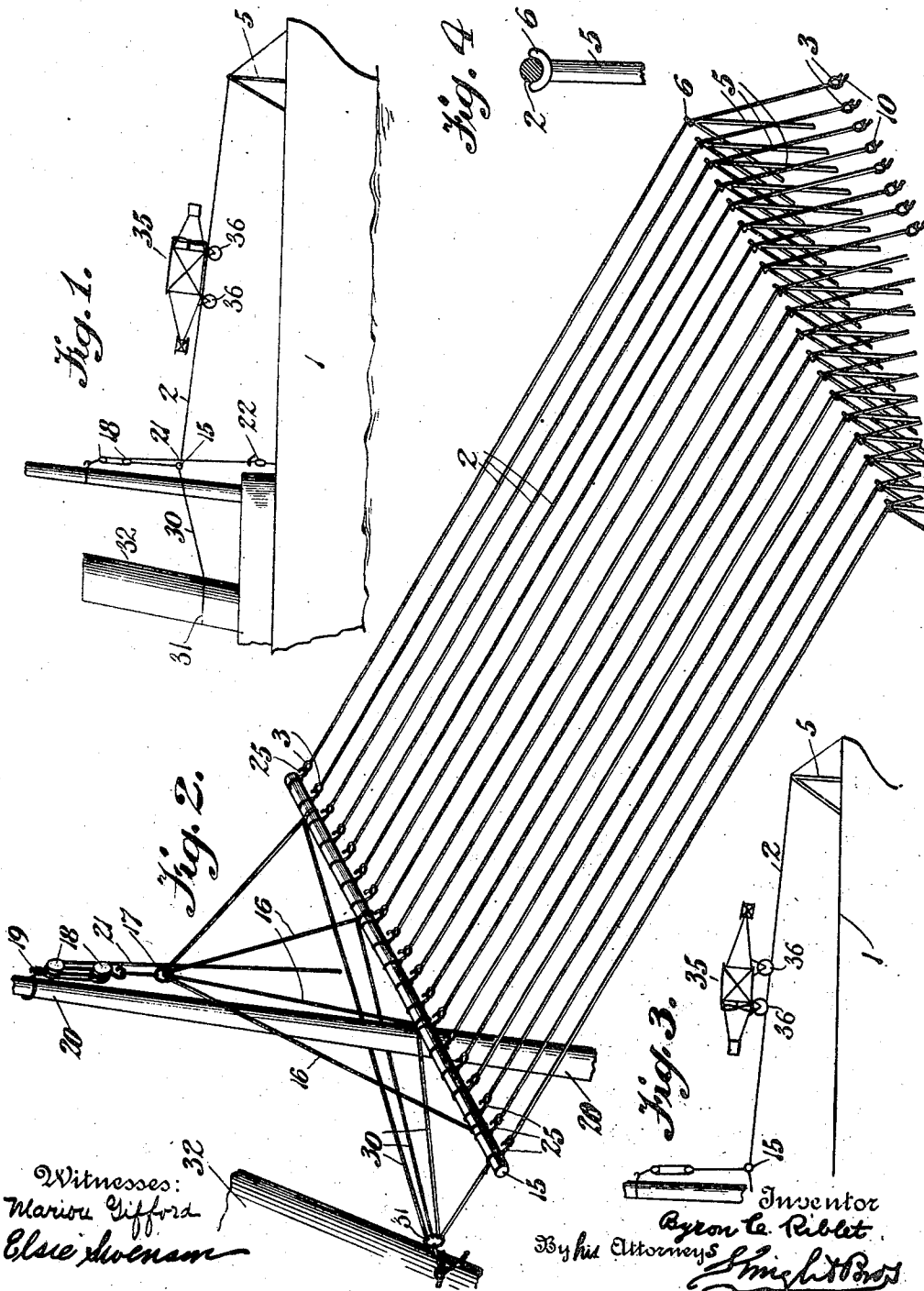


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 LANDING AND LAUNCHING PLATFORM FOR AEROPLANES.
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UNITED STATES PATENT OFFICE.

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LANDING AND LAUNCHING PLATFORM FOR AEROPLANES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BYRON C. RIBLET, a citizen of the United States, and a resident of Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Landing and Launching Platforms for Aeroplanes, of which the following is a specification.

The object of the present invention is to provide a simple and effective skeleton landing and launching stage or platform for aeroplanes.

The invention is designed particularly for application to ships to facilitate the landing of an aeroplane upon a ship and the flight of an aeroplane from the ship, although the stage or platform may also be employed upon land, particularly in places where it is impossible to obtain a level surface of the proper dimensions for the operation of an aeroplane.

