(No Model.)

H. A. HANNUM.

VIBRATING PROPELLER FOR BOATS.

No. 278,945. Patented June 5, 1883.

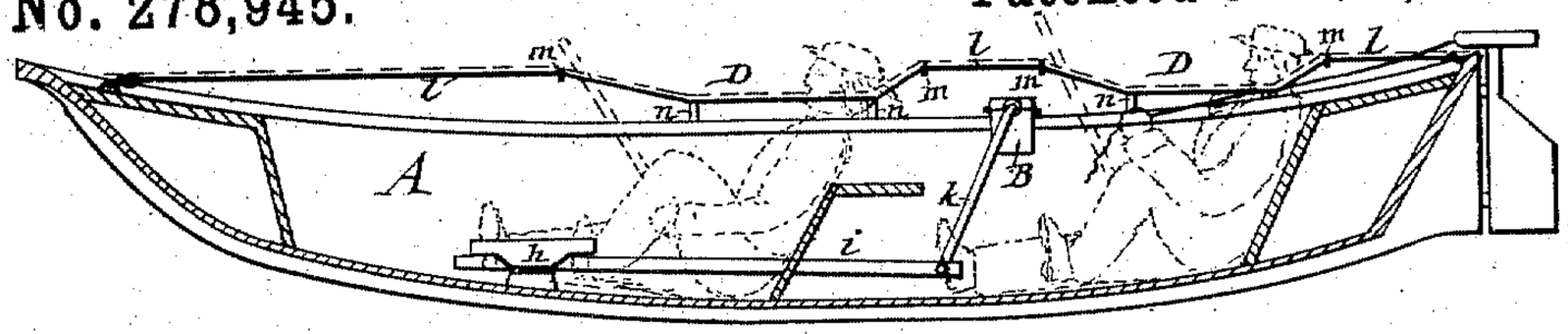

FIG-1-

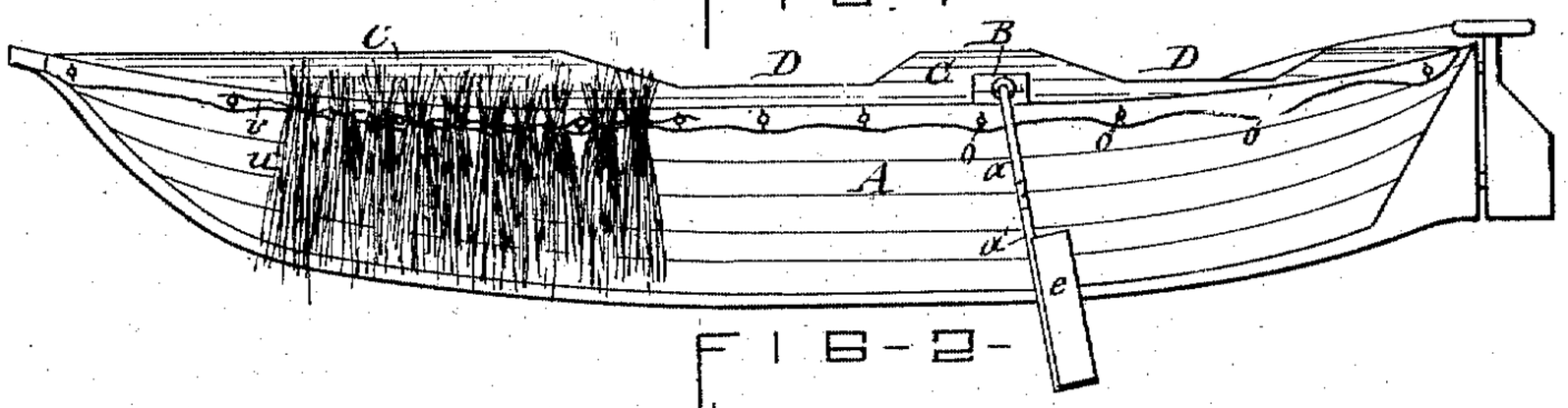

FIG-2-

