

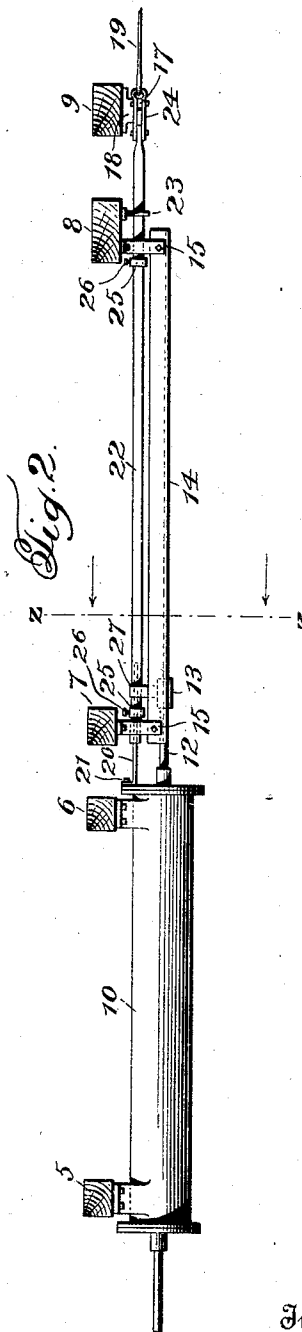
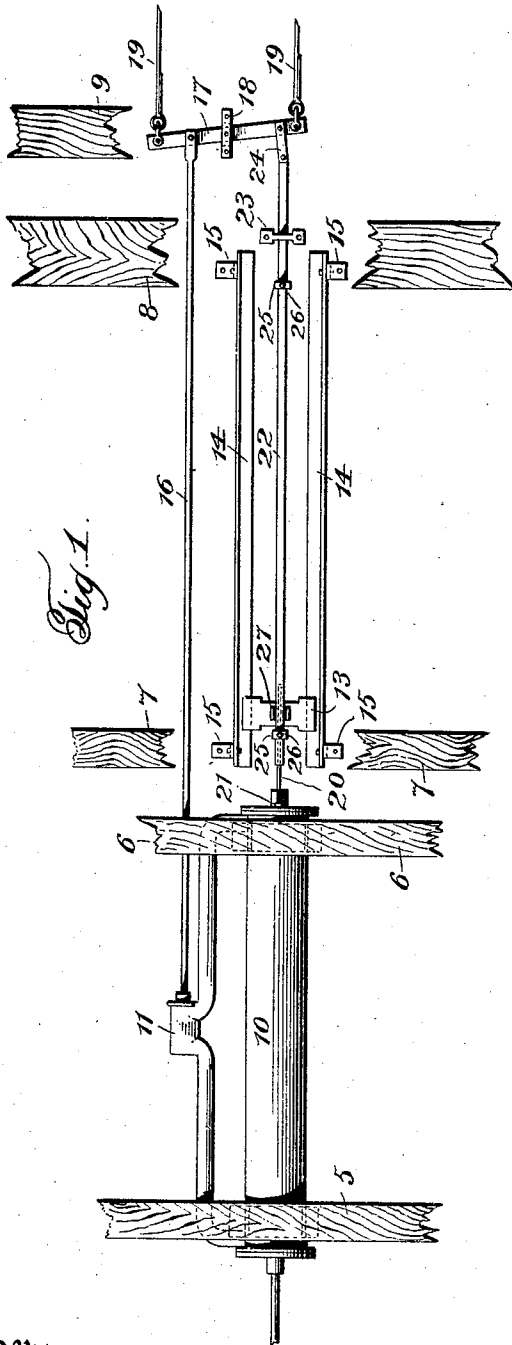
No. 858,207.

PATENTED JUNE 25, 1907.

F. DE V. PATTEN.
STEERING ENGINE.

APPLICATION FILED APR. 30, 1907.

2 SHEETS—SHEET 1.



Witnesses:
James Hutchinson.
C. E. Daly

Inventor:
Frank D. Patten,
By Royal E. Burnham, Attorney.

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2 SHEETS—SHEET 2.

Fig. 3.

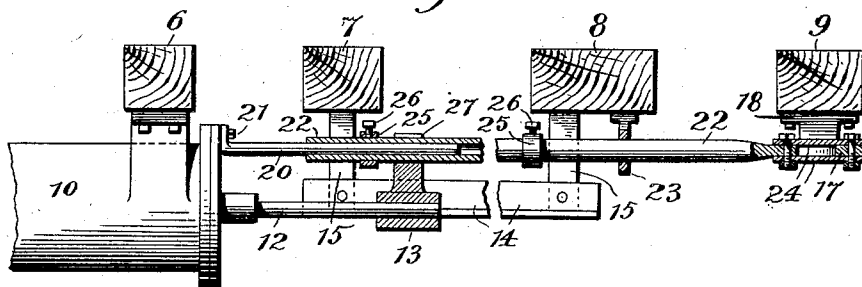
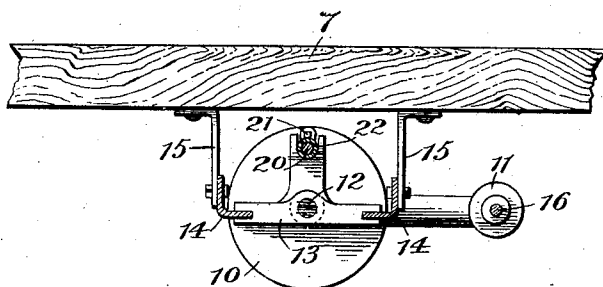


Fig. 4.



