

(No Model.)

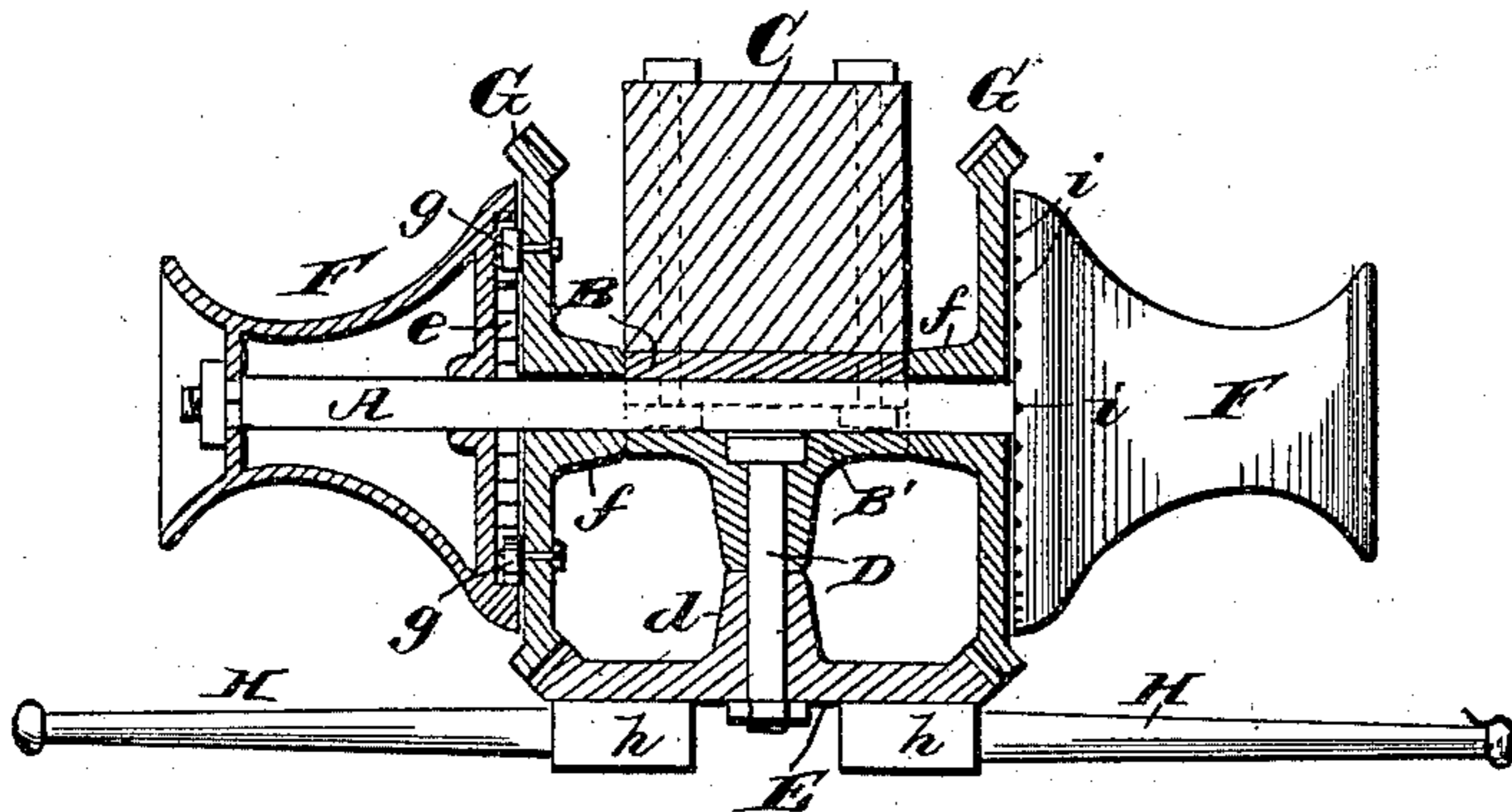
S. T. RICHARDSON.

WINDLASS.

