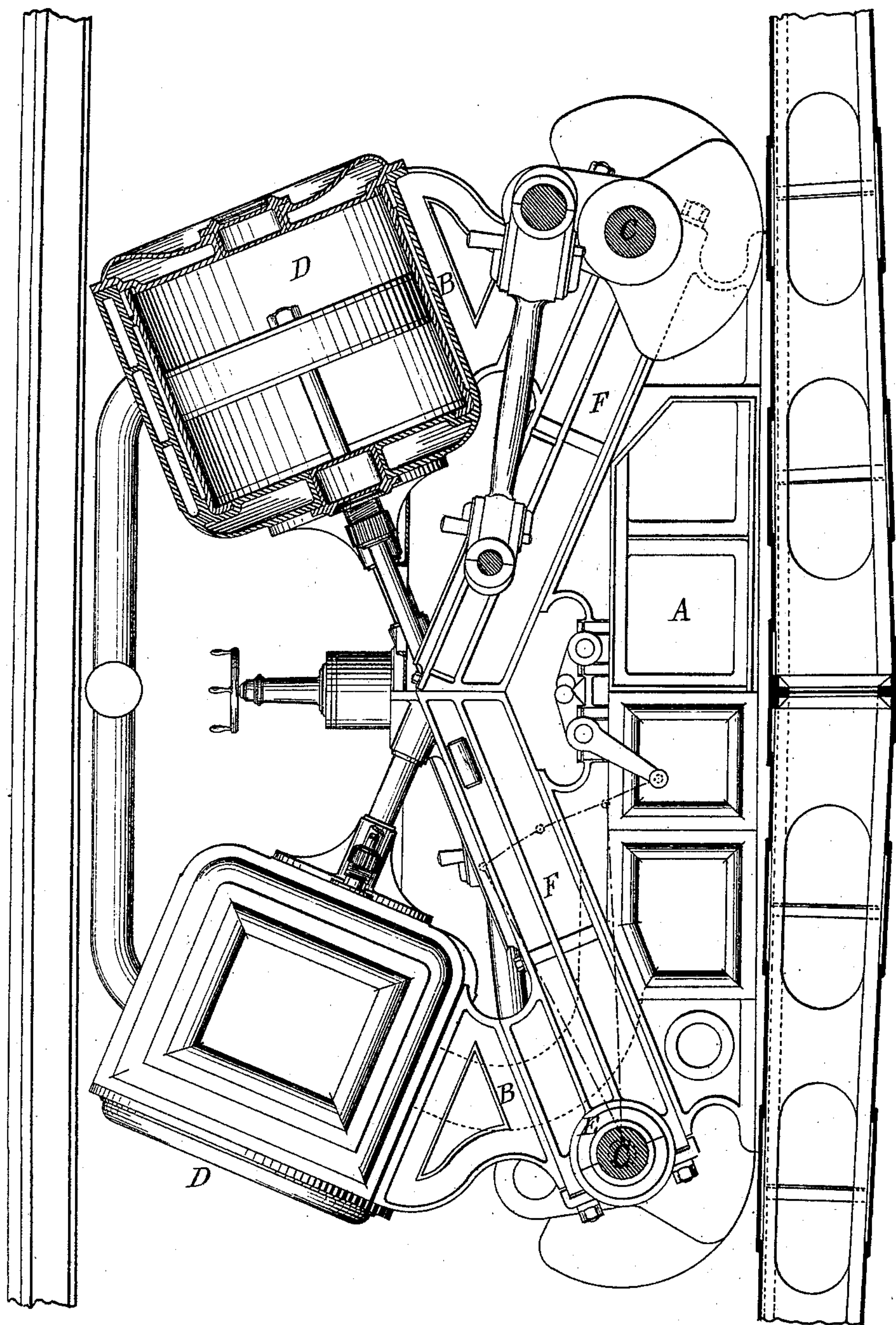


G. B. WHITING.
ENGINE FOR TWIN SCREW PROPELLERS.
No. 171,074. Patented Dec. 14, 1875.

Fig. 1.



