

(No Model.)

C. & E. MYERS & J. DAVIES.  
SCREW PROPELLER.

No. 467,824.

Patented Jan. 26, 1892.

FIG. 1.

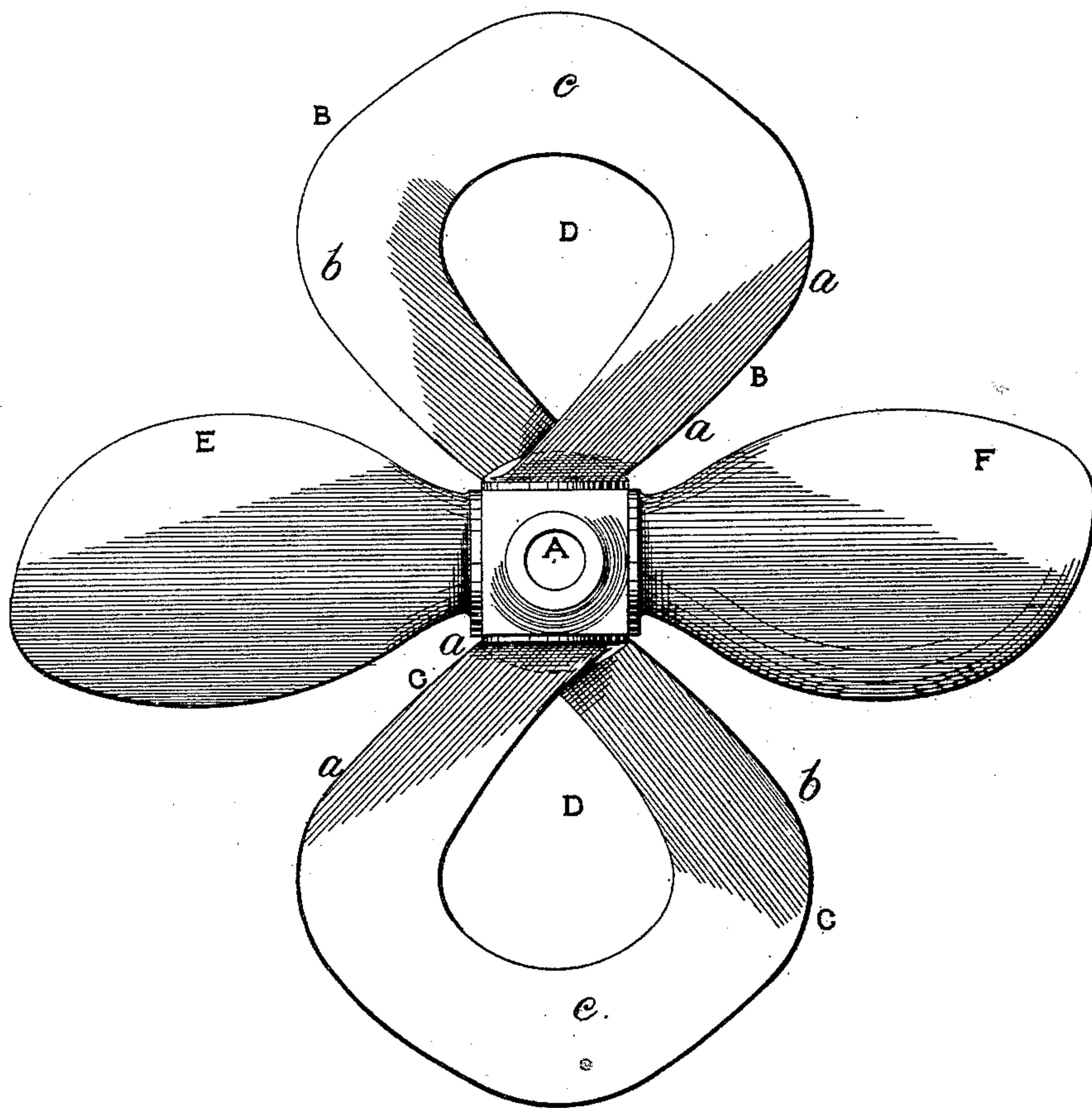


FIG. 2.

