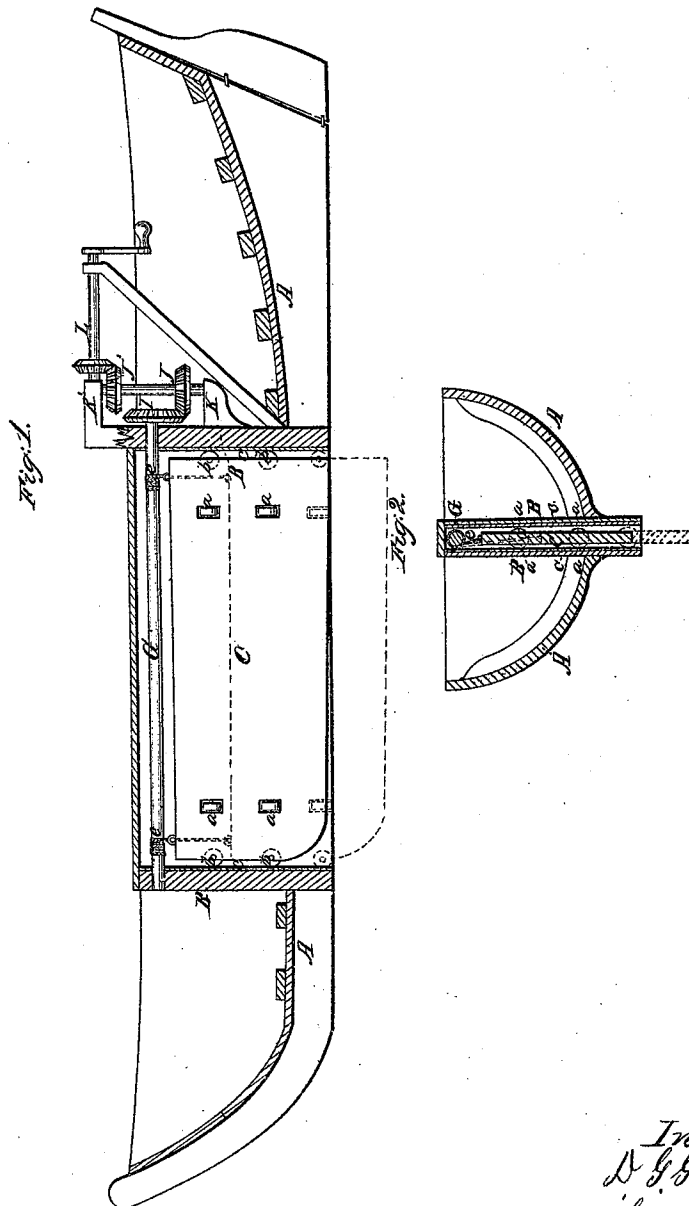


D. G. Gerard.
Centre Board.

N^o 28,979.

Patented Jul. 3, 1860.



Witnesses:
J. O. Corbitt
C. Hughes

Inventor:
D. G. Gerard
J. W. Munn & Co.
Attorneys

UNITED STATES PATENT OFFICE.

DANIEL G. GERARD, OF PATCHOGUE, NEW YORK.

CENTERBOARD FOR VESSELS.

Specification of Letters Patent No. 28,979, dated July 3, 1860.

To all whom it may concern:

Be it known that I, D. G. GERARD, of Patchogue, in the county of Suffolk and State of New York, have invented a new and useful Improvement in Centerboards for Vessels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1, represents a vertical middle longitudinal section taken through a vessel showing clearly, though somewhat enlarged the application of my adjustable center board to the vessel, with the means of operating it. Fig. 2, is a transverse vertical section taken through the centerboard and its box.

Similar letters of reference indicate corresponding parts in both figures.

To enable those skilled in the art to fully understand my invention, I will proceed to describe its construction and operation.

In the drawings, A, represents the outline of the hull of a vessel; B, the box that incloses the centerboard C, which box is built up from the keel, and calked tight so as to prevent any leak, in the usual manner, and if necessary, the ends and sides of the inside of this box may be lined with sheet metal, or strips *c, c*, of metal will answer the purpose very well.

The center-board C, is furnished with friction rollers *a, a*, that are let into the sides of the board as clearly shown in the drawings, and that bear against the strips of metal *c, c*, and friction rollers *b, b*, that project from the ends of the board and roll against the strips of metal in each end of the box as shown. These rollers are exceedingly important where a board is used having its front and rear ends of the same width, as shown in the drawings, and in fact for any

shaped board, as the lateral pressure of the water upon the board while the vessel is under sail is very great, and these friction rollers allow the board to be raised or depressed under these circumstances with comparatively great ease.

G is a shaft that passes longitudinally through the box B, above the board C, and has its bearings in each end of the box B. From this shaft, which is a rolling shaft, is hung the center-board C, by chains or ropes *e, e*, one connecting with the front end of the board C, and the other with its rear end, and if necessary one or two chains may be used intermediate between the two chains *e, e*. The shaft G, carries a bevel spur wheel I, on its rear end which engages with a horizontal bevel wheel J, the shaft of which is in an upright position and has its bearings in brackets K, K'.

J', is a bevel wheel placed above the wheel J, and on its shaft which engages with a bevel wheel on the end of a rod or shaft L, which shaft passes astern and is arranged in a convenient position to be operated by means of crank *g*, by the man at the helm.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

The arrangement and combination with a center board C, in the manner herein shown and specified, of the lateral rollers *a, a*, projecting through upon each side of the board C, the longitudinal end rollers *b, b*, lifting shaft G, diving shaft I, and gear wheels, all as set forth and for the purposes specified.

DANIEL G. GERARD.

Witnesses:

SAM'L C. HAWKINS,
ALFRED B. HOWELL.