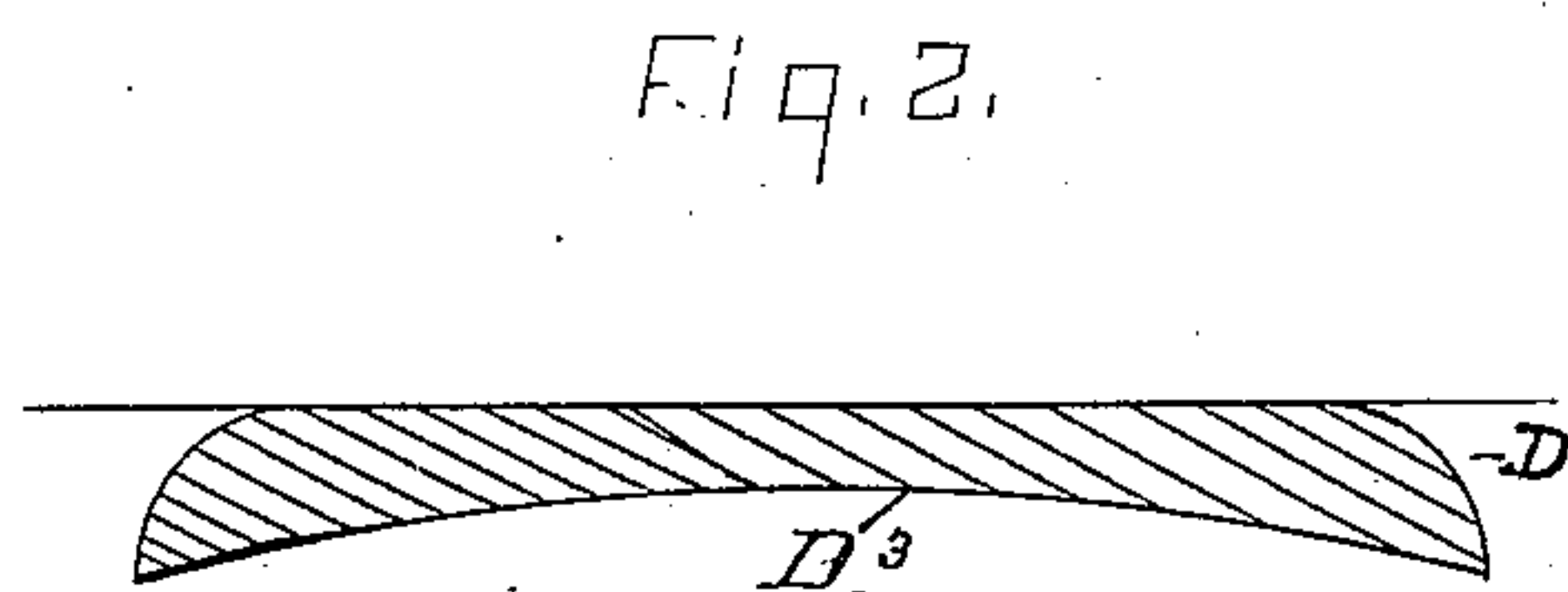
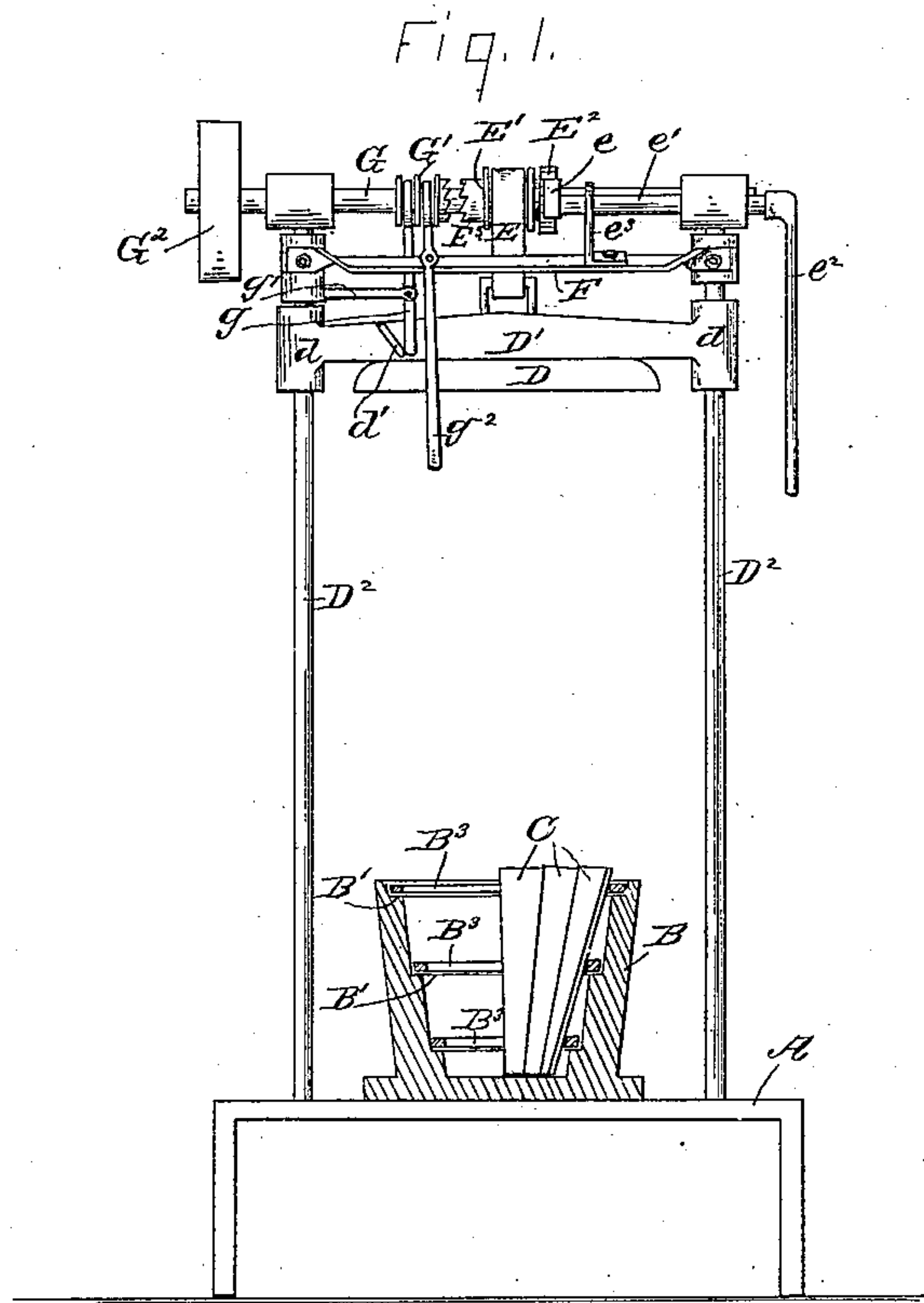


