

(No Model.)

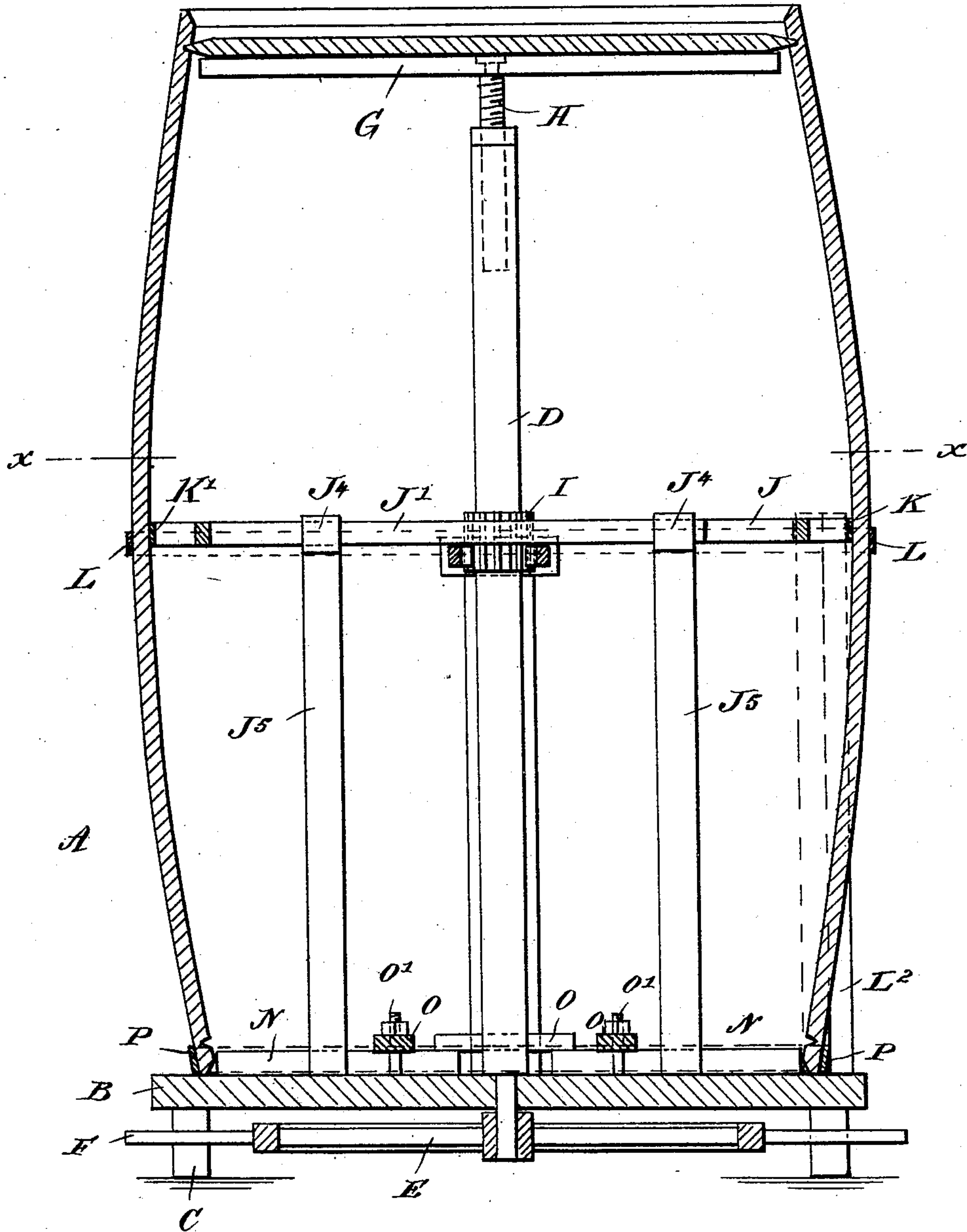
2 Sheets—Sheet 1.

H. T. DRAKE.
BARREL MAKING MACHINE.

No. 452,666.

Patented May 19, 1891.

Fig. 1.



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Fig. 2.

