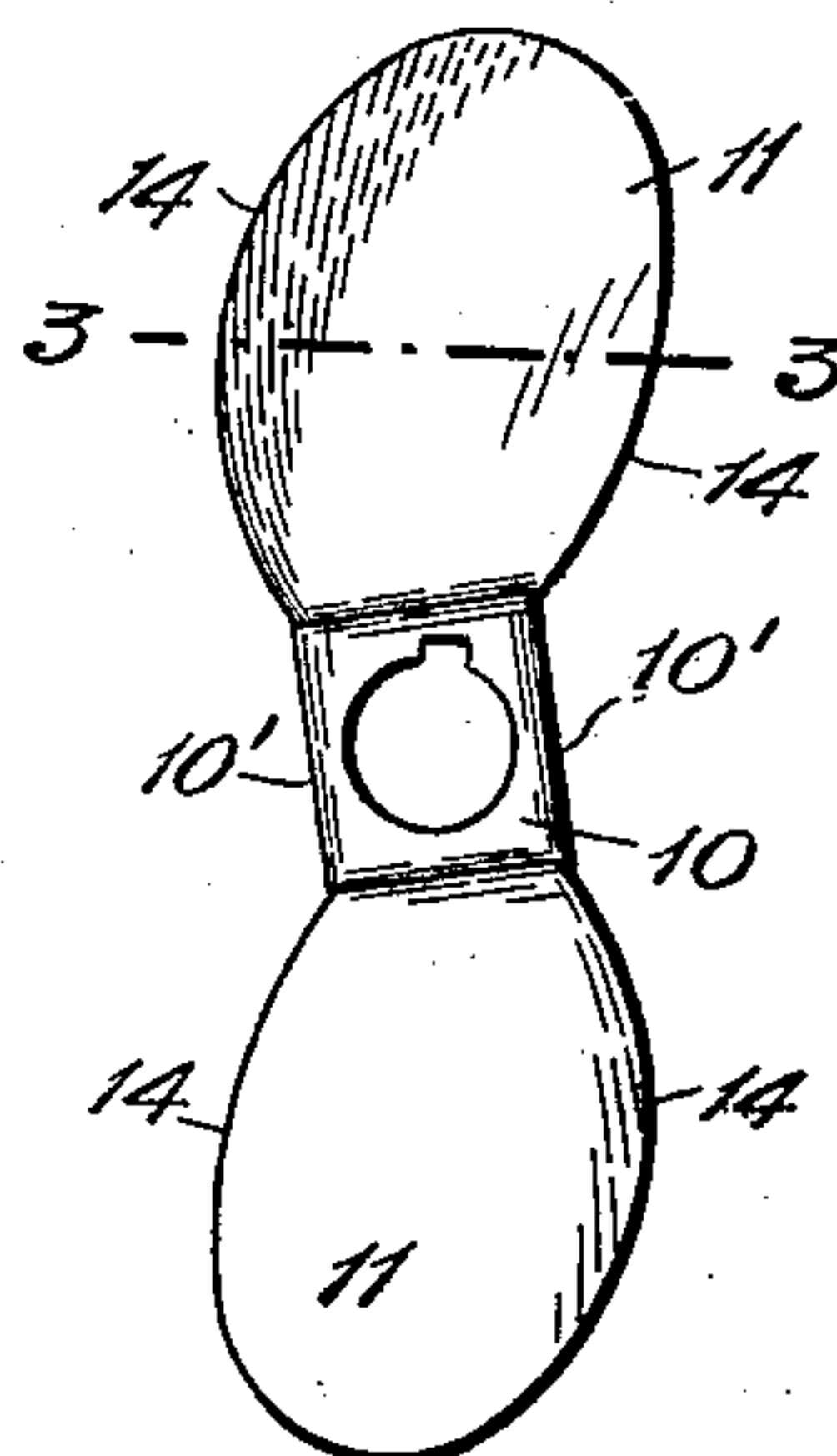