The improved stage or platform is of skeleton formation and consists essentially of suitable end supports and a series of longitudinal spaced and separated members mounted upon and extending between said end supports in a common plane. These longitudinal members, which constitute the skeleton platform, are preferably in the form of ropes or cables stretched between the end supports with free spaces separating the individual ropes or cables from end to end of the platform. In some cases it may be desirable to arrange one end of the platform at a slightly higher elevation than the other end. With this construction of skeleton stage or platform, it will be understood that when an aeroplane alights upon it, the main frame parts of the machine will rest upon a number of the longitudinal supporting ropes or cables and the wheels will pass between the cables and act as lateral guides to prevent the aeroplane from sliding off toward the sides of the platform. The flexibility of the longitudinal supporting cables is an important feature of the improved landing platform since this flexibility serves to reduce to a minimum the shock of the machine landing upon the platform. The same skeleton stage or platform may also be effectively employed for launching an aeroplane whether from the land or from a ship. In using the platform for launching it is desirable that the aeroplane be provided with grooved supporting wheels or pulleys which may rest upon two or more

of the longitudinal ropes or cables forming the platform and upon which the aeroplane can be guided for a sufficient distance to insure its elevation into the air.

I prefer to construct the skeleton stage or platform in such manner that it can be readily erected and taken down. To this end I prefer to provide a series or considerable number of longitudinal ropes or cables of equal length provided or formed with eyes or rings at their opposite ends which are adapted to be engaged by suitable hooks mounted upon the end supports. The form of end supports may differ according to the location of the stage or platform, that is, to fit the structure to the particular requirements presented, but in any case I prefer to provide at least one of the end supports with means for raising and lowering it to facilitate erecting and taking down the sectional platform and properly stretching the ropes or cables, and in the case of applying the invention to ships, the support at the stern of the vessel may be in the form of suitably braced props having guideways for the individual ropes or cables and proper hooks secured in the deck of the vessel or to the stern rail, while the support for the opposite end of the platform may be in the form of a spar provided with a plurality of hooks for engaging the eyes or rings of the ropes or cables and suitable bracing ropes and block and tackle for manipulating the end supporting spar. This means for raising and lowering the stage or platform is also convenient in properly mounting an aeroplane upon the ropes or cables in preparation for a flight, since the cables can be lowered to the ground or deck of the ship and the aeroplane put in place with its grooved wheels in engagement with two or more of the ropes or cables and the sectional platform then elevated and stretched into operative position.

The principal application of my invention is, as stated above, for affording a simple, convenient and safe skeleton and flexible platform for assisting in the landing and launching of aeroplanes upon ships, and I have accordingly illustrated the invention in the accompanying drawing as applied to ships.

In said drawing: Figure 1 is a detail side elevation of the rear portion of a ship having my improved stage or platform mounted thereon above the after deck with its wheels

between the ropes or cables. Fig. 2 is a perspective view on a larger scale showing the stage or platform in operative position. Fig. 3 is a detail view similar to Fig. 1 illustrating diagrammatically an aeroplane in position upon the stage or platform in readiness for flight with its wheels on the ropes or cables. Fig. 4 is a detail view of one of the end supports or props for the strands or cables.

In the drawing, 1 represents a ship upon which the improved stage or platform may be erected.

2, 2, etc., indicate the individual ropes or cables constituting the longitudinal members of the skeleton stage or platform. Each of these ropes or cables 2 is provided with two eyes or rings 3, one of which is permanently attached at each end by splicing or other suitable means.

5, 5, etc., indicate the individual members of a series of props or knee supports suitably mounted upon the deck adjacent to the stern rail of the ship. Each of these props 5 may be formed with a crutch or yoke-shaped upper end as indicated at 6 to effectively support one of the ropes or cables 2.

10, 10, etc., indicate hooks suitably secured in the deck or to the stern rail of the ship adjacent to the supports 5. The eyes at the rear ends of the ropes or cables 2 are designed to be engaged upon the hooks 10 and the cables then passed over the yokes 6 of supports 5 as shown clearly in Fig. 2 of the drawings.

15 is a heavy spar connected by ropes 16 with a ring 17 hung from one of a pair of pulley blocks 18 supported at 19 from the mast 20. The rope 21 operating in the pulley blocks 18 in the usual manner passes down to the deck of the ship where it may be secured by any suitable means as indicated at 22. The spar 15 has properly secured to it a series of hooks 25 over which are adapted to engage the eyes or rings 3 at the forward ends of the ropes or cables 2.