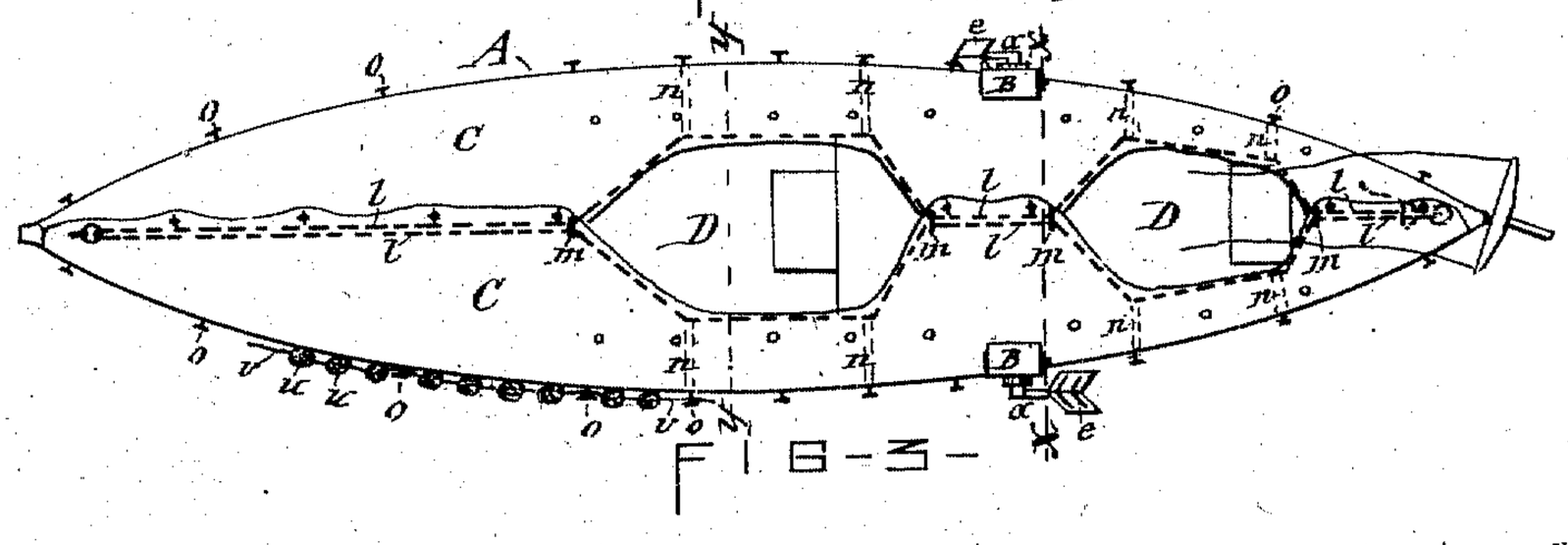

FIG-3-

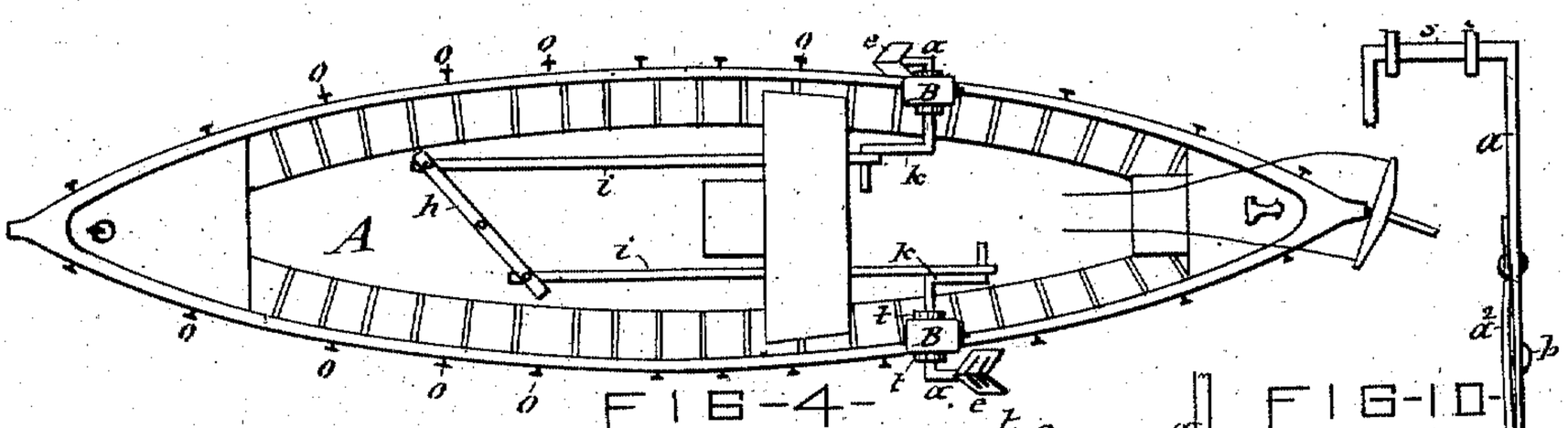

FIG-4-

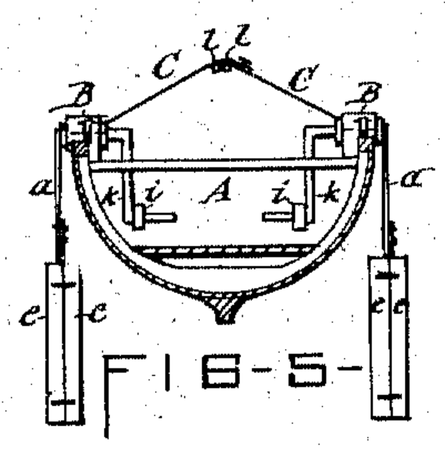

FIG-5-

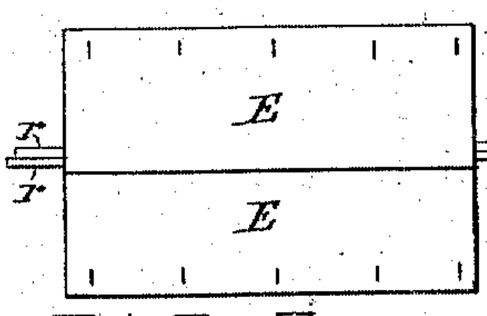

FIG-7

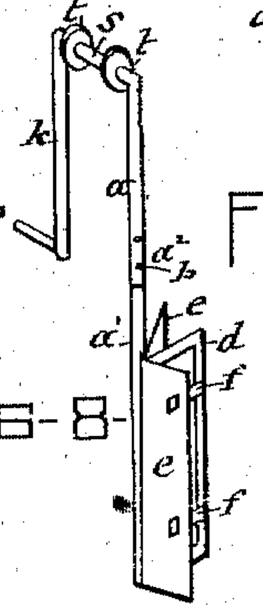

