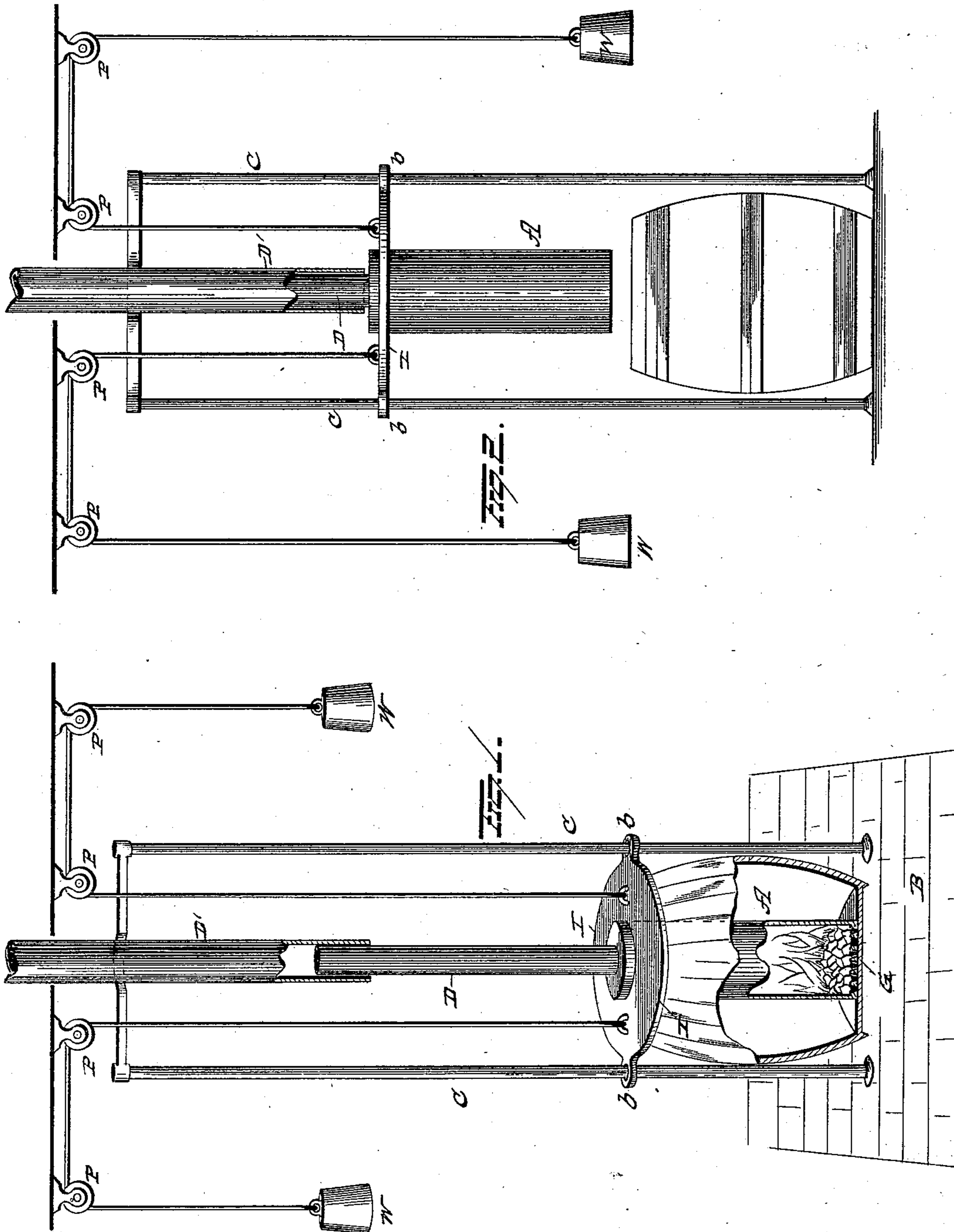


(No Model.)

W. S. WYMOND.
BARREL FIRING APPARATUS.

No. 374,570.

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Witnesses

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BARREL-FIRING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 374,570, dated December 6, 1887.

Application filed May 14, 1887. Serial No. 233,252. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. WYMOND, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Barrel-Firing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in barrel-firing apparatus.

In the manufacture of barrels, either tight or slack, it has been found of advantage to highly heat or "char" the interior of the barrel before the hoops are permanently set, the staves being set up by the use of temporary binders or clamping-hoops. The barrel in this form is placed over a furnace or firing-pot and its inner surface thoroughly dried, and in some instances it is of advantage to char the surface. This process removes all sap that might give an objectionable flavor to the material the barrel is designed to hold; and, further, the charring of the interior will give a permanent set to the staves, so that the hoops which are fixed in place afterward will hold the barrel intact, and as all possible contraction or shrinkage of the material is effected by this "firing" operation a barrel will remain tight as long as the hoops are firmly in their place on it.

It is a manifest necessity that the exterior surface of the staves of a barrel should not be heated when the interior is "fired," as the cellular tissue of the wood, if preserved in normal condition, will, by absorption of moisture, render the joints of the barrel tighter, and also prevent the staves from gaping at the joints, which ordinarily would occur if a barrel were heated or kiln-dried on the exterior as well as fired on its interior surface.

