(No Model.)

J. C. & S. LAKE.

OYSTER DREDGE WINDLASS.

No. 485,635. Patented Nov. 8, 1892.

Fig. 1.

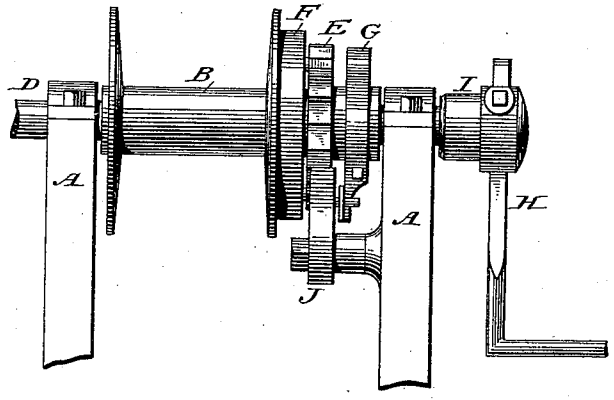


Fig. 2.

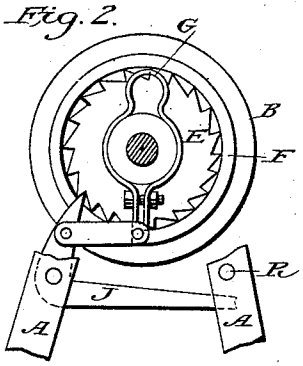


Fig. 3.

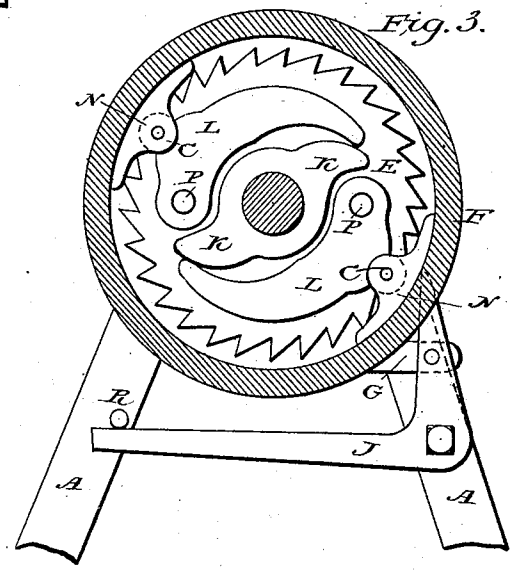


Fig. 4.

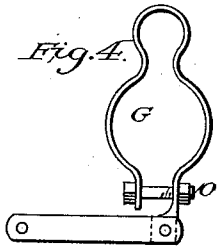


Fig. 5.

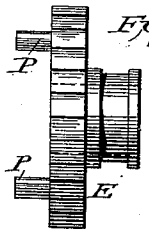
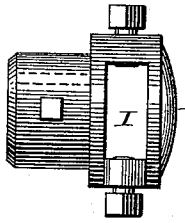


Fig. 6.



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UNITED STATES PATENT OFFICE.

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OYSTER-DREDGE WINDLASS.

SPECIFICATION forming part of Letters Patent No. 485,635, dated November 8, 1892.

Application filed April 13, 1892. Serial No. 429,072. (No model.)

To all whom it may concern:

Be it known that we, JOHN CHRISTOPHER LAKE and SIMON LAKE, citizens of the United States, residing in the city of Baltimore and State of Maryland, have invented a new and useful Windlass, of which the following is a specification.

Our invention relates to improvements in oyster-dredge windlasses or hoisting-machines, the object of which is to have automatic and positive control of the weights with only a limited movement of the handle and to prevent injury to the men in case of meeting with an obstruction, which is a common occurrence in oyster-dredging; also, to prevent the continual noise and wear of the pawl against the ratchet-teeth, common in similar machines as heretofore constructed. We obtain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of our improved windlass. Fig. 2 is an end view of same, showing part of frame broken away. Fig. 3 is an end elevation from the spool with spool cut away and flange in section, showing the operation of locking-levers and means for operating same. Fig. 4 is a view of the pawl-lifting device. Fig. 5 is an elevation of ratchet-wheel or carrier. Fig. 6 is a view of the handle-holder.

