(No Model.) 2 Sheets—Sheet 1.

J. MASSIE.

BARREL MAKING MACHINE.

No. 265,121. Patented Sept. 26, 1882.

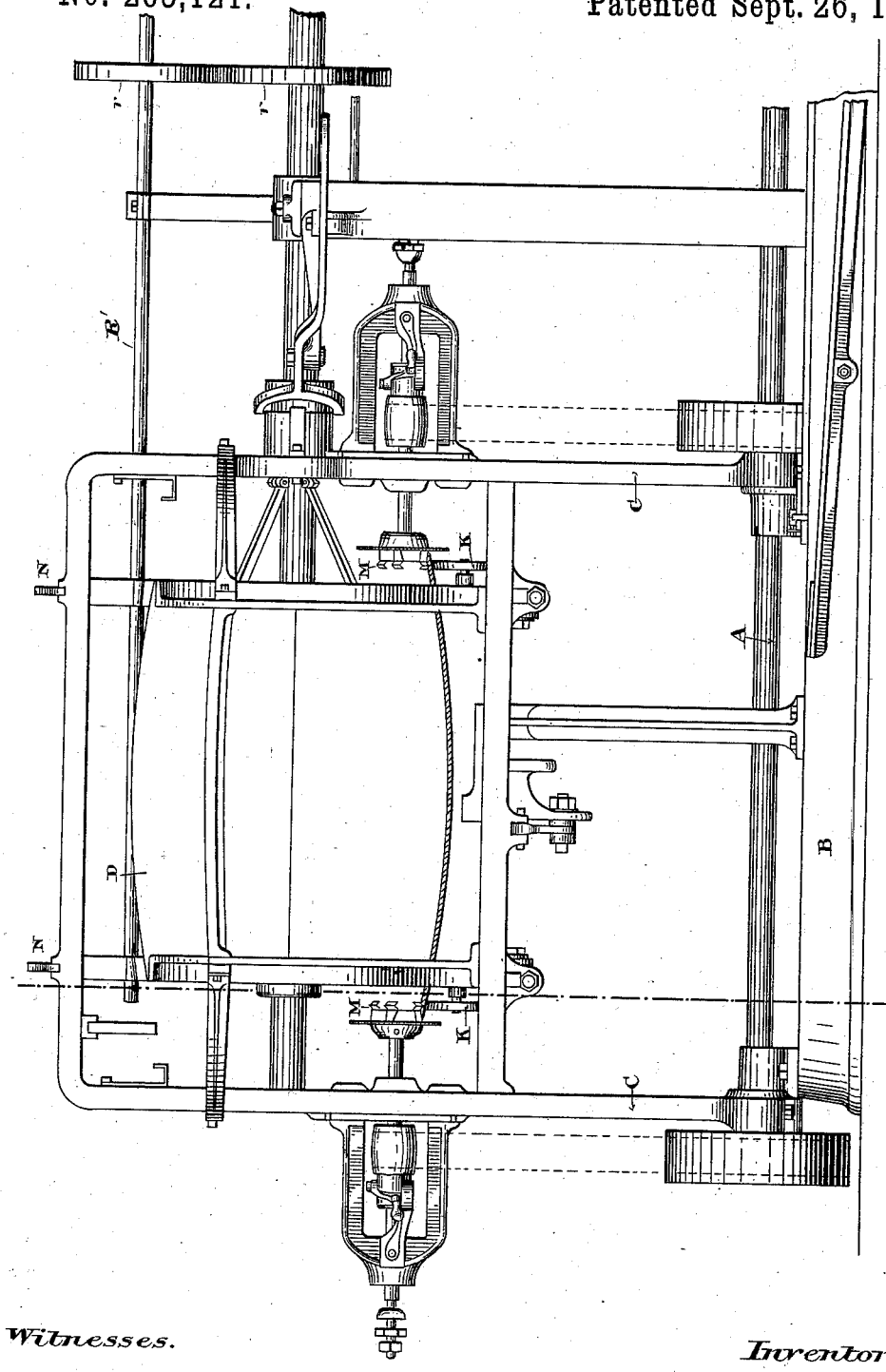

Fig. 1.

Witnesses.

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(No Model.)

