Sept. 15, 1925 1,553,854

G. FORNACA

INTERNAL COMBUSTION ENGINE FOR AIRCRAFT

Filed Dec. 23, 1924

Fig. 1

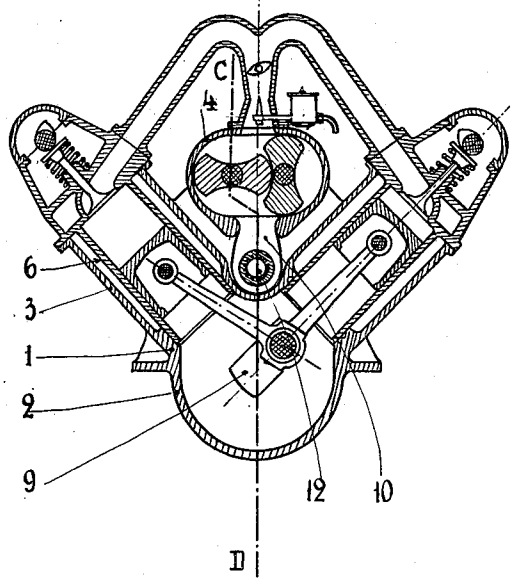
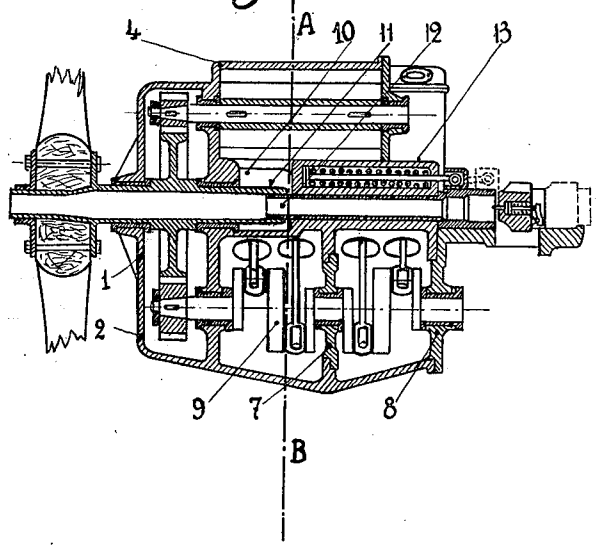


Fig. 2



Inventor
Guido Fornaca,
By
Atty.

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UNITED STATES PATENT OFFICE.

GUIDO FORNACA, OF TURIN, ITALY.

INTERNAL-COMBUSTION ENGINE FOR AIRCRAFT.

Application filed December 23, 1924. Serial No. 757,681.

To all whom it may concern:

Be it known that I, GUIDO FORNACA, a subject of the King of Italy, resident of Turin, in the Kingdom of Italy, have invented certain new and useful Improvements in Internal-Combustion Engines for Aircraft; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The object of this invention is to provide an improved superfeed internal combustion engine for aircraft, of the kind having the forced feed compressor arranged between the engine cylinders, a propeller secured on a hollow counter shaft, and a gun adapted to fire through said shaft.

In accordance with the invention the principal stationary parts such as the engine casing, the crank chamber, parts of the cylinders, and the compressor casing, are cast in a single piece.

Preferably, the casting includes the engine casing, the propeller casing, and also parts of the aforesaid gun.

Provision may be made for circulating the air drawn in by the forced feed compressor round the end of the gun barrel, and also, if desired, round the end of the counter shaft or propeller shaft, through which the gun fires, in order to cool these parts.

The accompanying drawing shows, by way of example, one form of the improved engine.

Fig. 1 is a vertical transverse section of the engine on the line A—B of Fig. 2, and Fig. 2 is a vertical section on the line C—D of Fig. 1.

On the drawing, the reference 1 denotes the engine casing cast in one with the crank chamber 2, the cylinder water jackets 3, the compressor casing 4, and the recoil case 13 of a gun, which may be a machine gun or automatic gun.

In this casting are inserted, after the necessary machining operations, the cylinders 6 and heads 7 and 8, which latter assist in supporting the crank shaft 9.

The inlet pipes 10 of the compressor 4 envelop the ends of the hollow counter shaft or propeller shaft 11 and the barrel 12 of the gun, which is mounted coaxial with said shaft, in order to cool these parts. In some cases, however, this feature may be omitted; also the casting containing the stationary parts may be less complex, the cylinders and the crank chamber, for example, being separate.

What I claim is:

1. A superfeed internal combustion engine for aircraft, of the kind having the forced feed compressor arranged between the cylinders, a propeller secured on a hollow counter shaft, and a gun adapted to fire through said shaft, with the characteristic feature that the principal stationary parts such as the engine casing, the cylinder jackets, the compressor casing, and the recoil case of the gun, are cast in a single piece.

2. An internal combustion engine as claimed in claim 1, in which provision is made for circulating the air drawn in by the forced feed compressor around the end of the gun barrel, and around the end of the hollow counter shaft or propeller shaft through which the gun fires, in order to cool these parts.

In testimony that I claim the foregoing as my invention, I have signed my name.

GUIDO FORNACA.