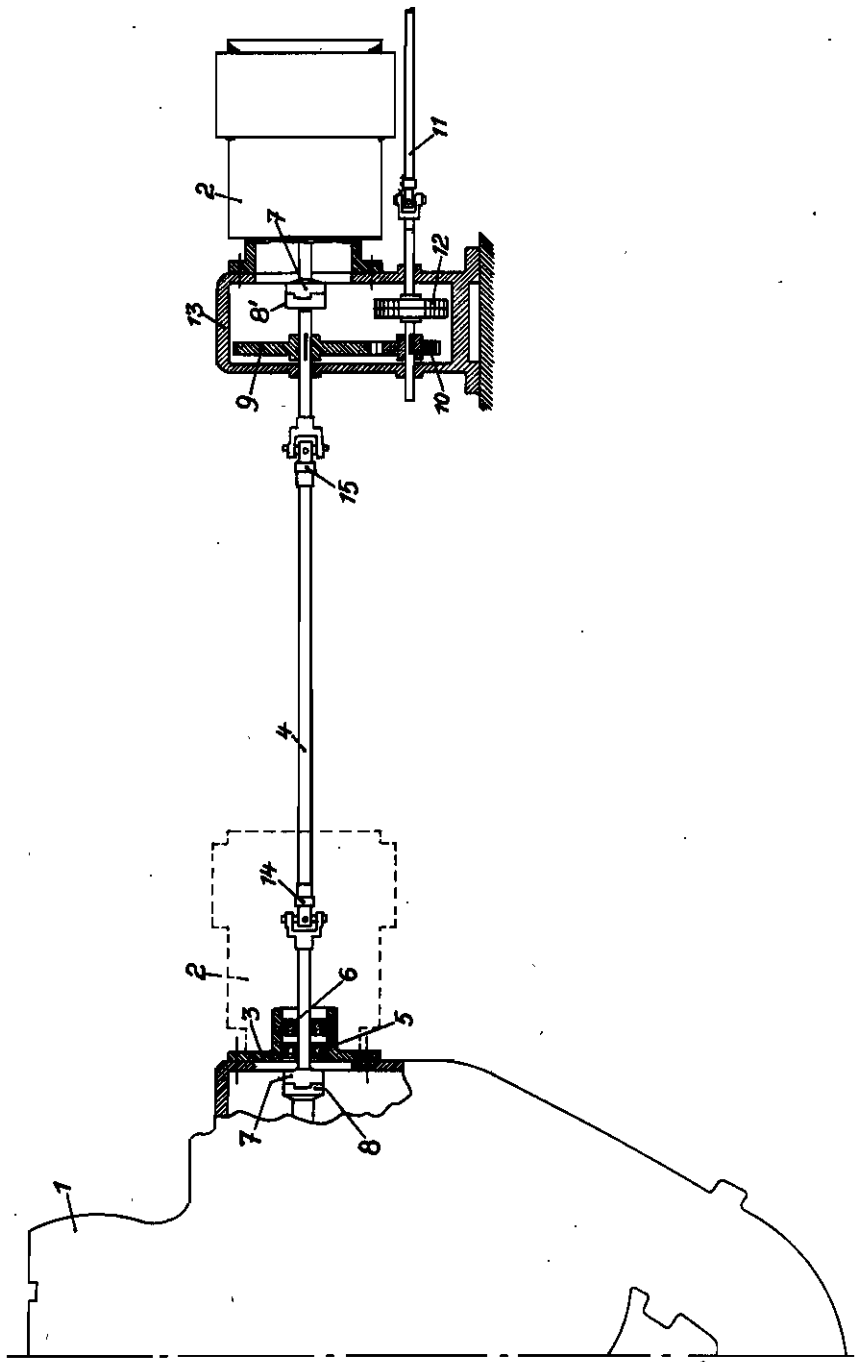
PUBLISHED
MAY 11, 1943.
BY A. P. C.

O. MADER ET AL
DRIVE MECHANISM FOR ATTACHMENT TO AIRPLANE MOTORS
Filed July 7, 1939

Serial No.
283,256



Inventors
Otto Mader
Hans Groptler
Erwin Handke
by Grauel & Baldwin
Attorney.

