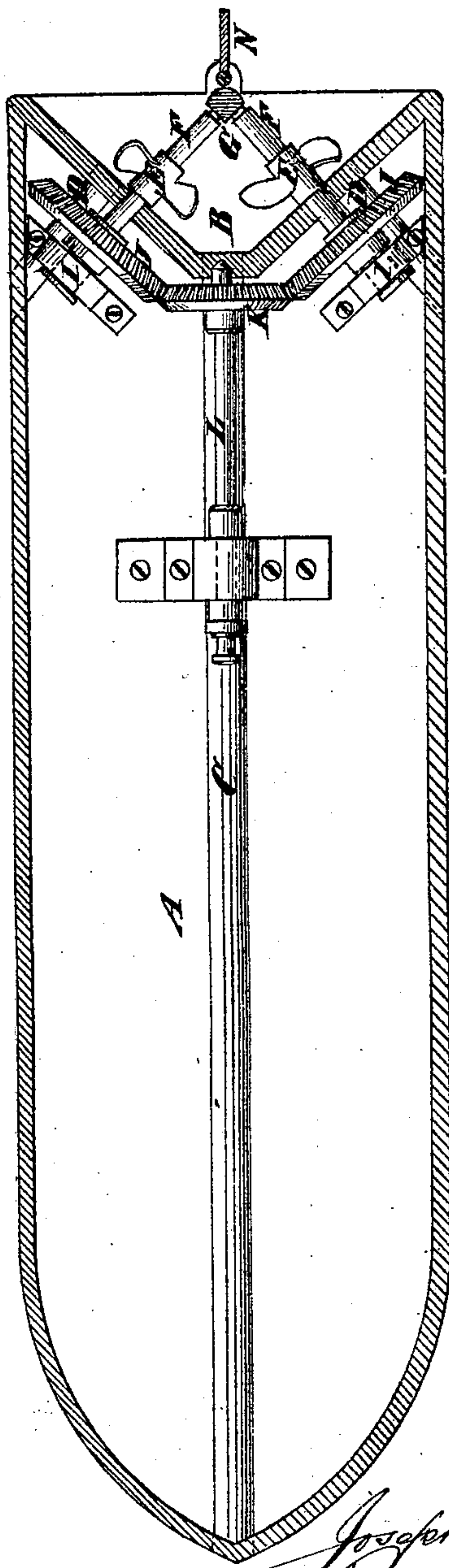
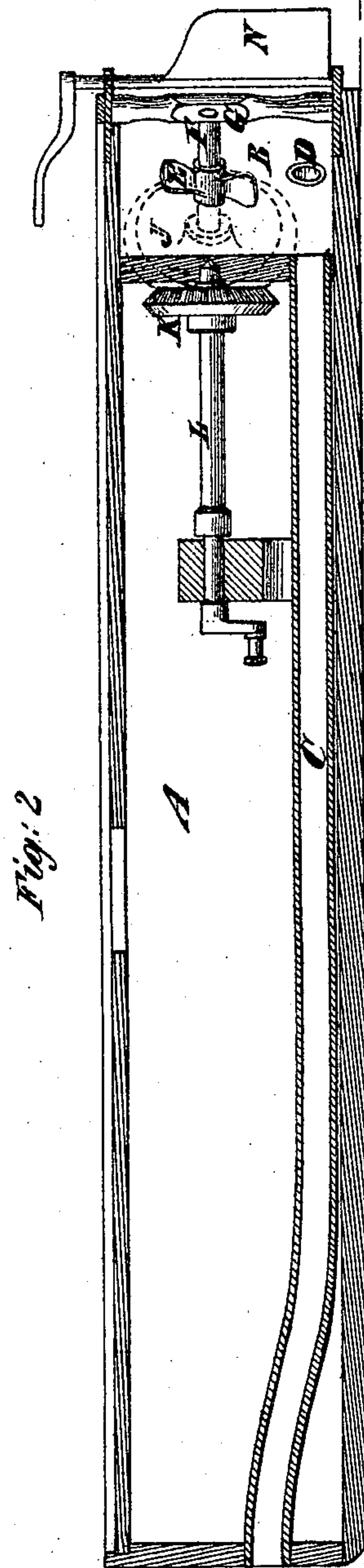
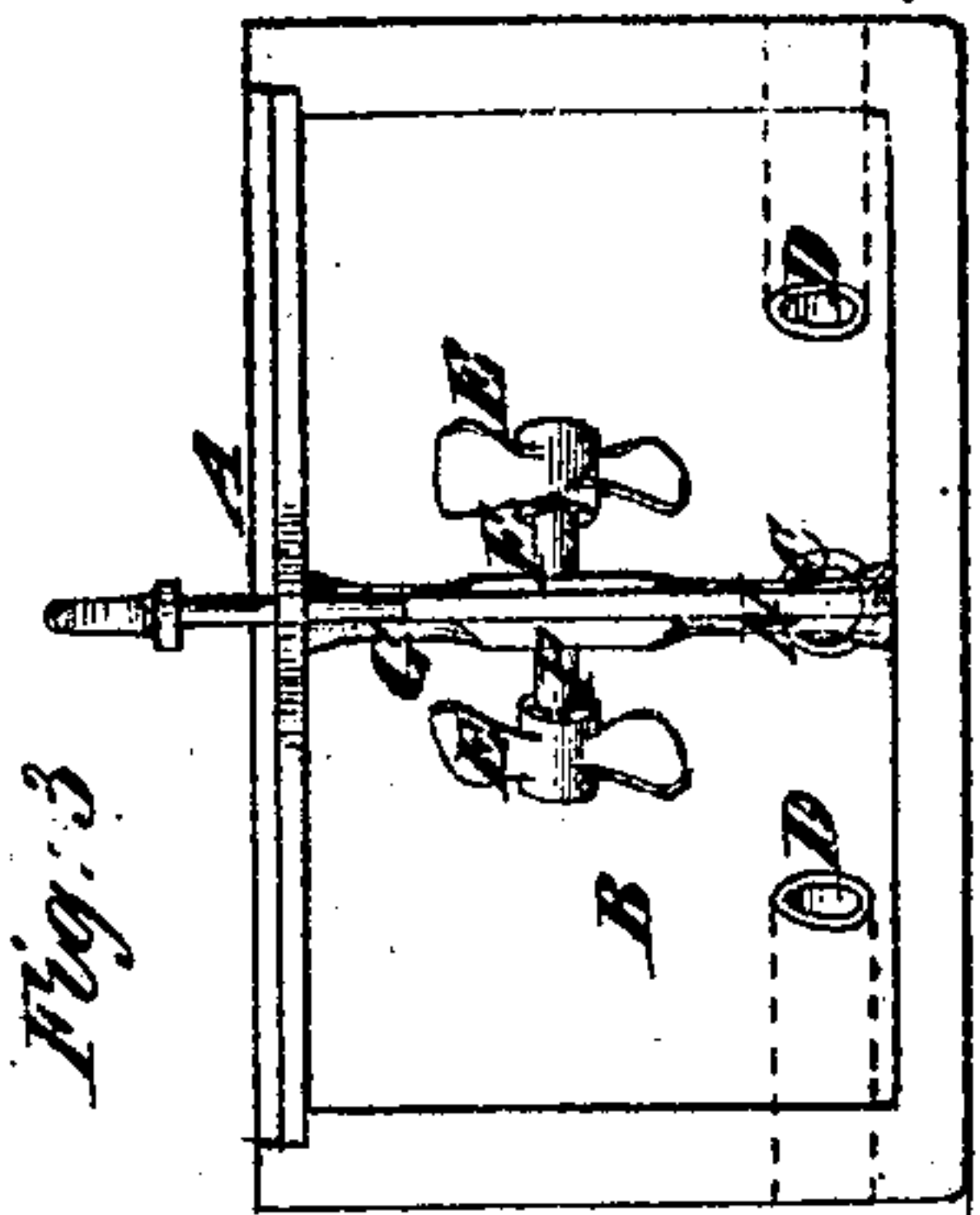