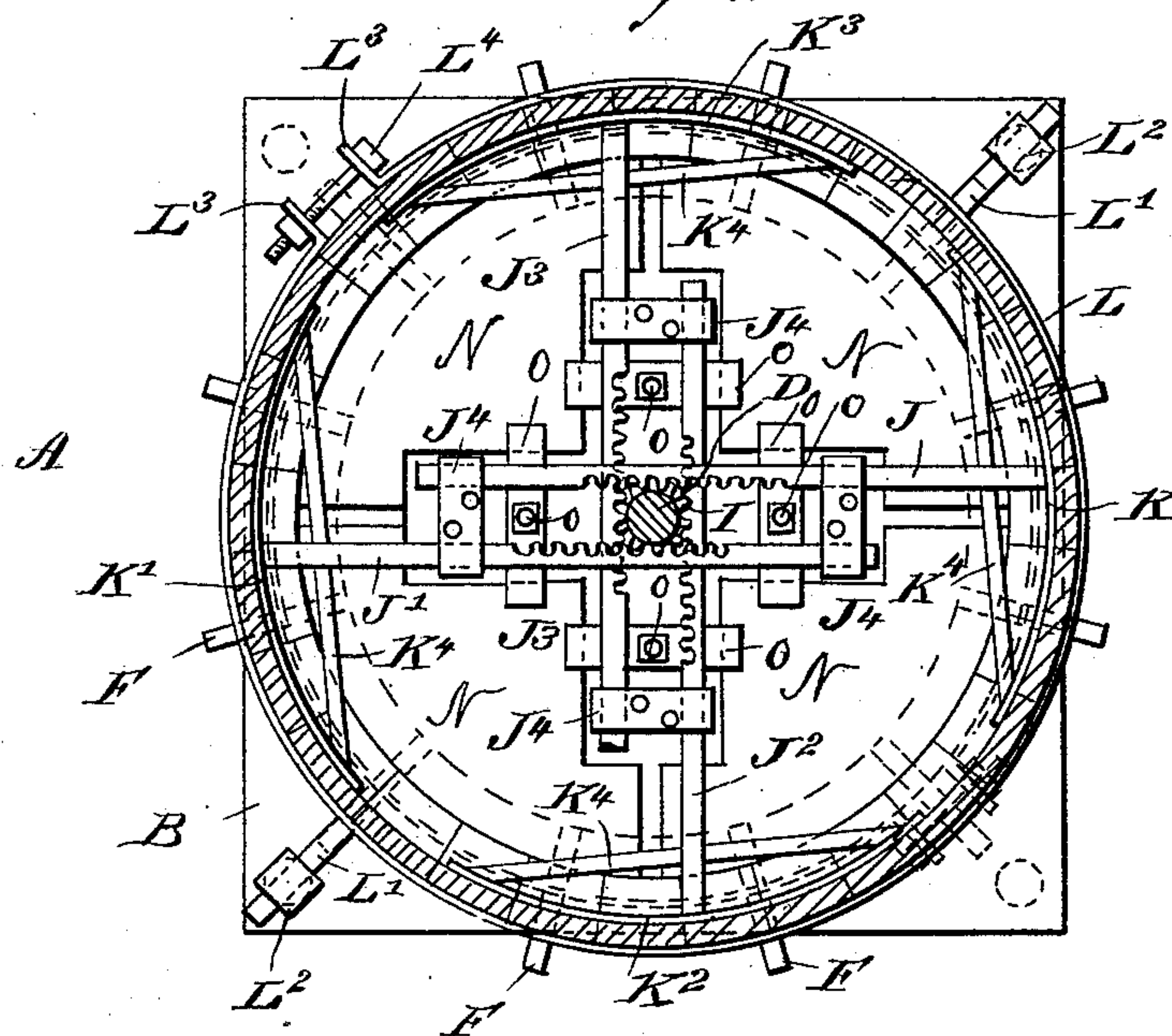
