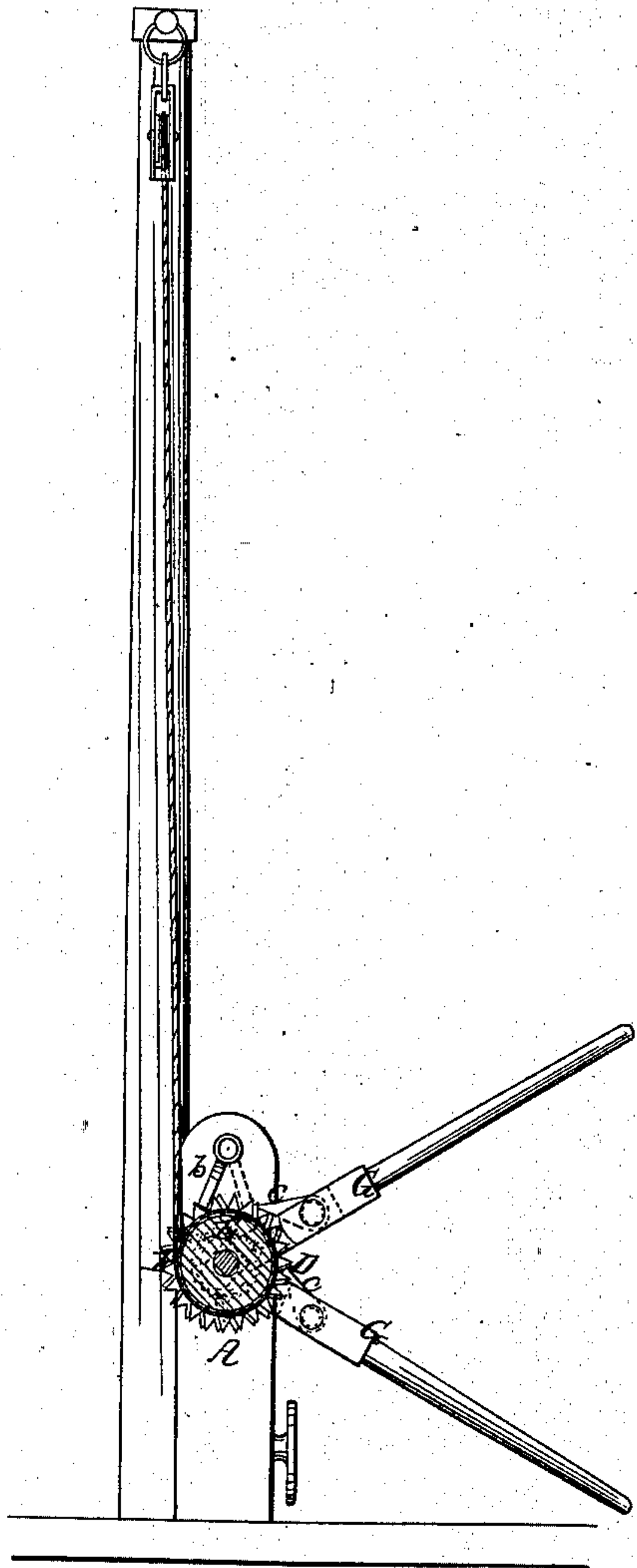


Edwards & Horner,
Windlass.

No 32,262.

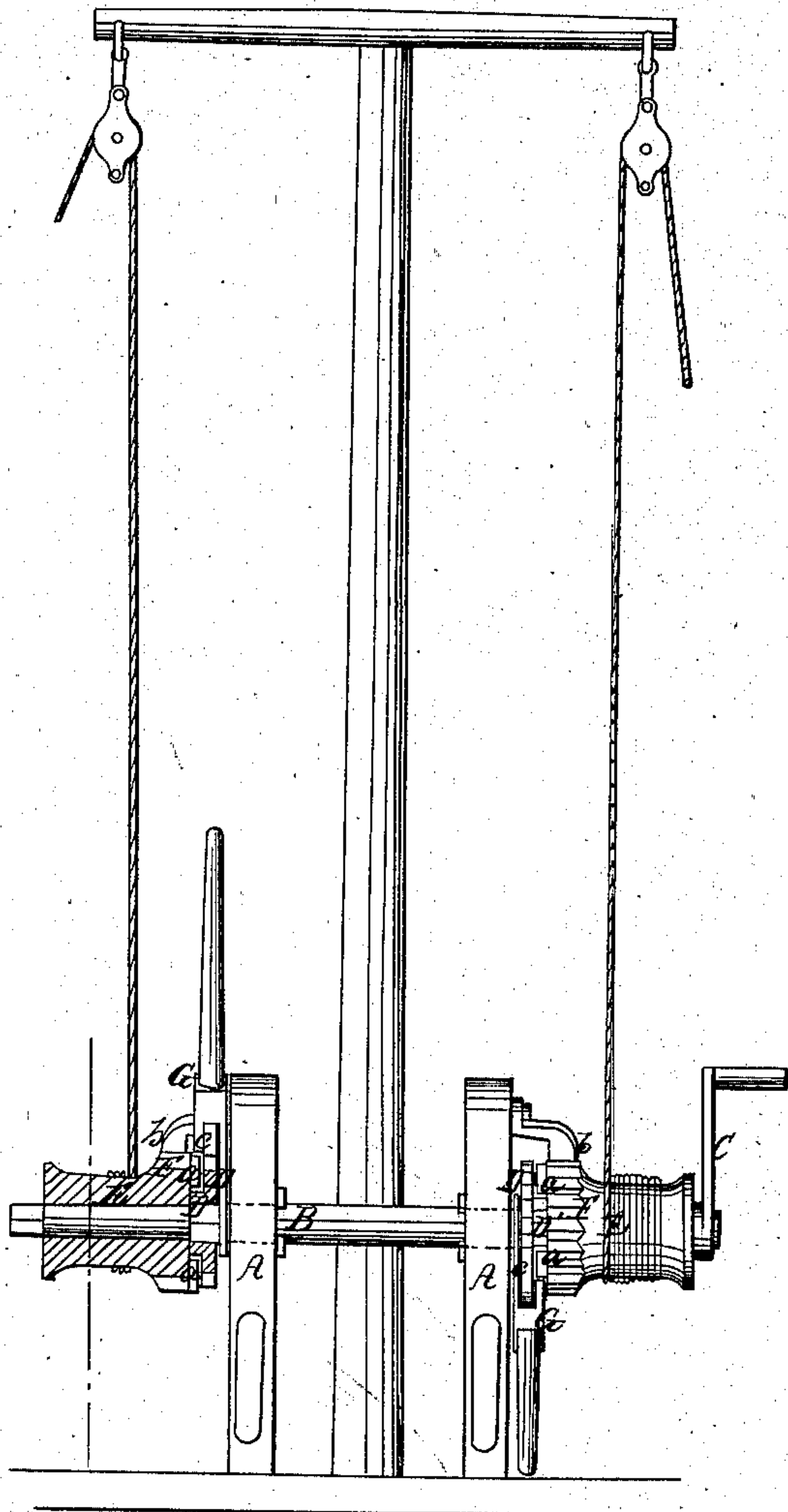
Patented May 7, 1861.

