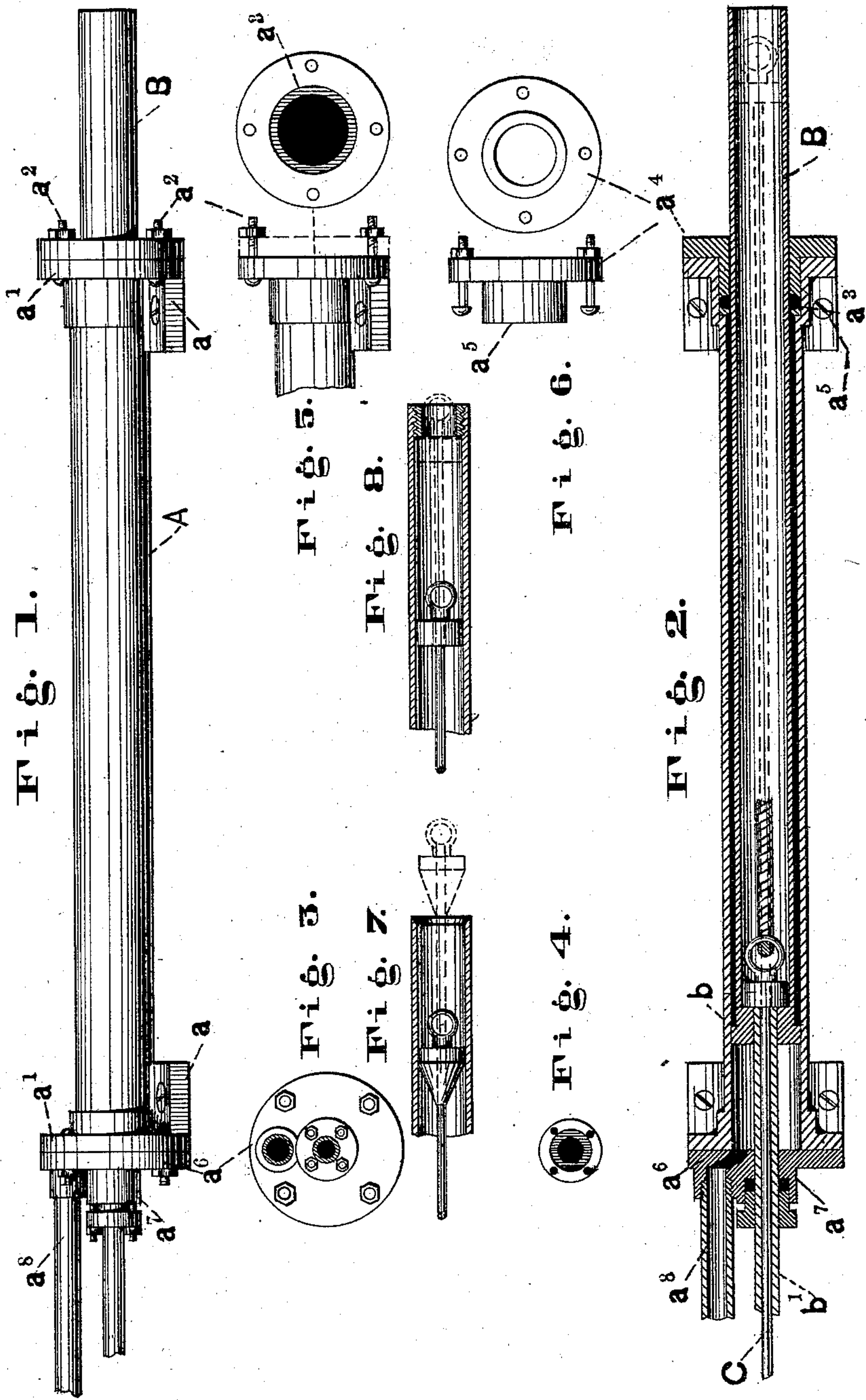


J. GATES.

Steam or Hydraulic Steering Apparatus.

No. 223,804.

Patented Jan. 27, 1880.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN GATES, OF PORTLAND, OREGON.

STEAM OR HYDRAULIC STEERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 223,804, dated January 27, 1880.

Application filed October 25, 1879.

To all whom it may concern:

Be it known that I, JOHN GATES, of Portland, in the county of Multnomah and State of Oregon, have invented a new and Improved Steam or Hydraulic Steering Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention consists, mainly, in the combination, with a hollow piston-rod, of an extended hollow ram or piston, as will be fully described hereinafter.

In the drawings, Figure 1 represents a side elevation of my invention; Fig. 2, a sectional elevation of the same; Fig. 3, a front view of the cap or cover; Fig. 4, the stuffing-box with cap removed; Fig. 5, side and end view of flange of main cylinder; Fig. 6, side view and plan of cover a^4 . Fig. 7 represents the tiller-rod, with a conical collar adapted to enter readily the beveled end of the cylinder; and Fig. 8 represents a stop-ring in the end of the cylinder, adapted to prevent the escape of the collar.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

A, Fig. 1, represents the cylinder, having the usual base-pieces a a on its lower side and the usual flange-pieces a' a' at its ends, provided with the bolts a^2 a^2 , as shown.

a^3 , Figs. 2 and 5, represents an annular recess formed within the cylinder at its rear end, which is designed to receive any suitable packing.

a^4 , Figs. 2 and 6, represents the cylinder head or cover at the rear end, which is removably secured in place by means of nuts screwed upon the fixed bolts a^2 a^2 , and is provided with an inwardly-projecting collar, a^5 , adapted to enter the end of the cylinder, as shown in Fig. 2, for the purpose of securing the packing held in recess a^3 properly in place.

a^6 , Figs. 1 and 3, represents the cylinder head or cover at the front end, also remov-

ably secured by means of nuts screwed upon the bolts a^2 a^2 , which is provided with a stuffing-box, a^7 , of any proper construction, and a pipe, a^8 , for the passage of steam or water into or from the cylinder.

B, Figs. 1 and 2, represents the piston or ram, consisting of an extended hollow tube, which is united by means of a head, b , Fig. 2, to the hollow piston-rod b' , as shown.

When the piston and piston-rod are properly in place, the former has a bearing at the rear end of the cylinder and at the head b , and at no other point, and the latter at the stuffing-box only.

C, Fig. 2, represents the tiller-rod, which lies in the hollow piston and rod, as shown. This is provided preferably with a conical portion, as shown in Fig. 7, by means of which it is guided back into the tube if it escapes therefrom. A stop-ring, however, may be placed in the end of the cylinder to prevent its escape, as shown in Fig. 8.

The advantages of this special construction are as follows: By means of this extended piston it is made possible to locate the packing at the rear end of the cylinder, where the same can be readily reached, when desired, by simply loosening the cylinder-head. The packing, consequently, may be removed at any time without stopping or disturbing any part of the steering apparatus.

By means of the hollow piston and rod the tiller-rod and rope are permitted to render through them when it is desired to steer the vessel by hand.

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

In combination with the extended hollow piston b and the hollow piston-rod, the tiller-rod, adapted to render through the same, substantially as described.

This specification signed and witnessed this 26th day of August, 1879.

JOHN GATES.

Witnesses:

THEODORE WYGANT,
GEO. S. BROOKE.