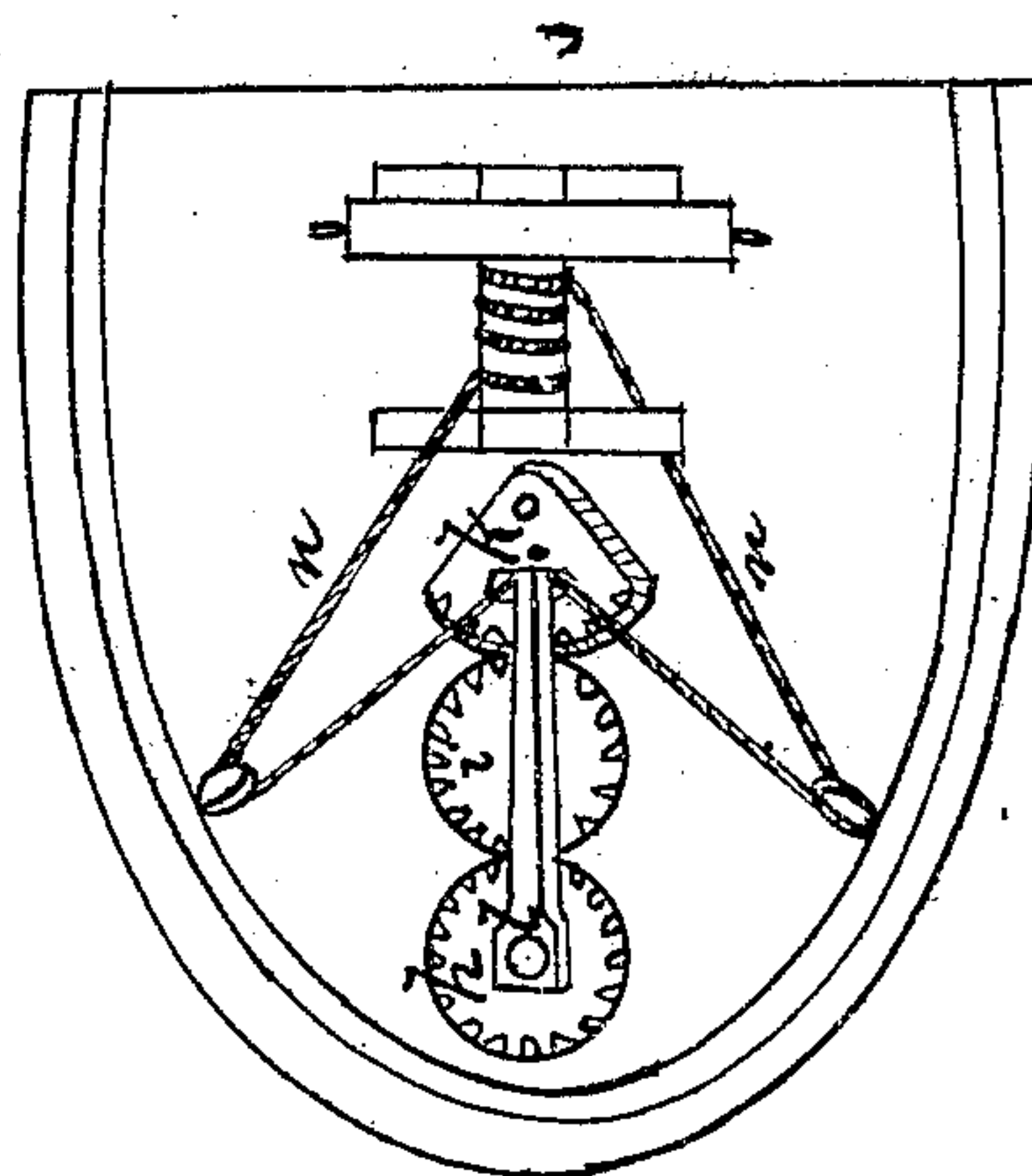
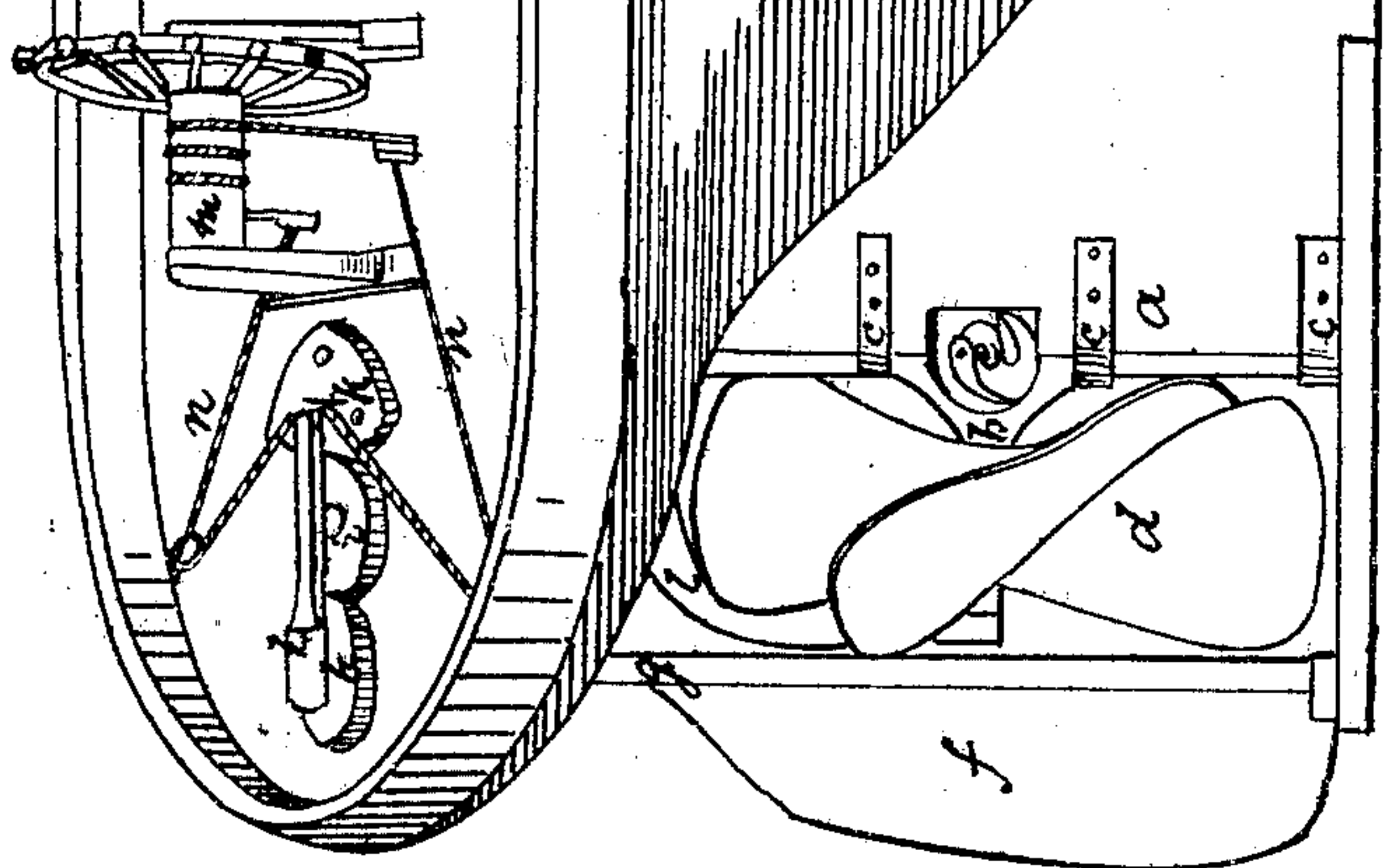


