

(No Model.)

3 Sheets—Sheet 1.

S. H. LE FEVRE.
RUDDER LOCK FOR STEERING APPARATUS.

No. 460,706.

Patented Oct. 6, 1891.

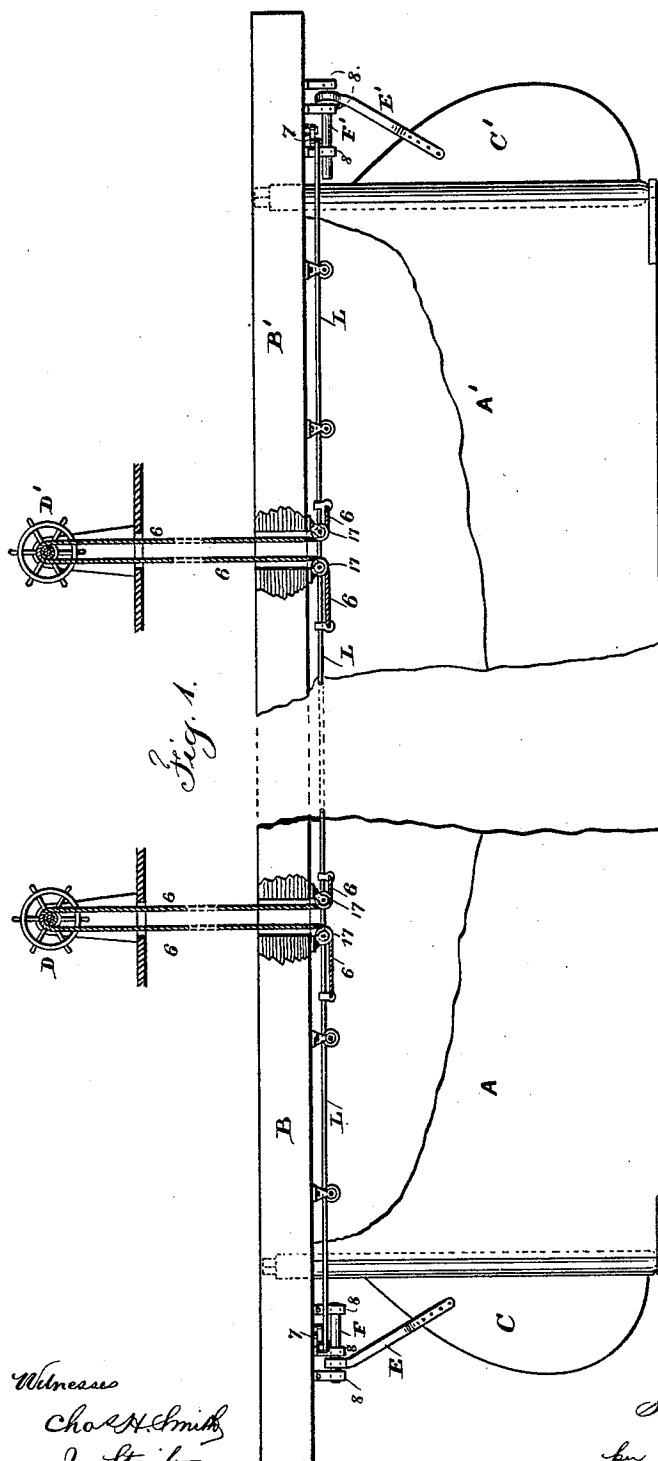


Fig. 1.

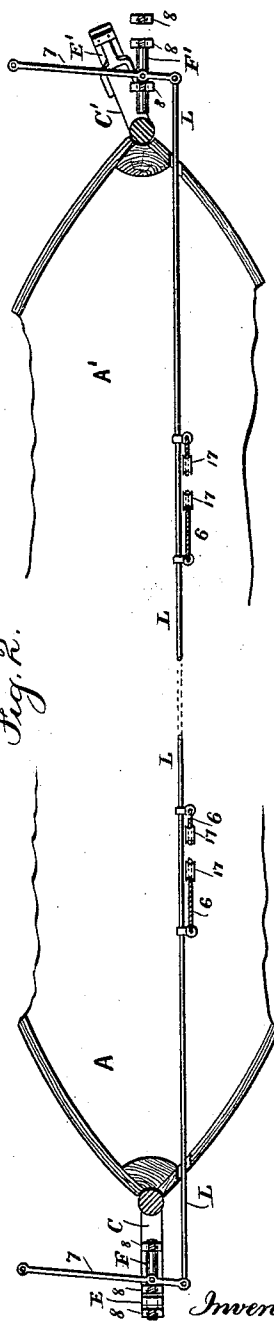


Fig. 2.

