

*J. Harvey,
Windlass.*

N^o 20,555.

Patented June 15, 1858.

Fig. 1.

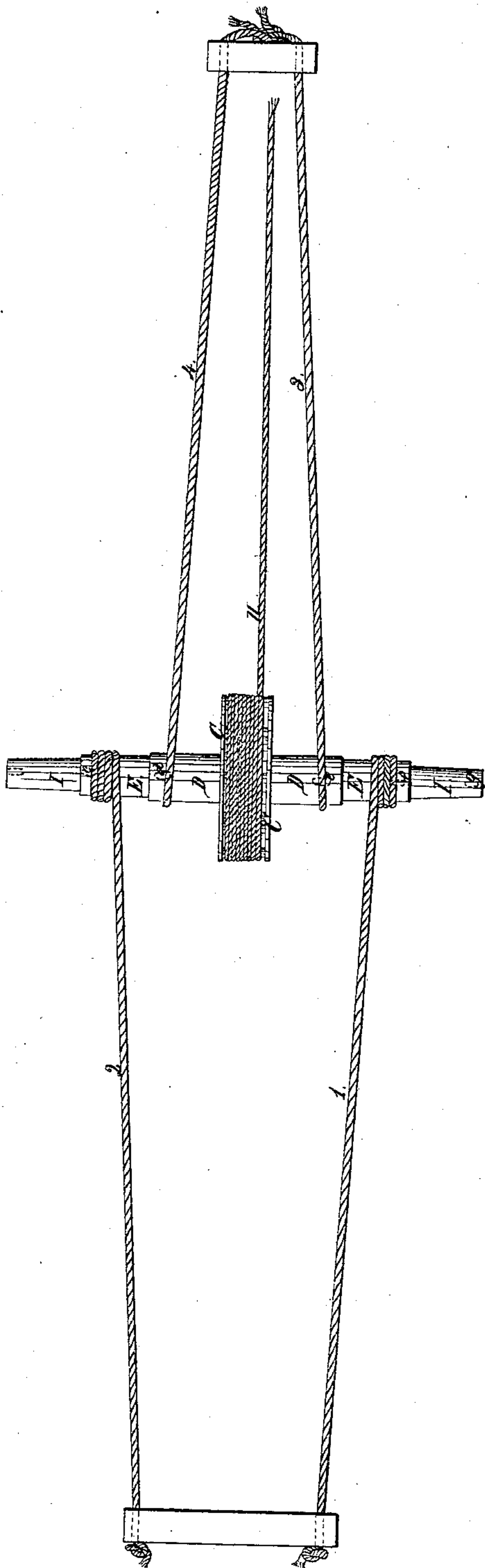
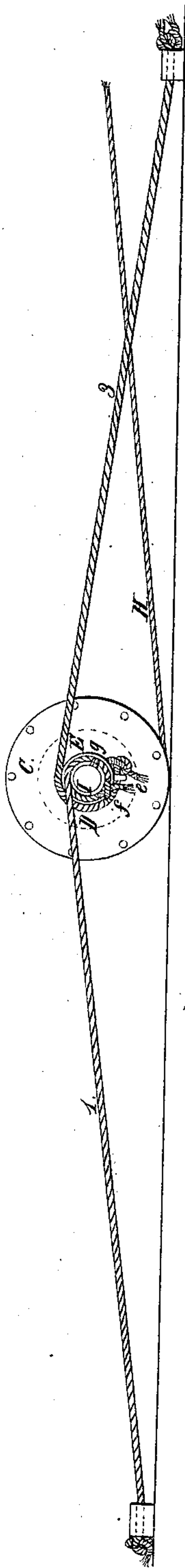


Fig. 2.



UNITED STATES PATENT OFFICE.

JNO. HARVEY, OF CARMEL, MAINE.

WINDLASS.

Specification of Letters Patent No. 20,555, dated June 15, 1858.

To all whom it may concern:

Be it known that I, JOHN HARVEY, of Carmel, in the county of Penobscot and State of Maine, have made a new and useful Invention, which I term "An Antifriction Variable-Power Windlass," and do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—
10 Figure 1, is a top view and Fig. 2, a side elevation of such windlass.

In such drawings, D, D, represents a cylindrical drum carrying a wheel C, on its middle part, around which wheel a rope H, is passed, or wound, such rope at one end being attached to the circumference of the wheel.

At E, E, as shown in the drawings, the windlass is formed cylindrical, and of a less diameter than it is at D, D, and beyond the parts E, E, it is constructed conical or tapering as shown at I, I. Each of the cylindrical as well as each of the tapering parts is furnished with a staple as shown at b, c, d, e, f, g, the same being to enable a rope to be attached to such part by means of a hook or otherwise, such staples being arranged on the respective parts of the windlass as exhibited in the drawings.

Now, if we hook two ropes 3, and 4, to the large cylinders D, D, next the wheel C, and also apply in the same manner, two other ropes marked 1, and 2, respectively to and wind them upon the smaller cylinders, and we attach the two ropes 1, and 2, at their other ends to an object and also attach the ropes marked 3 and 4, at their other ends to another object, the apparatus will be complete for action. Now, by turning the wheel C, by the line H, so as to wind the ropes 3, and 4, upon the larger cylinders D, D, the ropes 1, and 2, on the smaller ones, will unwind therefrom and a constant power will be gained which will be as much greater as the space passed over by the motive power attached to the end of the drawline is greater than the difference between the circumference of one of the larger and that of one of the smaller cylinders. Again, should a variable power be required as is often the case, when stumps of trees are to be extracted from land, a great power being

needed to start them and a less degree of power to overturn them, the ropes 3, and 4, are to be hooked to the smaller bases of the conical frusta I, I, of the windlass and are to be wound on the said frusta, the ropes 1, and 2, being unwound from their cylinders. This having been accomplished, if we turn the wheel C, as in the first case, the power which at first is great gradually decreases as the ropes unwind from the conical parts of the windlass, while at the same time, the rate of motion gradually increases the motive power moving all the while, at a uniform rate of speed, so that while we lose a certain amount of power, while it is not needed, at the same time we gain in rapidity of execution.

From the above it will be seen, that with my said windlass or mode of operation, power is gained without friction of journals in bearings as the windlass barrel has no journals to support it, but will be sustained by the ropes, for if the ropes on one side of the windlass are attached to an object to be moved while those on the other are connected to some suitable object serving as an anchor as soon as the windlass is rotated sufficiently to straighten the ropes, the continued tension of them will cause the windlass to be lifted off the ground, and thus the ropes will support it so as to enable it to rotate without friction from journals in boxes.

I do not confine my invention to any particular mode of turning the windlass as it is evident that it may be put in operation by a crank or any mechanical equivalent therefor.

What I claim is—

My mode of obtaining power by a windlass and ropes constructed and arranged substantially as specified, and I particularly claim making the windlass with the conical or tapering parts I, in conjunction with the cylindrical parts D, E, or either as described.

In testimony whereof, I have hereunto set my signature.

JOHN HARVEY.

Witnesses:

ELISHA HOPKINS,
NATHAN HOPKINS.