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Steering-Apparatus.

N^o 73951

Patented Feb. 4, 1868.



Witnesses.
C. F. French.
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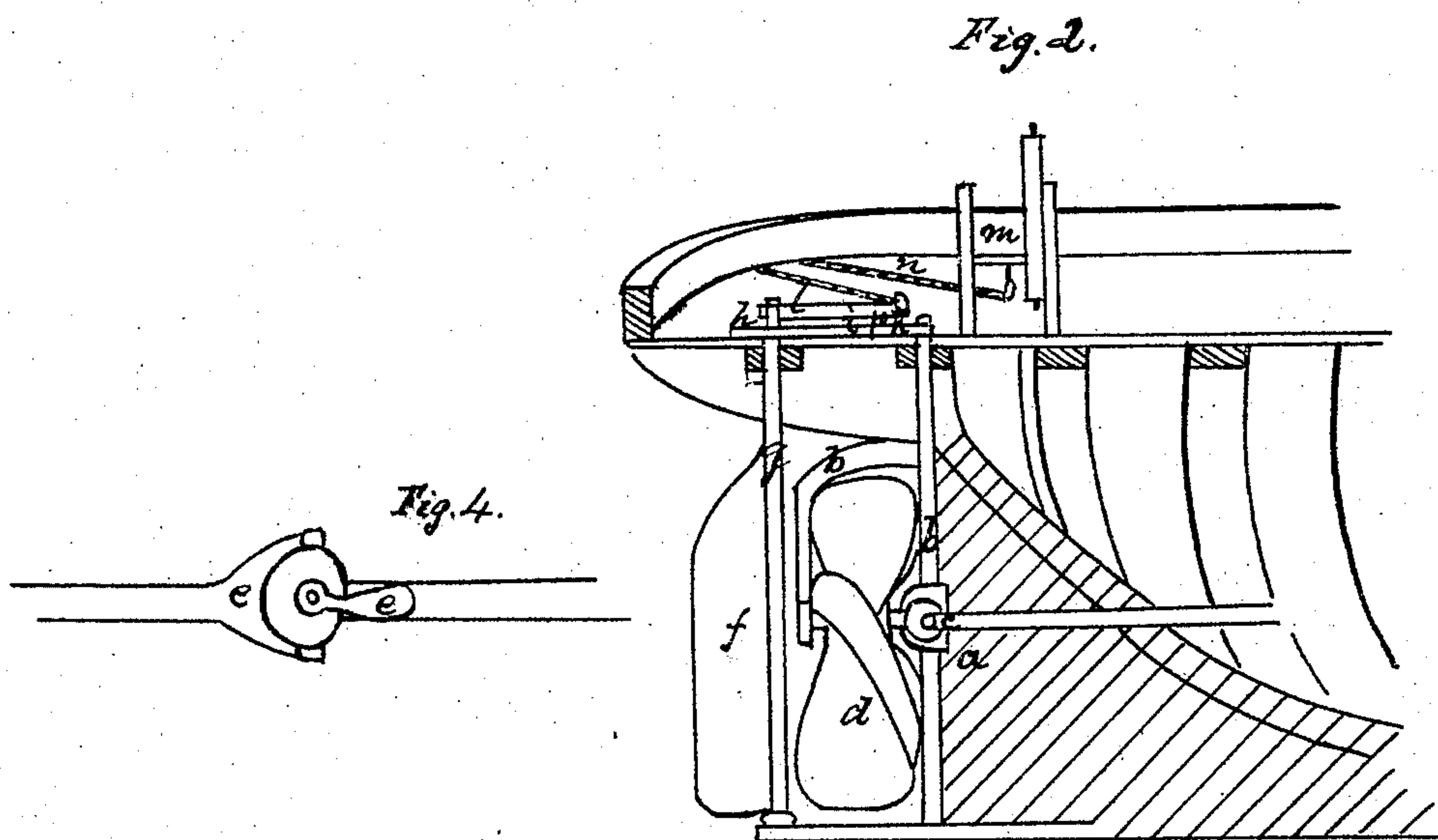
Inventor:
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United States Patent Office.

