

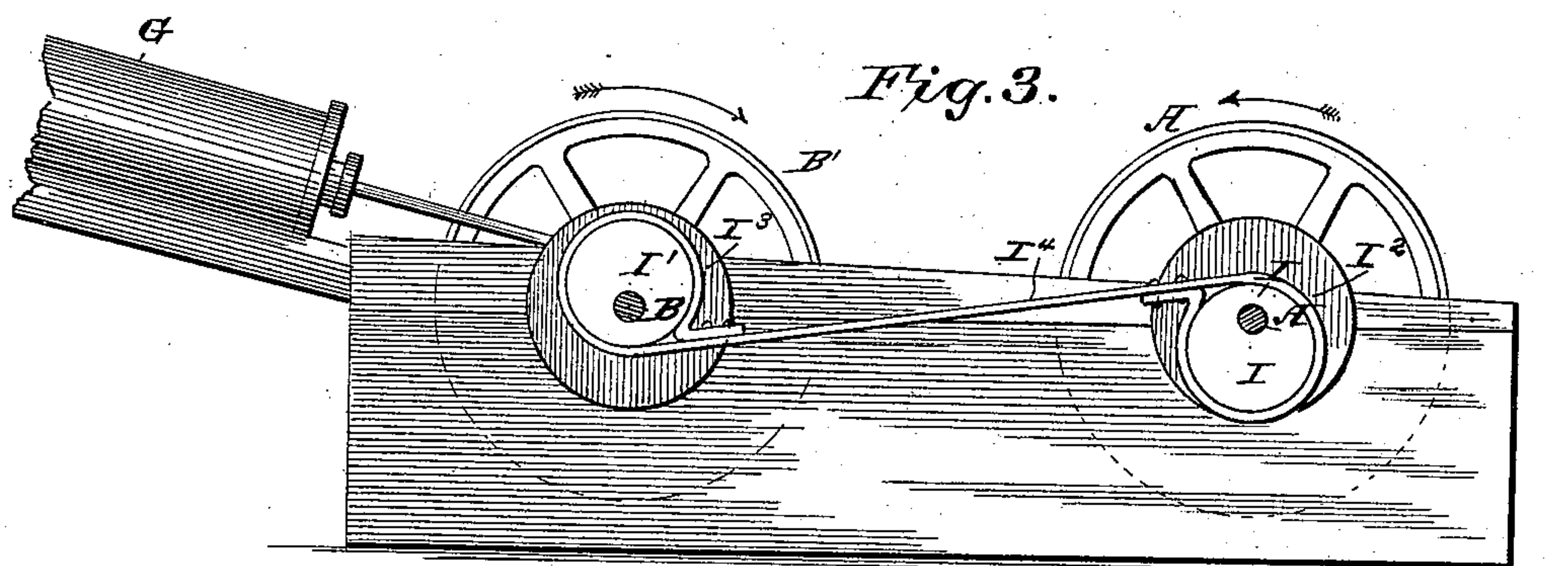
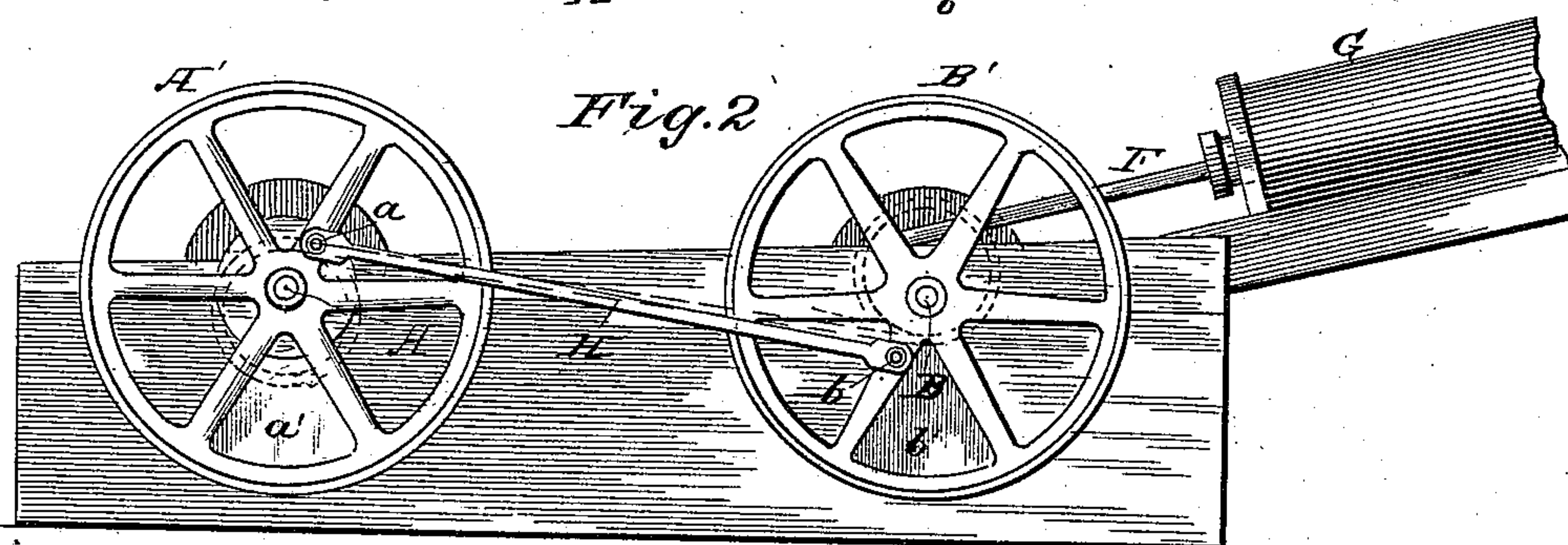
