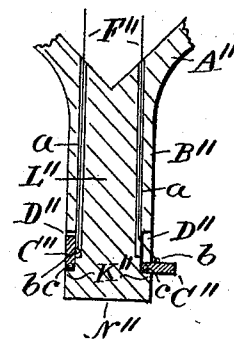
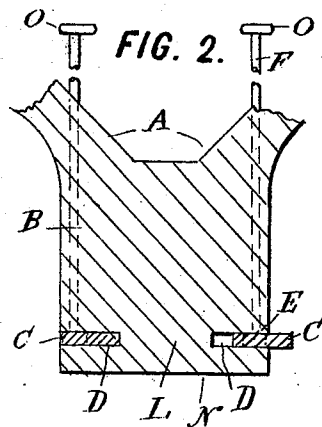
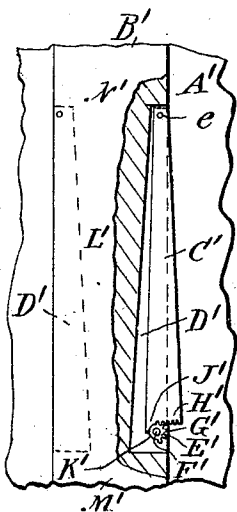
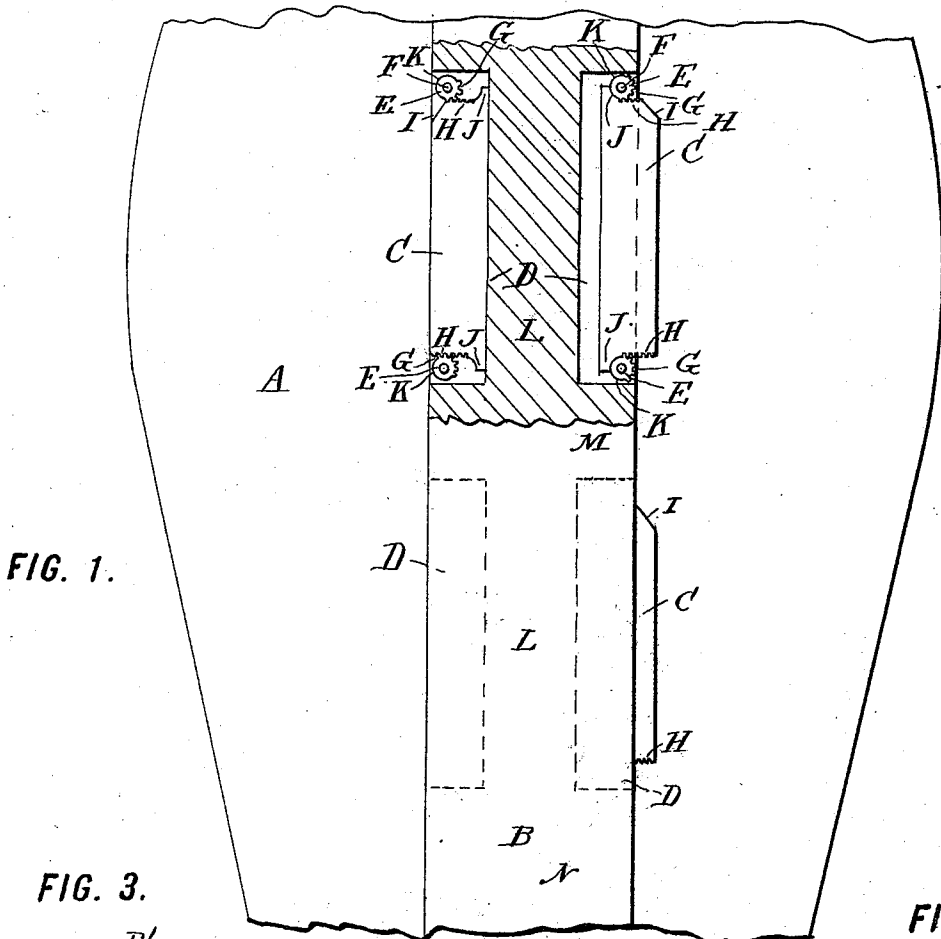


(No Model.)

N. C. JESSUP.
LEE WING FOR VESSELS.

No. 517,864.

Patented Apr. 10, 1894.



WITNESSES:

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UNITED STATES PATENT OFFICE.

NATHAN C. JESSUP, OF WEST HAMPTON BEACH, NEW YORK.

LEE-WING FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 517,864, dated April 10, 1894.

Application filed June 17, 1893. Serial No. 477,906. (No model.)