Stay ropes 30 or any other suitable bracing means may be connected to spar 15 at different points and adjustably attached to a support indicated at 31 which, as shown, is attached to the smoke stack 32 of the ship.

It will be observed that when the ropes or cables 2 are attached at their opposite ends in the manner just explained and passed up over the props 5 forming the support at one end of the skeleton platform, that the spar 15 can be raised from the deck of the ship by means of the block and tackle described for stretching the ropes or cables between the two end supports. When the ropes or cables are properly stretched, with the spar 15 preferably at a slightly higher elevation than the end support 5, the rope 21 is secured to hold the series of cables or longitudinal members of the platform in

the described operative position, that is, with each rope or cable taut. It will be observed that the ropes or cables are mounted in parallel relation with free spaces between them and that all of the ropes or cables are in the same general plane which is preferably slightly inclined to the horizontal as shown.

In Fig. 1 I have shown diagrammatically an aeroplane 35 in the position it will assume after alighting upon the longitudinal members or cables 2 of the skeleton platform. It will be observed that the usual supporting wheels 36 of the aeroplane project down between the supporting cables 2 and that the main frame of the machine rests directly upon the cables. The wheels and their supports passing between the longitudinal cables will act as guides for the aeroplane to prevent its sliding off to either side of the skeleton platform. The flexibility of the cables avoids the shock of the landing of the aeroplane upon the platform.

In Fig. 3 I have shown diagrammatically the position an aeroplane will assume upon the skeleton stage or platform when it is in position for flight from the ship. To assist the free movement of the aeroplane over the cables, it is desirable to provide grooved wheels above the platform to engage two or more of the cables 2. In placing an aeroplane upon the platform it is preferable to lower the end supporting spar 15 and place the machine above the proper ropes or cables 2 so that the wheels 36 will engage therewith, and then elevate the spar 15 to stretch the cables 2 into their operative position. When the stage or platform is not in use, it can readily be taken down and separated into its elements and stored away in a small space.

The stage or platform composed of the end supports and flexible longitudinal members or cables is superior to the large and unwieldy wooden platforms which have heretofore been used in recent experiments of flying aeroplanes to and from ships, in that it can be more readily put in place and removed and affords a safe and effective platform for the reasons above explained.

In the event of applying the skeleton platform upon the land, it will be understood that any suitable end supports can be built at the desired points with a sufficient distance between them to provide the desired length of platform, and the ropes or cables stretched between them in the same manner as above explained in connection with the mounting of the platform upon a ship.

I would have it understood that I do not intend to limit myself to the specific details of the construction described, since it may be changed to suit the requirements of the various applications made of my invention. The "knock down" feature of the invention

is a great convenience and in working out the details of this, it will of course be understood that any suitable fastening devices may be used for the various parts of the structure. If preferred, the hooks and eyes may be interchanged by placing the hooks upon the ends of the cables and the eyes upon the supports.

What I claim is:

10 1. A skeleton platform for aeroplanes comprising a series of closely arranged spaced and separated longitudinal flexible connections extending in the same general direction in a common plane and flexible
15 supports connected with the flexible connections.

2. A platform for aeroplanes comprising suitable supports, and a series of closely arranged, spaced and separated ropes or
20 cables detachably mounted upon and stretched between said supports.

3. A platform for aeroplanes comprising removable supports, means for securing said supports in position, and a series of closely
25 arranged, spaced and separated ropes or cables detachably mounted upon and stretched between said supports.

4. A platform for aeroplanes comprising end supports, a series of ropes, or cables,
30 between the end supports, and hooks, and eyes or rings for supporting said ropes, or cables, in a common plane between said supports.

5. A platform for aeroplanes comprising end supports, a series of ropes, or cables, 35 between the end supports, means loosely securing the ropes or cables to the end supports, and knee supports, intermediate of the end supports, having crutches over which the ropes or cables are passed. 40

6. A platform for aeroplanes comprising suitable supports, hooks mounted upon said supports, and a plurality of ropes or cables provided with rings or eyes at their opposite ends adapted to engage said hooks for 45 supporting said ropes or cables in a common plane between said supports.

7. A platform for aeroplanes comprising a plurality of ropes or cables, a support at one end of said ropes or cables, a spar connected with the opposite ends of said ropes or cables, and a block and tackle mounted above and connected with said spar for adjustably supporting it. 50

8. The combination with a ship, of an 55 aeroplane platform comprising suitable supports mounted upon the ship, and a series of closely arranged ropes or cables stretched between said supports and maintained thereby in a common plane and in spaced and separated relation above the deck of the ship. 60

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