(No Model.)

2 Sheets—Sheet 1.

E. C. BACON.

WINCH ENGINE.

No. 333,496. Patented Jan. 5, 1886.

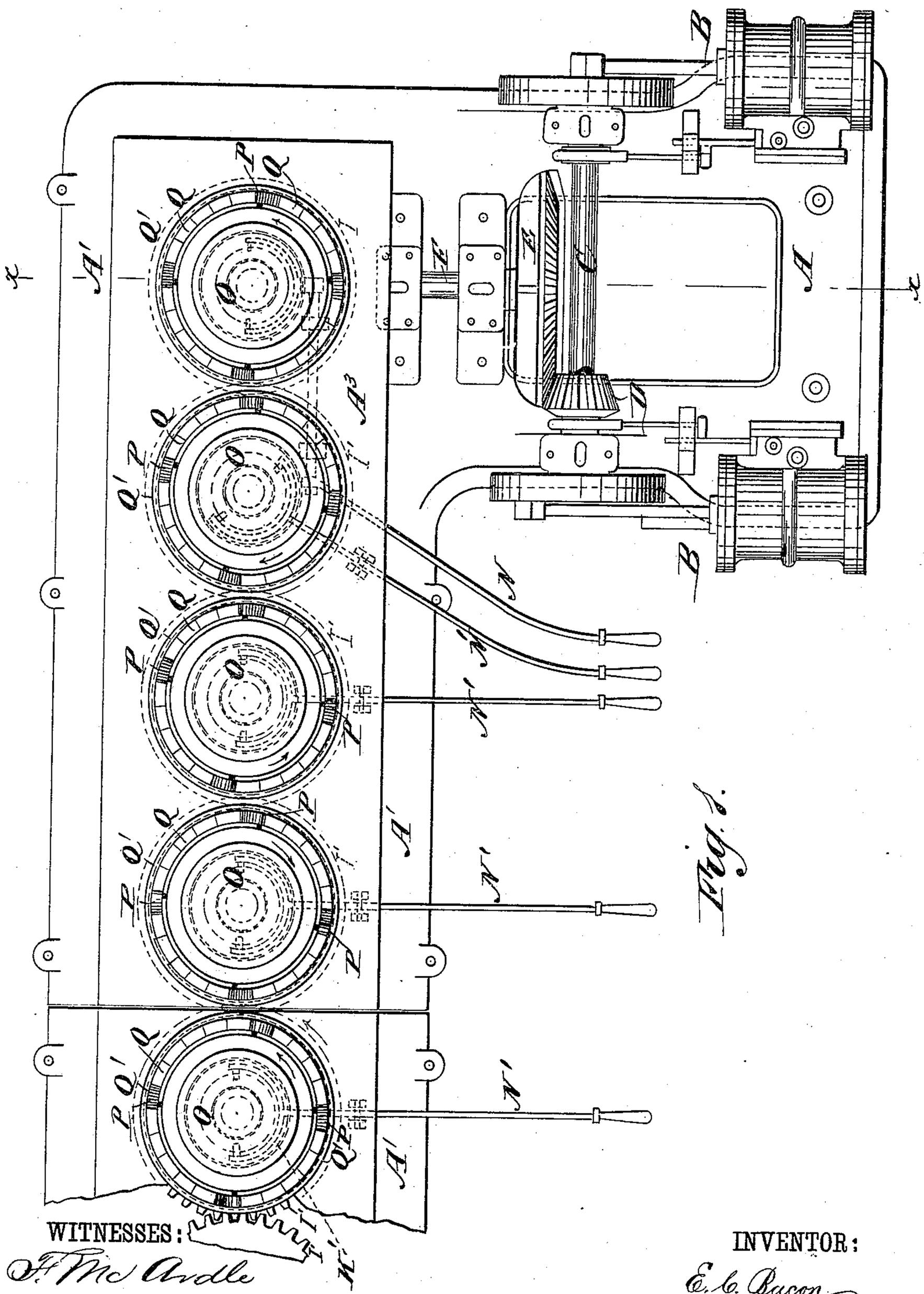

Fig. 1.

WITNESSES:

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

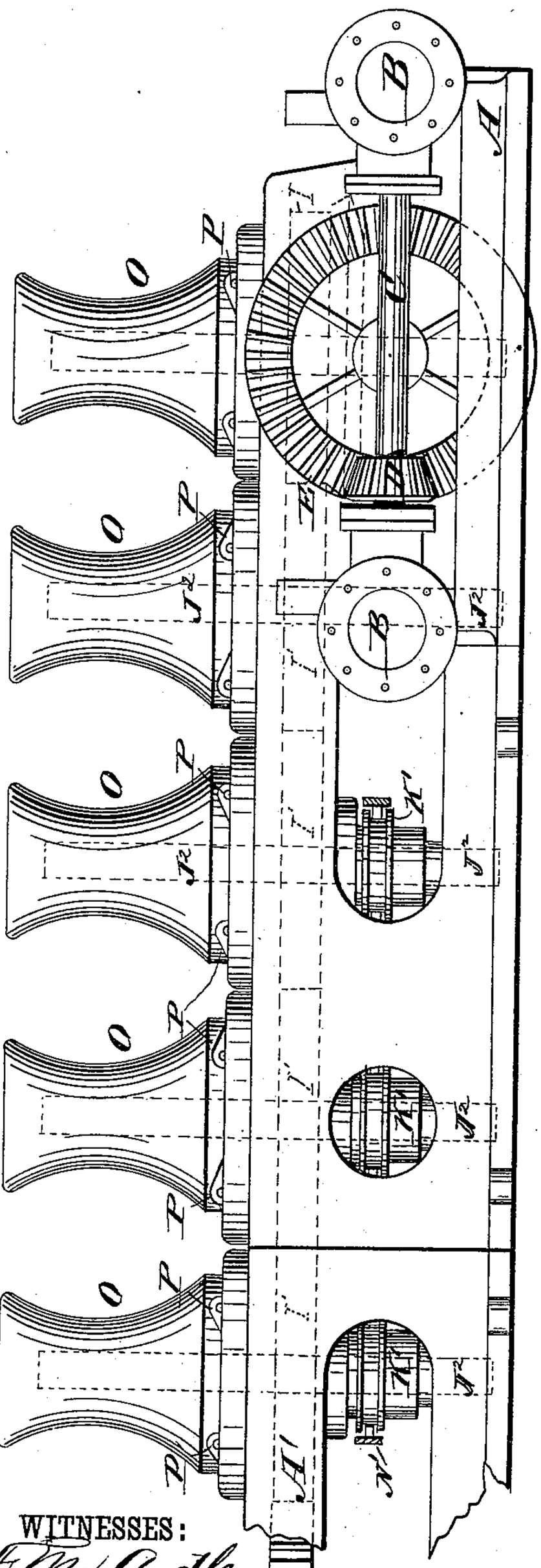
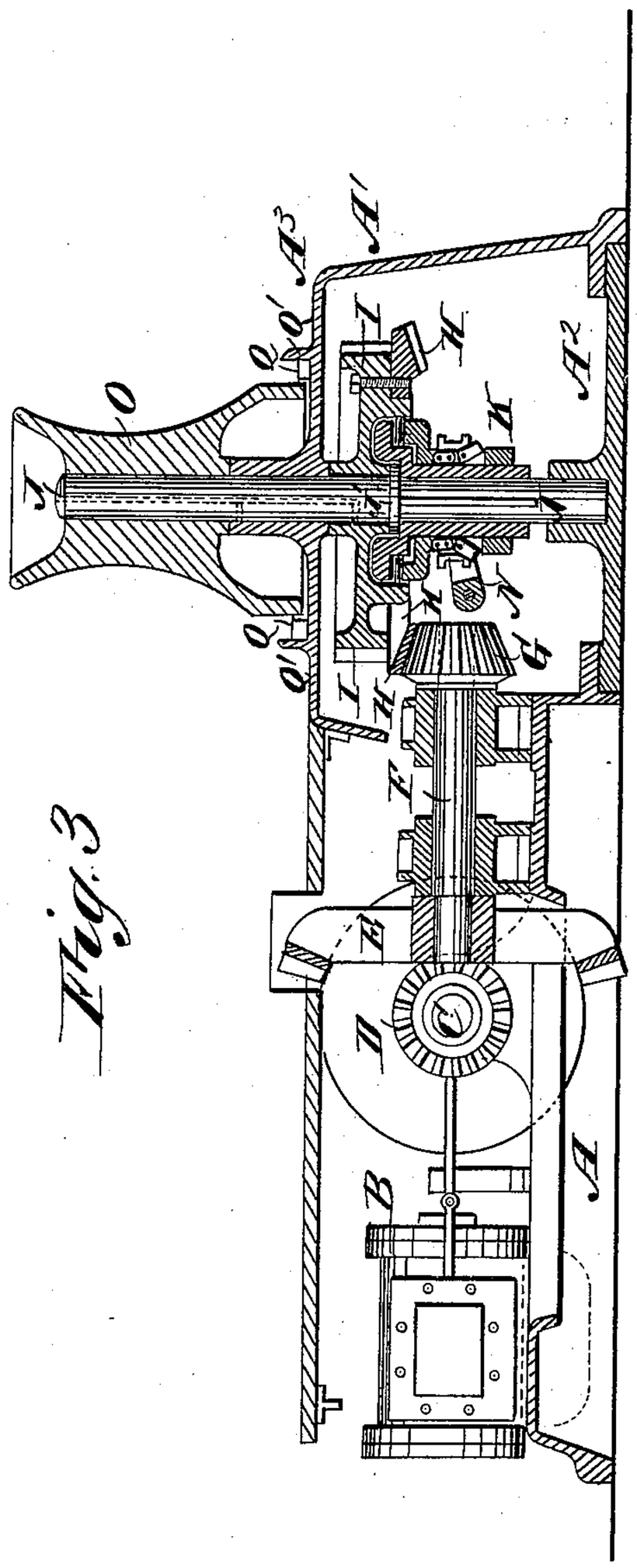


Fig. 3.