Witnesses
Chas. H. Smith
J. Stait

Inventor
Solomon H. Le Fevre
per Lemuel W. Serrell
Att'y

(No Model.)

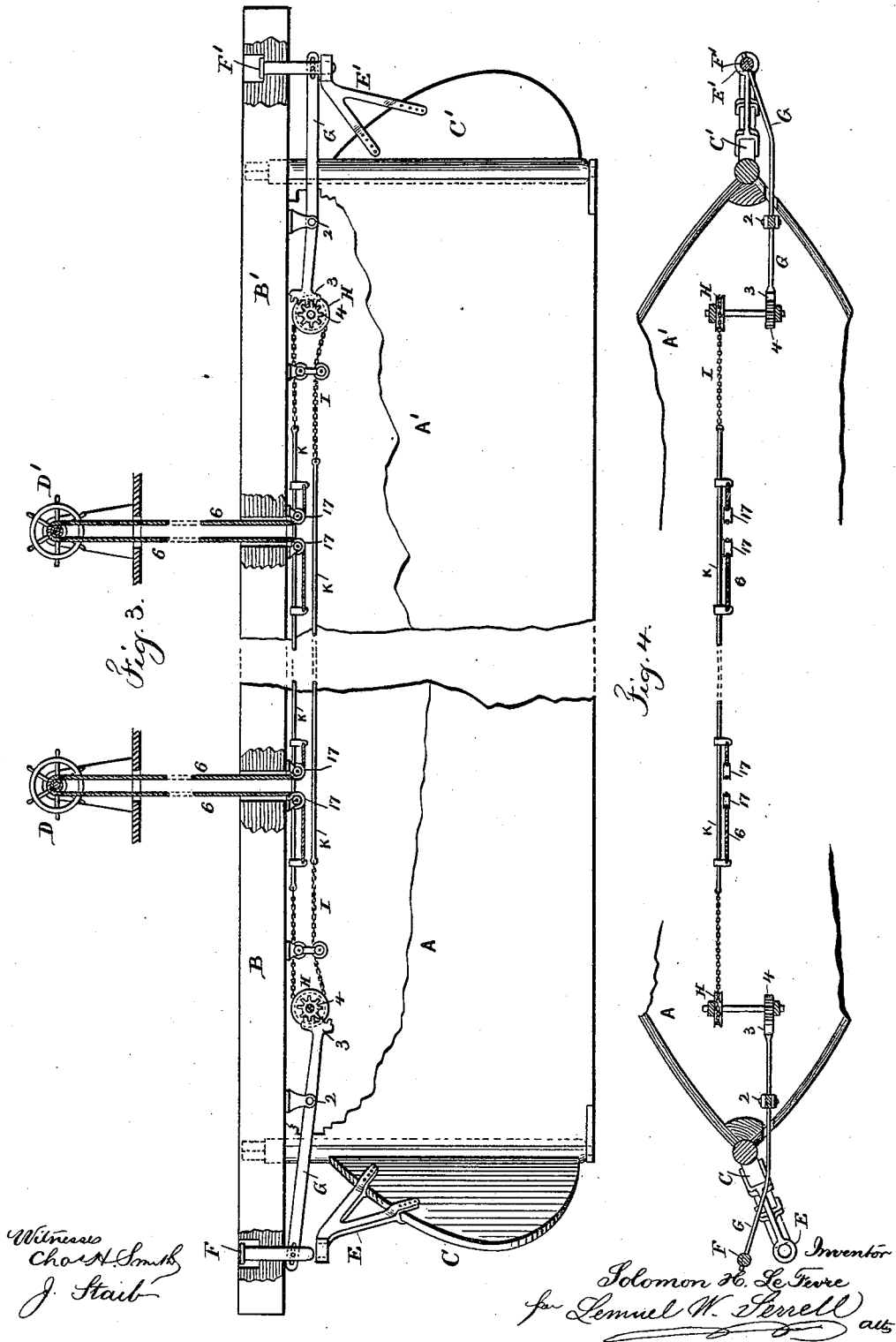
3 Sheets—Sheet 2.