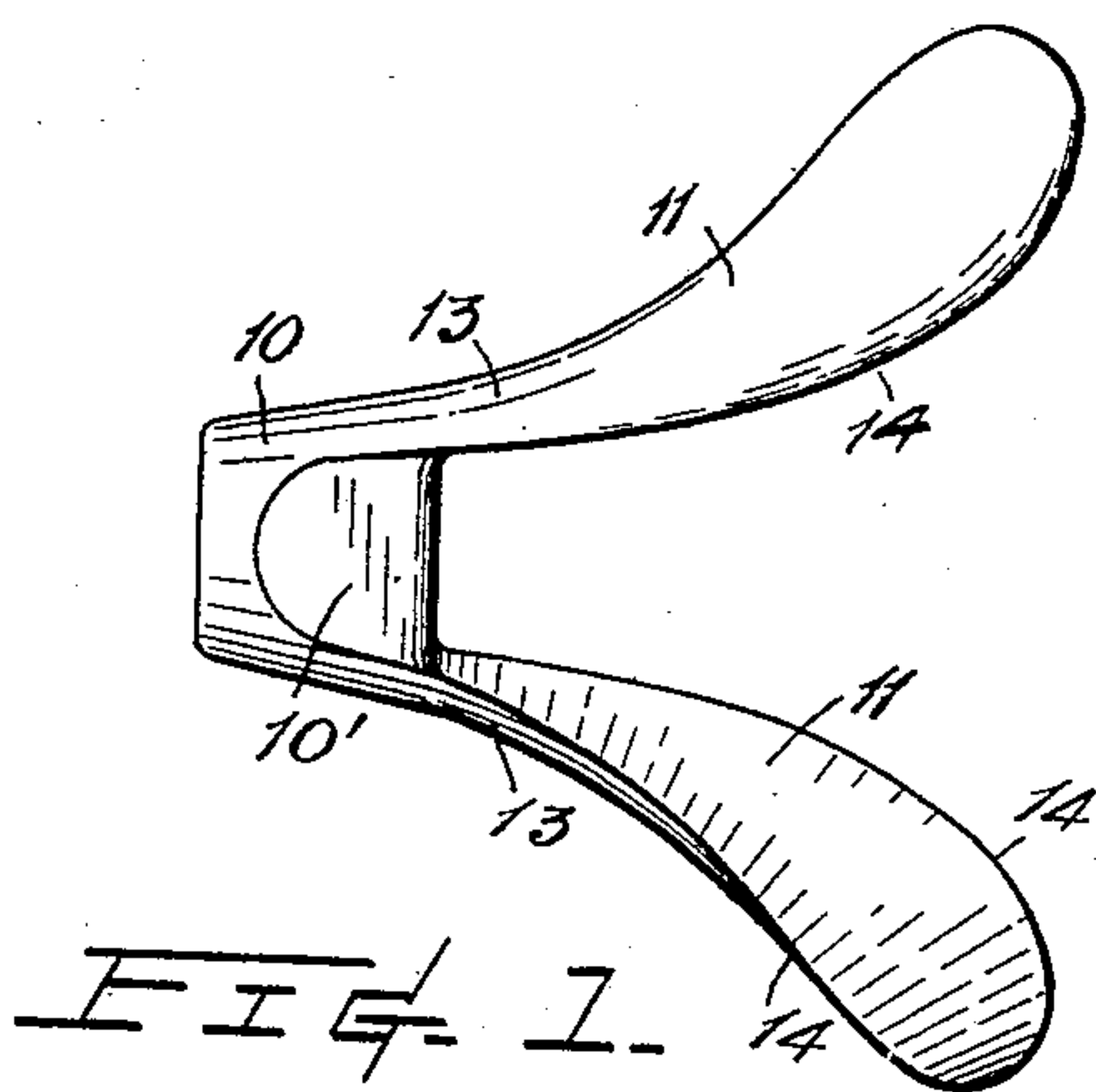