Fig. 1.



Witnesses:
W. Loomis
R. S. Spencer

Fig. 2.



Inventor:
L. M. Edwards
Ed. Horner
per Wm. H. R.
A. E. S.

UNITED STATES PATENT OFFICE.

D. M. EDWARDS, OF NEW YORK, N. Y., AND JOSEPH HORNER, OF NEW BRUNSWICK,
NEW JERSEY.

WINDLASS.

Specification of Letters Patent No. 32,262, dated May 7, 1861.

To all whom it may concern:

Be it known that we, D. M. EDWARDS, of New York city, New York, and JOSEPH HORNER, of New Brunswick, in the county
5 of Middlesex and State of New Jersey, have invented a new and useful Improvement in Windlasses; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had
10 to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side view of our invention; Fig. 2, a front view of the same.

Similar letters of reference indicate corresponding parts in the two figures.

To enable those skilled in the art to fully understand and construct our invention we will proceed to describe it.

A. A. represent two uprights in which a
20 horizontal shaft B. is placed and allowed to rotate freely. The ends of this shaft have squares formed on it to receive cranks C.

On the shaft B. there are placed ratchet wheels D. D'. two pairs. These wheels are
25 placed on squares on the shaft B. so that the ratchets and shaft will always turn or rotate together. The wheels D. D'. of each pair are connected together, the wheel D'. being smaller than D. as shown clearly in
30 Fig. 2.

On the shaft B. there are placed two drums E. E. These drums are placed loosely on the shaft B. and to their inner ends pawls *a*, are attached which engage
35 with the smaller ratchet wheels D'. The ratchet wheels D. D'. have not inclined but straight or radial teeth as shown clearly in Fig. 1; and to each upright A. there is attached a pawl *b*. These pawls are reversible and may be made to engage with
40 ratchets F. at the inner parts of the drums E. E. at either side of the center of said ratchets F. This will be fully understood by referring to Fig. 1, in which a pawl *b*,
45 is shown in two positions one position being in red.

On the shaft B. and adjoining each ratchet D. there is fitted loosely a lever G. These levers are each provided with a pawl *c*,
50 which, when the levers G. are worked, engage with the ratchet wheels D.

The operation is as follows: When it is

designed to rotate both drums E. E. simultaneously the pawls *a*, of both drums are set in the same or corresponding positions so
55 as to engage with their respective pinions D'. when the shaft B. is turned in the proper direction. By this arrangement both drums E. E. will be rotated simultaneously on turning shaft B. and each drum may be
60 engaged in hoisting a separate article or both engaged in hoisting a single article. In case it is designed to operate the drums E. E. separately the pawls *a*, of one drum are placed in a position reverse to those of
65 the other, and either drum therefore may be rotated separately by its pawl lever G. or by turning shaft B. in the proper direction. The levers G. may also be used for turning the shaft B. when both drums E. E. are rotated simultaneously, and when power is required. The pawls *b*, it will be understood
70 are turned or adjusted to suit the direction in which the drums are to be turned. The drums E. E. may be slipped from or on the
75 shaft B. so as to admit of the ready reversing of the pawls *a*.

By this arrangement it will be seen that a very simple and useful improvement is made in the windlass; as the power may be applied to the drums through the medium of
80 the crank C. or levers G. according as power may be required, and both drums E. E. turned simultaneously, or either turned separately as may be desired. The invention
85 may be used for ships and all other purposes for which windlasses are generally employed.

Having thus described our invention, what we claim as new and desire to secure
90 by Letters Patent is—

The arrangement of the combined differential ratchet wheels D. D'. pawl *a* and pawled lever G, with the ratcheted drum E. pawl *b* and shaft B in the manner and for
95 the purpose herein shown and described.

DAVID M. EDWARDS.
JOSEPH HORNER.

Witnesses to signature of Horner:

JOHN HELM,
JOHN J. HOLLAND.

Witnesses to signature of Edwards:

LEWIS HOAGLAND,
PETER STROBY.