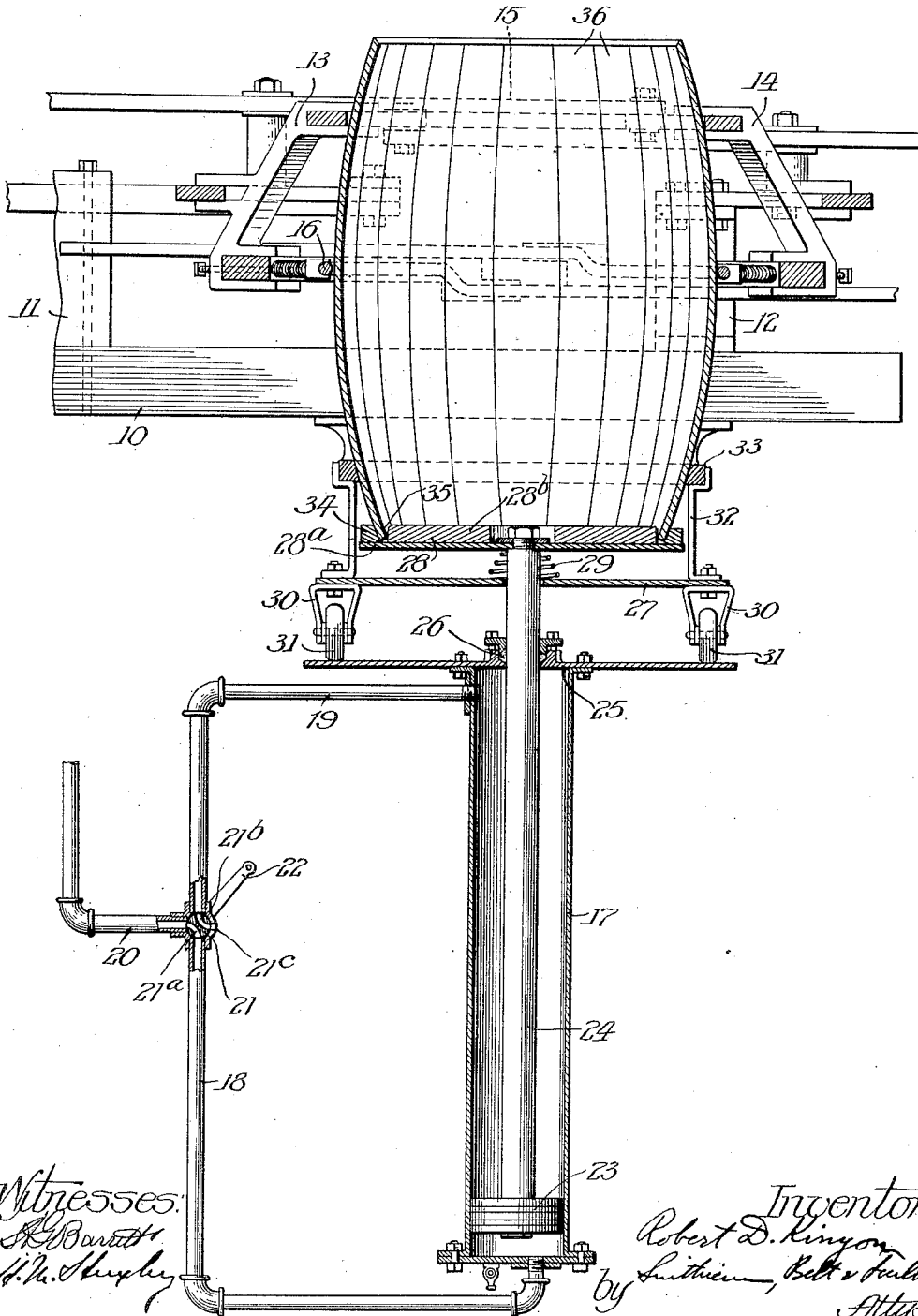


R. D. KINYON.
 BARREL FORMING MACHINE.
 APPLICATION FILED OCT. 26, 1911.

1,044,664.

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ROBERT D. KINYON, OF CHICAGO, ILLINOIS.

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Specification of Letters Patent.

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Application filed October 26, 1911. Serial No. 657,006.

To all whom it may concern:

Be it known that I, ROBERT D. KINYON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Barrel-Forming Machines, of which the following is a specification.

My invention relates to barrel forming machines, and refers particularly to mechanism which is adapted to remove the barrel after it has been formed in the machine.

In Patent No. 1004540 issued to me on September 26, 1911, I described and claimed a machine by which a plurality of barrel staves could be readily assembled and formed into a barrel.

The present invention constitutes an improvement on the invention described in the above-mentioned patent, and has for its object the use of readily operable means by which the barrel may be easily raised after it has been formed, and thus readily be removed from the machine.

The various advantages inherent in my improvement and the means by which I attain the desired result may be readily understood by reference to the accompanying drawing, which represents a preferred embodiment of my invention, and is a vertical longitudinal section through a portion of the barrel forming machine and the barrel raising mechanism associated therewith.

