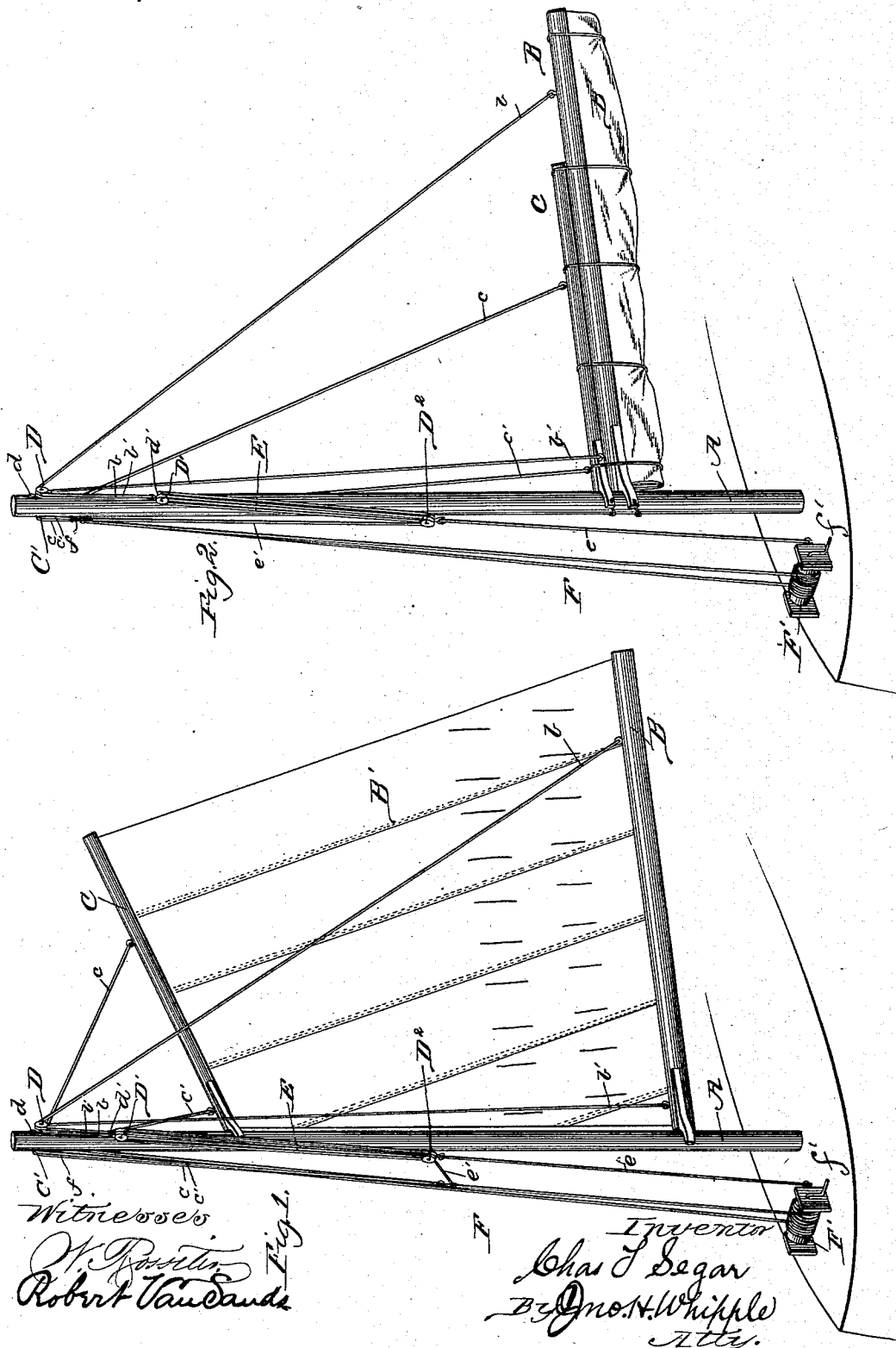


(No Model.)

