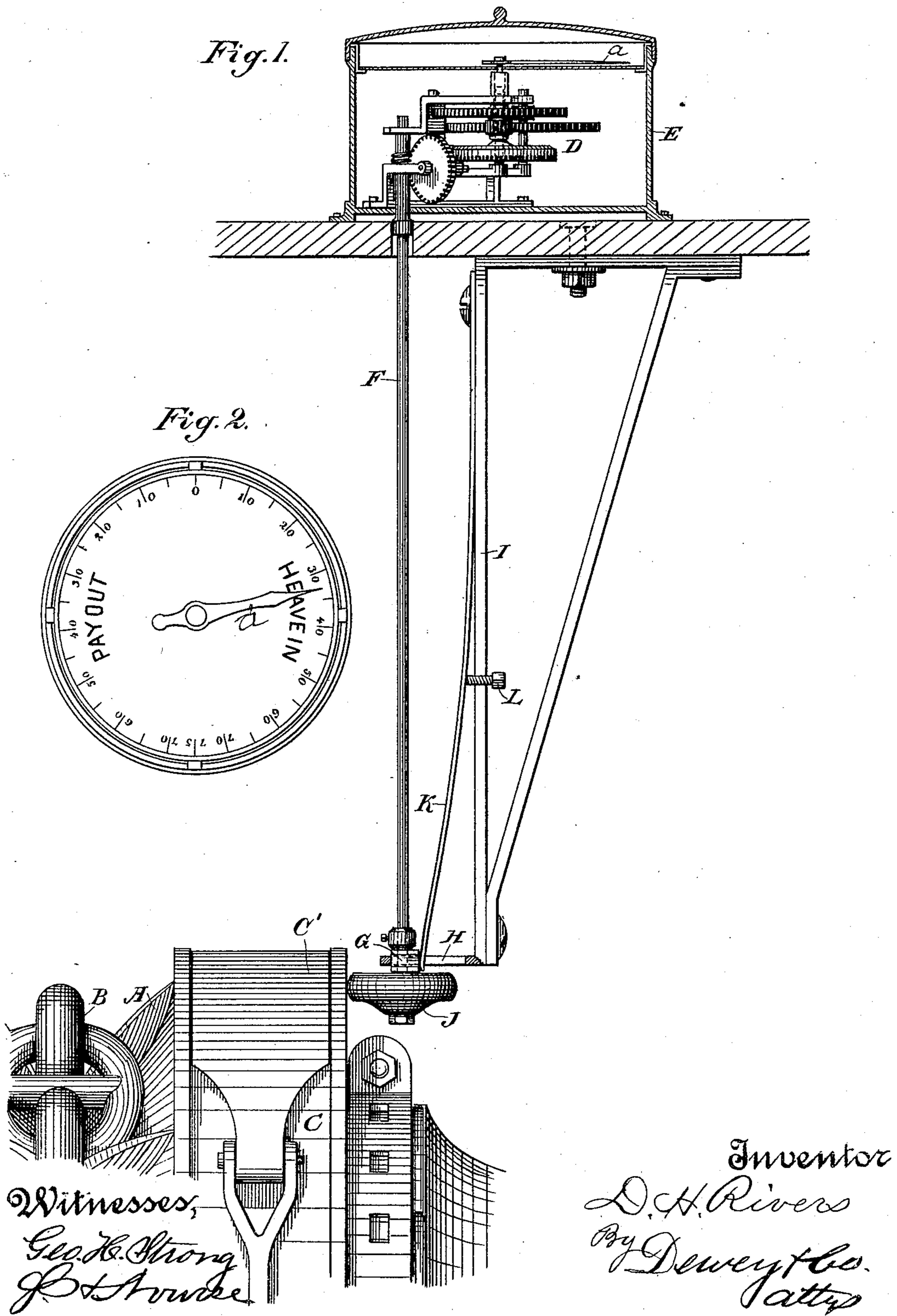


(No Model.)

D. H. RIVERS.
SHIP'S WINDLASS INDICATOR.

No. 404,983.

Patented June 11, 1889.



UNITED STATES PATENT OFFICE.

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TO NICHOLAS SMITH, OF SAN FRANCISCO, CALIFORNIA.

SHIP'S-WINDLASS INDICATOR.

SPECIFICATION forming part of Letters Patent No. 404,983, dated June 11, 1889.

Application filed December 12, 1888. Serial No. 293,371. (No model.)

To all whom it may concern:

Be it known that I, DAVID H. RIVERS, of Stoneham, Middlesex county, State of Massachusetts, have invented an Improvement in Ship's-Windlass Indicators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device which I call a "ship's-windlass indicator;" and it consists in the constructions and combinations of devices which I shall hereinafter fully describe and claim.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical section of the case containing the gearing, the dial, and the index-hand, showing the shaft by which the gearing is driven and the operation of the windlass which actuates the shaft. Fig. 2 is a plan view of the dial.

