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H. JUNKERS

START OF FLYING MACHINES

Filed Nov. 16, 1927

Fig. 1.

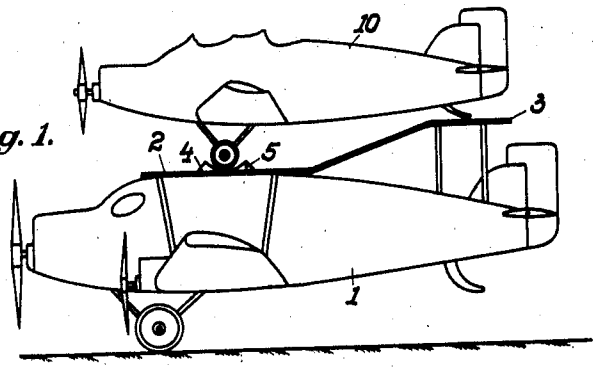
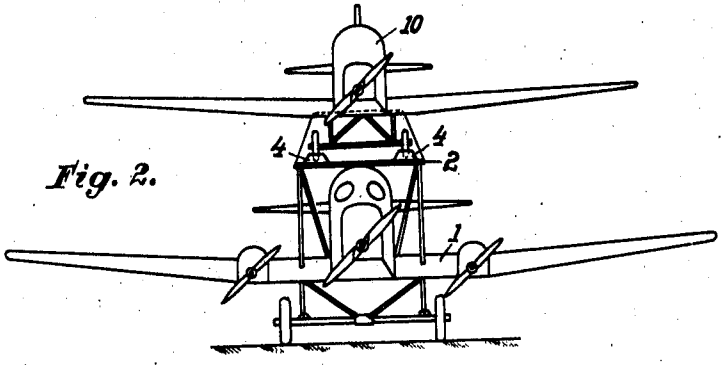


Fig. 2.



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HUGO JUNKERS, OF DESSAU, GERMANY.

START OF FLYING MACHINES.

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My invention refers to flying machines and more especially to a method and the means for starting them, it being a particular object of the invention to provide starting means which are more efficient than those hitherto used.

According to the present invention a flying machine is placed on or connected with another flying machine of some suitable type, which serves for imparting to the machine to be started an additional acceleration and, if desired, to support it in the air until a predetermined altitude has been attained.

I am aware that it has already been suggested in order to facilitate the starting of a flying machine to place it on a truck or slide arranged to be propelled by some suitable source of energy, such as an engine, drop weight, gas pressure, or the like. As these starting means add an additional accelerating power to the accelerating power created by the power plant of the machine to be started, the craft can be imparted the velocity necessary for the floating in air already after a comparatively short distance. However these starting means involve a drawback, inasmuch as they do not allow acting on the craft after it has once started floating in the air, as is desirable in all cases where the craft is required to rise directly after the start, for instance in order to fly over obstacles placed near the starting point. A quick rising of the craft is connected with particular difficulties in the case of flying machines which are heavily loaded per unit of carrying surface and have little spare energy left for propulsion.

If according to the present invention the craft to be started is supported by another flying machine, preferably the craft to be started is placed from above onto an auxiliary flying machine provided with means for supporting the craft, and in such a case simple means must only be provided for preventing any undesirable relative displacement of the crafts. The machine to be started can separate itself from the auxiliary craft as soon as the supporting surfaces (wings) of the craft to be started have attained the lift required for free flight. It is however also possible to suspend the craft to be started from the auxiliary flying machine, where the landing or floating gear of the auxiliary craft is arranged in such manner is not to hinder the detaching of the craft to be started from the auxiliary machine.

In the drawings accompanying this specification and forming part thereof two modifications of flying machines embodying my invention are illustrated diagrammatically by way of example.

In the drawings

Fig. 1 is a side elevation, and

Fig. 2 is a front elevation of a flying machine to be started, the machine being placed on top of an auxiliary machine.

Referring first to Figs. 1 and 2, 1 is the auxiliary flying machine, 2 is a platform erected on the wings and extending above the fuselage of the auxiliary machine, 3 being a stage connected with the platform and serving as a support for the spike of the machine to be started. Blocks 4 and 5 placed in front and behind the starting wheels of the machine 10 which shall be started, prevent relative displacement of the two crafts.

The machine 10 which shall be started is placed on top of the auxiliary machine 1, the engines of both machines are started, and the auxiliary flying machine 1 now starts rolling until it comes free from the ground, whereupon both crafts together can rise to a predetermined altitude, when the separation of the craft 10 to be started from the auxiliary supporting craft 1 can be effected by suitably adjusting the rudders or ailerons of the crafts, if desired in connection with a slacking down of the engine of the supporting craft.

This new starting method can be used for starting on land and on the water surface. The machine to be started and the auxiliary or supporting craft can be of any desired type and a flying machine having an ordinary landing carriage can be started from the surface of the water, while the machine 10 shown in Fig. 1 might as well be replaced by a hydroplane placed on top of the auxiliary machine 1.

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.

I claim:—

The method of starting a flying machine having the usual landing gear but which is incapable of rising by its own power from

the surface when heavily loaded, comprising combining such machine with an auxiliary flying machine, utilizing the combined power of both machines for attaining sufficient speed for lifting the machine to be started off the surface and to an altitude at which it is supported by the air to the extent of being able to soar and fly, and then separating the auxiliary flying machine, while continuing the flight of the started flying machine independently.

In testimony whereof I affix my signature.

HUGO JUNKERS.