Witnesses:

James Hutchinson
E. E. Daly

Inventor:

Frank D. Patten
By Regal C. Burnham, Attorney

UNITED STATES PATENT OFFICE.

FRANKLIN DE VERE PATTEN, OF PORTLAND, OREGON.

STEERING-ENGINE.

No. 858,207.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed April 30, 1907. Serial No. 371,175.

To all whom it may concern:

Be it known that I, FRANKLIN DE VERE PATTEN, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Steering-Engines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention provides for direct-acting steering or similar engines means of novel construction whereby the flow of steam or other actuating fluid, and thereby the engine, is automatically stopped when the piston arrives at a point at or near either limit of its reciprocatory movement.

When read in connection with the specific description hereinafter, the details of construction and arrangement of parts contemplated by this invention will be apparent from the accompanying drawings, forming part hereof, wherein a preferable embodiment of the invention, as applied to a steam steering-engine, is disclosed, for purposes of illustration, only such parts being shown in the views as are necessary for the proper exposition of the invention.

Like reference-characters refer to corresponding parts in the several views of the drawings, of which—

Figure 1 is a plan view; Fig. 2 is a view in elevation; Fig. 3 is an enlarged detail view of the stop-rod and associated parts, partly in section; and Fig. 4 is a sectional view, on the line $z-z$, and looking in direction of the arrows, Fig. 2.

Having more particular reference to the drawings, 5, 6, 7, 8, and 9 designate the engine-support sills, on which the steering-engine is mounted, the engine including the cylinder 10, valve-chest 11, piston-rod 12, and cross-head 13, reciprocating in slide 14, supported from sills 7 and 8 by brackets 15, all of the usual construction, the cable or other means (not shown) for connecting the engine with the rudder being attached to the cross-head.

For the purpose of controlling the operation of the engine, a rod 16 extends from valve-chest 11 to an arm 17 with which it is pivotally connected, this arm in turn being pivotally mounted at or near its center on a hanger 18 attached to sill 9. Cables or links 19 are connected one to each end of arm 17 and extend to the wheel-house or other position of the helmsman, whence the arm and

thereby the engine-valve can be operated in an obvious manner.

In order that the engine may be automatically stopped when the helmsman fails to operate the valve and shut off steam as the piston reaches either limit of its reciprocatory movement, I provide an automatically-operable device for this purpose, which in no way interferes with the manual control of the engine. A rod 20 disposed in a parallel relation to piston-rod 12 is attached by a bolt or other suitable means 21 to the cylinder-head, and this rod acts as a support for one end of a hollow or pipe rod 22 into which it projects. Pipe-rod 22 is supported at the other end by a hanger 23 attached to sill 8, and at this end is pivotally connected by a link 24 with arm 17, the pipe-rod being so arranged that it is capable of reciprocatory movement as the arm swings on its pivot, and being disposed adjacent to and parallel with the path of movement of cross-head 13. Near each limit of movement of cross-head 13 a collar 25 is held on pipe-rod 22 by a set-screw 26. A fork-member 27 is attached to cross-head 13 and arranged to embrace pipe-rod 22 between collars 25 and to engage one or the other of those collars as the cross-head reaches one limit or the other of its movement. If the helmsman fails to stop the movement of the piston rod before the one or the other limit of movement is reached, fork 27 engaging one or the other of collars 25 will move pipe-rod 22 and through the instrumentalities of link 24, arm 17, and rod 16 operate the engine-valve and stop the engine.

It will be noted that the fact that the cross-head stops with one or the other of collars 25 in contact therewith when the engine has been automatically stopped does not prevent the starting of the engine in a direction contrary to that from which it has been stopped, for the reason that the starting is effected by movement of the valve in the same direction as it was moved to stop the engine, and that, therefore, the collar in contact will be moved away from the cross-head.

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

1. The combination with the valve-operating mechanism and a reciprocating part of an engine, of a fixed rod, a hollow rod into which said fixed rod projects and supported thereby at one end, a pivotal connection between the other end of said hollow rod and

the valve-operating mechanism, and stops on said hollow rod and arranged to be engaged by said reciprocating part as the latter nears a limit of reciprocatory movement.

- 5 2. The combination with the cylinder, valve, valve-rod, and cross-head of an engine, of a pivoted arm connected with said valve-rod and with means for its manual operation, a rod fixed to the cylinder and projecting therefrom, a hollow rod into which
10 said fixed rod projects and one end of which is supported thereby, said hollow rod being disposed parallel and adjacent to the path of

the cross-head, a pivotal connection between said pivoted arm and hollow rod, stops on
15 said hollow rod, and a member on said cross-head and arranged to engage one or the other of said stops as the cross-head nears either limit of its reciprocatory movement.

In testimony whereof I affix my signature 20
in presence of two witnesses.

FRANKLIN DE VERE PATTEN.

Witnesses:

WILBER G. COPELAND,
HARRY C. DENNIS.