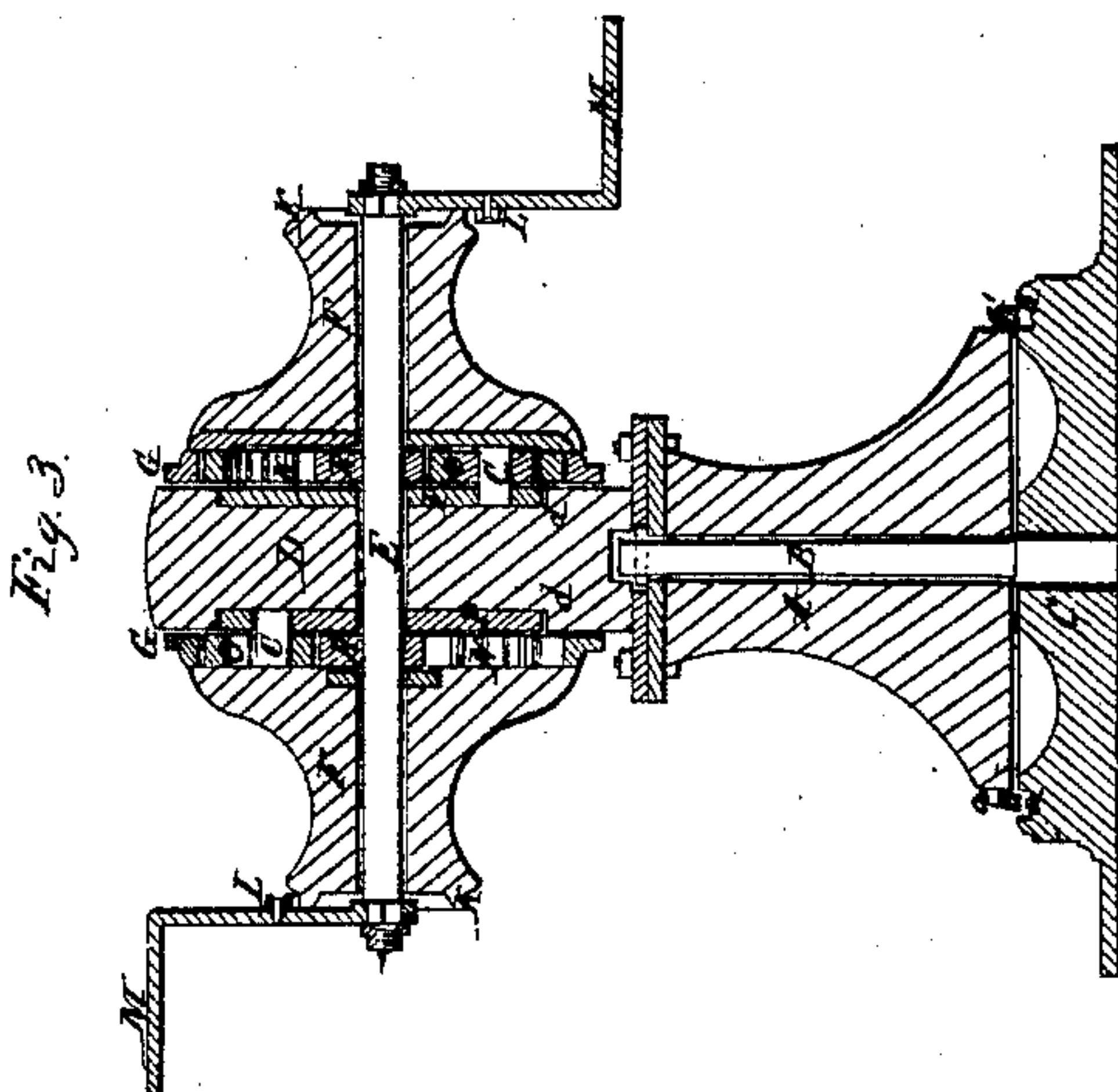