S. H. LE FEVRE.

RUDDER LOCK FOR STEERING APPARATUS.

No. 460,706.

Patented Oct. 6, 1891.



(No Model.)

3 Sheets—Sheet 3.

S. H. LE FEVRE.

RUDDER LOCK FOR STEERING APPARATUS.

No. 460,706.

Patented Oct. 6, 1891.

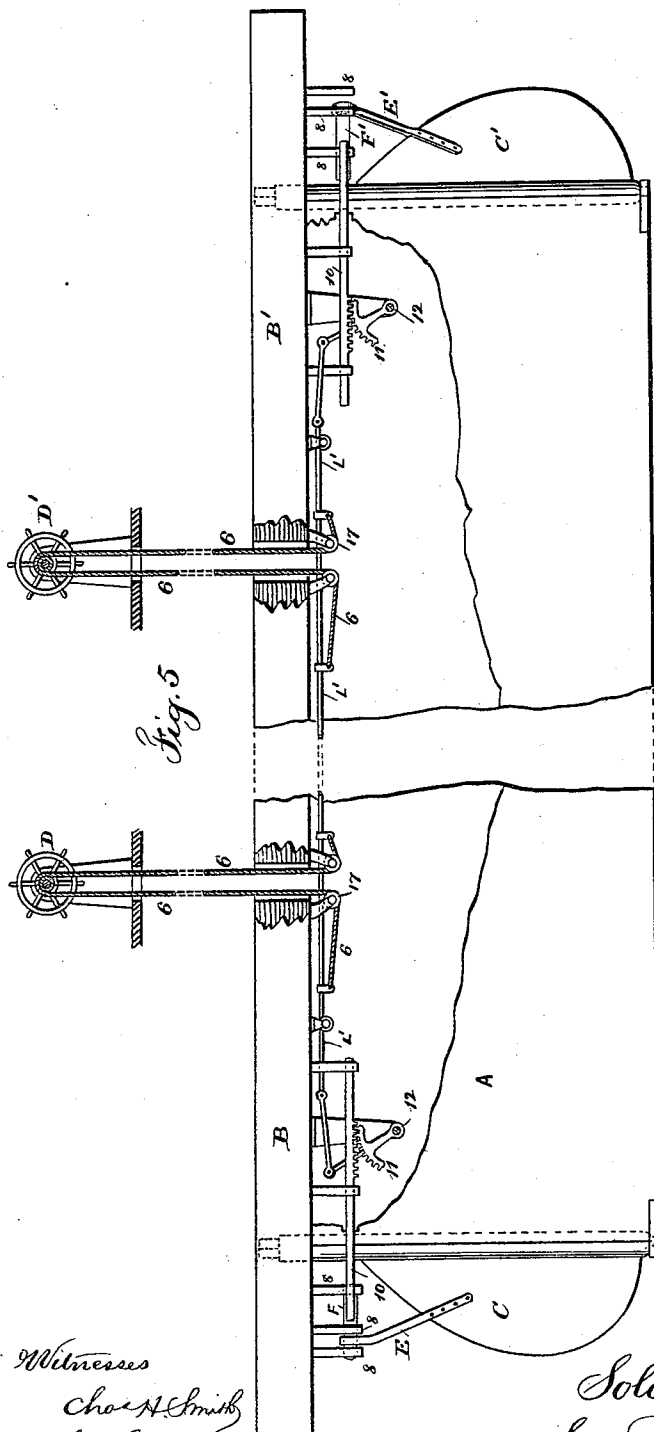


Fig. 5.