J. A. STERLING.
Propelling Canal-Boats.

No. 133,495. Patented Nov. 26, 1872.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH A. STERLING, OF NEW YORK, N. Y.

IMPROVEMENT IN PROPELLING CANAL-BOATS.

Specification forming part of Letters Patent No. 133,495, dated November 26, 1872.

To all whom it may concern:

Be it known that I, JOSEPH A. STERLING, of the city, county, and State of New York, have invented an Improvement in the Application of Screw-Propellers to Canal-Boats and other vessels, of which the following is a specification:

This invention consists in the arrangement, in the stern of the boat, of two screw-propellers at an inclination to each other and at a corresponding inclination to the boat's keelson, whereby the resultant of the forces produced by their joint action acts in a line with the boat itself, without any tendency to spread laterally and wash the banks of the canal or river which the boat traverses. It also consists in the combination, with the aforesaid screws, of a chamber in which they are arranged, whereby the washing of the bottom of said canal is prevented.

In the accompanying drawing, Figure 1 is a horizontal section of a canal-boat having my invention applied. Fig. 2 is a longitudinal section of the same, and Fig. 3 is an end view thereof.

Similar letters of reference indicate corresponding parts in all the figures.

A represents a canal-boat, which is or may be of ordinary construction, except that in its stern there is a flaring V-shaped chamber, B. To this chamber there leads from the bow of the boat a water-supply pipe or conduit, C, and from the sides of the boat there lead thereto other conduits, D D. E E are two screw-propellers, which are rigidly secured on shafts F F, arranged at or nearly at a right angle to each other and at corresponding inclinations to the keelson of the boat. These shafts are supported in bearings within the stern-post G of the boat and in bearings I I within the boat. On the portion of the shafts F within the boat itself bevel-gears J J are secured, and are driven in the same direction by means of an intermediate gear, K, furnished on a shaft, L, which may be driven by a steam-engine or other means. The propellers

are similarly pitched, and are arranged on those portions of the shaft F situated within the chamber B. The rudder N is arranged beyond the stern-post in the usual manner.

The propellers, being rotated by the driving-shaft L, as before described, produce two forces in the direction of the length of their shafts, and the two, meeting astern of the boat, form one resultant force which will act on the water in a line with the boat's keelson.

The great advantage of this resultant force, produced by two converging component forces over a single force produced by one propeller, is that the tendency of each force to flare outward is counteracted by the same tendency of the other force. Therefore the washing of the banks of the canal is obviated.

The water is, of course, conducted to the propeller-chamber B by the conduits C D D, and passes off from the stern of the boat. By this means water is taken from the bow of the boat, where it most impedes its travel, and conducted through it astern, thereby greatly facilitating the travel of the boat. The propellers, being arranged within the chamber B, are protected from damage, and said chamber, by preventing the water from being forced either upward or downward, concentrates the force, thereby adding to the propelling power, and also prevents the bottom of the canal from being washed.

This invention is particularly applicable to canal-boats on account of obviating the washing of the bed of the canal. It is also applicable, however, to other uses.

Claim.

The arrangement, in the stern of a boat, of twin propellers, having their axes at corresponding inclinations relatively to the keelson and about in a plane parallel therewith, substantially as and for the purpose specified.

JOSEPH A. STERLING.

Witnesses:

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