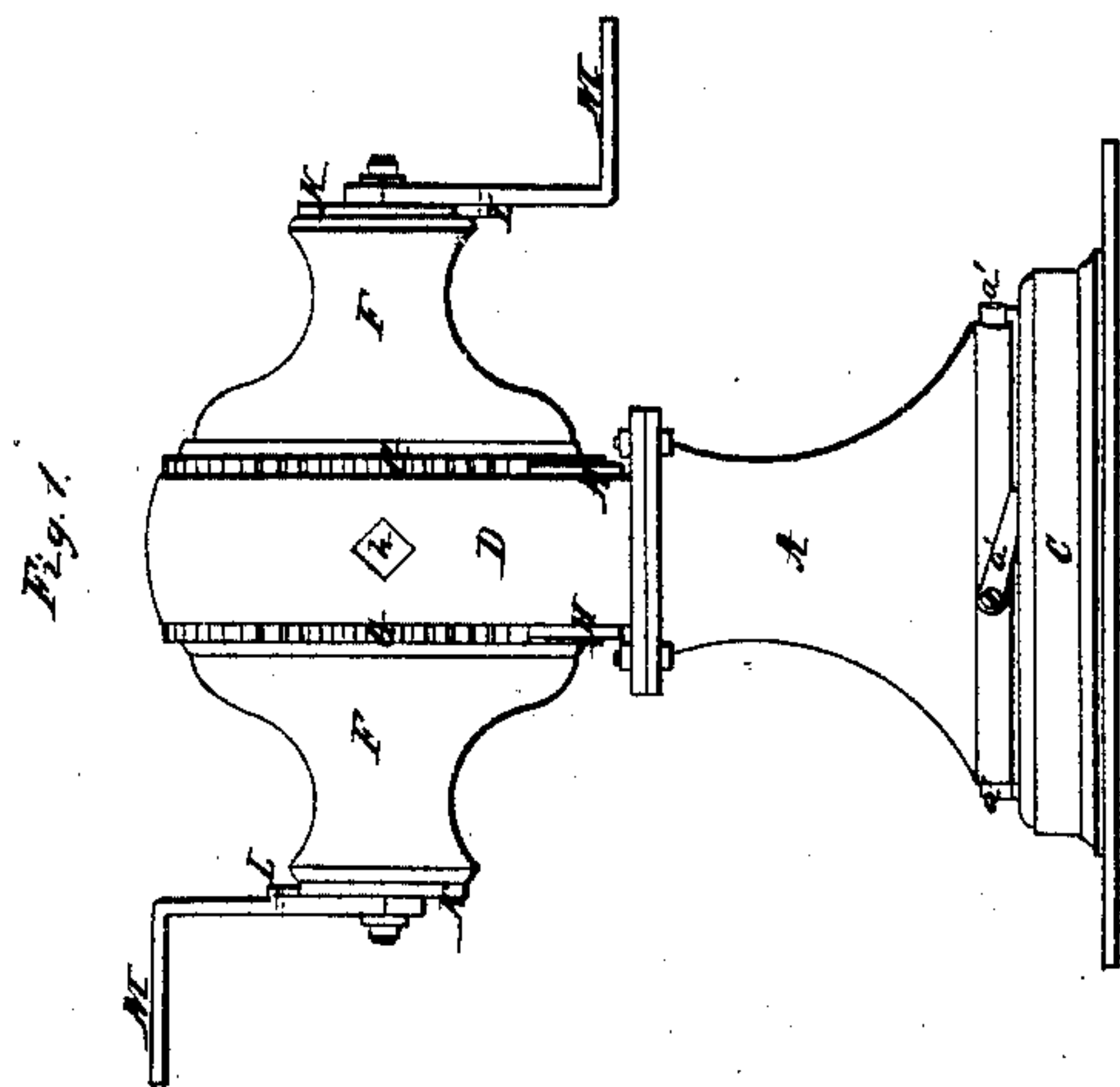
