

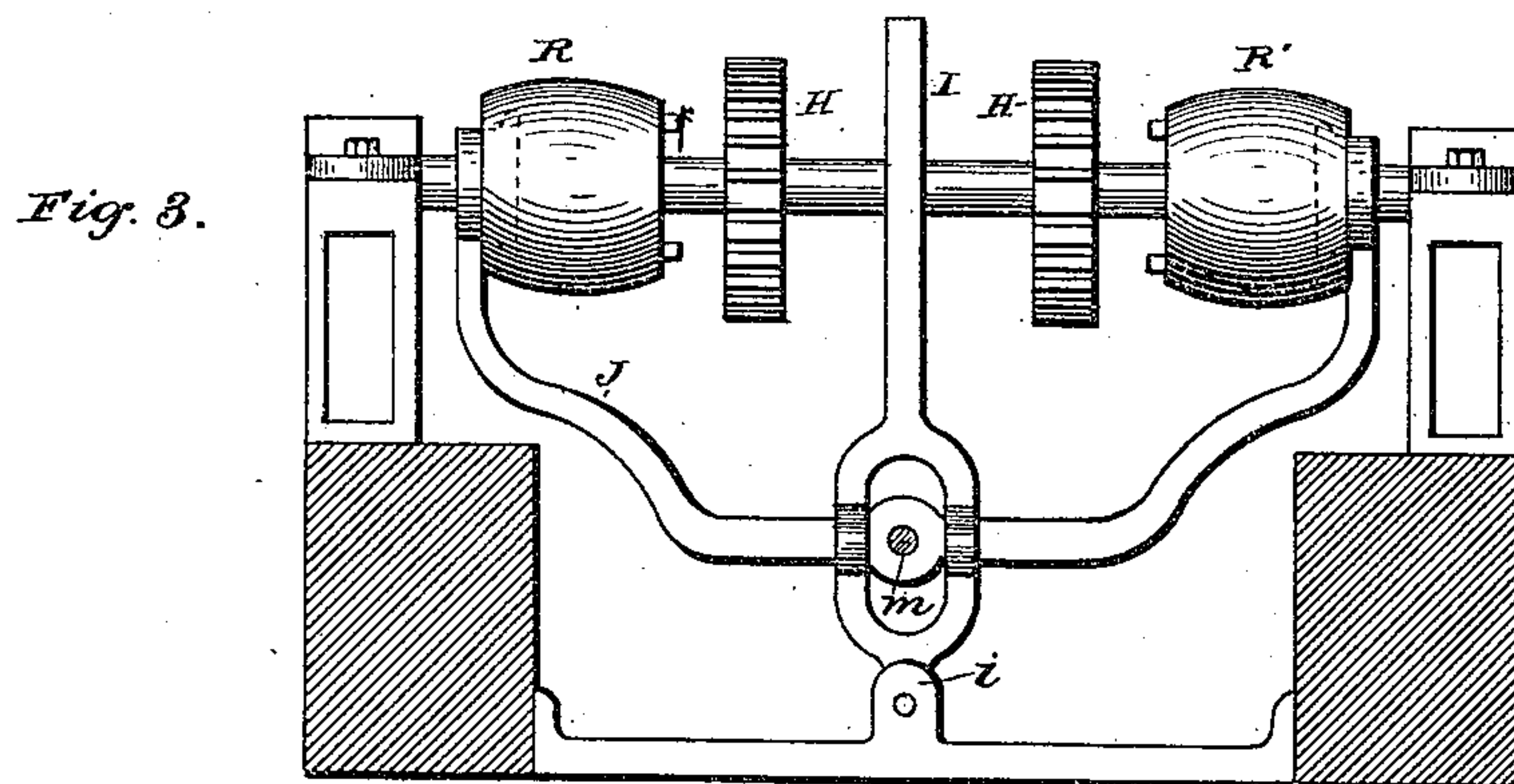
