Nov. 15, 1932. E. HEINKEL 1,887,509

APPLIANCE FOR AIRPLANE LAUNCHING TRACKS

Original Filed April 19, 1930

Fig. 1.

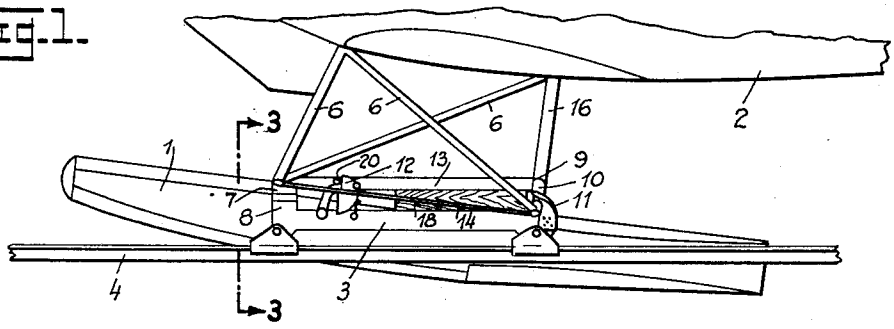


Fig. 2.

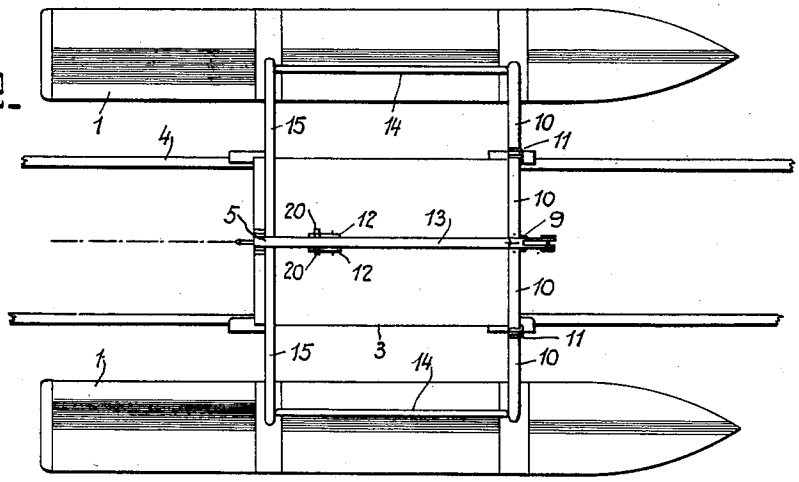


Fig. 3.

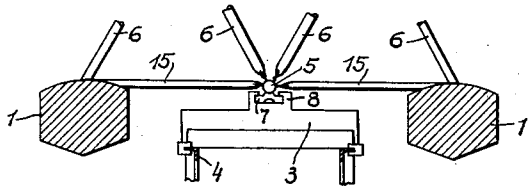
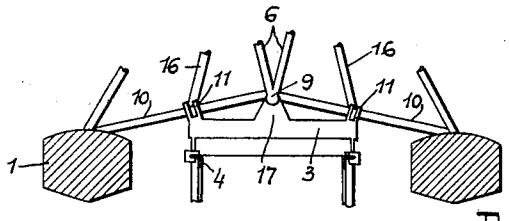


Fig. 4.



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UNITED STATES PATENT OFFICE

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APPLIANCE FOR AIRPLANE LAUNCHING TRACKS

Application filed April 19, 1930, Serial No. 445,773, and in Germany April 18, 1929. Renewed May 23, 1932.

My invention relates to the construction of the substructure of flying machines and especially of the water plane type in which floats are carried underneath the body of the flying machine.

The invention relates further to such machines which are adapted to be launched by a launching carriage or car propelled by power operated means.

The principal object of the invention is to provide an improved arrangement whereby a comparatively light substructure can be used for supporting the water plane on the launching carriage and transmitting the necessary driving forces in the most efficient manner.

Another object of the invention is to design the substructure of the water plane so that the latter is slightly elevated for starting purpose without having to increase the height of the front portion of the substructure unduly.

The invention further aims at providing improved automatic means for releasably connecting the understructure of the water plane with the launching carriage.

The nature and scope of the invention are briefly outlined in the appended claims and will be more fully understood from the following description with reference to the accompanying drawing in which Fig. 1 is a side elevation of the lower part of the water plane and of the launching sleigh.

Fig. 2 is a plan view, the plane being omitted.

Fig. 3 is a front view showing the method of interconnecting the understructure with the launching sleigh at its front end.

Fig. 4 is a similar view illustrating the connection at the rear end of the launching sleigh.

The water plane 2 is provided with floats 1 and connected to a launching carriage 3 which is propelled along a trackway 4 by power operated means (not shown).

The understructure of the water plane 2 comprises struts 6 with or without additional struts 16 and a base frame comprising transverse struts 10 and 15, side longitudinal struts 14, 14′ and a centre longitudinal strut 13.

The latter provides two nodal points connecting the substructure with the launching carriage: At the front nodal point 5 a T-shaped shoe is attached to the strut 13 and slides in a grooved guide member 8 mounted on the carriage 3. At the rear nodal point 9 the longitudinal strut 13 rests on a supporting member 17 carried on the carriage.

On the carriage 3 a pair of spring released driving members 12 is provided which are held in their operative position by pawls 12′ and abut against catch pins 20 projecting at each side of strut 13. This device affords the necessary driving connection between the carriage and the substructure of the machine, and as soon as sufficient speed is obtained, the machine is free to move forward, becoming automatically disengaged at 8, 12 and 9.

Various changes and modifications may be made in the structural details of water planes and their launching carriages as described above without substantially deviating from the spirit and the salient ideas of this invention. For example, the transverse struts 10 at the rear of the base frame may be inclined upwardly towards the nodal point 9 which is correspondingly raised so that the effective height of the rear portion of the substructure is less than that of the front portion and consequently the water plane is given an appropriate lifting inclination for rising into the air at a required minimum speed.

In order to secure the water plane to the carriage during the launching action and until the required speed is obtained hooks 11 may be provided on the rear end of the carriage 3 to engage over the struts 10, said hooks being open at the front so that the struts 10 can disengage from the hooks when the plane moves forwardly in relation to the carriage. In order to give additional strength to the substructure particularly where the hooks 11 engage with the struts 10 I prefer to provide substantially vertical auxiliary struts 16.

What I claim is:

1. In a substructure for flying machines of the water plane type provided with floats, a base frame comprising transverse struts and a longitudinal supporting strut and adapted

to support the plane upon a launching carriage, a T-shaped shoe provided at the front end of said longitudinal supporting strut and slidably engaging in a grooved guide member of the launching carriage.

2. The combination as specified in claim 1 in which the rear end of said longitudinal supporting strut is supported on the launching carriage at a level above the front end of said base frame.

3. The combination as specified in claim 1, in which the rear end of the launching carriage is provided with hooks open to the front and adapted to engage over the rear transverse struts of said base frame.

4. The combination as specified in claim 1, catch pins provided on said longitudinal supporting strut cooperating with an automatically moving driving member which positively drives forward said base frame and resiliently yields so as to permit forward movement of the supporting structure in relation to the launching carriage.

In testimony whereof I affix my signature.

ERNST HEINKEL.