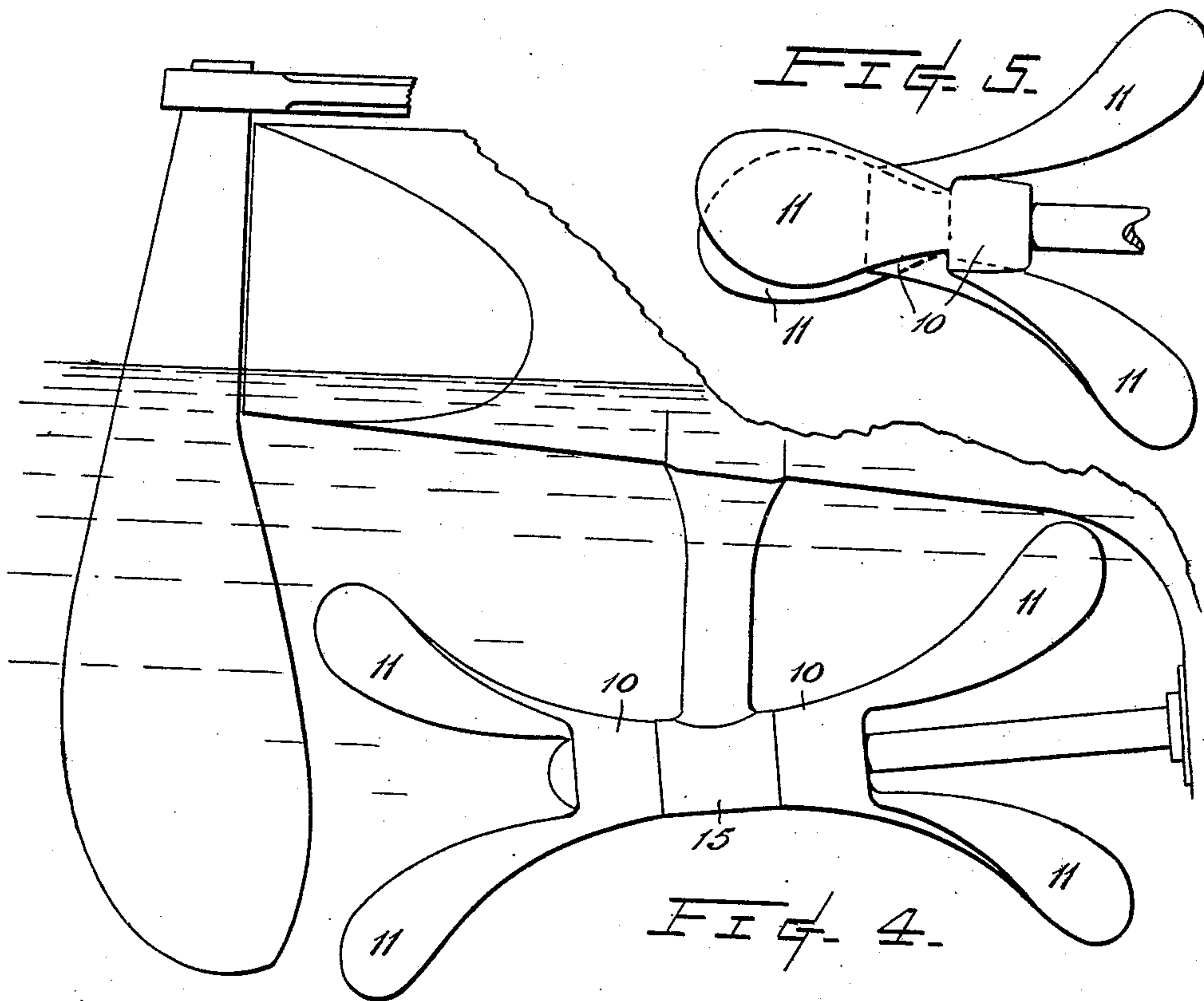


