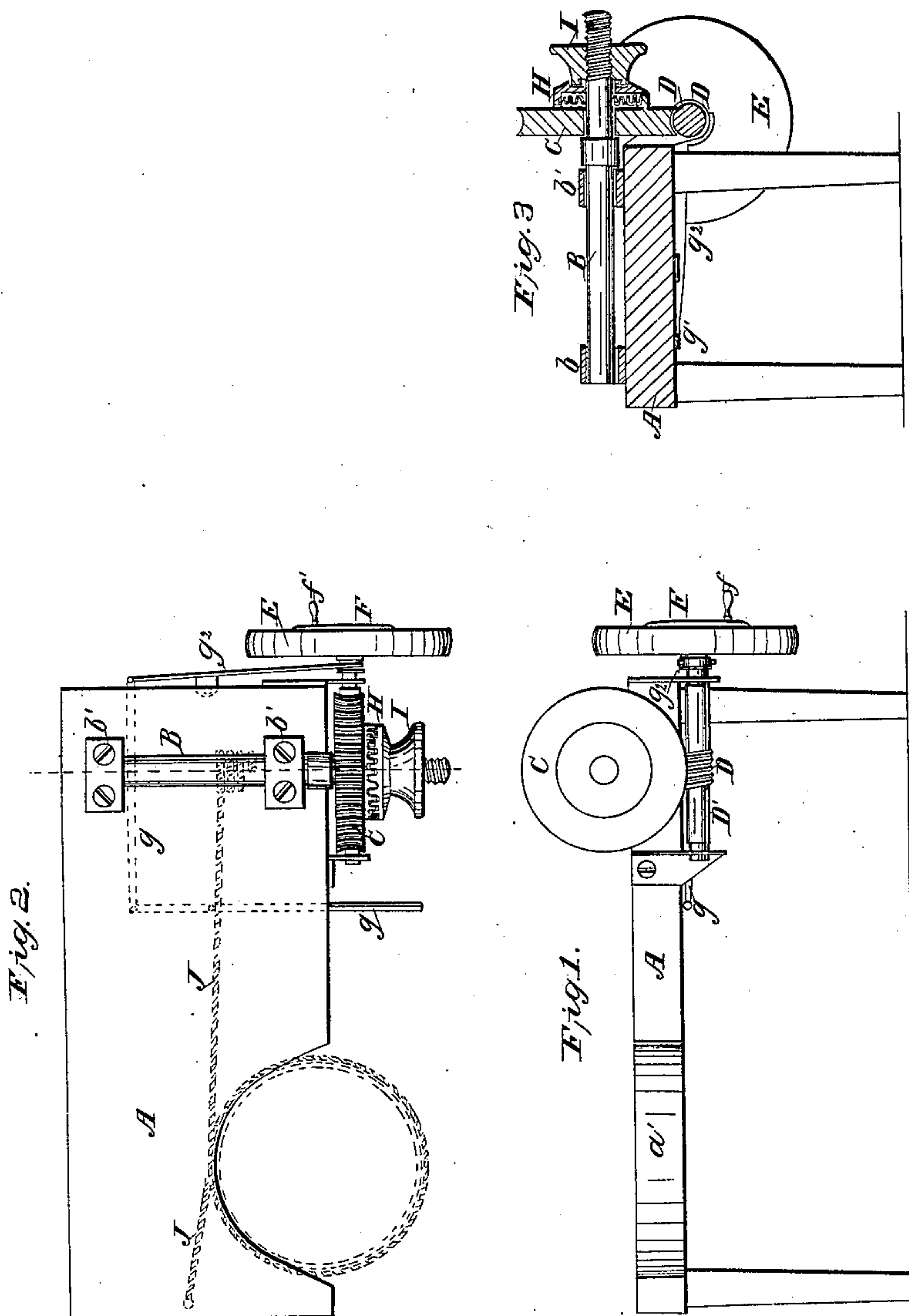


*E. & B. Holmes,  
Making Barrels.*

*N<sup>o</sup> 81,274.*

*Patented Aug. 18, 1868.*



*Witnesses:  
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# United States Patent Office.

EDWARD HOLMES AND BRITAIN HOLMES, OF BUFFALO, NEW YORK.

