F. MAYNARD.

SCREW PROPELLER.

No. 184,092. Patented Nov. 7, 1876.

Fig: 1.

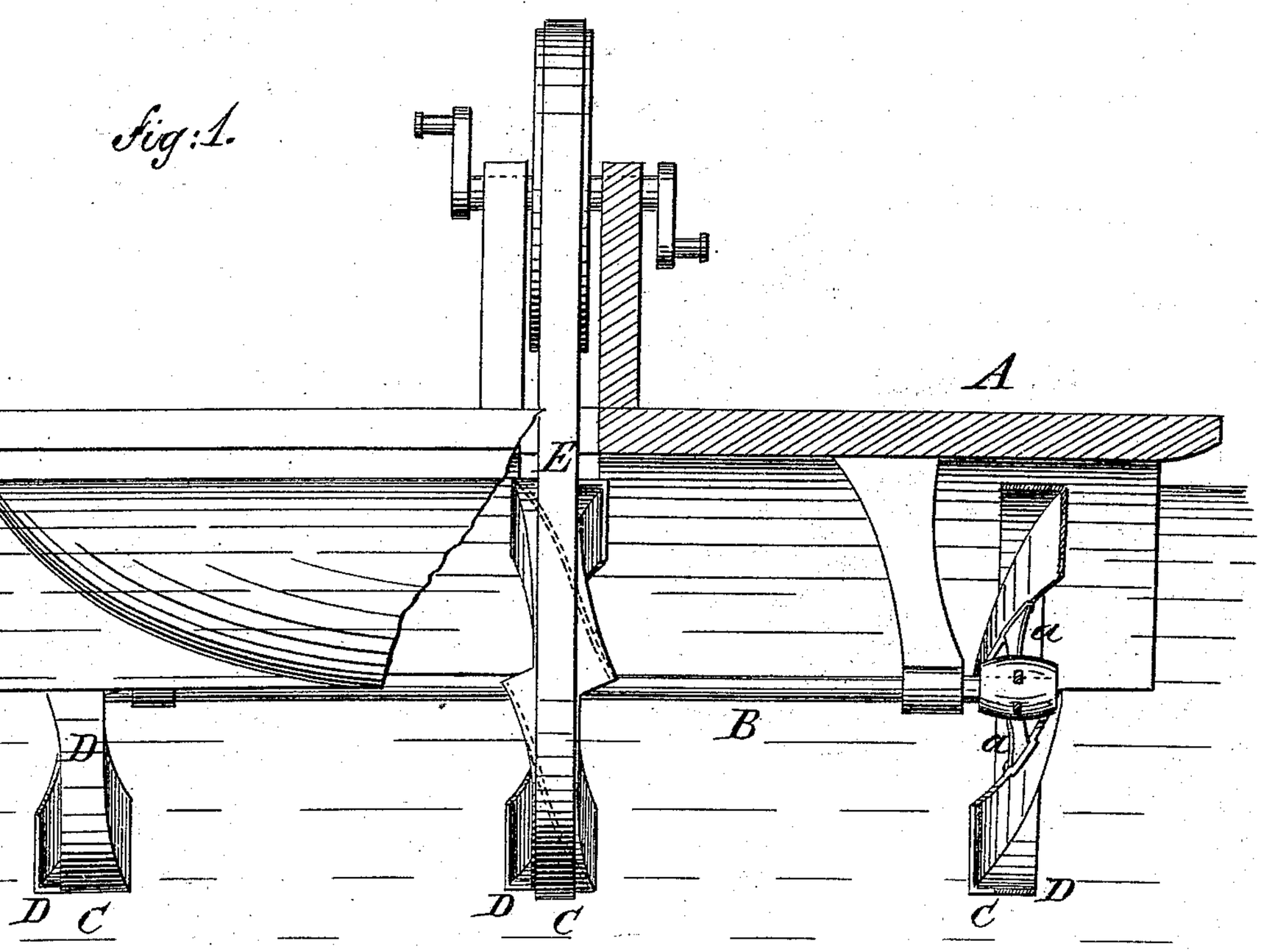
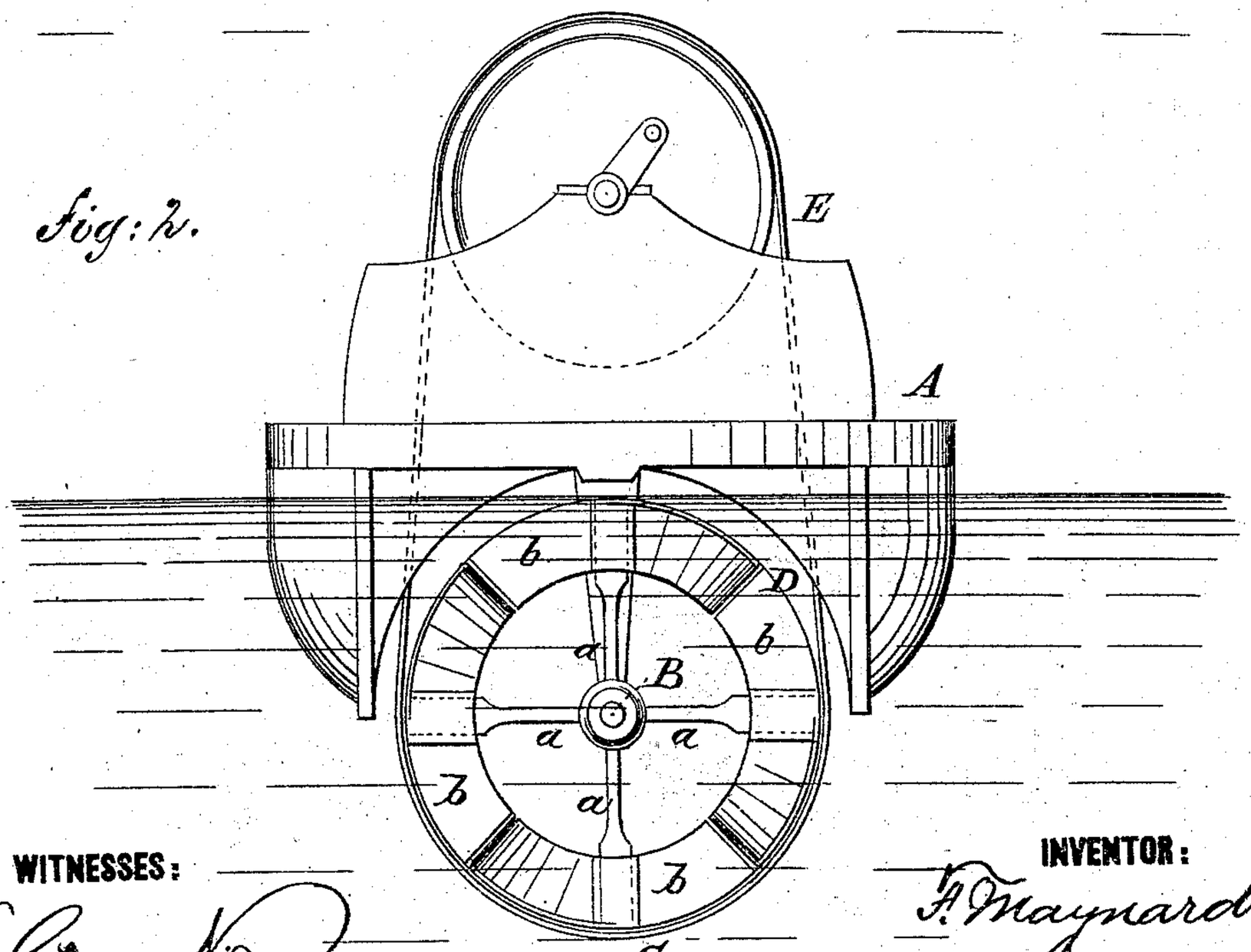


Fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK MAYNARD, OF NORTH DORSET, VERMONT.

IMPROVEMENT IN SCREW-PROPELLERS.

Specification forming part of Letters Patent No. **184,092**, dated November 7, 1876; application filed September 30, 1876.

To all whom it may concern:

Be it known that I, FRANK MAYNARD, of North Dorset, in the county of Bennington and State of Vermont, have invented a new and Improved Canal-Boat Motor, of which the following is a specification:

Figure 1 is a side elevation in part section. Fig. 2 is an end elevation.

Similar letters of reference indicate corresponding parts.

My invention relates to a motor or propeller for the propulsion of canal-boats; and it consists in arranging upon radial arms screw-blades that extend inward from the circumference of the wheel through one-half or less of the distance from the periphery to the shaft, and in making them of the same pitch at the inner and outer edges.

The object of my invention is to provide a powerful and efficient propeller for towing canal-boats, that shall be capable of taking several boats in tow, and carry them forward at a reasonable rate of speed without washing the canal-banks, or otherwise injuring the canal.

Referring to the drawing, A is a boat formed with a double or divided hull, in which is a central space for the propelling-wheels. B is a shaft, supported in any suitable manner in the center of the space in the hull, to which the wheels C are secured.

These wheels are similarly constructed, and consist of four arms, *a*, to the outer extremities of which the screw-blades *b* are attached. These blades extend inward toward the center of the wheel through one-half or less of the distance from the circumference of the wheel to the shaft. The blades extend in a circumferential direction so that they meet midway between the arms, but do not overlap.

The blades are of the same pitch at their inner and outer edges, and the wheel is surrounded by a band or hoop, D, that is cut or notched to conform to the shape of the blades. Any required number of these wheels may be placed on the shaft B. Power is applied to one of them by means of a belt, E, that passes from the engine-shaft around the wheel, as in the drawing, or by a wire-rope, or a chain, or by gearing.

It will be seen that the wheels are wholly submerged, and consequently must produce the maximum effect.

The hoop or band that surrounds the wheel, as well as the peculiar construction of the hull, throws the water in a line parallel with the shaft, and thus utilizes the greatest amount of power. It also obviates the commotion usually produced by propellers, and consequently does not wash the banks or otherwise injure the canal. The form of the wheel being annular, and the pitch of the blades being the same throughout, permits the wheel to pass through the water with less resistance than wheels of ordinary construction.

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

In the wheel C, the arrangement of the arms *a*, blades *b*, having the same pitch throughout, and the band D, substantially as and for the purpose shown and described.

FRANK MAYNARD.

Witnesses:

AUSTIN LADD,

GEORGE B. PETTY.