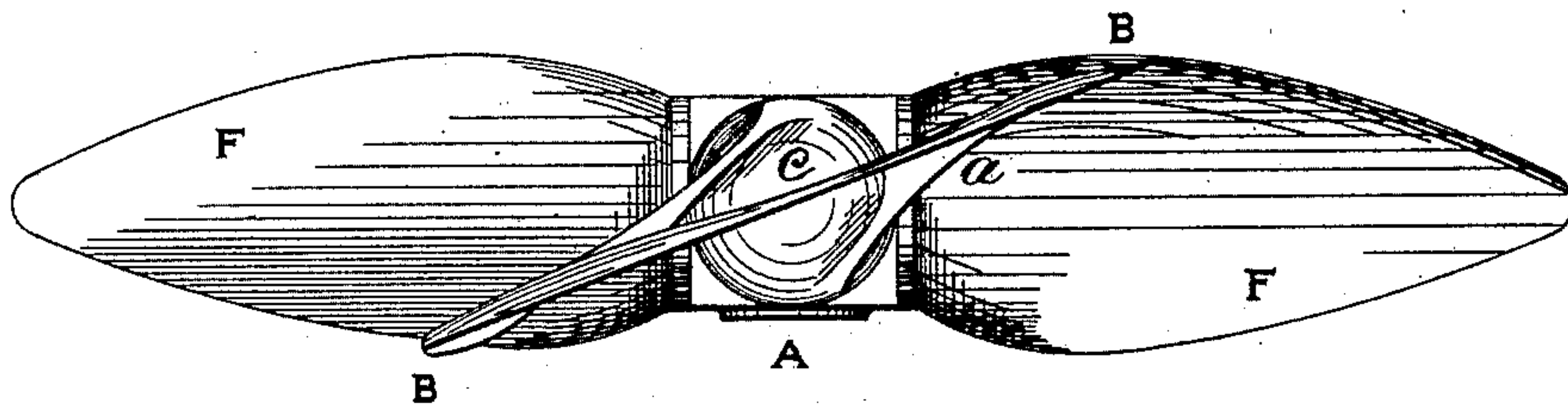
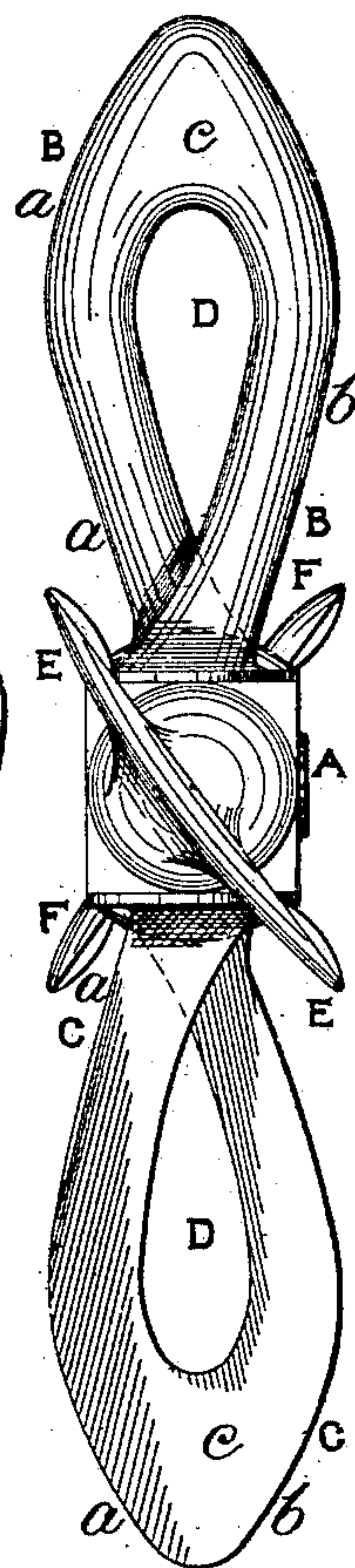


FIG. 3.

WITNESSES

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By Wm. P. Thompson atty



# UNITED STATES PATENT OFFICE.

CHARLES MYERS, ELIZABETH MYERS, AND JOHN DAVIES, OF MANCHESTER,  
ENGLAND.

## SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 467,824, dated January 26, 1892.

Application filed September 3, 1891. Serial No. 404,671. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES MYERS, ELIZABETH MYERS, and JOHN DAVIES, subjects of the Queen of Great Britain, residing at Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Screw-Propellers, of which the following is a specification.

This invention relates to improved screw-propellers for steamships, and is designed with the object of increasing the efficiency of the propeller under certain conditions and of preventing or obviating the vibration incident thereto where large propellers with few blades are used, and at the same time provide for the more general application of looped blades to screw-propellers.

It consists, essentially, of a screw-propeller constructed with one or two separate independent looped blades (such as shown in the drawings) and one or two separate plain flat blades placed alternately round the same hub or boss.

It will be fully described with reference to the annexed drawings, in which, as an example, a four-bladed propeller is shown.

Figure 1 is an elevation; Fig. 2, a side elevation; Fig. 3, a plan.

In carrying out the invention the propeller is constructed with a central hub or boss A, of ordinary construction, to which are bolted or otherwise attached two, three, four, or more blades. The two blades B and C are constructed of flat helically-disposed loops, both ends of which terminate in and are attached to the boss, one in advance of the other, thus forming a severed loop composed of the radial arms *a* and *b*, connected together by an outer segmental piece *c*, inclosing an opening D through the center of the blade, and the other two blades E and F are constructed of a plain flat spiral or twisted blade of any shape attached to the boss at one end.

It will of course be understood that, if desired, in a two-bladed propeller one looped blade and one plain flat blade of ordinary type may be used, and in a three-bladed propeller one looped blade with two plain flat blades or two looped blades with one plain

flat blade may be used; but we do not consider that either of these will be equal to, and at present we prefer, the arrangement shown in the drawings.

The blades, as before stated, are preferably bolted to the hub or center, but may be cast in one piece therewith or otherwise attached thereto, and they may, if desired, be provided with mechanism for turning them upon their axes to alter the pitch, technically known as "feathering." Further, they may be of any desired pitch or dimensions.

What we claim, and desire to secure by Letters Patent, is—

1. A screw-propeller for steamships, provided with two separate independent looped blades and two independent plain flat blades placed alternately upon the same hub or boss, substantially as described.

2. A screw-propeller provided on the same hub or boss with two independent looped blades placed opposite to each other in a plane at right angles to the shaft and two separate plain flat blades, also opposite each other, placed alternately therewith, substantially as described.

3. A screw-propeller provided with one, two, or more separate independent looped blades and one, two, or more separate independent plain flat blades on the same hub or boss, substantially as described.

4. In a screw-propeller, the combination, with the hub or boss, of a separate independent looped blade and of a separate plain flat blade, substantially as described.

5. In a screw-propeller for steamships, the combination, with the hub or boss A, of the two separate independent flat looped blades B and C and the two separate plain flat blades E and F, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES MYERS.  
ELIZABETH MYERS.  
JNO. DAVIES.

Witnesses:

J. OWDEN O'BRIEN,  
WILLIAM H. TAYLOR.