In view of the foregoing statement of facts my present invention has for its object the construction of a barrel or cask firing device that will be reliable in operation and easy to manipulate, having working parts which are simple, few in number, and compactly arranged, thus affording a perfect firing apparatus at a low initial cost.

With these objects in view my invention

consists in certain features of construction and combinations of parts that will be hereinafter described, and pointed out in the claims.

Referring to the drawings making a part of this specification, Figure 1 represents the barrel-firing device in position while the operation of charring a barrel is in progress. Fig. 2 shows the device with the parts adjusted to receive a barrel to be charred or fired.

Two parallel upright standards, C C, are erected from a platform, B, or these may be affixed to the floor of the room in which the apparatus is placed. The standards C C are intended to be utilized as guides for the elevation of other portions of the device, as will be explained, and they may be made of wooden timber properly grooved to furnish guideways. Metal rods or pieces of tubular iron pipe may also be employed and will answer the desired purpose.

The metal disk I is provided with perforated ears *b b*, affixed to opposite points on its edge. This disk is designed as a cover for one end of a barrel while the firing operation is in progress, and therefore should be of a size to extend beyond the outer surface or the edge of such barrels as are to be operated upon. The holes in the ears *b b*, that are made to extend from opposite points on the cover I, are made of a diameter to loosely engage the upright guides C C and hold the cover in sliding engagement with these guides when it is elevated.

About the center of the metal cover I a perforation is made to receive the upper portion of the fire-chamber A, or this fire-chamber may be flanged at its upper end to be bolted or riveted to the cover, it being only essential that the connection shall be stable and permit the fire-chamber A to hang from the under surface of the cover I at right angles to it and concentric to its peripheral edge.

The fire-chamber A is preferably made cylindrical, of plate-iron that will readily heat and without being heavy will have stability to retain its form and hold a fire made on the grate G, that is secured in place at the lower end of this fire-chamber. The openings between the bars of the grate are of size sufficient to supply air necessary for combustion,

but too small for the passage of hot coals or cinders.

Upon the upper end of the fire-chamber A the draft-pipe D is secured. This is attached to a collar that surrounds a hole of suitable diameter made in the closed upper end of the fire-chamber and is extended upwardly a convenient height. The draft-pipe D is made to enter or telescope with a pipe, D', of such a relative diameter as to permit the pipe D to slide upwardly in it, and yet be tight enough to insure a fair draft for a fire made on the grate G.

It is necessary for the proper operation of the device that provision be made for the easy and quick elevation a limited distance of the cover I and its attached fire-chamber and pipe-section. A simple and efficient method is shown in the drawings, which consists in affixing flexible chains, wires, or cords to the top surface of the cover I and extending these upwardly to engage the pulleys P P, which are fixed to an elevated point, the free ends of the chains or ropes descending sufficiently to be attached to weights W, that are adapted to counterbalance the attached cover I and fire-chamber A, so as to permit these parts to be freely elevated or depressed with slight exertion of force by the operator.

In operating the firing apparatus the device is placed in the position shown in Fig. 2, with a free-burning fire in the fire-chamber A, the pipe D D' being of sufficient height to insure proper combustion of fuel. A barrel set up with temporary hoops to hold the staves connected is placed below the fire-chamber A, and this chamber, with the attached cover I, is lowered, the fire-chamber A occupying the interior of the barrel about equally distant from its inner surface. When the cover I is made to rest on the upper edge of the barrel, the lower section of the draft-pipe, D, will retain its connection with the fixed upper portion, D', the latter-named portion of the pipe being secured to some fixed point to prevent its displacement and allow the lower portion to slide freely within it.

It is evident from the foregoing description that the intense combustion of fuel in the fire-chamber, which renders its side walls red-hot, will quickly dry out and scorch or char the interior surface of the staves. When this is properly effected, the cover I and attached fire-

chamber A are elevated, the barrel removed, another placed in position, and the firing operation repeated, the work being rapidly and effectually performed by the simple device just described.

Many slight changes might be made in this apparatus without departure from the spirit of the invention—as, for instance, the guide-rods C C might be made fast above and allowed to depend and engage the ears of the head I, or in some situations the draft-pipe D might be used as a continuous piece and work through a thimble in the roof of the building in which the apparatus is located; and it is feasible to make a change in the fire-chamber to utilize a gaseous fuel in place of wood or coal as a combustibile; hence I do not wish to limit myself to the exact forms shown; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a barrel-firing device, the combination, with guides, a cover, a fire-chamber attached to the cover, and telescoping pipe-sections leading from the fire-chamber, of counter-weights and ropes or chains connecting the counter-weights and cover, substantially as set forth.

2. The combination, with a cover, a cylindrical fire-chamber secured to the lower side of this cover, and a telescoping draft-pipe leading upwardly from the cover, of the vertical guides, a counter-weight, a flexible connection connecting the cover and weight, and pulleys to support the flexible connection to permit the cover and fire-chamber to be raised or lowered, substantially as set forth.

3. The combination, with a metallic barrel-cover provided with perforated ears adapted to engage guides, vertical guides, a fire-chamber secured to the cover, a grate for the fire-chamber, and a telescopic draft-pipe leading upwardly from the cover, of flexible chains or wire ropes, counter-weight, and pulleys over which the chains or ropes are strung.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM S. WYMOND.

Witnesses:

H. D. FITCH,
A. V. LAFAYETTE.