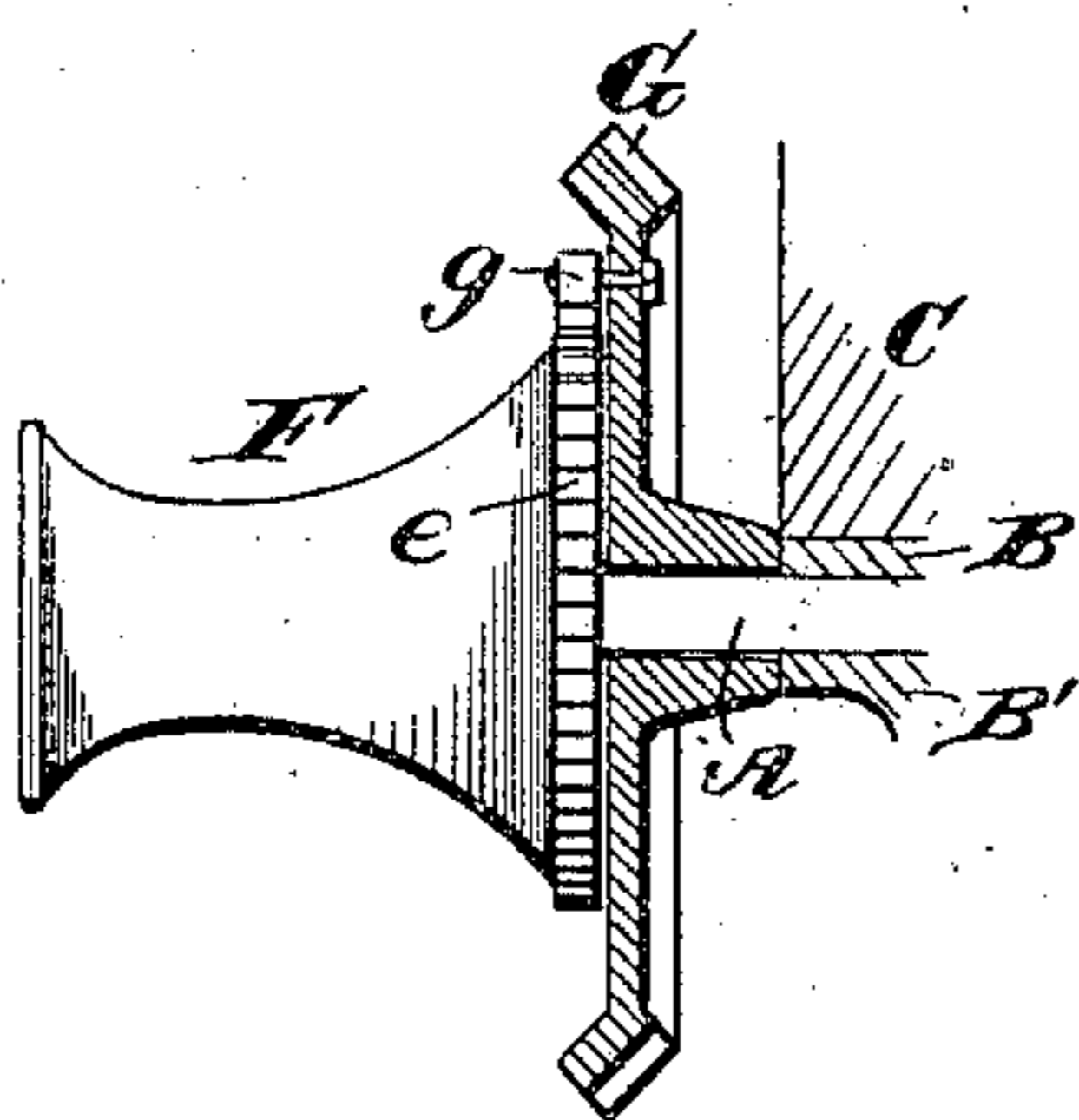
No. 311,373.

Patented Jan. 27, 1885.