In the present case I have shown only such a portion of the windlass as ordinarily constructed as will be sufficient to illustrate its application to my invention. The windlass being old, I make no claim upon any part of it.

A is that portion of the windlass around which the chain cable of the anchor passes, and by which it is hove in when necessary by any of the usual mechanisms employed upon a windlass. Connected with this portion of the windlass is the compressor wheel or disk C, around which passes a strap or band brake C', operated by a suitable lever, so that when the chain is allowed to run out this portion of the windlass, which is termed the "wild-cat," is allowed to turn freely and independent of the rest of the windlass; but when the chain is to be hove in it is locked to the other portion of the windlass, so that when the windlass is turned it will rotate the portion around which the chain passes and thus shorten up the chain.

D is the train of gearing contained within the case E, which is supported upon the deck above the windlass and in plain view of the operator who controls the compressor-brake by which the drum carrying the chain is released, so as to allow the chain to run out. From this gearing box or case E a shaft F extends downward to a point opposite the periphery of the drum or wheel C. The upper

end of this shaft is sufficiently steadied by its connection with the gearing in the case. The lower end of the shaft passes through a journal-box G, which fits in a slot H in the horizontal arm of the supporting-standard I. This standard, as shown in the present case, is bolted to the under side of the deck, and this supports the shaft F with its lower end in close proximity to the drum C. Upon the lower end of the shaft F is fixed a wheel or disk J, the periphery of which is preferably covered with rubber or other elastic material which will have sufficient frictional adherence to cause it to rotate when it travels in contact with the side of the drum C.

K is a spring, the upper end of which is bolted to the side of the standard I and the inner end presses against the inner side of the journal-box G, so as to press it outward in the slot H, and thus keep the friction wheel, disk, or roller J in contact with the drum C, and it compensates for any irregularities in the rotation of the drum, which might otherwise throw it temporarily out of contact with the friction-roller J. It also allows an adjustment for any end-play in the journal-shaft of the windlass or the parts connected therewith.

The tension of the spring K is adjusted to any desired degree by means of a screw L passing through the side of the standard I and pressing upon the inner face of the spring, as shown.

The operation will then be as follows: When the anchor is dropped, it is desirable to know how much cable is paid out, and when all is in readiness the wild-cat, having been unlocked from the remainder of the windlass, is held temporarily by the brake-band or compressor C', and when it is allowed to rotate its contact with the frictional roller J rotates the shaft F, and through this shaft the gearing D in the box E. The index-hand will thus be caused to move over the dial, and when it indicates that a sufficient quantity of chain has been paid out it may be stopped and held by the compressor. If for any reason it is desired to heave in a portion of the cable, or to shorten it preparatory to tripping the anchor, the index-hand, which is movable independent of the gearing, is turned back to

zero, and the amount of chain hove in will be accurately indicated by the dial and index-hand. I have not particularly described the train of gearing, as it would vary to suit different forms of windlass, the diameter of the friction-wheel, or the drum.

By this device the ship's master is able to know exactly the amount of chain which is out and to increase or diminish the amount accurately.

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

1. The combination, with a chain-cable windlass, of a dial and index and train of gearing, a friction-wheel traveling in contact with the rotating drum of the windlass, and a shaft upon which said wheel is fixed, connecting it with the train of gearing and the index, substantially as herein described.

2. A rotary chain-cable windlass, a dial, an index, and a train of gearing fixed with relation thereto, in combination with a friction-wheel held in contact with the rotating portion of the windlass, the shaft of said wheel being connected with the train of gearing, so that the index-arm is moved over the dial to correspond with the rotation of the windlass, substantially as herein described.

3. The dial, the indicator, the train of gearing, the driving-shaft F, extending downwardly therefrom and having the frictional roller J fixed to its lower end, the slotted supporting-standard I, and the journal-box G, through which the shaft passes, fitted into said slot so as to have a motion to and from the windlass-drum C, in combination with the spring pressing upon the box, whereby the friction-roller is held in contact with the drum and adjusted to irregularities in the rotation of the same, substantially as herein described.

4. The rotating drum or windlass, a train of gearing, and an indicator connected therewith, a frictional roller, a shaft connecting the train of gearing with the frictional roller, a slotted guide in which the journal-box of the lower end of said shaft is fitted to move to and from the windlass-drum, a drum, a spring acting upon said box so as to hold the roller in contact with the drum, and a screw L, whereby the tension of the spring is regulated, substantially as herein described.

In witness whereof I have hereunto set my hand.

DAVID H. RIVERS.

Witnesses:

GEO. H. STRONG,
S. H. NOURSE.