JAMES L. CATHCART, OF GEORGETOWN, DISTRICT OF COLUMBIA.

Letters Patent No. 73,951, dated February 4, 1868.

IMPROVEMENT IN STEERING-APPARATUS.

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, JAMES L. CATHCART, of Georgetown, in the county of Washington, and District of Columbia, have invented a new and useful Manner of Steering Steam-Propeller Vessels of all classes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view,

Figure 2 a longitudinal section.

Figure 3 a plan, and

Figure 4 a universal joint.

a is the stern-post; *b b* is the crane that supports the propeller; *c c c* are the fastenings that secure the crane to the stern-post; *d* is the propeller; *e* is the universal joint, which acts as a coupling to unite the out-board shaft upon which the propeller is secured to the driving-shaft that passes through the stern-post; *f* is the rudder-blade; *g* is the stem of the rudder, which passes through the deck; *h* is a spur-wheel, secured to the head of rudder-stem; *i* is also a spur-wheel, connecting the spur-wheel *h* with *k*; *k* is a section of a spur-wheel secured on the head of the crane *b b*; *l* is the tiller, which is fastened to the rudder-head; *m* is the steering-wheel; *n n* are the wheel-ropes or chains; *o* is a bolt, used to secure the propeller from having a lateral movement, by being passed through a hole in the section spur-wheel *k*, and into a socket in the deck.

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

I make the crane *b b* of iron or bronze, with two bearings, to support the propeller, and in which the out-board propeller-shaft revolves. The crane is secured to the stern-post by means of the two upper fastenings *c c*, and steps into the lower fastening *c*, and upon which it can be turned laterally. The shaft or stem of the crane passes through and above the deck sufficient to have the section of spur-wheel *k* secured to it. The rudder can be made of wood or metal, and is shipped as other rudders of propeller vessels, and on its head, or that part above the deck, the spur-wheel *h* is secured. The intermediate spur-wheel *i*, (which connects the spur-wheel *h* on rudder-head, and section of spur-wheel *k* on head of the crane-shaft,) ships and is revolved on a gudgeon or shaft secured to the deck in such manner as to be easily thrown in and out of gear with the wheels *h* and *k*, so that when it is not necessary for rapid steering, the wheel *i* is thrown out of gear, and the propeller secured amidships by means of the bolt *o*, which passes through the section of spur-wheel *k*, and into a socket secured in the deck, and the rudder alone is used for steering when in narrow and crooked rivers or canals, where quick steering is required. The spur-wheel *i* is thrown into gear with the spur-wheel *h* on head of rudder and section of spur-wheel *k* on head of crane, thereby giving the propeller a lateral movement in combination with the movements of the rudder. The tiller *l* is secured to the rudder-head, and is moved by the steering-wheel *m*, which is connected to the tiller by means of the tiller-ropes or chains *n n*. In canal and other small propeller-vessels, the tiller can be used without a steering-wheel.

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

The jointed propeller, so arranged in connection with the rudder as to be capable of lateral motion for steering purposes, in unison with the rudder, by power transmitted through the latter, and of being disconnected therefrom and secured in its normal position, substantially as herein described.

JAMES L. CATHCART.

Witnesses:

E. F. FRENCH,

W. W. SHEED.