

Aug. 18, 1936.

H. HEIN

2,051,709

LANDING SAIL SIDE BEAM

Filed Feb. 25, 1935

2 Sheets-Sheet 1

Fig: 1.

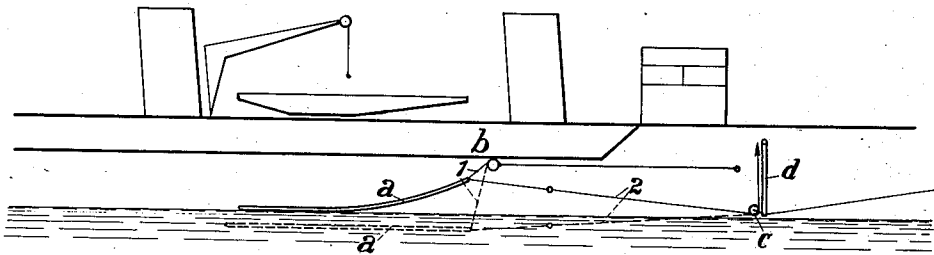


Fig: 2.

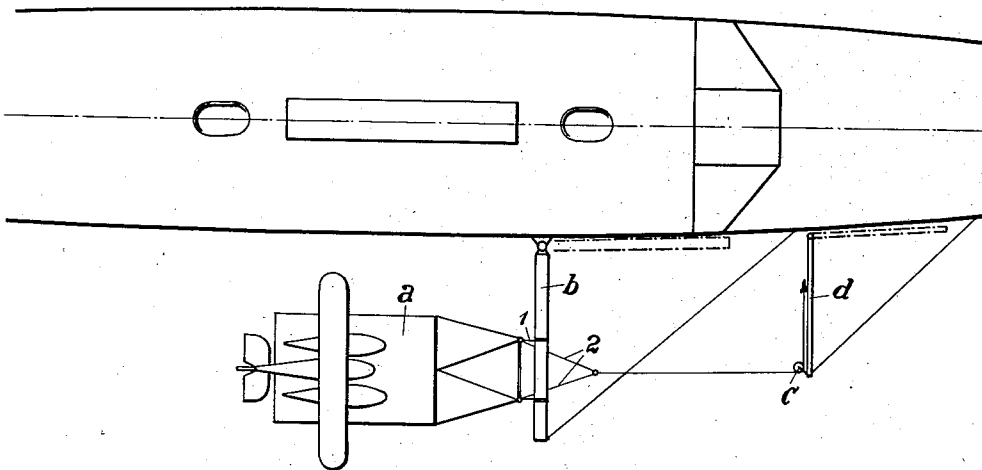


Fig: 3.

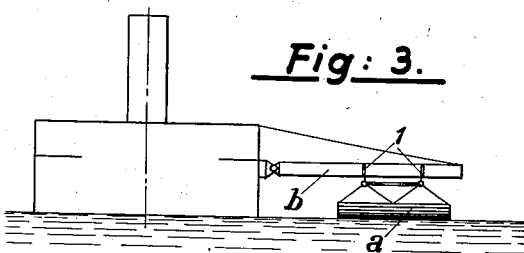
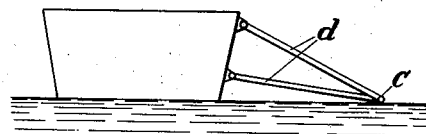


Fig: 4.



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Fig: 5.

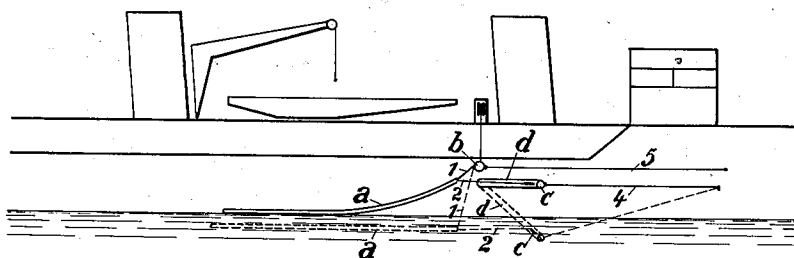


Fig: 6.