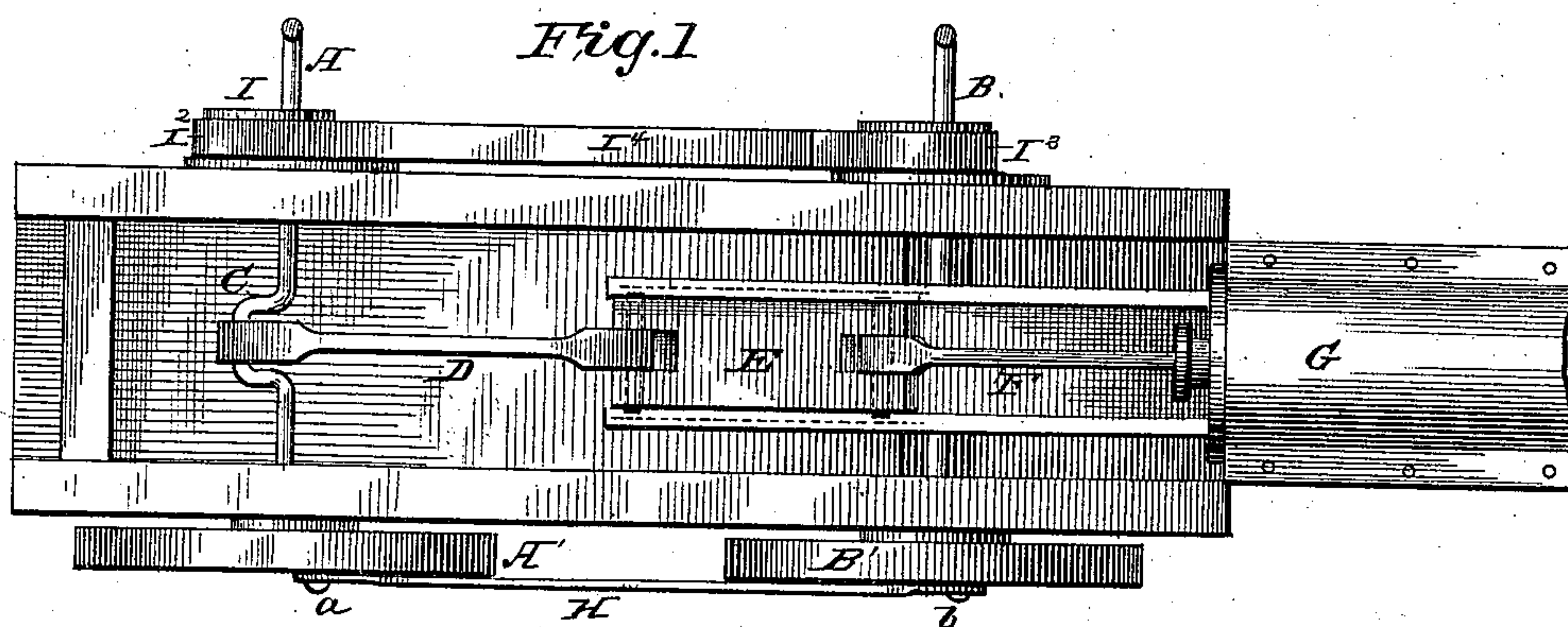
(No Model.)

