W. J. STEWART.

LANDING STAGE OR STATION FOR AIRCRAFT.

APPLICATION FILED DEC. 16, 1920.

1,395,612. Patented Nov. 1, 1921.

Fig. 1.

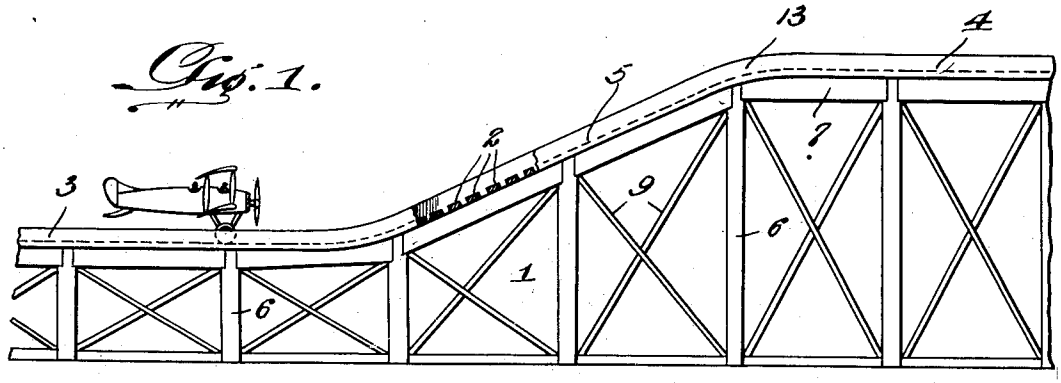


Fig. 2.

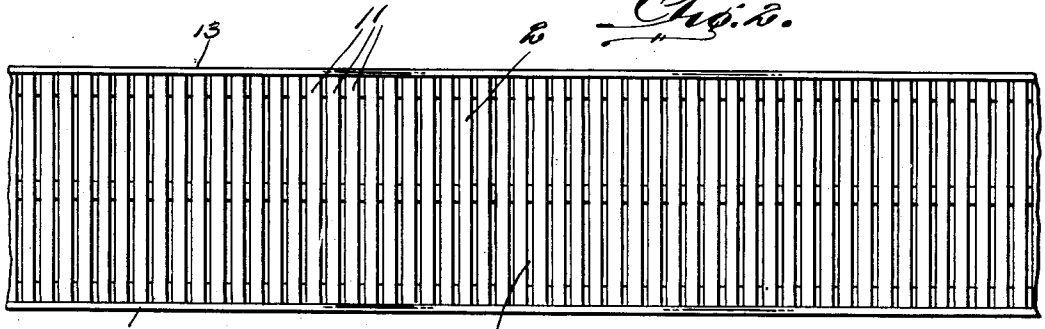
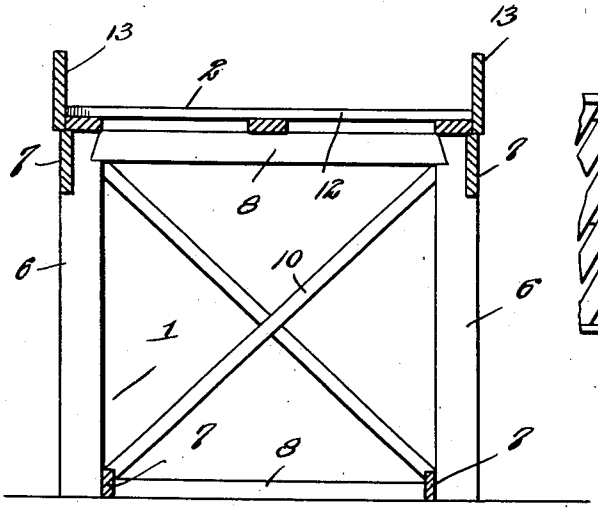
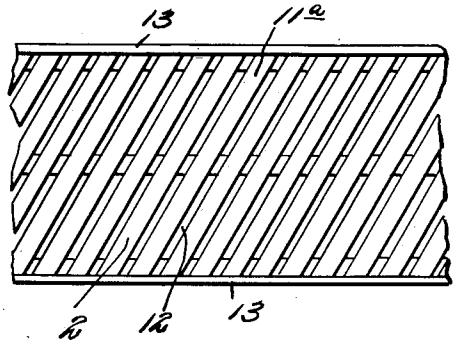


Fig. 3.



