

Title (en)
A WINGSAIL

Title (de)
TRAGFLÄCHENSEGEL

Title (fr)
VOILURE

Publication
EP 3299275 A1 20180328 (EN)

Application
EP 17250010 A 20170908

Priority
• GB 201616255 A 20160925
• GB 201709183 A 20170609

Abstract (en)

A wingsail comprising: (a) a plurality of support members (2) which are slideable along a mast (3) and which are moveable between a first condition and a second condition; (b) a sail covering (1) which is fastened to the support members (2) and which is formed by two continuous sheets of material, one on each side of the wingsail; (c) fastener means (4, 5); and (d) tension-providing means for hoisting and providing tension in the sail covering, and the wingsail being such that: (e) in the first condition the support members (2) each form a rigid aerofoil-shaped section in a plane perpendicular to the mast, which ensures that the sail covering (1), when the leading edges of the two sheets of material are connected together by the fastener means (5), forms a single double-surfaced covering with single curvature around the aerofoil sections formed by the support members (2), and the sheets of material are maintained in a taut condition between the support members by means of tension provided by the tension-providing means stretching the covering material over the support members (2); (f) in the second condition, the support members (2) are such that the parts of the support members (2) to which each side of the sail covering (1) are fastened, each form a straight line in a direction transverse to the mast (3); and (g) in going from the first condition to the second condition, the two sheets of material forming the sail covering (1) are separated from each other where they were connected together by the fastener means at the leading edge of the wing, the support members (2) vary their geometry so that the sail covering (1) changes from forming a single double-surfaced aerofoil shape in a plane perpendicular to the mast (3) in the first condition, to a pair of separate pieces of covering which are straight in a transverse direction to the mast (3) along a chord of the wingsail when the support members are in the second condition, thereby allowing the support members (2) to be lowered down the mast (3) when the tension in the tension-providing means is reduced, reducing the spacing between the support members (2) along the mast (3), while the sail covering (1) between the support members (2) is able to be flaked down while still attached to the support members (2), or detached from the support members (2) and rolled up, in either case without causing double curvature in the sail covering (1), with the exception of a transition zone between a first zone where the support members (2) are in the first condition thereby forming an aerofoil shape and a second zone where the ribs are in a second condition in which the covering is able to be flaked or rolled up, the transition zone being of a sufficient length to keep the degree of double curvature in the sail covering (1) within the limits that the sheets of material can accommodate without damage from creasing or crumpling.

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Citation (search report)
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• [A] US 2009165689 A1 20090702 - GONEN ILAN [IL]
• [A] US 2001047745 A1 20011206 - ABSHIER CHARLES ALLEN [US]

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