W. F. COWDEN.

GEARING FOR REVERSE SHAFTS.

No. 322,798.

Patented July 21, 1885.



WITNESSES:

Fred. G. Dietrich
P. B. Turpin,

INVENTOR:

Wm F Cowden

BY *Munn & Co*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM F. COWDEN, OF CUMBERLAND, MARYLAND.

GEARING FOR REVERSE-SHAFTS.

SPECIFICATION forming part of Letters Patent No. 322,798, dated July 21, 1885.

Application filed June 16, 1885. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. COWDEN, a citizen of the United States, residing at Cumberland, in the county of Alleghany and State of Maryland, have invented a new and useful Improvement in Gearing for Reverse-Shafts, of which the following is a description.

This invention is an improvement in gearing for reverse-shafts, and is especially intended for driving the shafts of twin propellers. It is capable, however, of use as a substitute for cog-belt and like gearing in mills, workshops, and other places where it is desired to drive two shafts in opposite directions.

In the drawings, Figure 1 is a plan view of my improvement, and Figs. 2 and 3 are elevations taken from opposite sides thereof.

As stated, my invention is especially intended for use in connection with twin propellers. In the use of such propellers it is desirable to employ one right and the other left hand propeller, and to revolve them in opposite directions. This is preferred, because it is found that by such construction the vessel is driven directly ahead, and all tendency to go out of course, experienced when two similar propellers are employed, is avoided.

I have not thought it necessary to show a boat or like construction, as the arrangement of my improvements in a boat or mill would involve simply mechanical skill; but I have shown the several parts of my invention in a suitable supporting-frame, which may be varied at will, as found desirable.

Two twin shafts, A B, are journaled in suitable bearings in the main frame, and are arranged parallel to each other. One of these shafts is provided with a crank, C, which is connected by pitman D with a cross-head, E, connected with and driven by the piston-rod F. The steam-cylinder G may be connected with the steam-generator in any desired manner. On one end the shafts are provided with fly-wheels A' B', provided with crank-pins a b,

and, preferably, with counterpoise-blocks a' b'. The pins a b are connected by a connecting-pitman, H, which is so arranged, as shown, that the shafts will be revolved in opposite or reverse directions. The motions of the shafts are steadied by the fly-wheels and the added counterpoises.

On the shafts A B, and in line with each other, are fixed eccentric disks I I', arranged with their longest radii at an angle (approximately a right angle) to the crank-pins a b on their respective shafts. The rings I² I³ of these eccentrics are connected by a strap, I⁴. By these eccentrics the cranks will be kept off the dead-center, and they operate to give uniformity to the movement of the machinery.

By this improvement a high rate of speed may be attained, and the machinery will run easily and smoothly. The constructions are light, not liable to get out of repair, and can be quickly and cheaply repaired when necessary.

Having thus described my invention, what I claim as new is—

1. The combination of the twin shafts, fly-wheels secured on the ends thereof and provided with crank-pins, a pitman extending between and connecting the said pins, eccentrics secured on the said shafts, and a strap connecting the rings of said eccentrics, substantially as set forth.

2. The improvement in drive-gearing for reverse-shafts, substantially as herein described and shown, consisting of the twin shafts, the fly-wheels secured thereon and provided with counterpoises, the crank-pins, the connecting-pitman extended between said pins, the eccentrics secured on the shafts, and a strap connecting the rings of such eccentrics, as and for the purpose specified.

WILLIAM F. COWDEN.

Witnesses:

F. M. OFFUTT,

WILL H. SHEPHERD.