*Letters Patent No. 81,274, dated August 18, 1868.*

## IMPROVEMENT IN POWER-WINDLASS FOR MAKING CASKS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, EDWARD HOLMES and BRITAIN HOLMES, of the city of Buffalo, county of Erie, and State of New York, have invented a certain new and improved Power-Windlass for Making Casks; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure I is a side elevation.

Figure II is a top plan view.

Figure III is a transverse vertical section.

The nature of our invention consists, in combining in a windlass, a friction-driving pulley, to prevent any injurious or breaking strain being brought upon the truss-rope or windlass, and a clutch-coupling to the windlass-drum, so that the drum may be readily disengaged and reversed to unwind the truss-rope therefrom, whereby the windlass is specially adapted to apply engine-power to trussing of casks.

Like letters refer to like parts in each of the figures.

A represents a table, having a semicircular notch cut in one side thereof, near one end, for the reception of the cask to be trussed, and supporting, near its opposite end, a windlass-drum, B, in appropriate pillow-blocks, b'.

A truss-rope, J, is firmly secured by one end to the table, its other end being secured to the windlass-drum.

Sufficient length is given to the truss-rope so that before winding on the drum, a loop may be formed therein and made to encircle the cask placed in the semicircular notch, as shown by red lines in Fig. I.

The winding of the rope upon the windlass-barrel will, by contracting the size of the loop, draw together and hold the diverging staves of the cask, so that the truss-hoops may be applied.

We are aware that the table, truss-rope, and windlass, arranged and operating as above described, manual-power being applied to work the windlass, are common and well known.

In order to apply engine-power to the operation of the windlass, we combine and arrange therewith certain mechanism, which may be described as follows:

G is a worm-wheel, placed loosely upon the overhanging end of the drum-shaft B, but which may be rigidly connected thereto by the clutch H, operated by the hand-wheel I.

D is a worm or screw-thread, cut upon the shaft D', supported in journal-bearings attached to the table A, so that the thread of the screw may mesh with the teeth of the worm-wheel, and impart its motion thereto.

E is the driving-pulley, receiving motion from the engine-power. It is placed loosely upon the overhanging end of worm-shaft D', but may be brought into frictional connection therewith by being forced against the disk or plate F, rigidly attached to said shaft. This movement against the disk F is effected, when required, by means of the levers  $g^1 g^2$ , the lever  $g^2$  being forked at its end, and clasping the grooved hub of the wheel E, the same being a common and well-known construction. The frictional connection of the driving-pulley with the worm-shaft will cause the same to revolve and impart motion to the worm-wheel, and when the clutch H is in gear, operate the windlass-drum and wind the truss-rope thereon.

At the instant the staves of the cask are brought together by the truss-rope, the movement of the windlass-drum must cease, or serious consequences will result, viz, either the cask will be crushed, the truss-rope parted, or the windlass-drum torn from its bearings.

The use of the friction-driving pulley removes all danger of this kind, as it will slip, and cease to communicate motion to the windlass before a breaking strain can be applied to any of the parts. A fixed driving-pulley, or any similar device which the attendant would require to throw in or out of gear just at the instant the staves of the cask come together, would be inoperative, as the least carelessness or delay upon his part would involve a breakage of the machine.

After the staves have been brought together, and the truss-hoops applied, it becomes necessary to remove the loop of the truss-rope therefrom, so that the cask may be removed. This is accomplished by uncoupling the clutch H, by unscrewing the hand-wheel I, thereby releasing the hold of the worm-wheel upon the drum-

shaft, so that a slight pull upon the truss-rope will reverse the movement of the drum and unwind the truss-rope therefrom, and thereby allow the loop to be readily removed from the cask and applied to its successor.

The function performed by this clutch is of great importance, as without it the truss-rope could only be unwound from the drum by reversing the motion of the worm, so that as much time would be occupied in unwinding the truss-rope from the drum as in winding it thereon, thereby rendering the machine practically worthless. But by combining the friction-driving pulley and clutch H with the windlass-drum, engine-power may be applied thereto, and a safe and expeditious operation thereof insured.

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

The combination of the driving-pulley E, provided with a friction-clutch, the screw-shaft D', worm D, worm-wheel C, clutch H, and windlass-drum B, operating in the manner and for the purpose described.

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Witnesses:

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