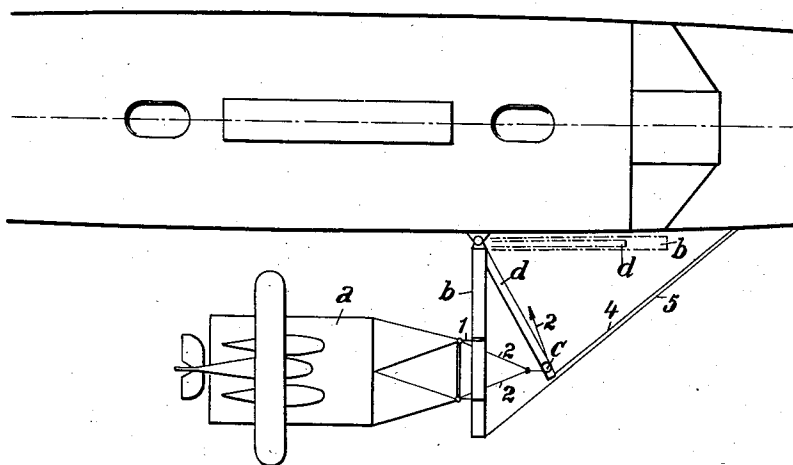
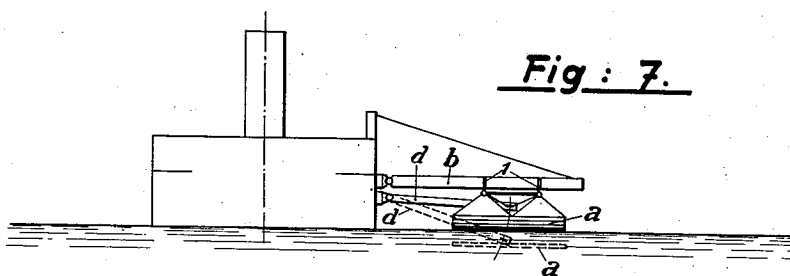


Fig: 7.



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UNITED STATES PATENT OFFICE

2,051,709

LANDING SAIL SIDE BEAM

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6 Claims. (Cl. 114—0.5)

Landing sails for aircraft intended to be taken on board ship have hitherto been arranged at the stern of the ship. This arrangement is however not always desirable. In particular, if the arrangements for taking the aircraft on board and for projecting it were located amid-ship for example between funnels, the carrying of the aircraft from the stern to the centre of the ship would be avoided. This is achieved by the present invention, according to which the landing sail is manipulated by swingable and fixable lateral spars mounted on the side of the ship. A main spar serves for hauling the upper main towing members of the sail, and for clewing up or rolling up the sail, while a second, auxiliary spar having its end arranged in or movable into a position close above the water level, serves for manipulating the towing members provided for flooding the sail. The advantages are obtained by the invention of rapid preparation for use and easy manipulation of a landing sail intended to be towed alongside a ship.

The accompanying drawings diagrammatically illustrate an example of embodiment, Figures 1 and 5 being elevations and Figures 2 and 6 plans. Figures 3, 4 and 7 are side views of the two respective sail holding spars.

In the drawings, *a* is the landing sail, *b* a laterally projecting main spar to which the front end of the sail is attached. This spar can at the same time serve for rolling up the sail and is then rotated either by hand or power. It is adapted, as Figures 2 and 6 show, to be swung in against the ship's side. It can however be arranged so that it can be taken completely on board.

1 is the upper towing members of the landing sail, *2* the lower towing members which in the illustrated example are connected to form a bridle and then continued as a single line over a block *c* carried by a second spar *d* which is also laterally mounted. The block *c* lies near the water line or can be brought close over the water level by suitably swinging the spar *d*. In the example of Figures 1-4 the spar *d* with the block *c* lies at such a distance in front of the main spar *b* that when the lines *1* are played out the leading edge of the sail can submerge and the sail is flooded (Figure 1).

The spar *d* is also adapted to be swung to (Figure 2), or it can be taken on board. In the example of Figures 1-4 it is constructed as a double spar (Figure 4), at the outer junction point of which the block *c* is located. The at-

tachment and position of the two members extending from the point *c* are so arranged that this point *c* resists upwardly directed forces.

In the example of Figures 5-7 the spar *d* for the lower sail towing members *2* is laterally mounted on the ship in the neighbourhood of the spar *b* for the upper towing members, for example beneath the same, and can be swung laterally and downwardly. It can be swung in against the side of the ship by a line *4*, just as can the spar *b* for the upper towing members by the line *5*. The line *4* in conjunction with the tie *2* takes the weight of the spar *d*, a certain amount of sag naturally being provided.

The spar *d* is swung so far forward when the sail is unrolled that the members *1* run approximately vertically. The necessary length of the members *2* is thereby reduced to the minimum; secondly the spar *b* is relieved of load because the main towing load is taken through the lines *2*; thirdly access to the sail from the spar *b* is facilitated. To flood the sail the towing members *1* are paid out. The spar *d* suspended by the ties *1* and *4* correspondingly descends and holds the flooded sail at the correct distance from the ship.

What I claim is:

1. A device for manipulating aircraft landing sails at the side of a ship, comprising a main spar and an auxiliary spar, both secured to the side of the ship, connecting means between the sail and the main spar for hauling the sail, and connecting means between the sail and the auxiliary spar to lower the sail for flooding purposes.

2. A device according to claim 1, in which the spars are swingably mounted to the side of the ship.

3. A device according to claim 1, in which the connecting means are tow lines.

4. A device according to claim 1, in which the spars are swingably mounted to the side of the ship so that they may be swung against the side of the ship and both having swinging points arranged one vertically above the other.

5. A device according to claim 1, in which the spars are swingably mounted to the side of the ship so that they may be swung against the side of the ship and both having spaced swinging points.

6. A device according to claim 1, in which the main spar is rotatably mounted so that the landing sail may be rolled thereon after use.

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