To all whom it may concern:

Be it known that I, NATHAN C. JESSUP, a citizen of the United States, residing in West Hampton Beach, town of Southampton, Suffolk county, State of New York, have invented certain new and useful Improvements in Vessels, of which the following is a specification.

This invention relates to lee wings for vessels, and aims to provide certain improvements in such wings and in their application to the hull of the vessel.

According to my invention I provide the vessel with a solid keel having two or more recesses penetrating its solid body laterally, but not entirely traversing the width of the keel. I mount my improved lee wings movably in these sockets in such manner that they can at will be shifted either entirely within the socket or to project at right angles to the vertical axis of the keel from the socket. The wing at the lee side is thus projected to catch the water and prevent the leeway in sailing, the other wing being then disposed within its socket. On changing the course the projecting wing is moved in and the opposite wing projected out, it being then on the lee side.

In the accompanying drawings which illustrate certain adaptation of my invention, Figure 1 is a fragmentary plan view partly in horizontal section through the sockets, of the bottom side of the hull of the vessel. Fig. 2 is a fragmentary cross section thereof through the sockets. Fig. 3 is a fragmentary plan view partly in horizontal section of the keel of the vessel and Fig. 4 is a fragmentary cross section showing a modification.

Referring to Figs. 1 and 2 let A indicate the hull, B the keel, C the lee wings, D the sockets therefor, E the gears for manipulating the wing, F the shafts carrying the gears, G a segment of gear teeth on the gears, H gear racks on the wings, J projecting stops on the latter and K co-operating stops on the gears E.

O are handles on the shafts F for operating the latter.

According to my invention the keel B is constructed with a solid bottom face N traversing its entire width, with a solid web L traversing its entire depth between said sock-

ets D, and with solid portions M traversing its entire width and depth at the ends of said sockets, whereby the keel can ride on the blocking during construction or repair of the vessel, or can pass over or rest on any substance of any kind without impairing the sockets D or their contacts.

According to another feature of my invention I provide the shallow sockets D each independent of the others in the sides of the keel itself, and I provide shallow wings C in these sockets. Preferably the wings and sockets are of equal depth, whereby when moved in the wings abut against and are stopped by the inner ends of the sockets. Preferably the wings are constructed with stop projections J, those shown being concave and corresponding in curve to the inner pitch line of the gear teeth G, projecting at rear of the gear E, which stop engages the segment K of the gear when the wing is projected, and thereby the outward movement of the latter is limited. Preferably the corner at the front of the wing is beveled off at I.

In operation the wing to be projected is shifted by turning the handle O of the shaft F, and the wing at the other side is moved in the same manner. When projected the wing catches the water on the lee side of the keel and tends to hold the vessel against leeway, as usual with such wings.

In the modification shown in Fig. 3 the hull is lettered A', the keel B', its bottom face N', its web L', its solid part M', the sockets are lettered D', the wings C', the gear E', its teeth G', its shaft F', its stop K', the rack on the wing H', and the stop thereon J'. The construction and operation are identical with that described as to Figs. 1 and 2, with the exception that the wing is tapering being pivoted at its front end on a pin e, and swinging on this pin in moving from the open to the closed position, and the socket is constructed with a corresponding taper.

In the modification shown in Fig. 4 the hull is lettered A'', the keel B'', its bottom face N'', its web L'', the sockets D'', the wings C''. In this construction the wings fold into the sockets, being fulcrumed at their lower edges on pins c, and carrying at their inner sides eye-lets b, to which are connected manipulating cords F'' which rise through conduits a trav-

ersing the keel. The under side K'' of the sockets serves to limit the unfolding movement of the wings. The windward wing is folded up by tautening the cord and the lee wing is unfolded by loosening the cord, whereby it projects to leeward of the keel.

What I claim is—

1. In vessels, the hull and keel, the latter constructed with sockets in its side faces and a solid wall L intervening between said sockets, in combination with a lee-wing movably mounted in each of said sockets, when moved in one direction projecting laterally from said keel for preventing leeway, and when moved in the other direction moving within its socket, and means for moving said wings, substantially as set forth.

2. In a vessel, the hull and keel, the latter constructed with a plurality of sockets in each of its side faces, with a solid web L between said sockets, with a solid under face N beneath

said sockets, and with solid portions M between the ends of said sockets, in combination with lee wings for each of said sockets, and means for moving said wings, substantially as set forth.

3. In a vessel, the hull and keel, in combination with a lee wing C carried by the keel and having rack teeth H and stop projection J, and a gear E having a shaft F for manipulating it and constructed with a toothed segment G engaging said rack and a segment K in the path of and engaging said stop J for limiting the movement of the wing, substantially as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

NATHAN C. JESSUP.

Witnesses:

GEORGE H. FRASER,
THOMAS F. WALLACE.