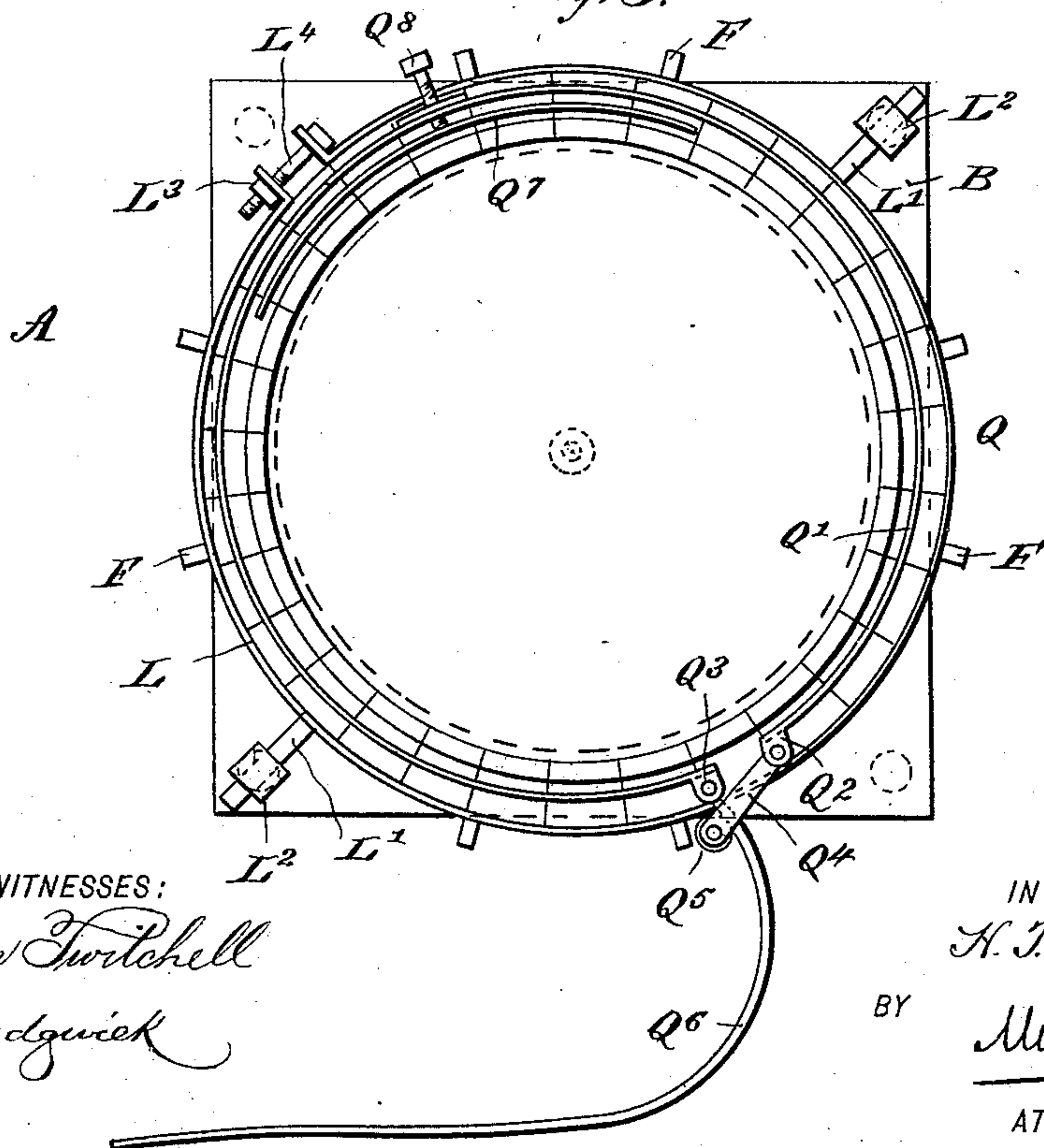