(No Model.)

F. W. ULRICH.
BARREL MAKING MACHINE.

No. 356,217.

Patented Jan. 18, 1887.



WITNESSES -

Virgil J. Ferguson,
Joseph C. Chamberlin.

INVENTOR -

Friedrich W. Ulrich,
by Manahan & Ward,
His Atty's

UNITED STATES PATENT OFFICE.

FREDERICH W. ULRICH, OF ROCK FALLS, ILLINOIS, ASSIGNOR OF ONE-HALF
TO JAMES J. ALLISON, OF SAME PLACE.

BARREL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 356,217, dated January 18, 1887.

Application filed April 7, 1886. Serial No. 198,145. (No model.)

To all whom it may concern:

Be it known that I, FREDERICH W. ULRICH, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Barrel-Making Machines; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to barrel-making machines, and pertains more especially to certain mechanism, hereinafter described, for driving the staves into the truss-hoops.

In the drawings, Figure 1 is a front elevation of a machine embodying my invention, the truss-pot B being shown in section. Fig. 2 is a cross-section of the driving-head D.

A is the pedestal or base upon which the machine is supported.

B is the truss-hoop pot, centrally seated on the base A and having its circular inner walls upwardly divergent. In the inner walls of the pot B, at proper intervals, are formed above each other recesses B', extending entirely around the inner sides of such pot.

B³ are the usual truss-hoops, supported, respectively, on the recesses B'. C represents the staves in position in such hoops.

D is the drop-head used to drive by its own gravity the staves C into the truss-hoops B³. The machine is operated mainly upon butter-tubs and like casks, and by reason of their flaring top the upper ends of the staves are not transversely horizontal, but have their inner edge higher than their outer edge. It is obvious that under this condition the dropping of a horizontal surface upon the upper ends of such staves will bruise and batter the inner edge of the upper ends of the staves. This has been the difficulty with all drop-drivers of which I have knowledge. To obviate this objection I form the lower face, D³, of the head D into a concave form, so that the portion thereof which comes in contact with the upper edges of the staves shall slope downward out-

wardly, so as to be parallel with the tops of the staves.

D' is a movable cross-brace, which carries the head D. In each end of the brace D' is formed a vertical sleeve, d, fitted loosely around and reciprocating upon the vertical posts D², and which serves to guide the head D in its downward drop.

G is a horizontal shaft, journaled in the top of the posts D² and rotated continuously by means of the pulley G², rigidly fixed on such shaft, or in any other suitable way.