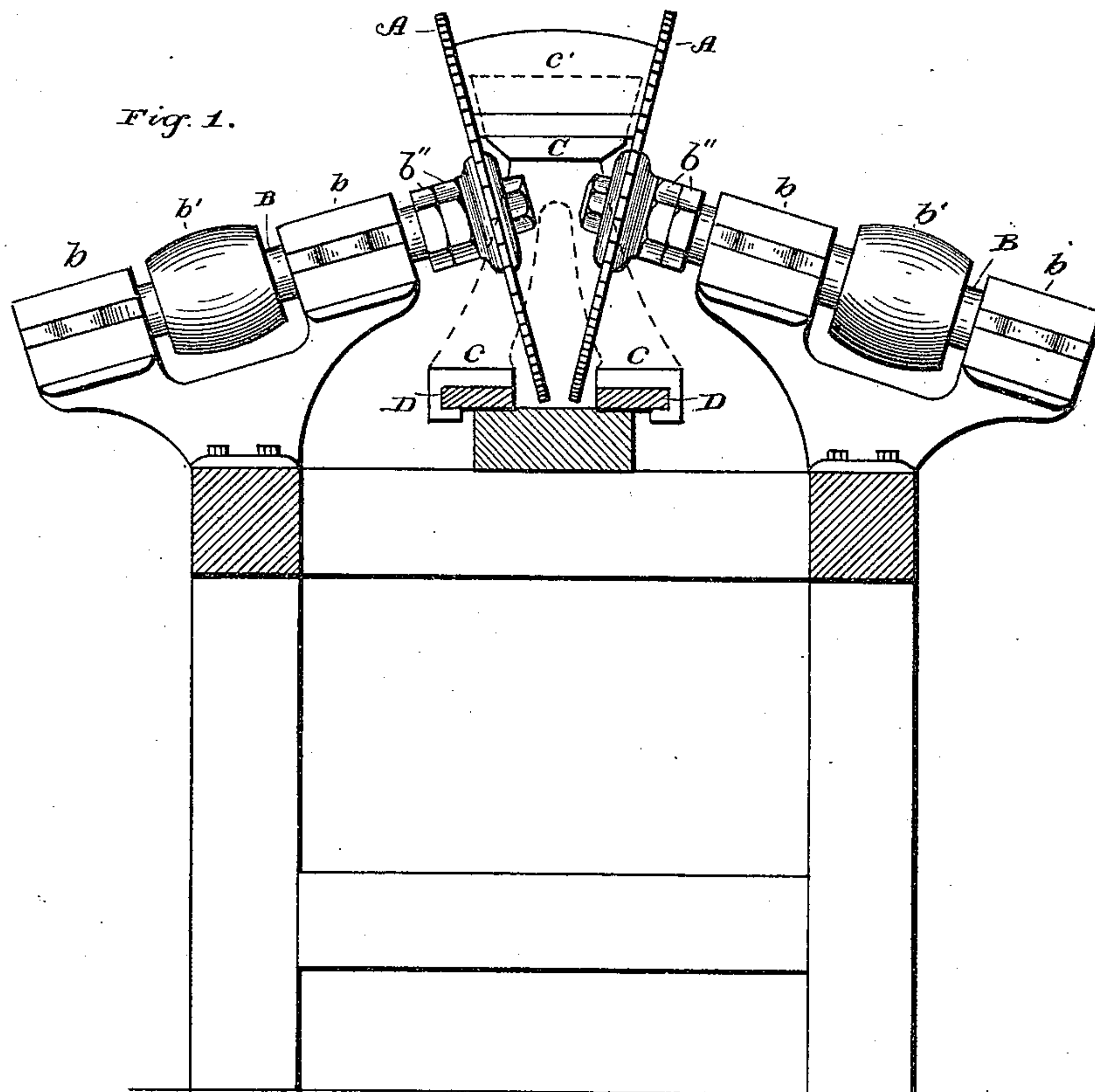
(No Model.)