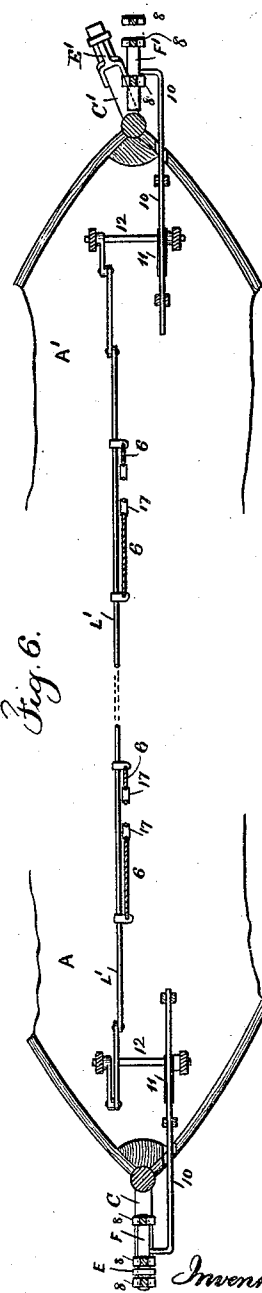


Fig. 6.

Witnesses
Chas. A. Smith
J. Stair

Solomon H. Le Fevre
per Lemuel W. Serrell
att.

UNITED STATES PATENT OFFICE.

SOLOMON H. LE FEVRE, OF TOTTENVILLE, NEW YORK.

RUDDER-LOCK FOR STEERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 460,706, dated October 6, 1891.

Application filed December 12, 1890. Serial No. 374,417. (No model.)

To all whom it may concern:

Be it known that I, SOLOMON H. LE FEVRE, a citizen of the United States, residing at Tottenville, in the county of Richmond and State of New York, have invented an Improvement in Rudder-Locks for Steering Apparatus, of which the following is a specification.

In ferry-boats it is usual to provide a rudder at each end and a movable pin for locking the rudder at the bow and unlocking the one at the stern. This locking and unlocking is usually performed by one of the deck-hands, and the rudder can only be locked when the pilot has turned the same into a central plane with the boat, and accidents have often arisen from inattention on the part of the deck-hand or from the necessity that sometimes arises of reversing the direction of the boat, and in this case the locking and unlocking operations at the distant ends of the boat are difficult to perform with the necessary rapidity.

My present invention relates to a locking device actuated from the pilot-house, whereby the locking of one rudder is simultaneous, or nearly so, with the unlocking of the other rudder, and these operations can be performed almost instantaneously by the pilot himself, and where there are two pilot-houses the locking and unlocking operations can be performed at either of said houses.

In the drawings, Figure 1 is a vertical diagrammatic section of a locking device in a simple form. Fig. 2 is a diagrammatic plan view of the same. Fig. 3 is a vertical diagrammatic section. Fig. 4 is a similar plan view representing the arrangement of the mechanism that may be applied to the locking-pins now made use of, and Figs. 5 and 6 are similar diagrammatic sections and plans of modifications in the connections for the locking-bolts.

Portions of the ends of the vessel are represented at A and A' and portions of the deck at B and B', which deck extends out beyond the end of the vessel, so as to overhang the rudder, as usual.

C C' represent the rudders, which may be of any desired character, and the steering apparatus that is connected to the rudders is not shown to avoid confusion, and it is to be understood that this steering apparatus may

be of any desired character, and wheels or other devices for actuating the steering apparatus are provided in the pilot-house, and in the drawings I have represented wheels D D' in the respective pilot-houses, and it is to be understood that these pilot-houses are located in any desired portion of the vessel, and usually there are two such pilot-houses containing wheels D D', and they may be loose upon the same shaft, as the ordinary steering-wheel, or such wheels D D' may be adjacent to the ordinary steering-wheel or other steering device.