Similar letters refer to similar parts throughout the several views.

Reference being had to the drawings, A A are frame pieces or supports.

B is the winding-drum provided with flange F.

E is a ratchet-wheel, having a limited movement on the shaft, controlled by cam K and lever L and provided with pins P P, on which are pivoted the locking-levers L L.

N N are wearing-shoes pivoted to the levers L L at C C.

K K are lifting-cams secured to the shaft *d* and adapted to come in contact with and lift the levers L L.

G is a friction-clamp or pawl-lifting device, preferably made to fit into recess on hub of ratchet-wheel E.

O is a bolt for increasing the tension of same, if desired.

J is a pawl adapted to come in contact with and prevent reverse movement of ratchet-wheel E and shaft D.

R is a pin for limiting the backward movement of pawl J.

I is a handle-holder adapted to fit on the end of shaft D and having a radial slot extending through its center, through which the crank-handle H is adapted to slide, and provided with set-screws or keys for holding same in position.

The operation of the machine is as follows: In winding, the cams K K come in contact with and lift the ends of levers L L and force them outward against the inner surface of the flange F, locking the drum and shaft together. If it is desired to lower the weight or (as is usual in dredging for oysters) an obstruction is met with, the handle and shaft are revolved backward sufficient for the pawl to engage with a tooth on the ratchet-wheel, and the shaft continues to revolve backward until the cams relieve the strain on levers L L, when the drum is released. It will be seen that the operator has perfect control over the locking and unlocking of the drum, a very small movement of the handle either forward or backward being sufficient to lock or unlock it; also, when the line is running off the speed can be regulated at the will of the operator by simply increasing or diminishing the pressure on the handle H. When the handle is turned forward in winding, the pawl is lifted from contact with the teeth of ratchet-wheel or carrier through the medium of the friction-clamp G, which also serves the purpose of holding back the carrier when handle is first started forward, thereby causing the locking mechanism to take quicker effect. When the handle is reversed, it again instantly engages with the teeth of ratchet-wheel.

We do not limit ourselves to the exact construction of this device, as we have also used a friction-plate with the same effect.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In an oyster-dredge windlass or winch, a spool or drum loosely mounted on a cam-fitted shaft, in combination with an intermediate

carrier-wheel provided with locking-levers, and pawl J, adapted to engage with teeth of carrier-wheel, so arranged that the spool and shaft will be automatically locked together by frictional contact on a forward movement of the shaft and automatically released on a backward movement of said shaft, substantially as described.

2. A flanged winding-drum loosely mounted on a shaft, a toothed wheel, levers provided with wearing-shoes pivoted thereto, and cams for operating same, in combination with a pawl and a friction device for holding same from contact with teeth of wheel on the forward movement of shaft, substantially as shown and described.

3. In an oyster-dredge windlass, the combination, with a shaft, a drum loosely mounted thereon, a ratchet-wheel also loosely mounted on the shaft, and means for limiting the independent rotation thereof, of a pawl and a friction device bearing against a revoluble part of the machine, whereby the pawl is automatically lifted out of contact with the ratchet-wheel when the shaft is turned forward and allowed to come in contact on a backward movement of same.

4. In an oyster-dredge windlass, the combination, with a shaft and a flanged drum loosely mounted thereon, of a ratchet-wheel, a pawl to engage therewith, pivoted locking-levers provided with wearing-shoes adapted to engage the inner surface of the flange, and cams secured to the shaft for operating said levers, and thereby causing the ratchet-wheel and drum to revolve with the shaft when the same is turned forward, substantially as shown and described.

5. In an oyster-dredge windlass, the combination of a flanged spool or drum, a cam-fitted shaft, a ratchet-wheel or carrier-levers pivoted thereto and provided with wearing-shoes, and a frictional device for holding a pawl from contact with teeth of carrier and restraining forward movement of carrier, thereby causing locking-levers to act more positively, together with a handle-holder secured to ends of shaft, provided with a radial slot to allow adjustment of handle, substantially as shown and described.

In testimony that we claim the foregoing we have hereto set our hands this 12th day of April, 1892.

J. CHRISTOPHER LAKE.
SIMON LAKE.

Witnesses:
FELIX R. SULLIVAN,
A. M. LUKE.