F. G. FOWLER.

Steering Propellers.

No. 143,896. Patented Oct. 21, 1873.

Fig. 2.

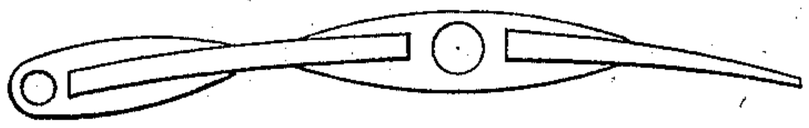


Fig. 1.

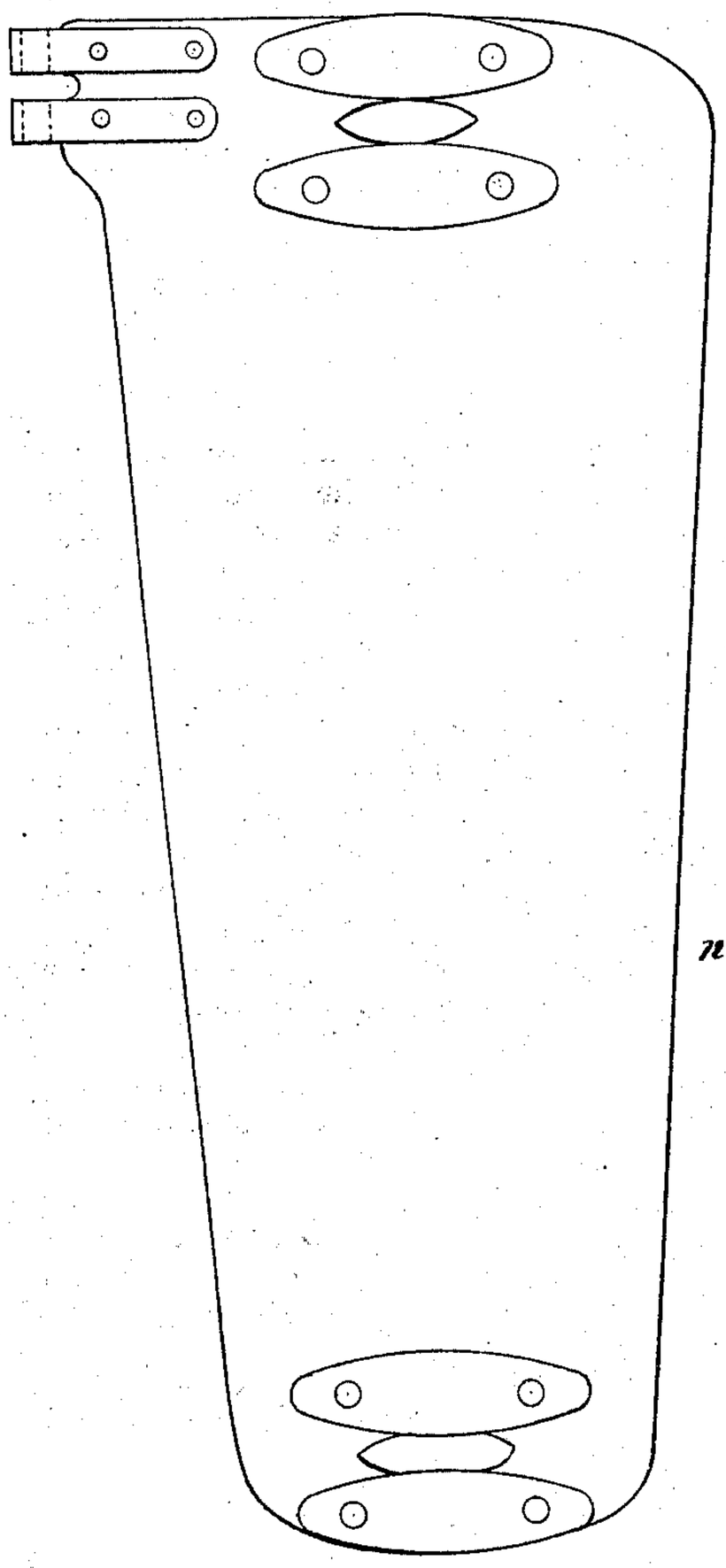
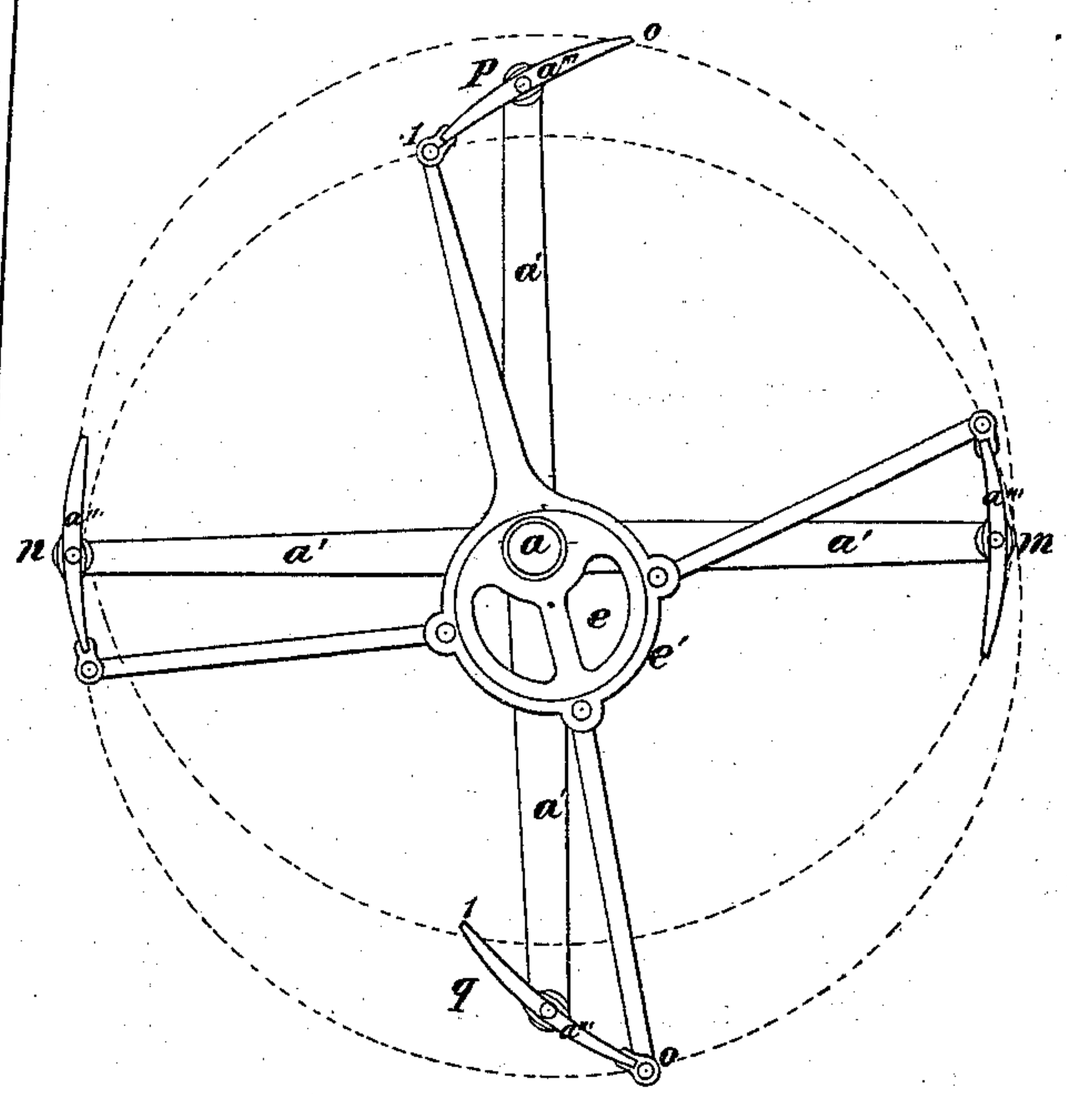


