but showing a modification having one blower only for each pair of cylinders.

In the drawing, 1 indicates a crank case carrying two pairs of horizontally opposed cylinders 2. 3 are housings, each of which encloses two cylinders and is open at the bottom. These housings have openings 4 at the top, above which a blower 5 is mounted for each cylinder. The blowers 5 are driven through belts 6 from the crankshaft. The outlets of the blowers are arranged so that the main air stream flows over the cylinder heads whilst the remainder of the air is conducted to the cylinder barrels. The bottom openings of the housings 3 enclosing the cylinders may be connected to outlets suitably arranged to secure additional draught due to the movement of the vehicle on which the engine is carried. The carburetter or carburetters can be arranged above the crank case between the blowers.

I claim:

An air cooling arrangement for internal combustion engines, in particular engines with horizontally opposed cylinders, a housing over each bank of opposed cylinders, said housing being open at the bottom and having an opening at the top, at least one blower having an outlet communicating with said top opening and having that portion of its outlet which carries the main stream of the cooling air located opposite the cylinder head, by virtue of which the main air stream sweeps over the hottest part of the cylinders.

HANS LEDWINKA.