A portion of the barrel forming machine proper is illustrated in the drawing as consisting of the frame member 10, which acts to support the uprights 11 and 12, to which, in turn, are attached the brackets 13 and 14. These brackets are provided with the movable forming members 15 and the spring formers 16 in exactly the same manner as described in my previous patent above mentioned. Directly below that portion of the barrel forming machine in which the barrel itself is assembled is located a cylinder 17, to the opposite ends of which are connected the pipes 18 and 19, these pipes in turn being themselves connected to the main supply pipe 20, which is connected with a source of compressed fluid, preferably air. Between the main pipe 20 and the pipes 18 and 19 is located the valve 21 having therein the ports 21^a and 21^b. Connected to the valve 21 is the operating handle 22. When the valve is in the position shown in the drawing, the

port 21^a connects the pipe 18 with the pipe 20, while the pipe 19 is connected through the port 21^b with the vent 21^c leading to the atmosphere. On the other hand, when the handle 22 is moved downwardly from the position shown in the drawing the pipe 20 may be connected with the pipe 19 through the port 21^a and the pipe 18 is connected with the vent 21^c through the port 21^b.

Operating within the cylinder 17 is a piston 23 provided with the piston rod 24, which passes through the cylinder head 25, this cylinder head preferably being extended radially beyond the periphery of the cylinder itself. A packing ring 26 is provided in the cylinder head to prevent escape of fluid. The piston rod 24 extends upwardly through a plate 27, and is connected at its upper end with the barrel supporting base 28, this connection being of such nature that the base 28 is free to rotate with respect to the piston rod 24. Between the plate 27 and the base 28 is located the spring 29.

Carried by the plate 27 are the brackets 30, in which are mounted the rollers or wheels 31 which preferably rest on the radially extended cylinder head 25, although, if preferred, these rollers may rest directly on a floor below which extends the cylinder 17. Also carried by the plate 27 are the brackets 32, suitably bent at their upper ends to support the bilge hoop 33.

It will be apparent from the drawing that the base 28 consists of a bottom plate 28^a and an upper plate 28^b, the latter being of smaller diameter than the former. A chime hoop 34 may be placed in position on the plate 28^a forming a groove 35 between the periphery of the plate 28^b and said chime hoop.

Having thus described the construction of the various parts used in my invention, its operation may now be readily understood. When a barrel is to be formed the staves are placed in position with their lower ends in the groove 35 formed between the base plate 28^b and the chime hoop 34. The machine is then operated to cause the movable forming members 15 and the spring formers 16 to approach each other, whereby the barrel is brought into the shape shown in the drawing. A truss hoop may then be applied to the top of the barrel in order to keep the staves in position. During the

formation of the barrel it sometimes happens that a slight rotary motion is given to the latter on account of the fact that some staves resist the forming action more than others. When this occurs the base 28 is free to rotate on the end of the piston rod 24, and the plate 27 is also free to rotate by means of the rollers 31 and on account of the fact that the aperture in the plate 27 through which the piston rod 24 passes is larger than the piston rod itself. Moreover, in forming the barrel the base 28 may be depressed against the tension of the spring 29, while this spring always keeps the base in contact with the lower edges of the staves 36. After the barrel has been formed the formers are released and the valve 21 moved to such position that the pipe 20 is connected with the pipe 18. Compressed fluid is thereby allowed to enter the lower end of the cylinder 17, and the piston 23 is moved upwardly, the fluid above the piston 23 escaping through the pipe 19, the port 21^b and the vent 21^c. This movement carries the base 28 in an upward direction, and is continued until the barrel is lifted a sufficient distance to be clear of the forming machine. The barrel may then readily be removed with its chime hoop 34. A new chime hoop is then placed in position, and the valve 21 is moved so that the pipe 20 is connected with the pipe 19, thereby introducing fluid into the upper part of the cylinder 17. This causes the piston 23 to be moved downwardly into the position indicated in the drawing. As the piston moves downwardly the air below the piston is expelled through the pipe 18, port 21^b and vent 21^c. Although ordinarily I prefer to allow the bilge hoop 33 to remain in connection with the brackets 32, if so desired this hoop may be carried upwardly with the barrel and a new bilge hoop placed in position when the next barrel is formed.

It will be apparent to those skilled in the art that many changes could be made in the detailed construction of the various parts

which I have described without departing from the spirit or scope of my invention.

What I claim is:

1. In a barrel forming machine, the combination of a supporting base, means for compressing the staves to form a barrel, and means for raising said base to lift the barrel clear of the compressing means, substantially as described.

2. In a barrel forming machine, the combination of a supporting base, laterally movable means for compressing the staves to form a barrel, and fluid controlled means for actuating said base to lift the barrel clear of the compressing means, substantially as described.

3. In a barrel forming machine, the combination of a supporting base, means for compressing the staves to form a barrel, a cylinder below said base, a piston operable within said cylinder and connected with said base, and fluid means for operating said piston to lift the barrel to free the same from the compressing means, substantially as described.

4. In a barrel forming machine, the combination of a stave supporting base, rotatable bilge hoop supporting means independent of said base, means for compressing the staves to form a barrel, and means for actuating said base to lift the barrel clear of the compressing means, substantially as described.

5. In a barrel forming machine, the combination of a stave supporting base, a bilge hoop supporting member independent of said base, rollers carried by said member whereby the latter may be rotated, laterally movable means for compressing the staves to form a barrel, and means for actuating said base to lift the barrel clear of the compressing means, substantially as described.

ROBERT D. KINYON.

Witnesses:

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