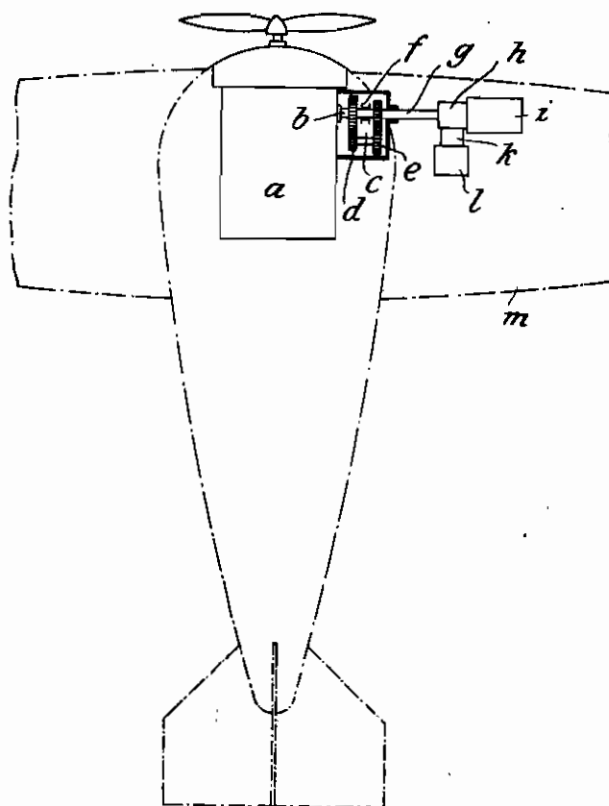


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DRIVE OF AUXILIARY APPARATUS
FOR AIRCRAFT MOTORS
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DRIVE OF AUXILIARY APPARATUSES FOR AIRCRAFT MOTORS

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The present invention relates to a drive of auxiliary apparatuses for aircraft motors.

The arrangement of auxiliary apparatuses on aircraft motors offers substantial difficulties, as a large number of such apparatuses is to be arranged and because compared with the available space the dimensions of the apparatuses are relatively large. For this reason it has already been proposed to provide a so-called distributor shaft leading from the aircraft motor and to place a special distributor drive box separated from the aircraft motor for instance into a cell of the aircraft. Fixed to this distributor box are the various auxiliary apparatuses, as electric generators, air pumps, oil pressure pumps and the like which are driven from this point by way of a special gear. Under circumstances, however, this drive has substantial disadvantages particularly in connection with aircrafts intended for flying in high altitudes. If such an aircraft moves in a sliding flight from a very high altitude to a normal altitude then, due to the long sliding flight, the motor rotates slowly for a very long period of time. Hereby for instance no current whatever or rather little current only is produced by the generator. If an air pump is connected intended to maintain a certain pressure in a cabin tightly sealed for high altitudes, this air pump also rotates very slowly and the pump must have very large dimensions to maintain the desired minimum output. The water pump also rotates very slowly and consequently produces a very small pressure only which is particularly disadvantageous in case of a hot cooling effected by steam.

The invention obviates these draw-backs and consists in this that the auxiliary apparatuses, as the generator, the oil pump, the air pump and the like, arranged separately from the motor, are driven by the latter by way of a change speed gear. Preferably the auxiliary apparatuses are combined to a common aggregate driven by the motor, which aggregate for instance may be driven by a distributor gear arranged separately from the motor. The auxiliary apparatuses, forming the aggregate, are connected to this distributor gear. The change speed gear is located between the motor and the distributor gear. Preferably the change speed gear is formed as a gear with two speeds having besides a normal gear or a direct drive a so-called overgear, there-

fore at least one gear effecting gearing up. By the latter the auxiliary apparatuses may be driven with their normal number of revolutions by a slowly rotating motor and, therefore, maintain their full efficiency. A motor slowly rotating for a longer period of time, therefore, has no disadvantageous effect upon the drive of the auxiliary apparatuses. Moreover, the auxiliary apparatuses may be made considerably smaller. The motor may be arranged preferably in the body of the aircraft or is mounted self-supporting above or below the supporting plane respectively. The auxiliary apparatuses preferably are mounted in the supporting plane itself.

In the accompanying drawing one construction according to the invention is diagrammatically shown by way of example.

The crank shaft of the motor *a* arranged in the body of the aircraft drives a transverse shaft *b* and a change speed gear *c* which comprises two pairs of gear wheels *d* and *e* as well as coupling *f* which either puts in a direct speed or a gear, effecting gearing up, by way of the two pairs of gear wheels *d* and *e*. An additional shaft *g* leading from the gear *e* and arranged in the prolongation of the transverse shaft *b* extends to a distributor gear provided in a distributor driving box *h* to which for instance a generator *i*, an oil pressure pump *k* and an air pump *l* are connected. The total aggregate, formed of the auxiliary apparatuses, is arranged in a supporting plane *m* of the aircraft. The aggregate mentioned could, however, also be arranged at any desired other point of the aircraft.

The operation of the subject matter of the invention is quite evident from the drawing. As long as the motor rotates with a normal number of revolutions, a direct connection is maintained between the shafts *b* and *g* by a corresponding adjustment of the coupling *f*. If, however, the motor *a* rotates with a lower number of revolutions, the fast speed gear *d, e* is put in by the coupling *f*. In this case the normal number of revolutions of the shaft *g* or that of the auxiliary apparatuses-aggregate *i, k, l* is maintained in spite of the slower rotating motor *a*.

The mentioned suitable coupling is either a friction coupling or a claw-coupling (if operated by hand) or a centrifugal coupling if operated automatically.

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