Fig. 4.





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UNITED STATES PATENT OFFICE.

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LANDING STAGE OR STATION FOR AIRCRAFT.

1,395,612. Specification of Letters Patent. Patented Nov. 1, 1921.

Application filed December 16, 1920. Serial No. 431,110.

To all whom it may concern:

Be it known that I, WILLIAM J. STEWART, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Landing Stages or Stations for Aircraft, of which the following is a specification.

My invention relates to a landing stage or station for aircraft, and particularly aircraft of the airplane type.

One object of the invention is to provide a landing stage or station whereby airplanes may be readily and safely landed in congested areas upon the roofs of buildings or at any desired elevation above the surface of the ground.

Another object of the invention is to provide a landing stage or station which may be easily, quickly and cheaply constructed and economically maintained in proper condition.

Still another object of the invention is to provide an airplane landing stage or station having a defined runway or platform of such shape as to enable the craft to be safely landed and quickly brought to a stop.

Still another object of the invention is to provide an airplane landing stage or station in which the runway or platform may be supported upon a skeleton framework, and in which said runway or platform is so constructed as to permit of the free passage of air therethrough, thereby relieving the structure of wind stresses and providing for the blowing away or clearance of all trash or foreign materials falling thereon.

The invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:—

Figure 1 is a side elevation, partly in section, of a portion of an airplane landing stage or station embodying my invention.

Fig. 2 is a top plan view of the same.

Fig. 3 is a vertical transverse section through the landing stage or station.

Fig. 4 is a view similar to Fig. 2 showing a modification in the arrangement of the component parts of the platform or runway.

In carrying my invention into practice, I provide a landing stage or station comprising a supporting framework 1 and a platform or runway 2 laid thereon. This landing stage or station may be of any suitable length and width, as conditions or circumstances may allow or require, and the platform or runway portion 2 thereof is provided with terminal portions 3 and 4 and a gradient intermediate portion 5. As shown, the portions 3 and 4 are arranged at different horizontal levels and are connected by the gradient intermediate portion 5 which forms therewith a continuous platform or runway. The portion 3 arranged at the lowest horizontal level constitutes an initial landing stage on which the machine to be landed first alights, such machine traveling up the gradient or inclined portion 5 whereby its speed is rapidly reduced, and stopping on the terminal portion 4 arranged at the highest elevation. By the provision of a platform or runway of such construction it will be evident that the speed of the landed machine will be quickly arrested by its travel up the gradient portion 5, so that it will be under full and complete control on reaching the portion 4, along which it will slowly travel until it comes to an easy stop. By this means the length of the landing platform or runway may be considerably reduced, allowing a landing stage or platform of ample length for the landing of the highest speed machines to be mounted upon the roof of a building or the roofs of adjoining buildings of comparatively restricted area or linear extent, or upon a ground surface of restricted size, so that ground in or near cities or other congested areas not now available for the purpose may be rendered available for such purpose by the provision of a landing stage or platform constructed in accordance with my invention.

Preferably the supporting framework 1 is of skeleton type, and may be of trestlework formation as shown, the same being constructed of spaced series of side uprights 6 connected by suitable stringers 7 and cross-pieces 8. The side posts of each series may be connected by suitable trusses or braces 9 and the side posts of the two series may be connected by similar trusses or cross-pieces 10. Where the structure is mounted upon a roof or is designed to support the platform or runway at a considerable height top and bottom stringers and cross-pieces may be employed to secure maximum strength of construction, but, where the platform or runway is supported above a road-

way or street surface, the lower cross-pieces and braces 10 may be omitted to form a clear passage for travel and the uprights otherwise suitably tied and braced. A skeleton framework of the character disclosed may be quickly and inexpensively constructed and will therefore be found of advantage whereby economy of construction is essential or conditions such that the supporting surface for the platform or runway can not be otherwise produced. This supporting structure being open from side to side allows free passage of wind currents, thereby reducing strain upon such structure.