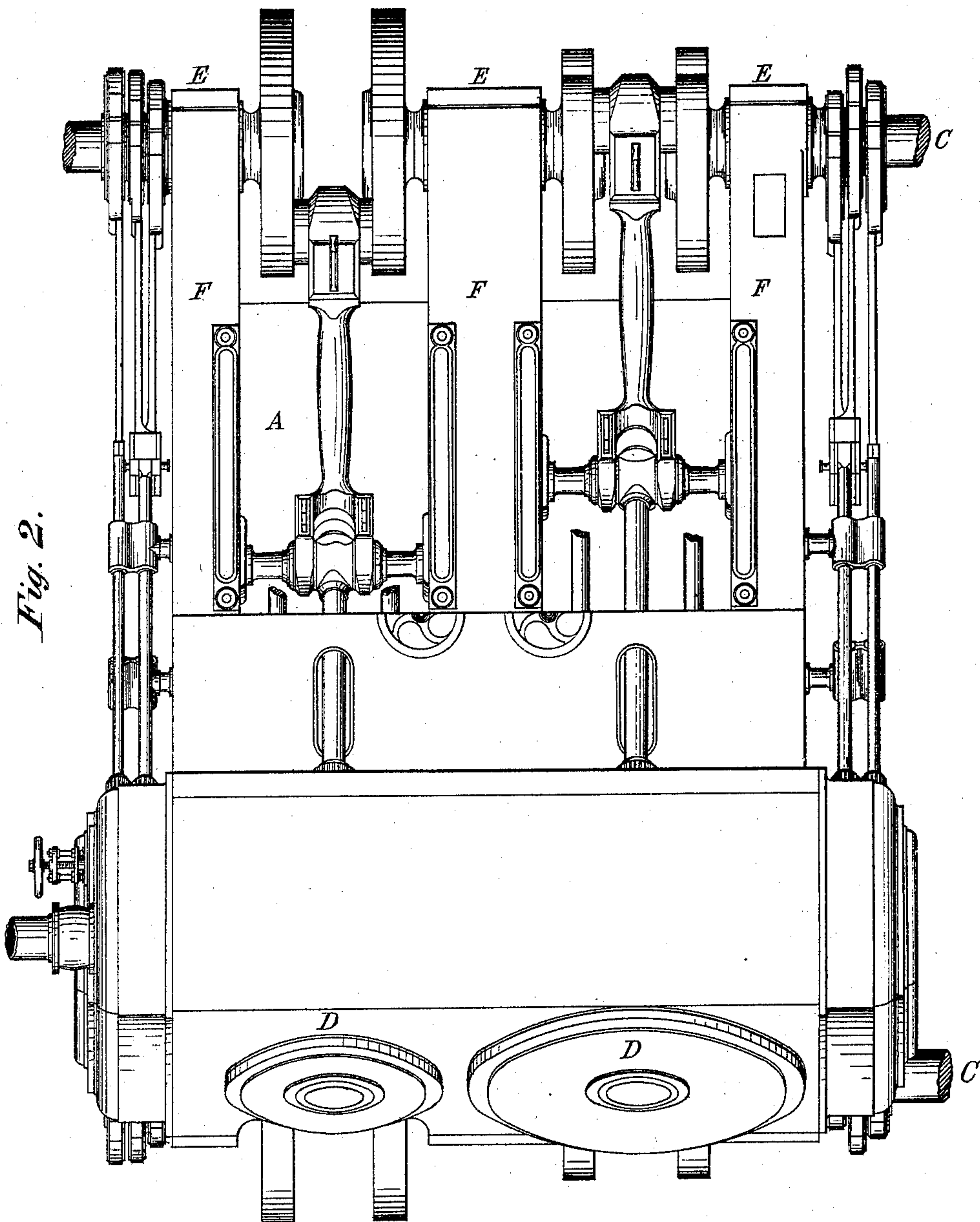
Witnesses:

W. J. C. Hedman.
Fred. G. McLean.

Inventor:

Geo B Whiting

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Witnesses:

W. J. C. Redman
Fred. G. McLean.

Inventor:

Geo B Whiting

UNITED STATES PATENT OFFICE

GEORGE B. WHITING, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN ENGINES FOR TWIN SCREW-PROPELLERS.

Specification forming part of Letters Patent No. 171,074, dated December 14, 1875; application filed October 16, 1875.

To all whom it may concern:

Be it known that I, GEORGE B. WHITING, of the city of Washington, in the District of Columbia, have invented certain new and useful Improvements in the Arrangement of Twin Screw-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to arrange and combine the several parts of twin screw-engines in a very compact, strong, and accessible form, so that they may be placed in a much smaller space than that occupied by the usual types of engines now in use, thereby saving much valuable room in the ship, which can be utilized for other purposes.

The nature of the invention consists in making the condenser-chest and channel-plate the bed of the engine, and upon suitable frames and brackets resting thereon are placed the cylinders and valve-chests, opposite and inclined to each other, with their respective crank-shafts and connecting-rods working under the opposite cylinders, the crank-shafts being mounted on bearings, also supported from the condenser and channel-plate.

To enable others skilled in the art to make and use my invention, I will proceed to describe more fully its construction and arrangement, reference being had to the accompanying drawings, in which—

Figure 1 is an end elevation, partly in section; and Fig. 2, a plan of the same.

In the drawings, A is the condenser-chest and channel-plate, which serves, also, as the base-plate of the engine, on which the pillow-block frames F F F and brackets B B are supported and secured thereto. C C are the

crank-shafts, supported in bearings E E E on the frames F F F. The cylinders D D and their counterparts are placed over the crank-shafts C C, opposite and inclined to each other in reverse directions, and rest upon and are secured to the brackets B B, &c., which are also further secured, by suitable bolts, to the frames F F. To the frames F F are also secured or cast the guides for the cross-head.

The other parts of the engine are of the usual construction, and need no further description here.

The manner of arranging the cylinders, condenser, frames, brackets, and other parts of the engine herein described may be applied to all twin screw-engines where economy of space is an object, rendering such engines, at the same time, accessible to all the parts, and in a convenient manner. I do not confine myself, therefore, to the precise construction of the several parts, as these may be varied in many ways without deviating from my invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The cylinders D D, located above the screw-shafts C C in oppositely-inclined positions, whereby the piston of one cylinder connects with the crank-shaft beneath the opposite cylinder, substantially as and for the purpose described.

2. The combination of cylinders D D, brackets B B, frames F F F, shafts C C, and condenser-chest A, substantially as shown, and for the purpose herein described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

GEO. B. WHITING.

Witnesses:

W. S. C. REDMAN,

FRED. G. MCKEAN.