FIG-8-

FIG-10-

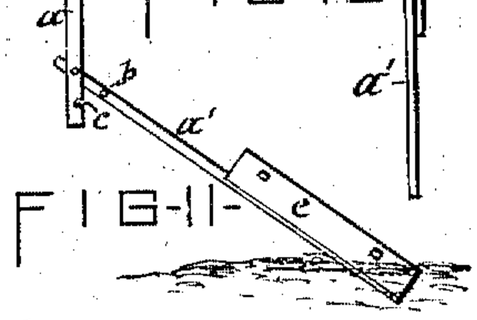

FIG-11-

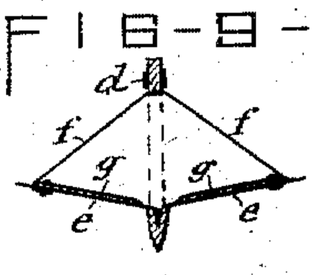

FIG-9-

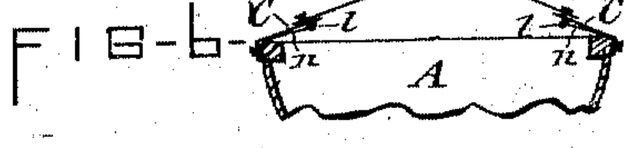

FIG-6-

WITNESSES—

Wm. C. Raymond.