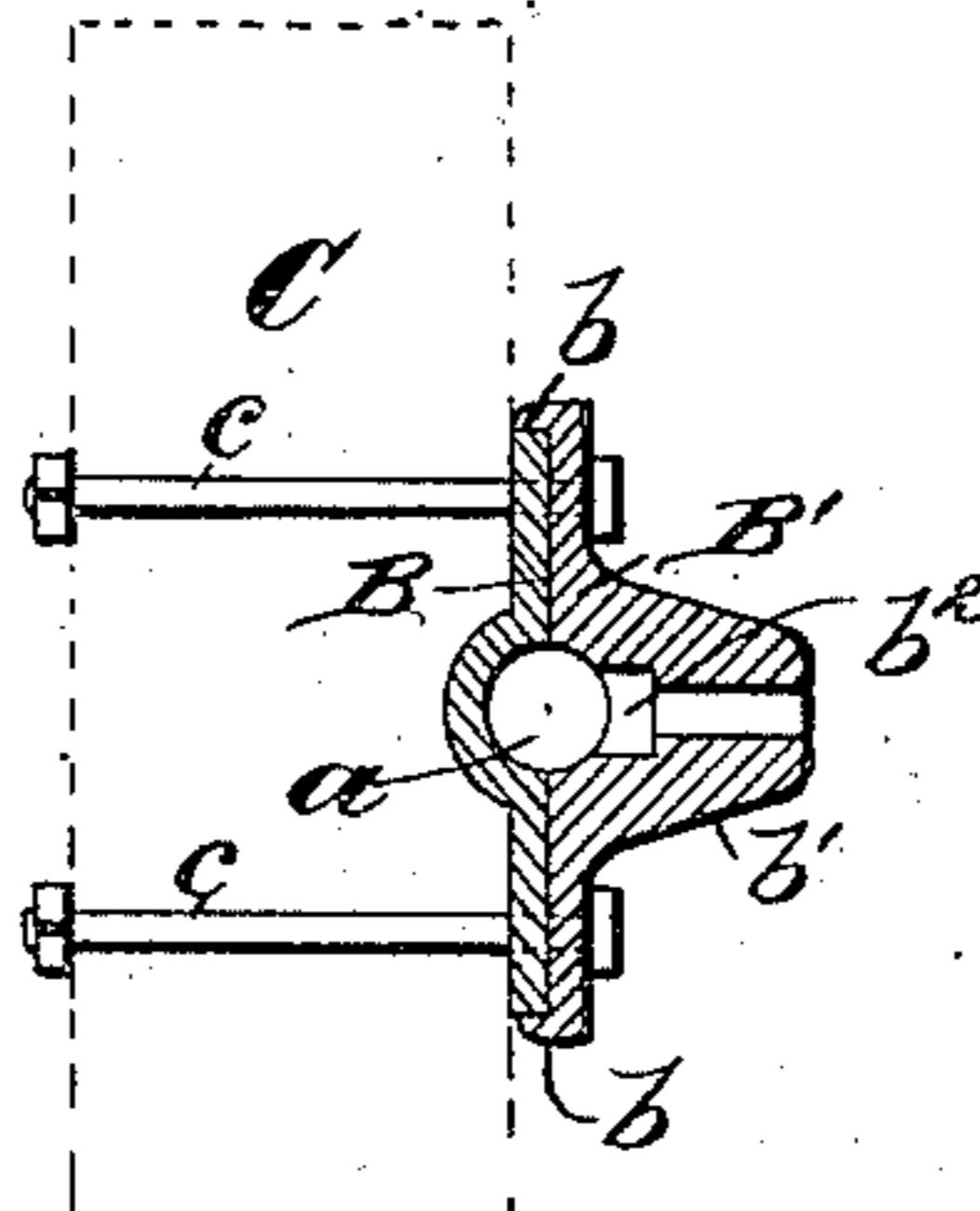
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses.*

Robert Corrett.

Lewis Lumbly.

*Inventor,*

*Samuel T. Richardson*

By James L. Norris.

*Atty.*

# UNITED STATES PATENT OFFICE.

SAMUEL T. RICHARDSON, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE  
RICHARDSON MANUFACTURING COMPANY, OF SAME PLACE.

## WINDLASS.

SPECIFICATION forming part of Letters Patent No. 311,373, dated January 27, 1885.

Application filed June 24, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL T. RICHARDSON, a citizen of the United States, residing at Baltimore, Maryland, have invented new and  
5 useful Improvements in Windlasses, of which the following is a specification.

My invention relates to a lever-power windlass for use on shipboard or elsewhere. This windlass consists of a shaft that is suitably  
10 mounted in a firm support, and carries at each end a windlass-barrel having ratchet-teeth for the engagement of pawls on a pair of bevel-gears that are mounted loosely on the shaft near its center, and mesh with an intermediate  
15 bevel-gear that is provided with levers, by means of which the gears are oscillated, so as to cause the pawls to alternately engage with the ratcheted windlass-barrels, and urge them continuously forward through their rigid con-  
20 nection with the shaft on which they are mounted.

The invention consists in the construction and combination of parts, hereinafter more fully set forth.