F is a fixed cross-brace, attached to the posts D² above the traveling brace D'. A short post, e³, is seated on the brace F, and in the upper end thereof is loosely journaled one end of the horizontal rock-shaft e', the latter being journaled at its outer end in the top of the post D² and being parallel with the shaft G.

E is a loose pulley, seated loosely on the shaft G and adapted to wind and unwind the strap E, the lower end of which is suitably connected to the brace D' and its upper end to the pulley E'.

G' is a clutch, feathered on the shaft G and adapted to be thrown into engagement with the adjacent ratchet end E⁵ of the pulley E' by means of a hand-lever, g², fulcrumed on the bar F, and having its upper end bifurcated and seated loosely in an annular groove in the clutch G', whereby such pulley E' is intermittently caused to rotate with the shaft G and raise the drop head or driver D. A ratchet, E², is formed on the opposite end of the pulley E'. A pawl, e, on the inner end of the shaft e' is held in engagement with the ratchet E² by the weight of the hand-lever e² attached to the outer end of the shaft e'.

The lever e² is placed in such relation to the projection of the pawl e that when such lever hangs vertically the pawl e shall be in engagement with the ratchet E². Thus the pawl e continuously holds the pulley E' from unwinding except when held out of engagement with the ratchet E² by means of the hand-lever. The clutch G' is caused to automatically disengage the pulley E' by means of a short vertical-lever, g, fulcrumed on the inner end of the horizontal arm g', which is attached at its outer end to the part D² above the travel-

ing brace D'. The upper end of the lever *g* traverses loosely an annular external groove in the clutch G', or it may be connected to the upper end of the lever *g*². The lever *g* is actuated by the diagonal trip *d'*, affixed with its upper end outward to the side of the brace D'. When the latter has nearly reached the upper end of its movement, the trip *d'* forces the lower end of the lever *g* inward, and the upper end of such lever, moving outward, draws the clutch G' out of engagement with the pulley E'. By pushing the lever *e*² backward, the pawl *e* is disengaged, and as the pulley E' is then free to rotate the brace D' falls, carrying with it the drive-head D, which drives the staves C into the loop B'. The lever *e*² is then released and, swinging into a vertical position, brings the pawl *e* again into engagement with the ratchet E². The lower end of the lever *g*² is then moved outward, which throws the clutch G' into engagement with the pulley E', and causes the latter to rotate with the shaft G and wind the strap E, and thereby raise the head D. When the latter has reached the proper height, the clutch G' is disengaged by the lever *g*, as aforesaid, and the shaft G turns loosely in the pulley E', the latter being held from turning by the pawl *e* until the shaft *e'* is rocked by the lever *e*².

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of the pot B, provided with recesses B', the head D, provided with lower outwardly-sloped face, D³, posts D², brace D', sleeved on said posts and carrying head D, the strap E, connecting the brace D' to pulley E', loosely seated on shaft G, and means for intermittently connecting and disconnecting said shaft and pulley, substantially as shown, and for the purpose described.

2. In combination with the pot B, provided

with recesses B', the brace D', sleeved on the posts D² and carrying the head D, the strap E, the rotating shaft G, pulley E', loosely seated on shaft G, ratchet E², integral with pulley E', pawl *e*, seated on shaft *e'* and adapted to engage ratchet E², rock-shaft *e'*, and lever *e*², attached to shaft *e'* in such relation to pawl *e* as that the gravity of lever *e*² will hold pawl *e* in engagement with ratchet E², substantially as shown, and for the purpose specified.

3. In combination with the pot B, provided with recesses B', the brace D', sleeved vertically onto post D² and carrying the head D, the rotating shaft G, pulley E', seated loosely on shaft G and provided with ratchet end E⁵, strap E, connecting brace D' with pulley E', clutch G', feathered on shaft G and adapted to engage and disengage ratchet end E⁵ of pulley E', and lever *g*², having its upper end loosely connected to clutch G', and adapted to throw clutch G' into engagement with ratchet E⁵, substantially as shown, and for the purpose mentioned.

4. In combination with pot B, provided with recesses B', the brace D', provided with trip *d'* and sleeved vertically on posts D² and carrying head D, the strap E, the rotating shaft G, pulley E', seated loosely on shaft G and provided with ratchet end E⁵, clutch G', feathered on shaft G and adapted to engage ratchet E⁵, and the trip-lever *g*, having its upper end loosely connected to clutch G' and adapted to be thrown outward by the trip *d'*, whereby the clutch G' is disengaged from the pulley E' automatically, substantially as shown, and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICH W. ULRICH.

Witnesses:

THOMAS DILLER,
H. C. WARD.