With the rudders of ferry-boats and similar vessels it is usual to provide a projecting bracket E or E', firmly attached to the upper part of the rudder and extending outwardly and provided with a hole or socket for the rudder pin or bolt. The rudder pin or bolt usually employed passes vertically into a socket of the bracket, as indicated in Figs. 3 and 4, such pins being shown at F F', and there is to be any suitable connection between the rudder pins or bolts and the wheels D D', whereby such rudder pins or bolts can be actuated from the pilot-house to withdraw one bolt and project the other.

In Figs. 3 and 4 each pin or bolt F or F' is connected with a lever or lifting-bar G, that is preferably bent, as indicated in Fig. 4, to pass clear of the rudder-post and pivoted at 2 and provided at the inner end with a segmental rack 3, acted upon by a pinion 4, and this pinion is upon a chain-wheel H, and the chains I, passing around these chain-wheels at the ends of the boat, are connected together, preferably, by rods K, and from the wheels D D' are ropes, cords, or chains 6, passing around pulleys 17 and connected with the respective rods K in opposite directions. It will now be apparent that upon turning either wheel D D' in the pilot-house the rods K can be drawn either one way or the other way and the pinions 4 rotated, and as such pinions 4 are rotated one rack 3 will be carried down and the other one moved upwardly, which racks, acting through the lifting-bars G, raise one rudder pin or bolt and depress the other. By this arrangement the pilot can turn the rudder at the back end of the boat until the socket or hole in the bracket E or E' is in line with the bolt or pin F or F', and then he can move

such pin down into the bracket to hold the rudder in position, and at the same time the pin or bolt is lifted at the other end of the boat to unbolt the rudder and allow the pilot to use the same freely in steering. The same facility is given to the pilot in operating the rudder-bolts represented in Figs. 1 and 2. In this instance the rudder-bolts are horizontal and connected together by a rod or bar L, extending from end to end of the boat and passing through suitable supports and connected directly to the respective rudder-pins or intermediately through the transverse levers 7, one end of each lever being pivoted to the under side of the deck and the other end being connected to the rod L, in order that said rod L may be at one side of the rudder-posts. The rudder-pins F F' are supported within the hanging loops or bearers 8, and the eyes upon the brackets E E' stand vertically and in such positions as to pass between two of the loops or bearers 8 and in line with the pins or bolts F F'. In this case the wheels D D' are connected by the chains, ropes, or cords 6, passing around the pulley 17, and attached at their ends in opposite directions to the longitudinal rod L, and hence such rod L can be moved and with it the rudder-bolts from either pilot-house.

In the form represented in Figs. 5 and 6 the rudder-bolts F F', that are supported horizontally in the loops or bearers 8, as before mentioned, are provided with shifting-bars 10, connected directly with the bolts and bent angularly, as seen in Fig. 6, to pass by the rudder-posts, and these shifting-bars are provided with rack-teeth acted upon by segmental gears 11 upon cross-shafts 12, having lever-arms to which the longitudinal rod L' is connected, and from this rod L' the ropes or chains pass to the wheels D D' in the pilot-house, as before described.

It will be apparent that these modifications of my improved device may be used according to the character of the vessel and may be modified from time to time to suit the other parts of such vessel.

I claim as my invention—

1. The combination, with the rudders at opposite ends of the vessel and the rudder-bolts, of a connection passing from one rudder-bolt to the other for unbolting one of such bolts from the rudder as the other bolt is brought into action for holding the rudder, substantially as set forth.

2. The combination, with the rudders at opposite ends of the boat, of movable rudder-pins, a connection between such rudder-pins and two connections extending up to the two pilot-houses, whereby the pilot can lock or unlock either rudder from either pilot-house, substantially as set forth.

3. The combination, with the rudders at opposite ends of the boat, of two rudder-pins moving horizontally, or nearly so, and supports for the same, connections from one rudder-pin to the other and a wheel in the pilot-house, and connections to the respective rudder-pins for actuating the same, substantially as set forth.

4. The combination, with the rudders at opposite ends of the boat, of horizontal rudder-pins, supports for the same, a bracket on each rudder having a vertical eye or opening for the rudder-bolt, and connections for moving such rudder bolts or pins, substantially as set forth.

Signed by me this 5th day of December, A. D. 1890.

SOLOMON H. LE FEVRE.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.