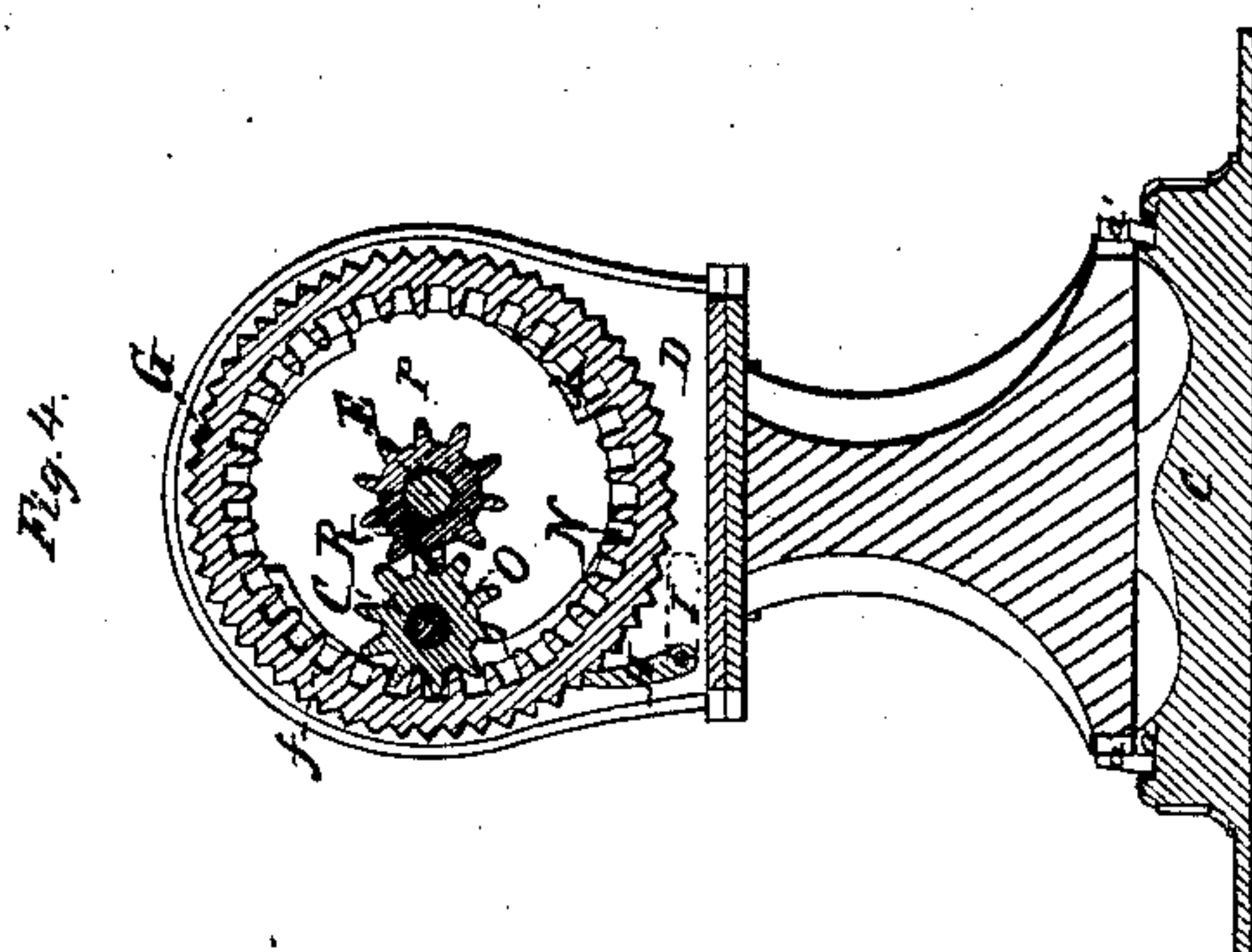
