

W. W. Vanderbilt,

Operating Canstans.

No 84,660.

Patented Dec. 1, 1868.

Fig 2.

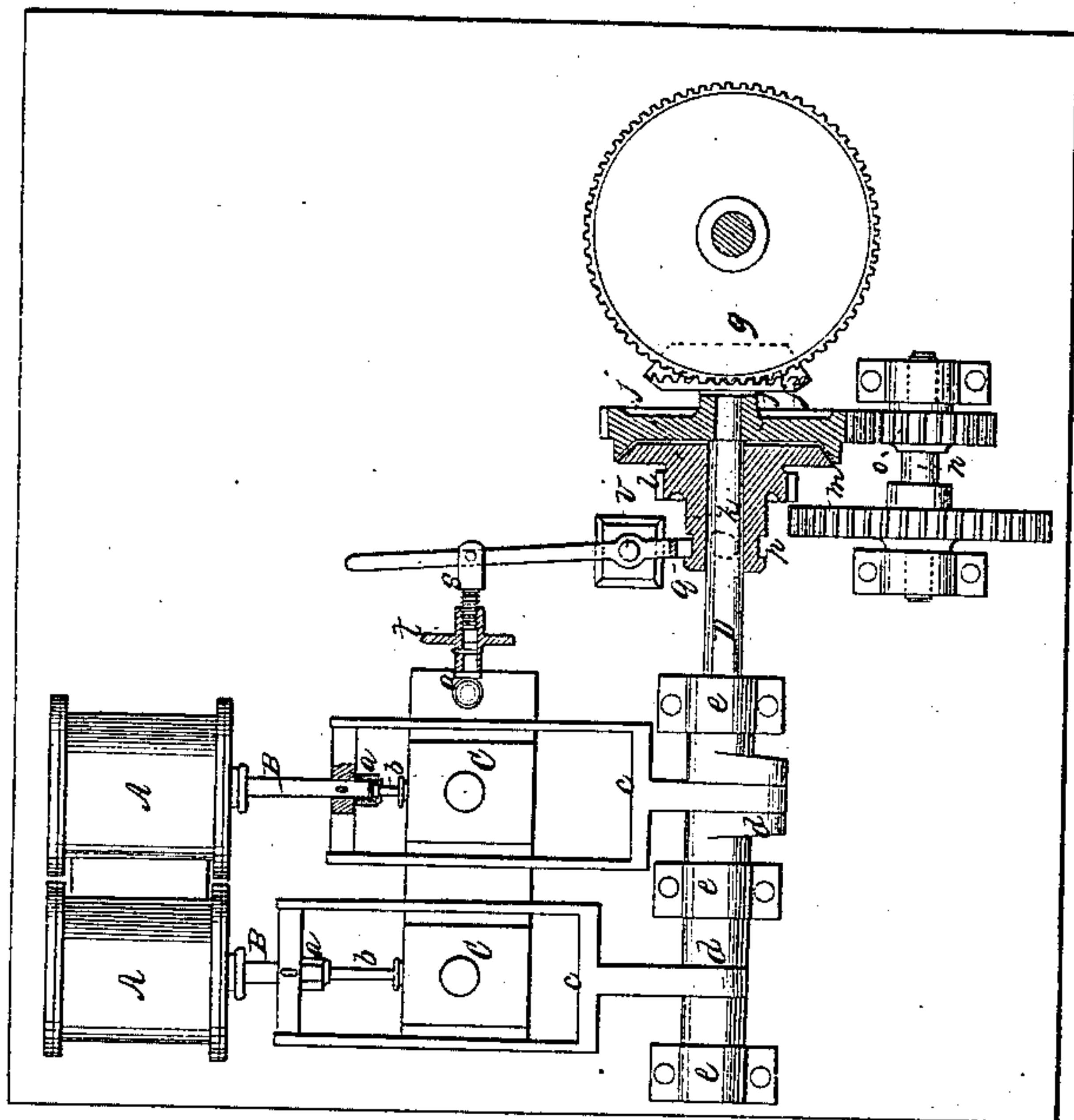
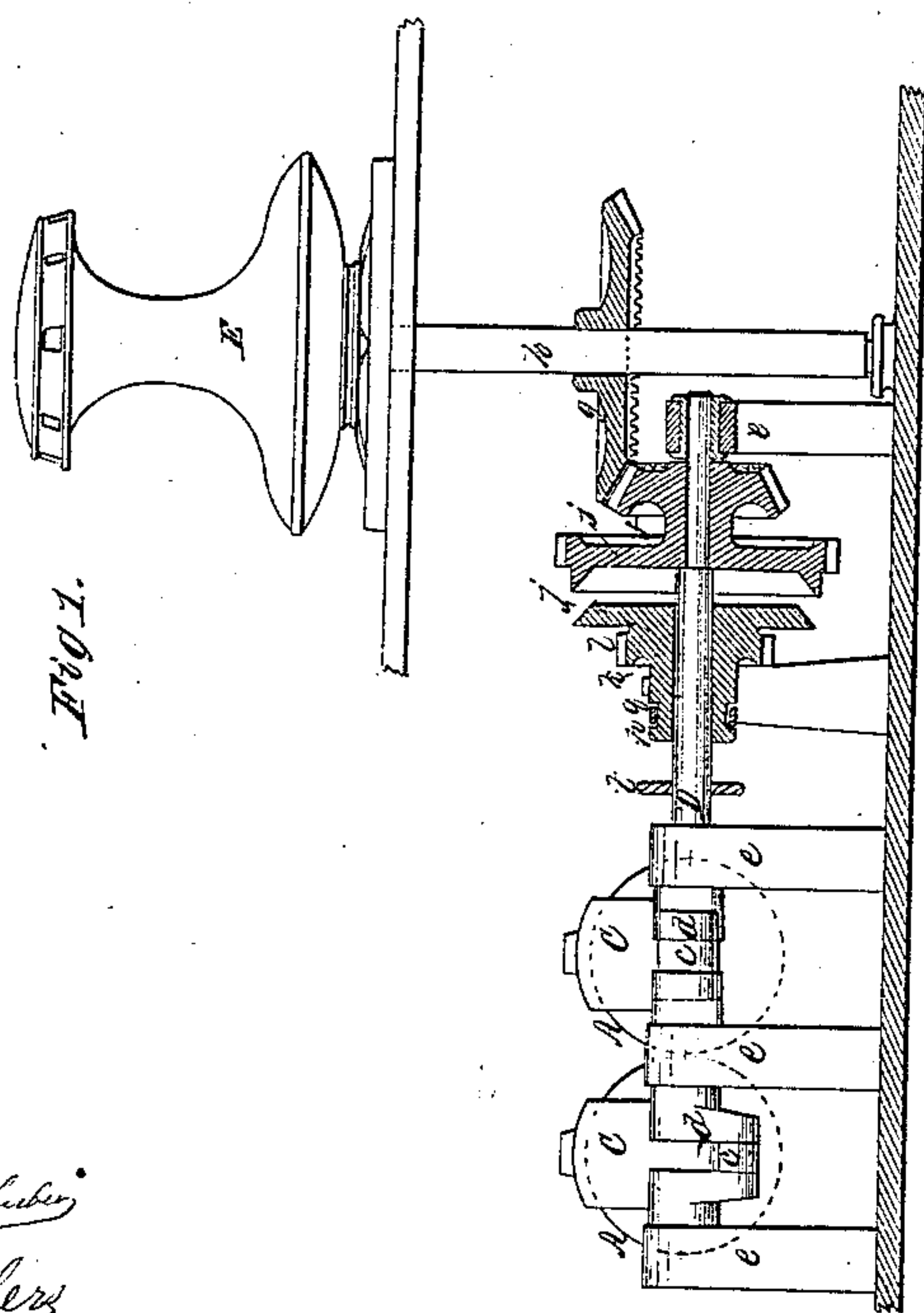