The runway or platform 2 is also properly constructed to permit of the free passage of air currents therethrough. To this end it is preferably made of boards or planks 11 spaced so as to provide intervening spaces or air passages 12 therebetween. In Figs. 1 and 2 I have shown the boards or planks 11 arranged cross-wise and in parallel relation to each other, but they may be extended diagonally of the structure as shown by the arrangement of the boards or planks 11^a in Fig. 4, or arranged at other suitable angles according to local conditions and to the general prevailing course of travel of air currents. If desired, the boards or planks may be laid, set or inserted in a grating like fashion with the board surfaces parallel to one another, thus permitting the use of any required depth for strength without reducing the intervening air spaces which reduce the resistance to air currents or wind strains. The purpose of so constructing the runway or platform is to allow the wind pressures to blow freely therethrough, thus relieving the structure as a whole of abnormal wind pressures or strains, and enabling a comparatively light but strong and durable type of structure to be built at a comparatively low cost. The air spaces furthermore, in allowing the wind to blow freely through the runway or platform, provide for the ready blowing off or clearance of all trash or foreign matter which may fall upon the platform. The platform as thus constructed, while light in weight, will be substantial and rigid enough to withstand all the impact strains in the landing of machines and to avoid any possibility of deflection of any portion of the platform liable to cause damage or overturning of the machine during the landing action.

In practice the sides of the runway may be provided with guards or rails 13 extending upwardly therefrom to a sufficient elevation to obviate liability of a machine running off the runway. These may be of any suitable construction and braced in any desired way. They may also extend upwardly to a sufficient height to serve as wind barriers to protect a machine in landing from cross currents of air, thus enabling it to be more easily controlled.

The portion 4 of the structure may extend or flare to any desired width at its extremity, so as to allow a landed machine to be turned around and a number of machines to be accommodated at a time without interfering with other machines which may be landed from time to time. This portion 4 may be used as a launching runway for a quick take-off, the machine taking the air at the moment it clears the brow of the gradient portion, as will be readily understood.

Having thus fully described my invention, I claim:—

1. A landing stage or station for aircraft comprising a skeleton framework supporting a rigid runway platform having terminal portions arranged at different horizontal levels and an inclined portion between said terminal portions, said platform being formed of boards or planks laid with spaces therebetween for the free passage of air through said platform, thereby relieving the rigid structure of wind stresses.

2. A landing stage or station for aircraft comprising a skeleton framework supporting a rigid elevated runway platform having terminal portions arranged at different horizontal levels and an inclined portion between said terminal portions, said platform being composed of component parts arranged to provide air spaces therebetween.

3. A landing stage or station for aircraft comprising an upright framework of openwork type, and a runway platform mounted upon said framework and having terminal portions arranged at different horizontal levels and a gradient portion between said terminal portions, and having air spaces extending therethrough.

4. A landing stage or station for aircraft comprising a skeleton framework, a rigid runway platform supported thereby, said platform having terminal portions arranged at different horizontal levels and an inclined portion between said terminal portions, and said platform having air spaces therethrough throughout its length, and guards extending upwardly from said platform at opposite sides thereof.

5. A landing stage or station for aircraft comprising an upright rigid skeleton framework, a rigid platform supported upon said framework and having terminal portions arranged at different horizontal levels and a gradient portion between said terminal portions, said platform being formed of boards or planks arranged in spaced relation to provide intervening air passages for the passage of air through said platform.

In testimony whereof I affix my signature.

WILLIAM J. STEWART.