2 Sheets—Sheet 2.

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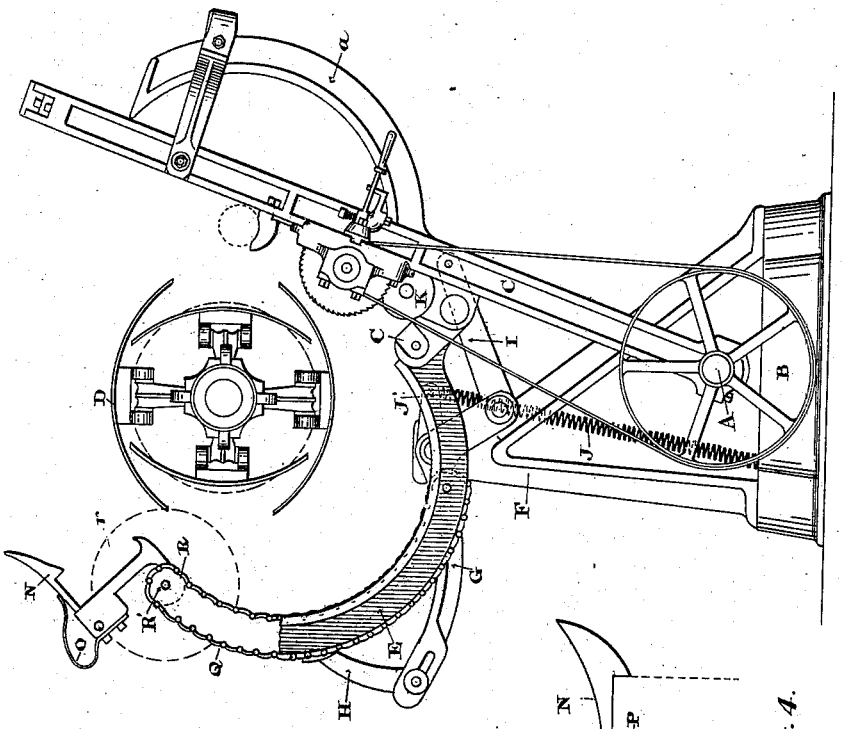

Fig. 3.

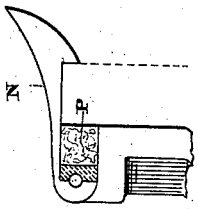

Fig. 4.

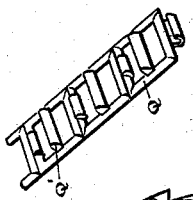

Fig. 3a.

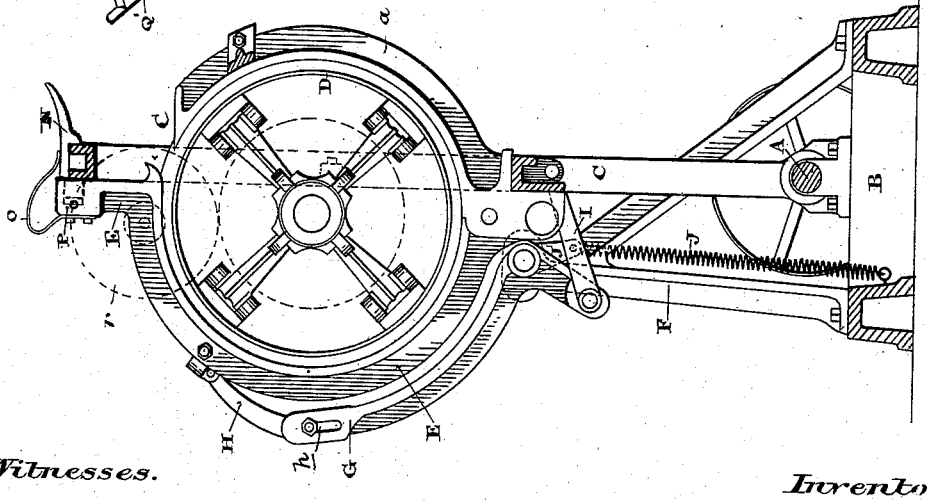

Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES MASSIE, OF TORONTO, ONTARIO, CANADA.

BARREL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 265,121, dated September 26, 1882.

Application filed May 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES MASSIE, a subject of the Queen of Great Britain, residing at the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Barrel-Making Machines, of which the following is a specification.

The objects of the invention are, first, to arrange counterbalanced mechanism by which the short or auxiliary frame for holding the staves against the forming-cylinder is automatically brought against the said cylinder when the main swinging frame is thrown in position; secondly, to provide mechanism by which each stave is forced to conform with the circle of the cylinder during the period when the chamfering and crozing knives are forming the chine and recess to receive the heading of the barrel, in order that the groove cut by the said knives may be of a uniform depth corresponding with the circle of the cylinder; thirdly, to arrange mechanism by which the staves shall be fed in position around the cylinder with regularity to correspond with the revolution of the cylinder; and, fourthly, to make provision for the expansion of the frames holding the staves against the cylinder, in order to permit staves of unequal thickness to pass between the frame and cylinder without straining the former or interfering with the operation of the cylinder; and it consists, first, in an arrangement of levers and springs designed to impart a movement to the auxiliary frame simultaneously and corresponding with the movement of the main grasping-frame, in order that the two may be thrown simultaneously toward the cylinders, as hereinafter more particularly explained; secondly, in placing a pressure-roller on the frame of the machine immediately below and in proximity to the chamfering-knives in such position that each stave must pass between the pressure-roller and chamfering-knives during the period that the groove is being cut in it; thirdly, in providing a peculiarly-formed endless chain, arranged to grip each individual stave, carrying it between the grasping-frame and cylinder, the said chain being operated from the spindle of the cylinder, so that the motion of the chain shall correspond with the revolution of the cylinder; and, fourthly, in arranging around the ribs of the grasping-frame a series of spring-plates sufficient to allow for any inequality in the thickness of the staves.