F. H. Gibbs

INVENTOR—

Henry A. Hannum

per Duell, Lässa & Hy

his Attys

UNITED STATES PATENT OFFICE.

HENRY A. HANNUM, OF CAZENOVIA, NEW YORK.

VIBRATING PROPELLER FOR BOATS.

SPECIFICATION forming part of Letters Patent No. 278,945, dated June 5, 1883.

Application filed August 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. HANNUM, of Cazenovia, in the county of Madison and State of New York, have invented new and useful improvements in Boats for Hunting Wild Fowls, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in a novel construction of a boat-propelling apparatus designed to be noiseless and capable of operating in shallow as well as deep water, and thus specially adapted for hunting wild fowl and other game on or near the water.

The invention also consists in certain novel means for operating the aforesaid propeller, all as hereinafter more fully explained, and set forth in the claims.

Referring to the annexed drawings, Figure 1 is a longitudinal section of a boat, illustrating the manner of propelling the boat. Fig. 2 is an exterior side view of the same. Figs. 3 and 4 are plan views of the boat, respectively with and without a cover. Fig. 5 is a transverse section on line *x x*. Fig. 6 is a transverse section of the upper portion of the boat and its appurtenances, taken on line *y y*. Fig. 7 is a plan view of the supplemental cover for closing the openings or ports of the main cover. Fig. 8 is an enlarged isometric view of the paddle detached. Fig. 9 is a further enlarged horizontal transverse section of the paddle proper. Fig. 10 is a detail view of the joint of the paddle-rod, and Fig. 11 illustrates the operation of the paddle in shallow water.

Similar letters of reference indicate corresponding parts.

A represents a boat of about the size and shape of an ordinary row-boat. Upon the gunwales of this boat, and diametrically opposite each other, are firmly secured two boxes or journal-bearings, B B, preferably formed of wood. In each of said bearings is hung a paddle composed of a short horizontal shaft, *s*, journaled in the bearings B, and sustained laterally by collars *t* on said shaft, abutting against opposite ends of the bearings, a crank, *k*, pendent from the inner end of the shaft *s*, and the paddle proper, pendent from and rigidly attached to the outer end of said shaft and in proximity to the side of the boat. The paddle proper consists of a vertical supporting-rod, *a'*, having a sharpened front edge, so as to easily move through the water.

To the rear edge of the rod *a'* is rigidly attached a rectangular skeleton frame, *d*, and at opposite sides of the frame are two wings, *e e*, hinged on the rod *a'*, said wings being formed of two thicknesses of leather, rubber, or analogous sheet material of proper width to lap onto the sides of the frame *d*. These wings are stiffened by a metal plate, *g*, inserted between the aforesaid two sheets or blades. The action of the wings is limited by straps *f f*, preferably of leather, connected at one end to the frame *d*, and at the opposite end to the outer or free edge of the wings, as best seen in Fig. 9 of the drawings. The object of employing leather as the material for the wings and their straps is to deaden the concussion of the wings against the frame *d* and to render the action of the paddle noiseless.

In order to adapt the paddle for operation in shallow as well as deep water, I construct the main or supporting rod of the paddle of two sections, *a a'*, joined with overlapping ends a^2, which are bowed outward from each other intermediately of the length of the overlapping portion, as shown in Fig. 10 of the drawings, the end of one bar, *a'*, being hinged on the side of the other bar, *a*, and provided in the center of the aforesaid overlapping part with a stud or clasp-button, *b*. The rear edge of the bar *a* is provided with a notch, *c*, adapted to receive the shank of the button *b*. This shank is so curtailed in length that when the bar *a'* is swung into line with the bar *a* the under side of the head of the button *b* will encounter the outer face of the bar *a*, and draw the bowed overlapping ends a^2 together, and thereby bind or clamp the jointed bars to such an extent as to enable the paddle to pass through the water during the aforesaid movement of the paddle without tripping or loosening the aforesaid joint.

