C. Dann.

Vibrating Propeller.

No. 37,856. Patented Mar. 10, 1863.

Fig. 1.

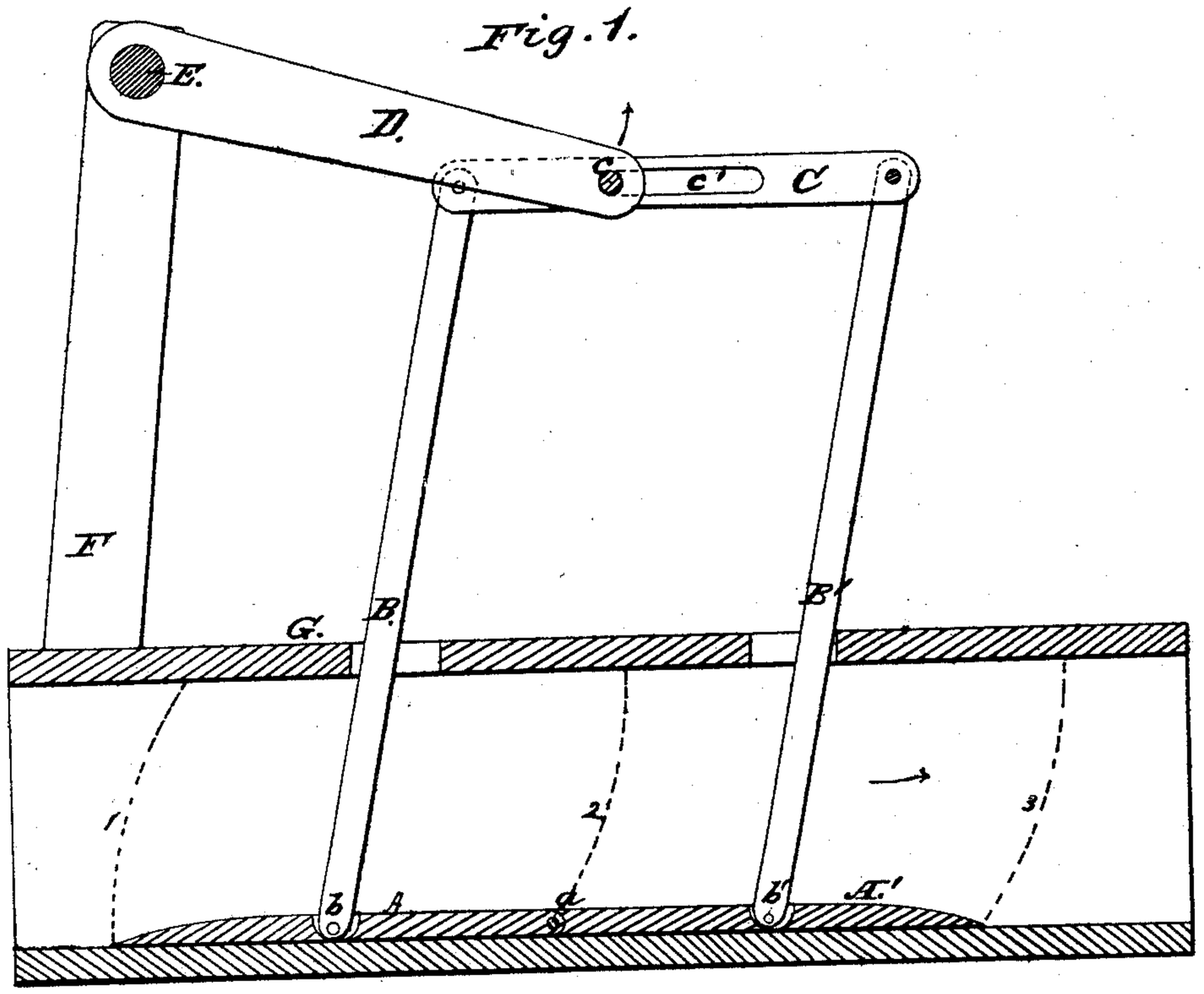
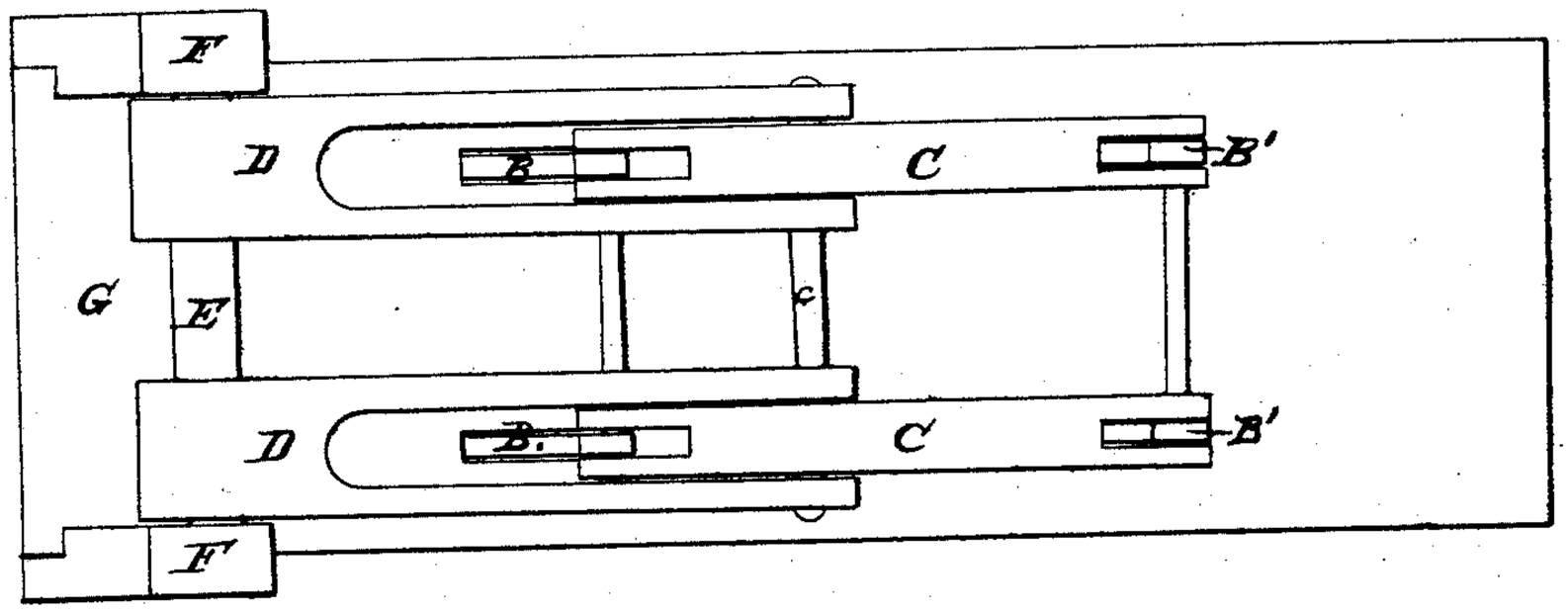