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY T. DRAKE, OF WADESBOROUGH, NORTH CAROLINA.

BARREL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 452,666, dated May 19, 1891.

Application filed April 23, 1890. Serial No. 349,063. (No model.)

To all whom it may concern:

Be it known that I, HENRY T. DRAKE, of Wadesborough, in the county of Anson and State of North Carolina, have invented a new and Improved Barrel-Making Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved barrel-making machine which is simple and durable in construction and specially designed to set up and hold the staves in the proper place while the hoops are driven thereon.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement with the staves in place. Fig. 2 is a reduced sectional plan view of the same on the line *xx* of Fig. 1; and Fig. 3 is a plan view of the same, also showing the device for tightening the staves.

The improved barrel-making machine A is provided with a platform B, set on suitable lugs C, resting on the ground or floor of the building in which the machine is used.

In the center of the platform B is mounted to turn in suitable bearings a vertically-arranged shaft D, provided on its lower end on the under side of the platform B with a wheel E, having a series of projecting arms or handles F, extending from the rim of the said wheel to be engaged by the foot or hand of the operator for turning the said wheel E in order to turn the vertical shaft D.

On the upper end of the shaft D is arranged a platform G, adapted to support the head of the barrel and held on a screw H, screwing in the upper end of the said shaft D, so as to raise or lower the platform G to the proper place to bring the head of the barrel into the proper position in relation to the staves.

On the shaft D, near its middle, is secured a gear-wheel I, in mesh with a series of racks J, J', J², and J³, of which the racks J and J' are arranged parallel to each other on oppo-

site sides of the said gear-wheel I and extending in opposite directions. The racks J² and J³ are similarly arranged to each other, at right angles to the racks J and J', as is plainly illustrated in Fig. 2. The racks J, J', J², and J³ are fitted to slide horizontally in suitable bearings J⁴, secured on the upper ends of posts J⁵, erected on the platform or base B.

On the outer ends of the racks J, J', J², and J³ are ring-sections K, K', K², and K³, held in place on the said racks by suitable braces K⁴ and adapted to engage the inside of the staves to be set up on the machine to form the barrel.

On the outside of the staves, about opposite the ring-sections K, K', K², and K³, is arranged a ring L, supported on rods L', arranged radially and fitted to slide in suitable posts L², erected on the platform or base B. The ring L is preferably open and has its ends formed with outwardly-extending lugs or flanges L³, connected with each other by a bolt L⁴, which serves to loosen or tighten the said ring on the staves whenever desired and according to the diameter of the barrel to be made. The ring-sections K, K', K², and K³, as well as the ring L, are arranged at such heights above the platform B as to be about in the middle of the staves when the latter are set up between the said ring L and the ring-sections K, K', K², and K³, as is plainly shown in Fig. 1.

On the top of the platform or base B is arranged a false bottom N, preferably made in four sections, adapted to be moved inward or outward, according to the size of the barrel to be made, and also adapted to be clamped in place when properly adjusted by a bar O, passing over two adjoining sections and clamped down on the said sections by a bolt O', held in the base B. The lower inner ends of the staves are adapted to rest against the periphery of the said false bottom O, and the outsides of the staves at their lower ends are adapted to be engaged by a ring P, similar in construction to the ring L, above described.

In order to press the staves firmly in position after they are assembled in the machine, a tightening device Q is provided, having an open ring Q', formed at its ends with outwardly-extending lugs or flanges Q² and Q³, (see Fig. 3,) of which the lug Q² holds the pivot

for a link Q^1 , carrying in its free end a friction-roller Q^5 , adapted to be engaged by a curved lever Q^6 , pivoted on the other lug Q^3 of the said ring Q' . When the lever Q^6 is dis-
 5 engaged from the friction-roller Q^5 , the said ring Q' , which is of spring material, can be widely opened, so as to be readily passed over the assembled staves in the machine, and then the said lever Q^6 is passed onto the friction-
 10 roller Q^5 and drawn toward the machine, so as to draw the link Q^1 toward the lug Q^3 , thereby tightening the ring Q' around the staves, which are thus tightly drawn together to receive the hoops.

15 On the ring Q' , in about its middle and opposite the lugs Q^2 and Q^3 , is arranged a screw Q^8 , carrying at its inner end a segment Q^7 , which can be moved inward and outward, so as to adjust the ring Q' to the different diam-
 20 eters of the barrels to be made. When the screw Q^8 is turned to move the segment Q^7 inward, the internal diameter of the ring Q' will be lessened, so that it may be used on a smaller barrel than when the segment lies
 25 close to the ring, as will be readily understood. If it is found that the ring Q' does not, when tightened by the action of the lever, sufficiently compress the staves, then the screw Q^8 may be turned to move the segment
 30 inward, which will cause the ends of the ring to be further separated and permit the lever to exert a greater contracting force on the ring.