The described peculiar construction of the clamp of the jointed paddle-bars, while capable of resisting the pressure of the water, as aforesaid, is capable of automatically tripping itself to allow the paddle proper to swing rearward from the bar a'' in case said paddle encounters rigid obstructions in the water, or is carried into shallow water and caused to strike the bottom, as illustrated in Fig. 11 of the draw-

ings, in which latter case the paddle operates in the manner of a pole.

To the lower end of the cranks *k* of each paddle is connected a pitman, *i*, and the two pitmen are extended along the interior of the boat and connected to opposite ends of a supplemental treadle, *h*, in the form of a horizontal cross-bar pivoted at its center to the bottom of the interior of the boat, as shown in Fig. 4 of the drawings.

The described paddles being operated by a person sitting or reclining on the bottom of the boat facing the bow and pressing with his feet against the rear of the crank-pin alternately at opposite sides of the boat, the forward motion of one crank imparts a rearward motion to the opposite crank by the medium of the pitmen *i i*, and pivoted supplemental treadle *h*. The rearwardly-moving crank, carrying with it the paddle connected therewith, causes the wings *e e* of the latter to become distended by the resistance of the water, and this resistance propels the boat.

It will be observed that by the arrangement of the supplemental treadle and pitmen transmitting motion from one side of the boat to the other the person propelling the boat is enabled to face the bow of the boat, which in this case is very essential. Furthermore, the supplemental treadle *h* affords additional means for applying propelling-power, inasmuch as a second person can apply his feet thereto and operate it in the same manner as the first person operates the cranks, as illustrated in Fig. 1 of the drawings.

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

1. The within-described combined poling and paddling propeller, consisting of a paddle rod or stem provided intermediately of its length with a forward deflecting joint and a friction-clutch connected with said joint, whereby the paddle-rod receives sufficient stiffness to resist the pressure of the water when operated as a paddle, and is enabled to automatically trip its joint when encountering rigid obstructions, and to operate in the manner of poling on the bottom of shallow water, substantially as described and shown.

2. The paddle-rods *a a'*, overlapping each other, with bowed ends a^2, hinged together at the end of one of said rods, one of said bowed parts being provided with a clasp-button, *b*, and the other bowed part being adapted to slide under the head of the button, and having a notch, *c*, for the reception of the shank of the button, the whole constructed, combined, and operating to automatically clamp the joint of said rods, substantially as shown, and for the purpose set forth.

3. In combination with the rod *a'* and its frame *d*, the wings *e*, formed respectively of leather blades and a stiffening-plate, *g*, between the leather blades, substantially as described and shown.

4. The combination, with the paddle *a a'*, fixed to shaft *s*, and provided with the crank *k*, of the pitman *i* and the horizontal lever *h*, pivoted at its center to the bottom of the interior of the boat, substantially in the manner described and shown, for the purpose specified.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Cazenovia, in the county of Madison, in the State of New York, this 19th day of July, 1882.

HENRY A. HANNUM. [L. S.]

Witnesses.
F. J. PULFORD.
S. L. LOOMIS.

Correction in Letters Patent No. 278,945.

It is hereby certified that in Letters Patent No. 278,945, granted June 5, 1883, upon the application of Henry A. Hannum, of Cazenovia, New York, for an improvement in "Vibrating Propellers for Boats," the number of the patent was erroneously written in the margin of the grant "298,945" instead of *278,945*; and that the Letters Patent should be read with this correction therein to make it conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 23d day of March, A. D. 1886.

[SEAL.]

H. L. MULDROW,
Acting Secretary of the Interior.

Countersigned:

M. V. MONTGOMERY,
Commissioner of Patents.