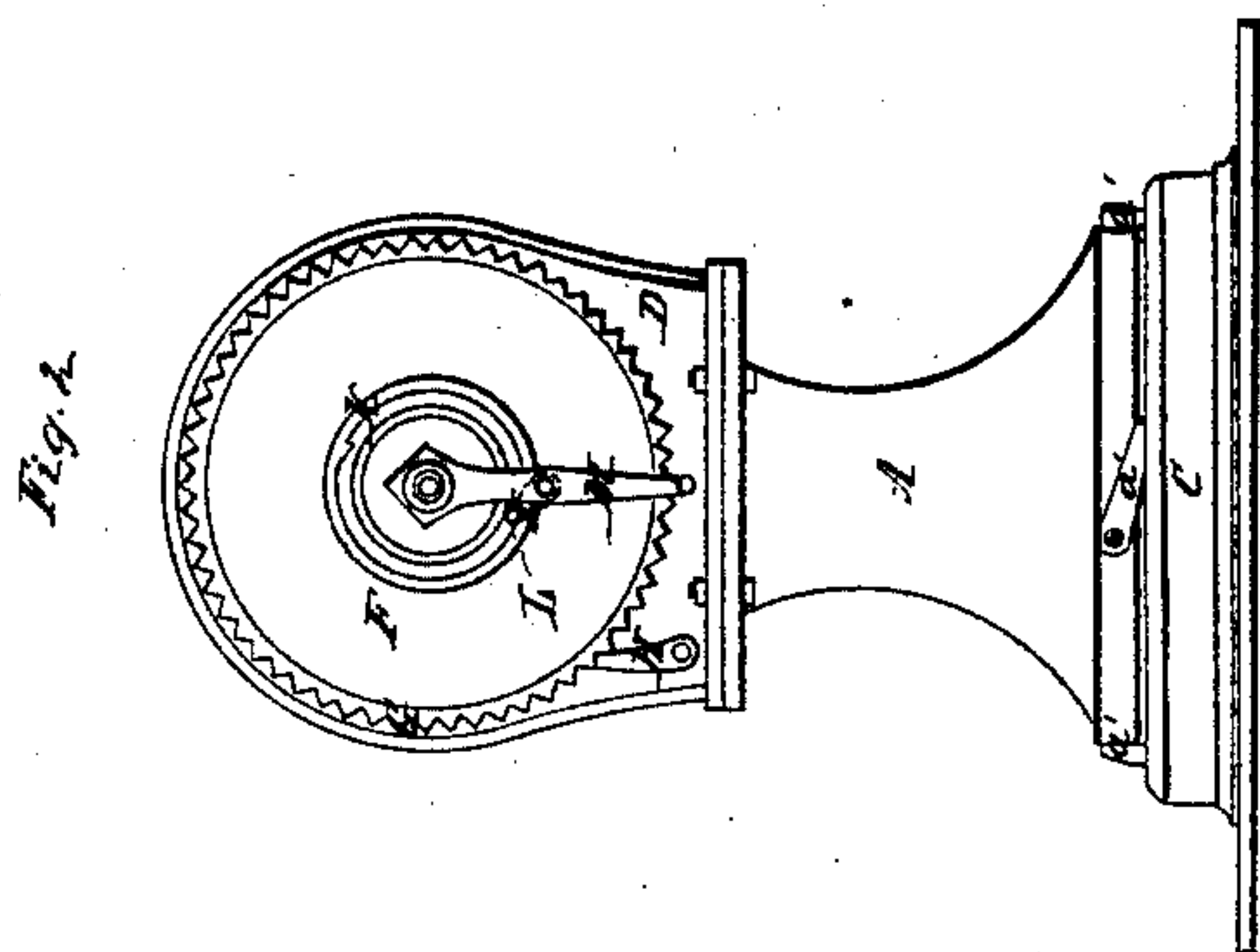