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UNITED STATES PATENT OFFICE.

EARLE C. BACON, OF NEW YORK, N. Y., ASSIGNOR TO COPELAND & BACON, OF SAME PLACE.

WINCH-ENGINE.

SPECIFICATION forming part of Letters Patent No. 333,496, dated January 5, 1886.

Application filed May 20, 1885. Serial No. 166,193. (No model.)

To all whom it may concern:

Be it known that I, EARLE C. BACON, of the city, county, and State of New York, have invented a new and Improved Winch-Engine, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved winch-engine, which is so constructed that any desired number of windlasses, each carrying a hoisting-rope, can be set in motion by a train of gear-wheels, which derive their motion from a steam-engine by suitable connections, and said windlasses can each be thrown separately in and out of gear and held at any point with a suspended load without interfering with the movements of the other windlasses.

The invention consists of one or more steam-engines rotating a shaft which actuates a train of gear-wheels, of any desired number of windlasses, each secured to a shaft and provided with a clutch and lever to throw the windlass in or out of gear with the train of gear-wheels, and of ratchet-teeth and pawls which prevent the windlass from unwinding when the windlass is thrown out of gear.

The invention also consists of various parts and details, hereinafter more fully set forth and described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improved winch-engine, showing a trunk-engine as the motive power. Fig. 2 is a side elevation of the same, and Fig. 3 is a horizontal section of the same on the lines *x x* of Fig. 1.

On a suitably-constructed frame, A, are mounted the steam-engines B B, driving the main shaft C, on which is fastened the beveled pinion D, which rotates the beveled gear-wheel E, secured to the shaft F. The shaft F is mounted in suitable bearings on the frame A, and carries on its outer end the beveled pinion G, which meshes with the beveled gear-wheel H, fastened to the spur-wheel I, which is placed loosely on the vertical shaft J. The vertical shaft J is mounted on the upright frame A′ and the bed-plate A^2, which is secured to the main frame A and the upright frame A′. The hub of the spur-wheel I is placed between the top plate, A^3, of the frame A′ and the collar J′, formed on the vertical shaft J.

On a key fastened on the shaft J slides the clutch K, of any suitable construction, which clutch K can be thrown in or out of gear with the spur-wheel I by means of the clutch-lever N.

To the upper end of the shaft J is secured the windlass O, provided with pawls P, pivoted to its lower rim, which pawls P are engaged with the ratchet-teeth Q, formed on an annular projection, Q′, on the top plate, A^3, of the upright frame A′. The spur-wheel I is in gear with a train of gear-wheels, of which each gear-wheel I′ is placed loosely on a shaft, J^2, similar to the shaft J, and each shaft J^2 is provided with a clutch, K′, and lever N′, by which the clutches K′ can be thrown in or out of gear with their respective spur-wheels in the train of gear-wheels. Each shaft J^2 is also provided with a windlass, O, to which are pivoted pawls P, engaging ratchet-teeth Q, formed on the annular projections Q′ on the top plate, A^3, of the frame A′, as before stated.

The operation is as follows: The train of gear-wheels is set in motion by the spur-wheel I, which derives motion from the beveled gear-wheel H and pinion G, attached to the shaft F, which is rotated by means of the beveled-gear wheel E and pinion D, fastened to the main shaft C, which is driven by the steam-engines B B. If a friction-clutch K′ is thrown in gear with its respective gear-wheel of the train of gear-wheels, its shaft J^2 is rotated, and consequently the windlass O attached to such shaft J^2, and if the friction-clutch K′ is thrown out of gear with its respective gear-wheel its shaft will cease rotating, and the pawls P, engaging the ratchet-teeth Q, will lock the windlass O and prevent the hoisting-rope from unwinding.

The upright frame A′ can be divided in as many sections as desired, and as many sections can be joined together as are required for the special work to be accomplished.

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

1. In a winch-engine, a train of gear-wheels

mounted on separate shafts and adapted to be driven from the engine, in combination with a series of windlasses mounted on said shafts, and a separate clutch mechanism for each shaft, whereby said windlasses may be operated separately or simultaneously, substantially as set forth.

2. In a winch-engine, a train of gear-wheels mounted loosely on separate shafts and adapted to be driven from the engine, in combination with a series of windlasses mounted on said shafts and provided with a series of pivoted pawls engaging ratchet-teeth, and separate clutch mechanisms constructed to connect said gears with the shafts for separate or simultaneous action, substantially as set forth.

3. In a winch-engine, a train of gear-wheels mounted loosely on separate shafts and adapted to be driven from the engine, in combination with a series of windlasses mounted on said shafts, and a separate friction-clutch for each gear-wheel, substantially as set forth.

4. In a winch-engine, the frame A′, divided into sections joined together, each section being provided with a train of gear-wheels, of which each gear-wheel is placed loosely on the vertical shaft J^2, which is provided with the clutch K, the clutch-lever N, the windlass O, the pivoted pawls P, and the ratchet-teeth Q, formed on the annular projection Q′, all arranged and operating substantially as shown and described.

EARLE C. BACON.

Witnesses:
EDGAR TATE,
EDWARD M. CLARK.