Figure 1 is a view of a portion of the side of the machine at which the operator stands. Fig. 2 is a section through V W, showing the grasping-frame against the cylinder. Fig. 3 is an end view, showing the grasping-frame thrown open and the cylinder collapsed for the purpose of removing the barrel. Fig. 3ª is a detail of chain. Fig. 4 is a detail of latch.

My invention consists in certain improvements upon a barrel-making machine patented by Samuel Wright on the 8th day of March, 1881, and it is therefore not neeessary for me to enter minutely into all the details of construction of the machine. I shall confine myself to the construction of those portions of the machine to which my improvements immediately relate.

A is the main driving-shaft of the machine, suitably journaled in bearings on the bed-plate B, and deriving its motion from any suitable motor.

C is the main grasping-frame, journaled on the driving-shaft A, and provided with ribs *a* to conform with the circle of the cylinder D, in order to hold the staves against the said cylinder.

E is an auxiliary grasping-frame, journaled on the frame C.

G is a lever journaled on the standard F at or about the longitudinal center of the cylinder D. The long arm of the lever G is connected to the frame E by the pivoted link H, while the short arm of the lever G is connected to the frame C by the pivoted link I.

The spring J is connected to a lug, J′, formed on the lever G, and is designed, as indicated, to counterbalance the weight of the frame E and assist its upward movement when the frame C is thrown forward by the operator.

In order to provide for the adjustment of the frame E upon the lever G, slotted passage-ways are formed at the pivotal points *h*, as indicated.

K is a pressure or friction roller journaled on the frame C immediately below the chamfering-knives M, so as to force the stave being cut to conform with the circle of the cylinder, in order that the groove formed in it may be

of equal depth throughout, corresponding with the circle of the cylinder.

In order to allow of the expansion necessary to permit staves of unequal thickness to pass through without straining the grasping-frame, I arrange a spring device at the point where the two frames C and E are locked together. This lock is composed of a latch, N, pivoted on the frame E, and provided with a spring, O. Behind the lock in which the latch N is journaled I place a piece of rubber, P, or other elastic material, designed to permit the frames to expand sufficiently far apart to allow the passage of staves of unequal thicknesses, while at the same time holding the two frames together sufficiently rigid for the purpose of holding the staves against the cylinder D.

In order to feed the staves in around the cylinder between the grasping-frame, I provide chains Q, formed substantially as shown in Fig. 3a. These chains are carried around sprocket-wheels R, journaled, as indicated, on the frame E, projecting lips Q′ being formed on the chain Q at a distance apart corresponding with the widths of the staves, the chain Q being caused to travel by a chain which passes around a sprocket-wheel on the spindle of cylinder D.

Instead of having projecting lips Q′ formed on the chain Q, the said chain may be shaped as shown in Fig. 3.

Instead of a chain for conveying the movement of the cylinder-spindle to the chain Q, I provide friction-wheels *r* on the spindle R′ and on the spindle of the cylinder, said wheels *r* being of such relative size that the chain and the cylinder will both move at the same speed. These friction-wheels are so arranged that when the frame is closed to grasp the barrel they come in contact with each other, and the movement of the spindle is thereby conveyed to the chain.

What I claim as my invention is—

1. In a barrel-making machine, the combination, with the cylinder for supporting the staves, of a grasping-frame divided in two parts, the main portion of which is journaled upon the machine-frame and the other half pivoted to the main grasping-frame, and a lever pivoted to the machine-frame and connected by links to opposite members of the grasping-frame, substantially as described.

2. In a barrel-making machine, the combination, with the cylinder for supporting the staves, of the grasping-frame C, pivoted at its lower end to the machine-frame, the grasping-frame E, pivoted at its lower end to the frame C, the lever G, pivoted to the machine-frame, and the links H I for connecting the upper and lower ends, respectively, of the lever with the grasping-frames E C, substantially as described.

3. In a barrel-making machine, the combination, with a revolving cylinder for supporting the staves and a grasping-frame made of two hinged parts open at one end, of a coupling for connecting the loose ends, provided with a spring, P, to allow the two parts to spread open to admit the passage of staves of different sizes, substantially as described.

4. In a barrel-making machine, the combination, with a revolving cylinder, D, and the two-part grasping-frame C E, of the pivoted catch N, the spring O, and an elastic cushion, P, the parts being arranged to hold the grasping-frames together and yet allow them to spread partly open, substantially as described.

5. The combination of the main grasping-frame C, having ribs *a* to correspond with the cylinder D, with the auxiliary frame E, lever G, link H, and locking device N, as and for the purposes set forth.

6. The combination, with the lever G and link H, of the spring J, lug J′, frame E, and frame C, the said spring serving to counterbalance the weight of the frame E and assist its upward movement when the frame C is thrown forward by the operator.

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Witnesses:
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