The operation is as follows: When the
 35 staves of a barrel are to be assembled, the ring-sections K , K' , K^2 , and K^3 are moved outward opposite the ring L sufficiently to form a space between the said ring L and the ring-sections for the admission of the
 40 staves, which are passed through the space to rest at their lower ends between the rim of the false bottom N and the ring P . The ring-sections are moved to this position by turning the shaft D , the operator actuating the
 45 wheel E , as previously described. The head of the barrel has previously been placed on the platform G , so that when the staves are set in position, as described, the head of the barrel is in the proper place to engage the
 50 usual groove or croze in the ends of the staves.

The tightening device Q is applied in the manner above described when the several staves have been assembled, so that the staves are drawn tightly together to permit of driv-
 55 ing the hoops onto the assembled staves. When this has been done, the tightening device Q is removed and the shaft D is turned in an opposite direction, so that the ring-sections K , K' , K^2 , and K^3 move inward a suit-
 60 able distance to permit of removing the barrel from the machine. It is understood that the other head is not put in the barrel until after the latter has been filled.

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

1. The combination, with the horizontal base having vertical uprights on its upper side, of upper and lower rings to support the center and lower end of the staves at their outer
 70 sides, a false bottom or circular support on the upper side of the base concentric with the lower ring, a space being formed between the two for the lower ends of the staves, and an expansible sectional ring concentric with the
 75 upper outer ring to force the centers of the staves outward, substantially as set forth.

2. The combination, with the base having on its upper side inner and outer vertical posts, of upper and lower rings mounted on the
 80 outer posts, bearings mounted on the upper ends of the inner posts, two pairs of horizontal rack-bars at right angles to each other mounted in said bearings, a vertical shaft having a gear meshing into all of the racks
 85 to throw the bars of each pair in opposite directions, ring-sections on the outer ends of the said bars concentric with the upper outer ring to press the centers of the staves out-
 90 ward, and a wheel on the lower end of the shaft under the base and having radial arms projecting outward to or beyond the edge of the base, substantially as set forth.

3. The combination, with the base and the upper and lower outer rings, of the vertical
 95 shaft having a gear about in line with the upper ring, the horizontal rack-bars operated by said gear and having ring-sections on their outer ends, a platform mounted on the upper
 100 end of the shaft, and an operating device on the lower end of the shaft under the platform, substantially as set forth.

4. A barrel-making machine comprising a base B , an expansible segmental false bottom on its upper side, vertical posts beyond said
 105 bottom, upper and lower horizontal rings mounted on the said posts, inner vertical posts, the horizontal rack-bars on the upper ends of said inner posts, the central vertical shaft mounted at its lower end in the base B
 110 and extending above the said rack-bars, a gear-wheel on the shaft between its ends engaging said rack-bars, a vertical screw turning in the upper end of the shaft and a hori-
 115 zontal platform on the said screw, and an operating-wheel on the lower end of the shaft under the base, substantially as set forth.

5. In a barrel-making machine, the combination, with a base, of a false bottom made in sections and held adjustably on the said base,
 120 and a ring arranged concentric with the rim of the said false bottom, substantially as shown and described.

6. In a barrel-making machine, a stave-tightening device comprising a split ring, a
 125 link pivoted on an end of the said split ring, a curved lever fulcrumed on the other end of the said split ring and adapted to engage the free end of the said link, and a screw screw-
 130 ing in the said split ring opposite its split, and a segment held on the said screw, substantially as shown and described.

7. In a barrel-making machine, the combination, with vertical posts, of a horizontal transversely-divided ring having on its periphery radial arms sliding in and out on said posts, and an adjusting-bolt connecting the ends of the ring, whereby when the bolt is turned to expand or contract the ring the arms will slide outward and inward, respectively, on said posts, substantially as set forth.

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Witnesses:

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