25 In the annexed drawings, illustrating the invention, Figure 1 is a top view of my improved windlass, partly in horizontal section. Fig. 2 represents a modification in the arrangement of the ratchet-teeth on the windlass-bar-  
30 rel. Fig. 3 is a vertical section through the bearing for the windlass-shaft.

The windlass-shaft A is supported centrally in a tubular bearing formed by corresponding grooves, *a*, in the opposing surfaces of the bearing-plates B B', that are bolted to a samson-  
35 post, C, as shown in Figs. 1 and 3. It will be seen that the inner bearing-plate, B, is partly embedded in the post C, and the outer bearing-plate, B', is provided at top and bottom with flanges *b b* that lap over said inner plate,  
40 bolts *c c* being passed through the post and bearing-plates and secured with nuts at one end, as shown, so as to connect the parts firmly. The outer bearing-plate, B', has a  
45 tubular boss, *b'*, that is recessed or counter-sunk on its inner side at *b'*, for receiving the head of a bolt or pin, D, on which is pivoted a bevel-gear, E, having a hub, *d*, the end of which abuts against the boss *b'*, as shown in  
50 Fig. 1.

On each end of the shaft A is mounted rig-

idly a windlass-barrel, F, of any suitable construction, the inner end being preferably of greater diameter than the outer end. Each windlass-barrel is provided at its inner end  
55 with ratchet-teeth *e*, that may be arranged either on the inner face of the barrel, as shown in Fig. 1, or on its circumference, as shown in Fig. 2. A pair of bevel-gears, G G, are mounted loosely on the shaft A, between the  
60 windlass-barrels F F and post or standard C. These gears mesh with the bevel-gear E, that is mounted in a plane at a right angle, as shown in Fig. 1. The bevel-gears G G have elongated hubs *f f*, that abut against the ends  
65 of the tubular bearing *a*, and each gear is provided with one or more pawls, *g g*, for engaging the ratchet-teeth *e e* on the windlass-barrel. The intermediate bevel-gear, E, is pro-  
70 vided with sockets *h h* for detachable hand-levers H H, by which the several gears and windlass-barrels are actuated.

It will be observed that by means of the hand-levers H H and gear E the gears G G will be made to oscillate reciprocally, so that  
75 their respective pawls will engage alternately with the ratchet-teeth on the windlass-barrels F F, and these latter, being rigidly secured to the shaft A, will consequently rotate together with a continuous forward movement.  
80

The ratchet-teeth *e* can be formed on the circumference of the windlass-barrel F, as represented in Fig. 2, or they may be arranged as an internal ratchet-gear on the inner recessed face of the barrel, as shown in Fig. 1.  
85 When constructed in the manner shown in Fig. 1, a series of perforations, *i i*, are provided to permit the escape of water, and thus prevent its accumulation in the recessed end of the windlass-barrel when the latter is ex-  
90 posed to wet weather.

Several of the devices herein shown are specifically claimed in my application for patent filed June 24, 1884, Serial No. 135,915; and hence I herein enter a disclaimer of such de-  
95 vices.

Having thus described my invention, what I claim is—

1. In a windlass, the combination of a shaft mounted in suitable bearings and carrying a  
100 barrel at each end, said barrels being provided with ratchet-teeth, a pair of bevel-gears

mounted loosely on the shaft at the inner ends  
of the windlass-barrels, and carrying pawls  
adapted to engage with the ratchets, and an  
intermediate bevel-gear pivoted in a plane at  
5 right angles with the pawl-carrying gears and  
arranged to mesh therewith, substantially as  
described.

2. In a windlass, the combination of the  
post or standard C, the bearing-plates B B',  
10 bolted thereto, one of said plates being pro-  
vided with a tubular boss, *b'*, the shaft A, the  
windlass-barrels F F, rigidly secured thereon  
and provided with ratchets *ee*, the bevel-gears  
G G, mounted loosely on the shaft at the inner

ends of the barrels, and having hubs *f f* and 15  
pawls *g g*, and the intermediate bevel-gear, E,  
having levers H H and hub *d*, said gear being  
 journaled on a pin, D, supported in the tubu-  
lar boss of the bearing B', substantially as de-  
scribed.

In testimony whereof I have hereunto set  
my hand in the presence of two subscribing  
witnesses. 20

SAMUEL T. RICHARDSON.

Witnesses:

JAMES L. NORRIS,  
JOS. L. COOMBS.