C. T. SEGAR.
RIGGING FOR SAILS.

No. 413,246.

Patented Oct. 22, 1889.



UNITED STATES PATENT OFFICE.

CHARLES T. SEGAR, OF UTICA, NEW YORK.

RIGGING FOR SAILS.

SPECIFICATION forming part of Letters Patent No. 413,246, dated October 22, 1889.

Application filed June 27, 1889. Serial No. 315,770. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. SEGAR, of Utica, in the State of New York, have invented certain new and useful Improvements in Rigging for Sails, of which the following is a specification.

My invention relates to rigging for the sails of vessels; and the object of my improvements is to lessen the labor of hoisting and lowering sails by providing a rigging arranged to counterbalance the gaff and weight of the sail so that they will stand at rest at any point of their elevation and may be raised or lowered by slight force applied in the proper direction, the force required being only sufficient to overcome the friction of the rigging when at rest. This object I have attained by the rigging constructed and arranged as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a mast with rigging containing my invention, the sail being spread. Fig. 2 is a like view, the sail being reefed.

A designates the mast, B the main boom or yard, B' the sail, and C the gaff. Said yard and gaff are connected with the mast so as to slide thereon in the usual manner. The ropes *b b'*, which suspend the main yard, pass up over the sheaves of a block D, connected at *d* to the top of the mast, and then extend down to a block D' and are separately tied in the ring or hook *d'* thereof. The block D' is connected by a rope E with a block D², which is made relatively stationary by means of a rope *e* fixing said last-named block to the deck or other stationary part of the vessel. The gaff is similarly supported by ropes *c c'*, which likewise pass over the sheaves of a block C', connected to the mast, and then pass down to, or about to, the block D², where they are tied to one side of a loop or endless belt F, which passes over a sheave or pulley at *f*, fixed to the mast, the opposite side being passed over a drum F', upon which it may be coiled one or more times to increase its friction thereon, so that a crank *f'* may be employed to raise or lower the sail. The loose end *e'* of the rope E is also tied to the belt F at or near the same point with the

ropes *c c'*. The sheaves of the blocks D' D² and the number of coils of the rope E thereon are such that the pull of the main yard on the ropes *b b'* and that of the gaff on the ropes *c c'* are equal, so that said yard and gaff balance each other; and it will be seen that by pulling on that side of the belt F required to lower the gaff will pull the end *e'* of the rope E up, as shown in Fig. 2, and thereby draw the block D' down and slightly raise the yard as the gaff is lowered. A simple weight attached to the lower ends of the ropes *b b'*, or to one of them, would operate in the same manner upon the gaff.

With this rigging it is not necessary to hold the gaff by continuous pulling on the rope, as is ordinarily done in raising or lowering. The sail being balanced, it will remain at any point if the operator lets go of the rope, and only slight power is required to raise or lower a sail, so that by its use one man can do what ordinarily requires several hands to do.

What I claim is—

1. The combination, with the mast and gaff, of an endless belt extended alongside the mast, ropes *c c'*, suspended on the mast with one end connected to the gaff and the other to the endless belt, ropes *b b'*, also suspended on the mast, with one end connected to a movable block D' and the other to the boom or suitable weight for counterbalancing the gaff, a fixed block D², and a rope E, said rope being attached to said movable block, passed to and through the fixed block, and connected to the endless belt, substantially as specified.

2. The combination, with the mast, boom, and gaff, of an endless belt extended alongside the mast, ropes *b b'*, suspended on the mast, with one end connected to the boom and the other through a movable block, a fixed block, and a rope E, connected with the endless belt, and ropes *c c'*, also suspended on the mast, with one end connected to the gaff and the other to the endless belt, substantially as specified.

CHARLES T. SEGAR.

Witnesses:

CHARLES A. TARBELL,
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