No. 865,364.

F. A. DOUSE.  
PROPELLER.

PATENTED SEPT. 10, 1907.

APPLICATION FILED NOV. 1, 1906.



WITNESSES:  
*Guy M. Thompson*  
*Horace Barnes*

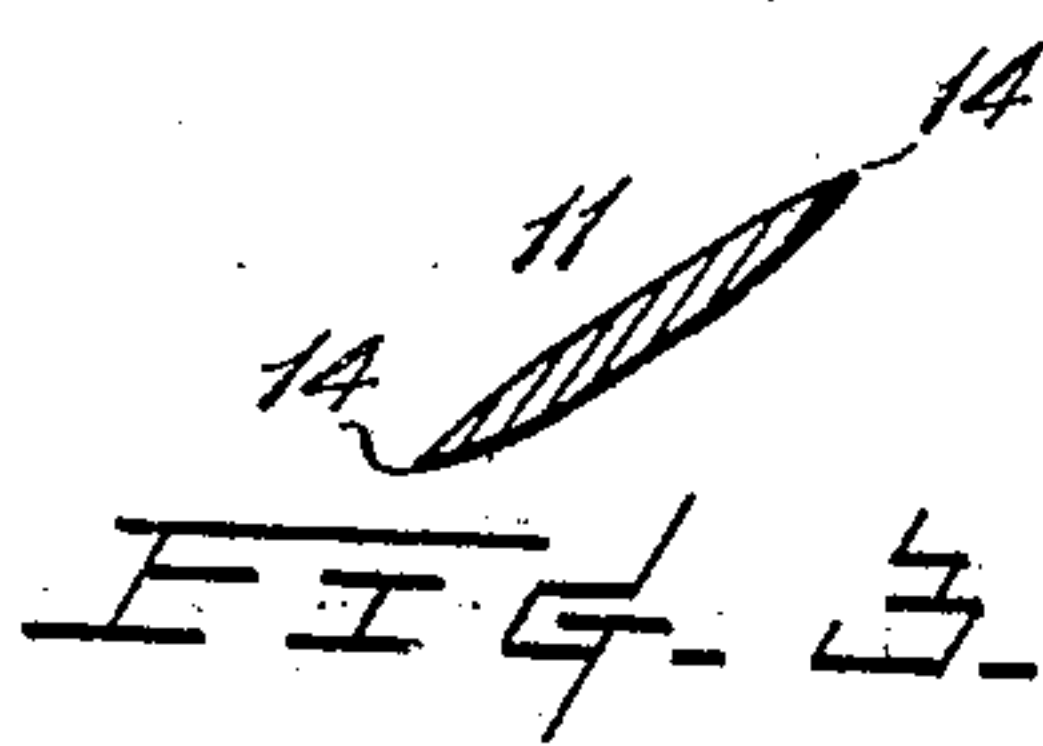


FIG. 2  
INVENTOR  
*Frederick A. Douse*  
BY  
*Pierre Barnes*  
ATTORNEY

# UNITED STATES PATENT OFFICE.

FREDERICK A. DOUSE, OF SEATTLE, WASHINGTON.

## PROPELLER.

No. 865,364.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed November 1, 1906. Serial No. 341,553.

*To all whom it may concern:*

Be it known that I, FREDERICK A. DOUSE, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvement in Propellers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to screw propellers for marine vessels; and the object is to provide a device of this character having a high propulsive efficiency for speed, and is especially suitable for light draft yachts where the diameters of the propellers are restricted.

A further object of the invention is to provide propellers which are capable of being used singly or in multiple upon a single shaft, whereby the driving power thereof is correspondingly increased without sacrificing the motor power.

The invention consists in a screw propeller having blades of peculiar shape and with the hub and blades arranged and combined in a novel manner, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a propeller-wheel embodying my invention; Fig. 2, is an end view of the same; Fig. 3, is a section of one of the blades taken through 3—3 of Fig. 2. Fig. 4 is a side elevation of an application of the invention to a motor-boat with two of the improved propellers compounded; and Fig. 5 illustrates another manner of employing the invention to a like purpose.

The reference numeral 10 designates the hub of the wheel which is made tapering, and at the larger end and at its junction with the blades, the hub is flattened, as at 10', to allow of the free egress of the water, and also permit the interfitting of two wheels when used as shown in Fig. 5.

Projecting from the large end of the hub 10 are two blades 11, disposed in diametrically opposite positions and extend longitudinally from the hub in curved diverging planes. In addition to the longitudinal curvature of the blades each of them is formed with a transverse helical curvature in a gradual increasing pitch from its root to the outer extremity, and varying, preferably, from the perpendicular to a radial line produced through the hub axis at an angle of approximately forty-five degrees therefrom at its tip. At the root of the blade, the outer surface 13 is circumferentially curved to merge into the peripheral surface of the hub, and from thence outwardly the blade is gradually made less curved until at its mid-length it is substantially flat and thence continues, excepting

that, at the edges, it is curved to make sharp angles with the other face, as at 14.

A propeller thus constructed can be advantageously used singly upon a shaft, as in the ordinary manner, but is notably applicable when used in pairs as illustrated in Figs. 4 and 5, wherein they are shown arranged to have their blades protrude in opposite directions. In the example illustrated in Fig. 4, the wheels are mounted upon their shaft and upon opposite sides of the pendent journal-bearing 15 and in the other, as in Fig. 5, the hubs are in juxtaposition with the blades extending in opposite directions therefrom. By compounding the wheels in either of these two ways a gain in propulsive efficiency is obtained which would be unattainable with but a single wheel without a loss of power disproportionate to the increase of speed therewith obtained.

The advantages of the invention reside in its availability to conditions which prevail with "motor boats", namely, a light draft of water and accompanied with speed, and it meets such conditions in a most satisfactory manner by presenting ample effective blade surfaces which revolve within a prism of a comparatively small diameter. Furthermore, the leading edges of the blade cut into the water and thrust the same backwardly in an unbroken solid column.

Another important function of the invention is its capacity to propel a vessel equally well in either a forward or backward direction.

What I claim, is—

1. A screw propeller provided with a hub tapered toward one end and having oppositely flattened side surfaces, and two helical blades extending at one end from the remaining opposite sides of the hub in diverging curved lines, said blades being formed with increasing pitch and increasing in width from the roots to the outer ends.

2. A screw propeller comprising a hub having flattened opposite sides and with two blades extending from the remaining opposite sides of the hub in diverging curved lines, and with progressively angular inclinations increasing in width toward their outer ends.

3. In combination with a shaft, two propellers, each consisting of a hub having oppositely flattened surfaces and with two helical blades extending from the remaining opposite sides of the hub in diverging curved lines and increasing in pitch and likewise in width toward their free end and arranged upon the shaft and with the blades extending in opposite directions.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK A. DOUSE.

Witnesses:

PIERRE BARNES,  
GUY M. THOMPSON.