D. Knowlton,
Winch Capstan,

No 55,673,

Patented June 19, 1866.



Witnesses:
Samuel W. Piper.
J. Curtis

Inventor:
David Knowlton
by his attorney,
R. M. Ledy

UNITED STATES PATENT OFFICE.

DAVID KNOWLTON, OF CAMDEN, MAINE.

IMPROVED WINCH-CAPSTAN.

Specification forming part of Letters Patent No. 55,673, dated June 19, 1866.

To all whom it may concern:

Be it known that I, DAVID KNOWLTON, of Camden, of the county of Knox and State of Maine, have invented a new and useful Winch-Capstan; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side view; Fig. 2, an end elevation, and Fig. 3 a longitudinal section. Fig. 4 is a transverse section taken through the larger or retaining ratchet of one of the winches, and so as to show the internal ratchet and the pawl thereof which is applied to the capstan-head.

In the said drawings, A denotes a common capstan, supported on a vertical shaft, B, extended up from a base, C, provided with pawl-teeth or recesses *a*, formed in the usual way, and to receive and operate with a set of pawls, *a'* *a'*, applied to the capstan.

From the top of the capstan a head, D, of the form represented in the drawings, rises. A horizontal shaft, E, goes through the center of the said head, and is supported so as to be capable of revolving therein. This shaft supports two winches, F F, each of which is arranged concentrically with the shaft, and both are arranged with respect to the head D in manner as represented.

Each winch has at each of its ends a ratchet. That ratchet next the head D, and which is shown at G, is a retaining one, and operates with a pawl, H, which is pressed up to the ratchet by the gravitating power of a weighted arm, I, extending from the center pin of the pawl, the same being as shown in the drawings. The other ratchet, which is shown at K as situated at the outer or smaller end of its winch, operates with a pawl, L, carried by a crank, M, applied to the contiguous end of the shaft E.

The object of the last-described ratchet and pawl is to engage the winch with the crank so that such winch and the shaft may revolve together and the same way when the shaft is turned in one direction, and this without the winch being put in revolution by additional power mechanism and by the shaft being revolved in a contrary direction. The said additional power mechanism, a set of which is applied to the shaft and each of the winches,

may be thus further described: At the larger base of each winch, and concentric with the retaining-ratchet thereof, is an internal gear, N, which engages with a pinion, O, that revolves on a pin, *c*, projecting from a ratchet, P, which revolves freely on the shaft E and is placed within a chamber or recess, *d*, formed in the head D. A retaining-pawl, *e*, supported on a pin or screw, *f*, projected from the said head D, operates with the ratchet P. The pinion O engages with another pinion, R, affixed to the shaft E.

By laying hold of the cranks or either of them and revolving the shaft in one direction, we shall bring the crank-pawls into action with their ratchets at the smaller ends of the winches, and as a consequence we shall revolve the winches, and at the same time revolve the ratchets P P and their pinions O O, with the shaft E and its pinions R R—that is, the ratchets P P and the pinions O O will travel around with the shaft E and in the same direction with it. But if we revolve the shaft in an opposite direction we do not change the directions of motion of the winches, but we shall estop the revolution of the internal ratchets, P P, and by so doing cause the pinions R R to revolve the pinions O O on their axes, and so as to revolve their internal gears, and as a matter of course put the two winches in revolution. Thus it will be seen that the additional power mechanism of each winch enables the winch to operate with greater effect when occasion may require.

The application and arrangement of the two winches with the capstan will often be found very useful, particularly when the capstan is employed on the forecastle deck of a vessel.

For the purpose of effecting a rotary motion of the capstan the head thereof may be provided with a square hole, *h*, arranged in each of its opposite sides, such holes being for reception of capstan bars or levers.

In other capstans the axis of the head has been in line with the body of the capstan; but with my arrangement of the head the axis of the head is horizontal and at right angles with that of the body.

I claim as my invention the following, viz:

1. The combination as well as the arrangement of the capstan A, the capstan-head D, and two or any other suitable number of

winches applied to such head, and provided with mechanism for revolving them separately from the capstan.

2. The arrangement of the head D with the capstan A.

3. The combination as well as the arrangement of the internal ratchet, P, and its pawl e, traveling pinion O, the driving-pinion R, the ratchet K, and pawl L, and also the combination of such additional power mechanism with each winch F, the head D, and the capstan A, or the same and the holding-ratchet G and pawl H of the winch.

4. The combination as well as the arrangement of the head D with the two winches and their operative mechanisms, as specified.

5. The combination of the two holding-ratchets G G and their retaining-pawls H H with the two winches, their shaft and operative mechanisms, as applied to them, their shaft, and the capstan-head, substantially as specified.

DAVID KNOWLTON.

Witnesses:

R. H. EDDY,

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