Fig. 2.



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C. DANN, OF RUSHFORD, MINNESOTA.

IMPROVED JOINTED SCULL-PROPELLER.

Specification forming part of Letters Patent No. **37,856**, dated March 10, 1863.

To all whom it may concern:

Be it known that I, C. DANN, of Rushford, in the county of Fillmore and State of Minnesota, have invented a new and Improved Jointed Scull-Propeller; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a longitudinal vertical section of my invention. Fig. 2 is a plan or top view of the same.

Similar letters of reference in both views indicate corresponding parts.

The object of this invention is an improvement in that class of propellers in which an oscillating blade, suspended from a rising and falling rod, and operating either in a tube or channel or submerged under water, is employed, and which are commonly designated "scull-propellers."

The invention consists in the arrangement of two or more blades jointed to each other and suspended by suitable rods from a beam or beams hung eccentrically upon a pivot fastened in the loose ends of oscillating arms in such a manner that each blade acts separately, one after the other, on the water, being held in position by the other blade, to which it is jointed, and thereby a powerful current of water in the desired direction is created.

It consists, further, in the arrangement of a slot in the beam or beams from which the sculling-blades are suspended, in combination with the pivot from which said beams are suspended, and with the sculling-blades, in such a manner that by shifting said beam or beams from one end of the slot to the other the action of the sculling-blades is reversed, and the propeller can be made to act in either direction at pleasure.

To enable others skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawings.

A A′ represent two blades, of wood or any other suitable material, which are jointed together by means of a pivot, *a*. The blade A is suspended by means of one or more rods or pitmen, B, from the end or ends of a beam or beams, and the blade A′ by one or more rods or pitmen, B′, from the opposite end or ends of said beam or beams, as clearly shown in the drawings, where each blade is suspended by two rods from the ends of two beams. The rods B B′ are connected to the blades by suitable means in about the middle of the length of each blade, and the beams C are suspended eccentrically or at points nearer to one of their ends than to the other from a pivot, *c*, which is secured in the loose ends of arms D, that are rigidly attached to and oscillate with a rock-shaft, E. This rock-shaft shall have any suitable bearings, and it is moved by steam or other competent power. If the oscillating arms move in the direction of the arrow marked near one of them in Fig. 1, the sculling-blade A, being suspended from points nearer to the fulcrum than the blade A′, is actuated first, and its loose end turns up in the circle 1, until its point touches the top of the tube or channel G, the jointed end of said blade being retained by the pressure of the water to which it is exposed, and which is larger than that acting on the loose end. When the point of the blade A touches the top of the channel G, it forms the fulcrum on which the inner or jointed end of said blade turns up in the circle 2, carrying with it the jointed or inner end of the blade A′, the outer or loose end of said blade being still retained by the pressure of water acting on it. After the jointed ends of the blades have reached the top of the channel, and if the motion of the arms D still further proceeds, the point of the plate A′ is turned up in the circle 3. When the motion of the arms D is reversed, the point of the blade A turns down first, then the inner or jointed ends of both blades, and the point of the blade A′ last. In following these different motions of the sculling-blades, it will be noticed that in every case the water is expelled from the tube in the direction of the arrow marked in the same in Fig. 1. The pivot *c*, from which the beams C are suspended, works in slots *c′* in said beams. These slots extend to an equal distance on either side of the center of the beams, and by moving said beams from one end of the slots to the other the motion of the sculling-blades is reversed, that blade the point of suspension of which is nearest to the fulcrum-pin *c* commencing to move first. By referring to Fig. 1 of the drawings it will be noticed that by raising the point of the blade A′ first the water is expelled from the tube in the direction opposite to the arrow marked in the

same, and consequently the motion of the vessel to which the propeller may be attached can be reversed. In practice the beams will be provided with a suitable attachment whereby the same can be shifted on the pivot *c*, whether the mechanism be in motion or at rest, and thus the engineer will have perfect control over the motion of the sculling-blades.

It is obvious that instead of two any other number of blades may be jointed together to produce a propeller.

What I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the jointed blades A A′, in combination with the beams C, suspended eccentrically from a pivot, *c*, in the loose ends of oscillating arms D, all constructed and operating substantially as and for the purpose shown and described.

2. The arrangement of the slots *c′* in the beams C, in combination with the pivot *c* on the oscillating arms D, and with the sculling-blades A A′, constructed and operating substantially in the manner and for the purpose herein specified.

Witnesses: C. DANN.

HIRAM WALKER,

JOSEPH OTIS.