2 Sheets—Sheet 1.

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MACHINE FOR JOINTING STAVES.

No. 451,133.

Patented Apr. 28, 1891.



ATTEST.
Victor J. Evans
Van Buren Hillyard.

INVENTOR
James Pleukharp.
By R. H. Lacey
his Atty.

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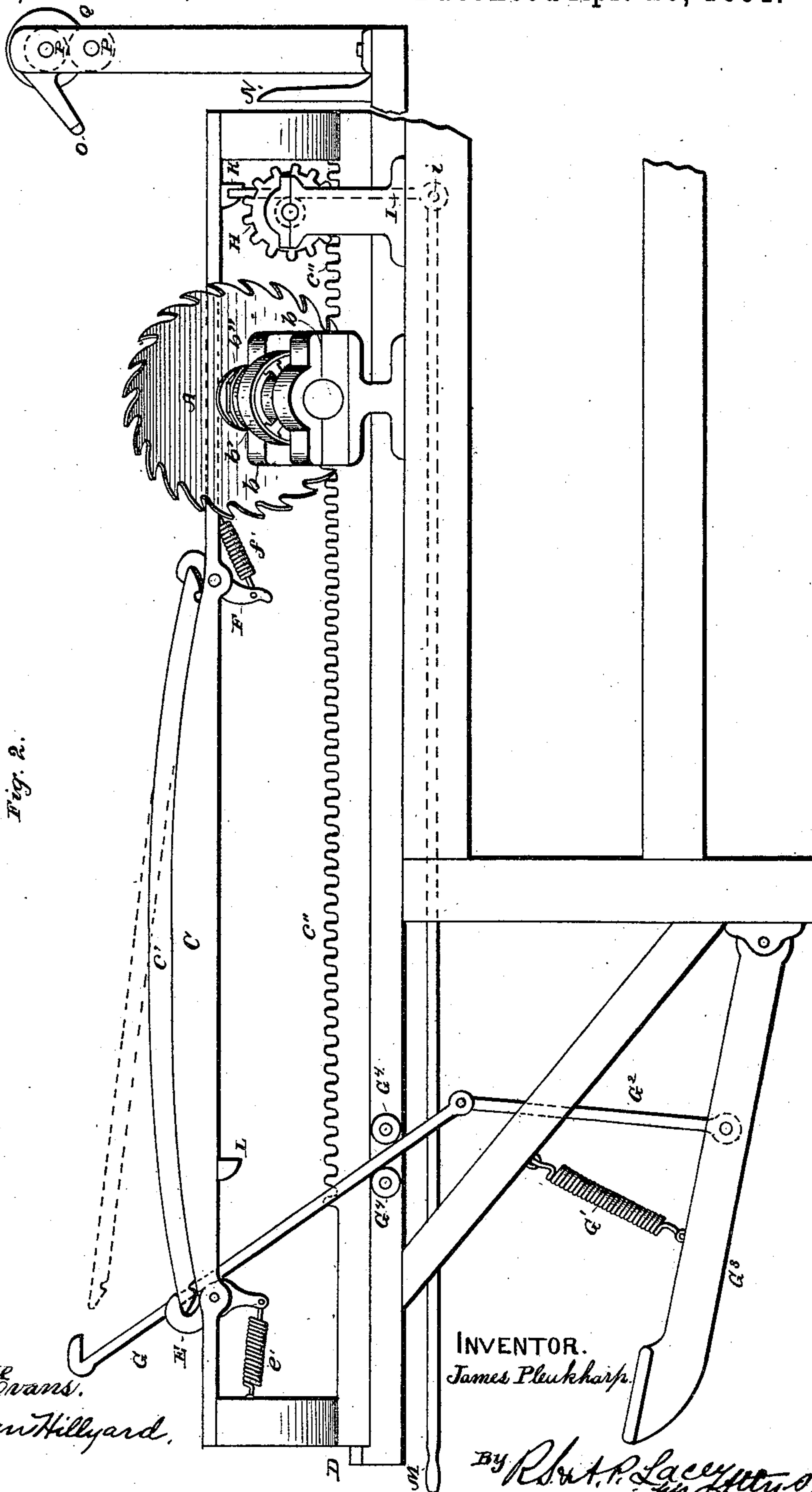


Fig. 2.

ATTEST.
Victor J. Evans.
Van Buren Hillyard.

INVENTOR.
James Pleukharp.

By R. A. Lacey
Att'y.

UNITED STATES PATENT OFFICE.

JAMES PLEUKHARP, OF COLUMBUS, OHIO.

MACHINE FOR JOINTING STAVES.

SPECIFICATION forming part of Letters Patent No. 451,133, dated April 28, 1891.

Application filed February 10, 1890. Serial No. 339,870. (No model.)

To all whom it may concern:

Be it known that I, JAMES PLEUKHARP, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Machines for Jointing Staves; 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.

This invention relates to machines for jointing staves, and aims to provide a stave of standard size, particularly as to width and bevel of edges.

A further object of the invention is a machine that shall always make a stave of exactly a given measurement in width at any given point, and shall furnish the stave with a perfect angle at all points along its edge, so that it shall always fit exactly as an element in the barrel.

It is not my object to make this machine adaptable to the jointing of staves of all kinds and descriptions. It is not intended for the jointing of staves of various widths and thicknesses, nor for staves in wind or twisted. By the use of staves of various widths it is impossible to make barrels of a standard diameter. Consequently the jointing angles must vary and the jointing cannot be done perfectly. The same fault exists in the use of the same stave in the making of barrels of different diameters, the differences being made up by the use of lagging placed between the edges of the staves; also, if the staves are jointed all of them on one angle and then warped the warpage will change the angle. Now my machine is intended for jointing, and by this jointing to make a perfectly true standard stave out of sawed stock.

In the drawings, Figure 1 is an end view showing principal elements of machine. Fig. 2 is a full side view of the machine; Fig. 3, a detail end view of gearing and mechanism for operating the carriage.

