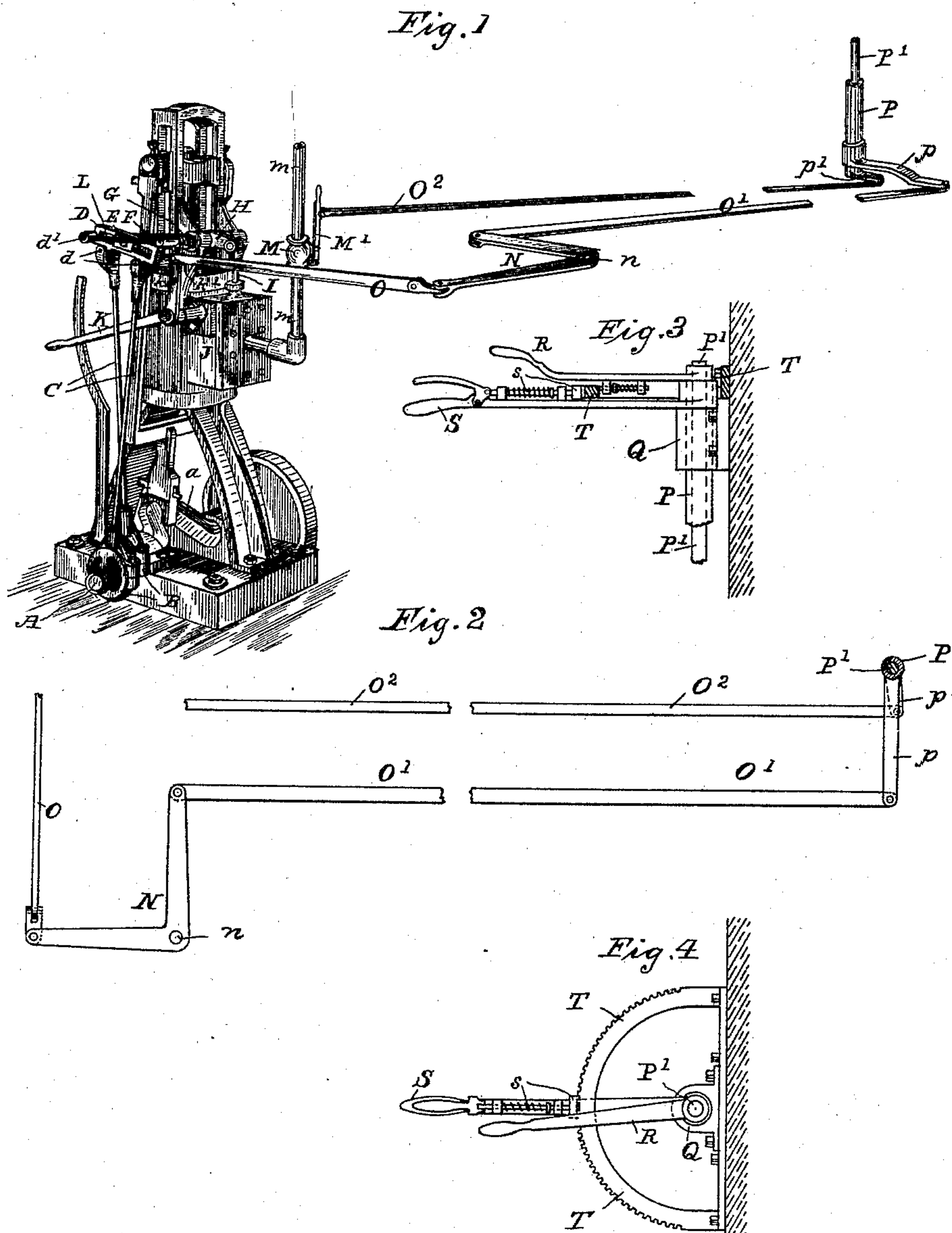


(No Model.)

D. R. & F. M. WOODSUM.
ENGINE ATTACHMENT.

No. 445,943.

Patented Feb. 3, 1891.



Witnesses

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UNITED STATES PATENT OFFICE.

DANIEL R. WOODSUM AND FRANK M. WOODSUM, OF HARRISON, MAINE,
ASSIGNORS OF ONE-THIRD TO JOHN E. ROBERTSON, OF CONCORD,
NEW HAMPSHIRE.

ENGINE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 445,943, dated February 3, 1891.

Application filed September 25, 1889. Serial No. 325,036. (No model.)