Fig. 3.



Witnesses.

Elphelet B. Stevens.

John Rylands.

Inventor:

F. G. Fowler.

UNITED STATES PATENT OFFICE.

FRANK G. FOWLER, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN STEERING-PROPELLERS.

Specification forming part of Letters Patent No. **143,896,** dated October 21, 1873; application filed November 22, 1870.

To all whom it may concern:

Be it known that I, FRANK G. FOWLER, of Bridgeport, in the county of Fairfield, State of Connecticut, have invented an Improvement in Steering-Propellers, of which the following is a specification:

My invention consists in so forming a steering-propeller blade that its pitch is varied according to the radial distance of different parts of its surface, and is made to operate with greater force on the outer edges than upon the edges nearest the shaft, thereby diminishing the strain on the arms of the eccentrics.

In the accompanying drawing, Figure 1 is a side view of my improved steering-propeller blade; Fig. 2, a sectional plan of the same; and Fig. 3, a sectional plan of the propeller with improved blades.

The outer face of the blade, or that most remote from the shaft, is formed with a convex surface, the inner face being, by preference, concave. The manner in which these curved surfaces serve to equalize the effective force against the water will be understood by reference to Fig. 3.

Had these blades plane surfaces, as in ordinary steering-propellers, their whole surfaces would have the same angle, and consequently their outer edges, being farthest from the center of motion, would move most rapidly; but by reason of the curvature of the blades their outer extremities having the greatest motion have the finer angle, and their inner extremities having the least motion have the coarser angle. The difference in the velocities of the two extremities or edges of the blades being compensated for by a difference of angle, and the curvature being such as to cause them to propel with equal force over their entire surface. The curvature has the effect of relieving the eccentric arms of a great amount of strain that would otherwise devolve upon them. The paths of the blades through the water when the boat is in motion are circular, and their curvature enables them to pursue these circular paths more easily than if they had plain surfaces.

I claim as my invention—

The curved steering propeller-blade A, in combination with the arms, eccentric, and sleeve of a steering-propeller, substantially as and for the purpose herein set forth.

FRANK G. FOWLER.

Witnesses:

ELIPHALET B. STEVENS,
JOHN RYLANDS.