Dec. 2, 1930. C. DORNIER 1,783,227

STARTING OF LARGE FLYING MACHINES

Filed Sept. 28, 1928

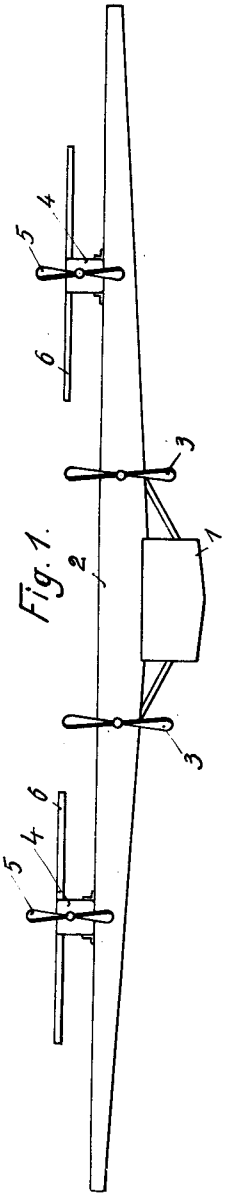

Fig. 1.

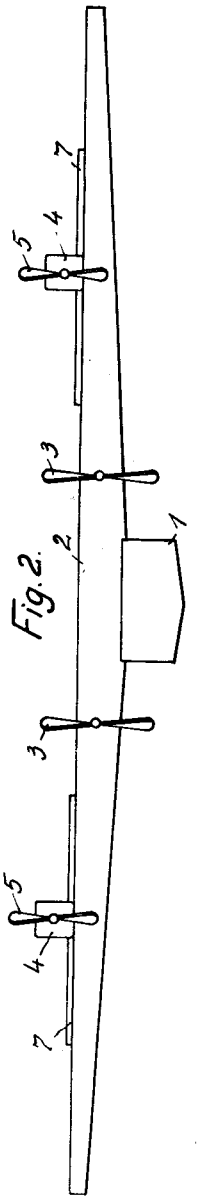

Fig. 2.

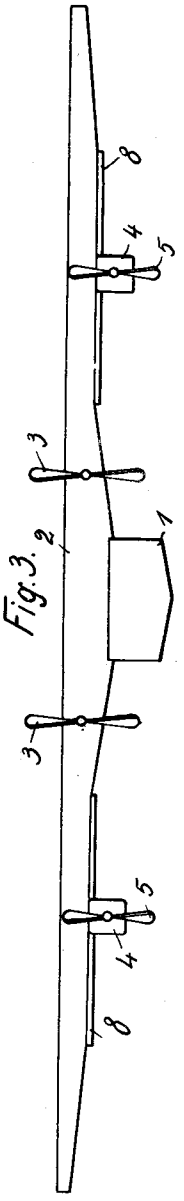

Fig. 3.

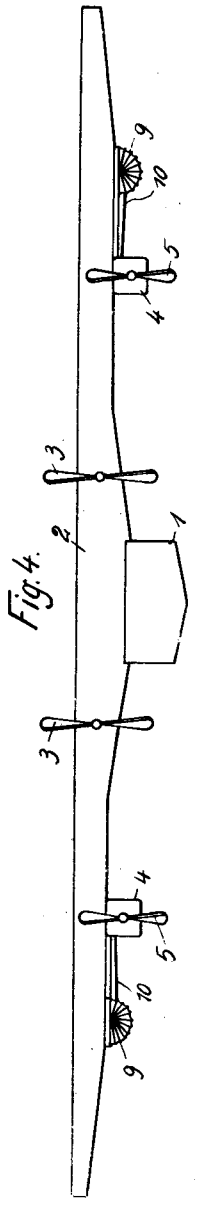

Fig. 4.

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UNITED STATES PATENT OFFICE

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STARTING OF LARGE FLYING MACHINES

Application filed September 28, 1928, Serial No. 309,002, and in Germany October 5, 1927.

My invention relates to flying machines and more especially to means for starting heavy-loaded aeroplanes, it being a particular object to provide starting means, which are more efficient than those hitherto used.

As is well known, a flying machine is always loaded according to its lifting capacities at the start, which are limited by the great starting resistance from the ground or water, preventing the machine from obtaining a great acceleration and velocity, whereas by a high speed, and resulting therefrom, an increased loading capacity can be quickly obtained when the machine has once left the ground and is in the air.

This is of material importance with regard to the loading of flying machines in the case of long non-stop flights. Up till now their actual range was never reached as the machines were not able to start with the quantity of driving material they could carry after having left the ground.

It is an object of my invention to avoid this drawback by increasing the propelling power.

For air liners and other large flying machines this can be accomplished by providing them with auxiliary driving means, which are mounted on the machine in such a way that they can be dropped after the machine is in the air. In order that the auxiliary engine reach the ground without being damaged, I prefer providing same with means for retarding its fall, for instance with a parachute or a supporting plane the landing being controlled by the attendant in care of the engine, after the mother-craft has once been successfully started. The auxiliary engine is further provided with landing means according to the character of the landing surface, but since these engines are not required to start by themselves, the landing means may be of a very simple construction, the usual landing gear being for instance replaced by a skid.

In the drawings affixed to this specification and forming part thereof three aeroplanes embodying my invention are illustrated diagrammatically by way of example in front elevation.

Referring to the drawings, Fig. 1 illustrates a flying boat comprising a boat's hull 1 and a self-supporting wing 2 with two symmetrically disposed propelling units 3. Upon the wing are placed in an easily detachable manner two auxiliary propelling units, each comprising an engine 4 and propeller 5, the means for temporarily fixing them to the wing being indicated at 10 and consisting for instance of lever-actuated locking means or the like. By operating these locking means the attendants are enabled to disengage their propelling units from the main craft and to return to the starting place, the auxiliary engines being mounted in suitable hulls suspended from wings 6.

In the modification illustrated in Fig. 2 the hulls of the auxiliary propelling units have the wings 7 fixed to their bottom, the wings being thus closely applied to the wing of the large craft.

Fig. 3 illustrates the case where the auxiliary propelling units are disengageably secured to the bottom surface of the wing of the main craft.

In Fig. 4 the auxiliary propelling units are shown to be connected to parachutes 9.

While the drawings show the invention applied to seaplanes, it is to be understood that it can equally be applied to all kinds of land machines.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described for obvious modifications will occur to a person skilled in the art.

In the claim affixed to this specification no selection of any particular modification of the invention is intended to the exclusion of other modifications thereof and the right to subsequently make claim to any modification not covered by these claims is expressly reserved.

I claim:—

The combination with an aeroplane comprising a longitudinally extending main body portion, a transversely disposed wing mem-

ber and a motor-propeller unit, of an auxiliary independent motor-propeller unit detachably secured to said wing at a point removed from said main body portion, and a parachute secured to said auxiliary motor-propeller unit and detachably secured to said wing in a collapsed position, and means controlled by the pilot of the aeroplane for detaching said auxiliary motor-propeller unit and its associated parachute from said wing.

In testimony whereof I affix my signature.

CLAUDIUS DORNIER.