Fig 1.



Witnesses.

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W. W. VANDERBILT, OF NEW YORK, N. Y.

Letters Patent No. 84,660, dated December 1, 1868.

IMPROVEMENT IN OPERATING CAPSTANS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, W. W. VANDERBILT, of the city, county, and State of New York, have invented a new and useful Improvement in Operating Ships' Capstans; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of this invention.

Figure 2 is a sectional plan or top view thereof.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of a series of gear-wheels and couplings between the pumping-engines of a vessel and its capstan, in such a manner that the connections between the pumping-engines and the pumps can be readily uncoupled, and the capstan can be thrown in gear with said engines, and that by these means the same engines can be used for the double purpose of operating the pumps and also the capstan.

The invention consists, further, in the arrangement of a regulating-screw, in combination with the friction-clutch, which serves to throw the capstan in gear with the pumping-engines, in such a manner that the effect of said clutch can be regulated as the desired action of the capstan may require.

A A represent the two steam-cylinders of an ordinary pumping-engine.

The piston-rods B B of these cylinders connect, by union joints or couplings *a a*, with the plunger-rods *b b* of the pumps C C; and said piston-rods also connect, by rods *c c*, with the cranks *d d* of a crank-shaft, D.

This shaft has its bearings in suitable standards *e*, rising from the bed-plate of the engines, and on it is mounted loosely a bevel-wheel, *f*, which gears into another bevel-wheel *g*, mounted on the upright shaft *h* of the capstan E.

On the hub of the bevel-wheel *f* is secured a cog-wheel, *i*, which is turned out to receive the friction-cone *j*, that is secured to a sleeve, *k*, which connects with the shaft D by means of a feather-key, so that it can be moved towards and from the cog-wheel *i*, and that it is compelled to revolve with its shaft.

On the sleeve *k*, and close to the friction-cone *j*, is also secured a cog-wheel, *l*, which can be thrown in gear with a cog-wheel, *m*, mounted on a secondary shaft, *n*, which also bears a cog-wheel, *o*, that meshes into the cog-wheel *i*, as clearly shown in fig. 2.

The sleeve *k* is provided with a circular groove, *p*, to receive the bifurcated end of a lever, *q*, that has its

fulcrum on a pivot, *r*, secured in a standard, which rises from the bed of the pumping-engines.

By means of this lever, the sleeve can be moved on the shaft D, and the friction-cone *j* can be thrown in or out of gear with cog-wheel *i*, or the cog-wheel *l* can be thrown in or out of gear with the back gear *m o*.

The end of the lever *q* can be secured in the bifurcated end of the screws *s*, which connects, by a nut, *t*, with a swivel *u*, the fulcrum of which is secured in a standard rising from the bed of the engines. If the lever is connected to the screws *s*, and the nut *t* is turned in the proper direction, the friction-cone *j* is forced with great force into the cavity of the cog-wheel *i*, and by turning said screw backward, the friction-cone can be made to release the cog-wheel partially or wholly.

If the engines A A are to be used for operating the capstan, the couplings *a a*, between the piston-rods B B and the plunger-rods *b b*, are uncoupled, and the friction-cone *j* is thrown in gear with the cog-wheel *i*. By these means a quick motion is imparted to the capstan.

If it is desired to impart a slow and powerful motion to the capstan, as may be required for heaving an anchor, the cog-wheel *l* on the sleeve of the friction-cone is thrown in gear with the back-gear *m o*; and if it is desired to operate the capstan by hand, in the ordinary manner, the friction-cone and its cog-wheel *l* are adjusted so that they clear both the cog-wheel *i* and the cog-wheel *m*.

This position is also given to the friction-cone, when the engines are required to operate the pumps. By making the engines reversible, the capstan can be made to turn in either direction.

By this simple arrangement, the pumping-engines of a vessel serve also for the purpose of operating the capstan.

Having thus described my invention,

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

1. The arrangement and combination of the engines A A, couplings *a a*, pumps C C, gear-wheels *f g i*, capstan E, and friction-cone *j*, all constructed and operating substantially as and for the purpose herein set forth.

2. The regulating-screw *s*, in combination with the lever *q*, friction-cone *j*, cog-wheels *f g*, and capstan E, substantially as and for the purpose described.

3. The arrangement of the back gear *m o*, in combination with the cog-wheel *l*, bevel-wheels *f g*, capstan E, crank-shaft D, and engines A A, all as and for the purpose shown and described.

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Witnesses:

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