To all whom it may concern:

Be it known that we, DANIEL R. WOODSUM and FRANK M. WOODSUM, citizens of the United States, residing at Harrison, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Engine Attachments, of which the following is a specification.

The object of this invention is to provide in the pilot-house of all steam-craft suitable mechanism, whereby a pilot may be in full control of the engines without the use of signal-bells communicating with the engineer.

The invention consists in providing a throttle and reverse lever in the wheel-house for each engine, connected by suitable shafts, cranks, and rods with the throttle and reverse lever located in the engine-room, all of which will be clearly set forth in the following specification and claim, and clearly illustrated in the accompanying drawings, forming an inseparable part thereof, of which—

Figure 1 is a perspective view representing a marine engine with its throttle and reverse lever and suitable cranks and rods connecting with shafts which may pass vertically to the wheel-house of a steamer. Fig. 2 is a broken plan view showing said shafts with their cranks and rods in relative position therewith. Fig. 3 represents, in side elevation, a throttle and reverse lever attached to a portion of their respective shafts, as when arranged in accordance with our improvements for placing within a wheel-house; and Fig. 4 represents a plan view of the same.

Similar reference-letters designate like parts throughout the several views.

A represents the driving-shaft; *a*, its crank; B, the eccentrics; C, the eccentric-rods, and D the link, to which they are pivoted at *d*.

E is the block, upon which the link slides in changing the position of the valve and reversing the engine.

F is the rocker arm or crank connecting said block with a rocker-shaft G, upon which also is mounted the rocker-arm H, carrying one end of the valve-rod I.

Upon a wrist-pin J, mounted at one side of the steam-chest, is mounted the reverse-lever

K, having an arm *k* rising in nearly a vertical direction, to the outer end of which is pivoted a rod L, the opposite end of which is mounted upon a stud *d'*, provided upon the link D, and by which said link is adjusted upon the block E.

A throttle-valve M, provided in the steam-feed pipe *m*, has an ordinary throttle-lever M', and our invention involves suitable mechanism for connecting said throttle and reverse levers with and operating them by a similar throttle and reverse lever located in the wheel-house. One single and convenient means for accomplishing this is illustrated in the drawings, to which, however, we do not limit ourselves, as the various constructions of marine engines would necessarily require more or less variation in the mechanism by which we are enabled to accomplish the objects of our invention.

In the drawings we show a bell-crank N, which may be mounted at *n* in any suitable support. The free ends of said crank are connected one with a rod O, extending to the arm *k* of the reverse-lever K, to which it is pivoted at *k'*, and the other with a rod O', extending forward at a right angle with said rod O and pivoted to a crank *p*, mounted upon the lower end of a vertical hollow shaft P. To the throttle-lever M' is connected one end of a rod O², having its forward end pivoted to a crank *p'*, mounted upon the lower end of a vertical shaft P', which passes upward through or within the hollow shaft P, both said shafts terminating in the wheel-house, and upon which are mounted, respectively, the throttle and reverse levers R and S.

The rods O O² should be so pivoted to the reverse and throttle levers respectively as to be readily detachable, if for any reason it became desirable to stop the engine while in the engine-room.

A curved rack T is mounted upon one of the walls U of the wheel-house, and is provided with the usual teeth *t*, with which a spring-stop *s* of the reverse-lever S is permitted to engage and thus shorten or lengthen the stroke of the valve in the ordinary manner; and in order to prevent any accidental

movement of the throttle R said throttle may be provided with a spring-actuated stud 7; arranged to bear with some force against the inside edge of the arc or rack T, the friction of which will serve to hold said throttle at any desired position—wide open, part way open, or closed.

It will be obvious that our invention applies as readily to double as to single engines, and when applied to engines running twin screws the invention affords a perfect and reliable means for steering a vessel.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination, with a steam-engine provided with a throttle and reversing mechanism, of a rack in the pilot-house, a hollow shaft through the deck, having a crank upon its lower end and a handle upon its upper end,

said handle being provided with a spring-stop to engage with the teeth of the rack, a post through the hollow shaft having a crank on its lower end and a handle upon its upper end, said handle being provided with a spring-actuated stud for engaging with the smooth portion of the rack, two rods and a lever for connecting the crank on the end of the hollow shaft with the reversing mechanism of the engine, and a rod for connecting the crank on the lower end of the post with the throttle-valve, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

DANIEL R. WOODSUM.
FRANK M. WOODSUM.

Witnesses:

W. C. STUROC,
A. W. WOODMAN.