Published May 11, 1943 Serial No. 283,256

ALIEN PROPERTY CUSTODIAN

DRIVE MECHANISMS FOR ATTACHMENT TO AIRPLANE MOTORS

Otto Mader, Hans Gropler and Erwin Handke, Dessau, Germany; vested in the Alien Property Custodian

Application filed July 7, 1939

This invention relates to drive mechanisms for attachment to airplane motors, so that another device, as well as a propeller, may be operated by the motor without making any change in the construction of the latter; it is an aim of the invention to provide such a drive mechanism for a blower, or other air pumping unit, employed for exhausting air from the skin layer adjacent portions of an airplane.

It is an object of the invention to provide a drive mechanism wherein a bearing is secured to the motor housing, preferably where the starter is usually located, to support one extremity of an extension shaft of the drive mechanism, and to provide coupling parts on both extremities of the extension shaft one for attachment to a coupling part on the motor shaft and the other for attachment to a starter. Moreover the extension shaft must be strong enough to transmit power from the starter to the motor when they are spaced some distance apart, and also for transmitting a drive from the motor to a device mounted upon a suitable portion of the airplane body.

Another object of the invention is to provide a drive mechanism which will not interfere with the resilient motor mounting; and for this purpose the extension shaft is supported adjacent the motor housing in at least two bearings and at least one universal joint is provided in the said extension shaft intermediately of its length.

A further object of the invention is to provide a light and simply constructed drive mechanism wherein a housing, adapted to be mounted upon a portion of the airplane body, is provided which serves as a support for the starter and also contains a driving means for transmitting power from the extension shaft to the device to be driven by the motor.

Yet another object of the invention is to provide such a drive mechanism wherein a stub shaft, for connection to the device to be driven, is supported for rotation in the housing, a positive drive is arranged therein between the extension shaft and the stub shaft, and a clutch is provided in the stub shaft, which is divided into two sections, between the positive drive and its extremity intended for attachment to the device to be driven; this provision is made for permitting the device to remain stationary when the motor is being turned over by the starter.

Having thus stated some of the objects of the invention, which consists in certain novel construction and arrangement of parts, I will now describe an embodiment thereof with the aid of the accompanying drawing wherein a longitudinal section of the invention is shown.

Referring to the drawing, 1 designates a conventional airplane motor to the housing of which a bracket 3, supporting at least two separate aligned bearings 5 and 6 therein, is secured where a starter, indicated at 2*a*, is usually mounted. The bearings 5 and 6 support an extension shaft 4 for rotation, and the latter is provided at its adjacent extremity with a coupling part 7 which engages a corresponding coupling part 8 fixed on one end of the shaft of the motor 1. 14 and 15 denote universal joints provided in the extension shaft 4 intermediately of its length.

13 denotes a housing adapted to be mounted upon a suitable part of an airplane body, and has a starter mounted upon its side remote from the motor 1. The adjacent extremities of the shaft of the starter 2 and of the extension shaft 4 which extends through the housing 13 are provided with coacting coupling parts 7*a* and 8*a* respectively, and the said extension shaft 4 is in the present instance rotatably supported in a bearing provided in the side of the housing 13 adjacent the motor 1.

Supported in bearings provided on opposite sides of the housing 13, and projecting through one side thereof for attachment to the shaft of a device (not shown) to be driven, is a stub shaft 11 having a gear 10 thereon which meshes with a gear 9 upon the extension shaft 4. Between the gear 10 and the side of the housing 13 through which the stub shaft 11 projects for attachment to the device to be rotated, the said stub shaft is split and provided with coacting parts of a clutch 12. Thus when the motor 1 is being turned over by the starter 2 the clutch 12 may be disengaged so that the extremity of the stub shaft 11 connected to the device to be driven will remain stationary.

From the foregoing it will be seen that we have provided a drive mechanism which can be connected to a conventional airplane motor without making any change in the construction of the latter and through this drive mechanism a device may operated which is located upon a suitable portion of the airplane body located at some distance from the motor.

OTTO MADER.
HANS GROPLER.
ERWIN HANDKE.