A A represent cutters, which are slightly concaved on inner sides to give clearance; B B, cutter-mandrels in boxes *b b* and provided with band-pulleys *b' b'* and with the lock-nuts *b'' b''* for the adjustment of the cutters; C C C, carriage with stave *c'* bent thereon;

D D, plate or slide on which the carriage runs; E and F, catches for holding stave in place on carriage controlled by the springs *e'* and *f'*; G G² G³, mechanism for bending the stave down onto the carriage in its proper place; G' G⁴ G⁴, spring and rollers for guiding and controlling the bending mechanism; H, gear-wheels, which mesh with the teeth *c''* on the upper surface of the lower part of the carriage C, serving to operate the said carriage; I, lever pivoted at *i* for throwing the clutch operating the gear mechanism; K and L, beveled lugs or stops operating with the lever I for throwing clutch; J, yoke having its ends engaging with the band-pulleys R and R' and operated by the lever I to reverse or stop the movement of the machine; M, hand-lever engaging with lever I for throwing clutch-yoke J; N, a stop at the end of frame to throw open the catch F, releasing the stave; O, guide against which the stave springs when released by the catch F; P P, rollers operated by the pulley Q, which carry away the jointed stave from the machine; R R', clutches, which also serve as band-pulleys, which operate the gears H H and which are controlled by the lever mechanisms and stops I, M, K, and L. R is provided with a straight belt, R' with a twisted belt.

Operation of machine: The stave *c'* is first inserted under the catch F. Then by means of the foot-lever the bending mechanism G is brought forward against the end of the stave and downward, grappling the stave and bending it down upon the carriage. The chamfered end of the stave striking the beveled nose of the catch *e* it is forced back, allowing the stave to go down, and then springs again into place by reason of the coil-spring *e'*, locking the stave in position, and the bending mechanism returns to its original position. By means of the hand-lever M the operator throws the clutch R into the gear H, operating both gears H H in same direction and drawing the carriage between the cutters. When the lever-arm of the catch F strikes the stop N, it is thrown upward, releasing the end of the stave. This end strikes the guide O, which guides it between the rollers P P, which then drag the stave out from under the catch *e* and carry it away from the machine. In the meantime the forward movement of the carriage is

kept up until the beveled stop F strikes the lever I, which throws the clutch R out and the clutch R' in, thus reversing the motion of the carriage and bringing it back to the operator.

5 Here it is stopped by the lever I coming in contact with the beveled stop K, throwing both the clutches out of gear, and the machine is ready for another operation.

The bending mechanism is composed of
10 treadle G³, pivoted to frame of machine, grappling-hook G, which passes between guide-rollers G⁴ G⁴, and pitman G², connecting treadle G³ and grappling-hook G. When outer end of treadle is depressed, lower end of grappling-
15 hook is drawn down and out and the upper end of said hook is carried forward and downward, thereby engaging with and drawing down the free end of the stave to catch E.

The cutting mechanism and the provisions
20 for moving the carriage are stationary relative to the frame of the machine.

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

25 1. In a stave-jointing machine, the combination, with the frame and the carriage having stave-retaining catches, of grappling-hook G, having a sliding and a tilting motion, the supports G⁴ to guide the grappling-hook in its
30 twofold movement, and the treadle connected with the said grappling-hook for operating the same, substantially as and for the purpose set forth.

35 2. The combination, with the frame and the carriage having stave-retaining catches, of the

guide-rollers G⁴ G⁴ on the frame, the grappling-hook passing between the guide-rollers, the treadle connected with the grappling-hook, and the spring G' for returning the treadle to a normal position, substantially as
40 and for the purpose described.

3. In a stave-jointing machine, the combination, with the frame, the stationary cutters, and the carriage, of the mechanism R, R', and H for operating the carriage, the lever
45 I, and the stops on the carriage for operating lever I and reversing the motion of the said carriage, substantially as described.

4. In a stave-jointing machine, the combination, with the frame, the rollers P P for
50 carrying the stave from the machine, the traveling carriage having retaining-catches, and the stop N, of the guide O for directing the released stave between the rollers P P, substantially as described.
55

5. A stave-jointing machine comprising the frame, stationary cutters, a carriage having stave-retaining catches, mechanism for moving the carriage, stops on the carriage for reversing the said mechanism, bending devices
60 for forcing the stave down on the carriage, stop N for releasing the stave, rollers P P, and guide O for directing the stave between the rollers P P, substantially as described.

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

JAMES PLEUKHARP.

Witnesses:

BARTON GRIFFITH,
MERCH SWANSON.