No. 778,881. PATENTED JAN. 3, 1905.

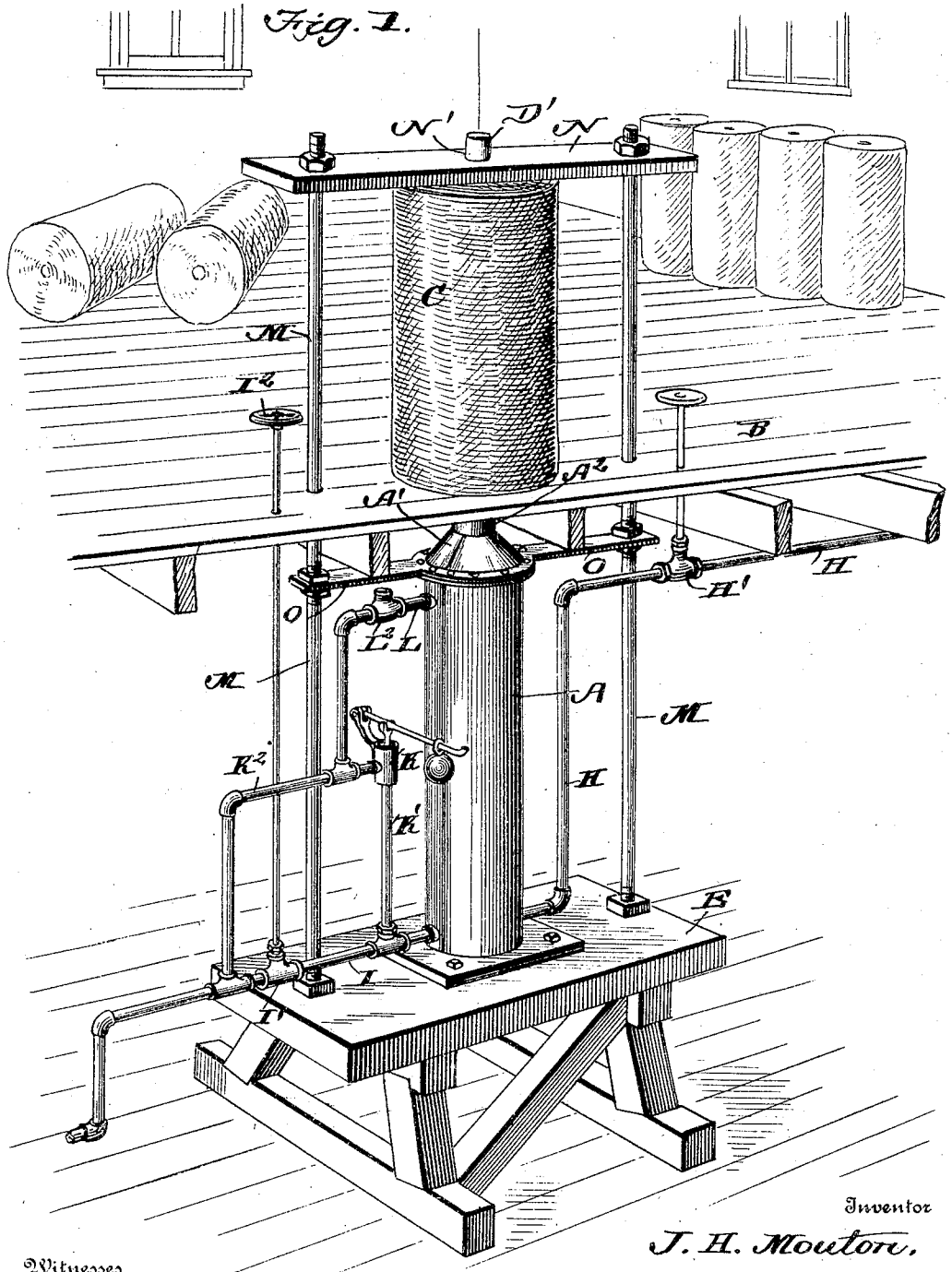
J. H. MOUTON.

DEVICE FOR REMOVING COTTON BALE AXLES.

APPLICATION FILED MAR. 24, 1903. RENEWED APR. 13, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



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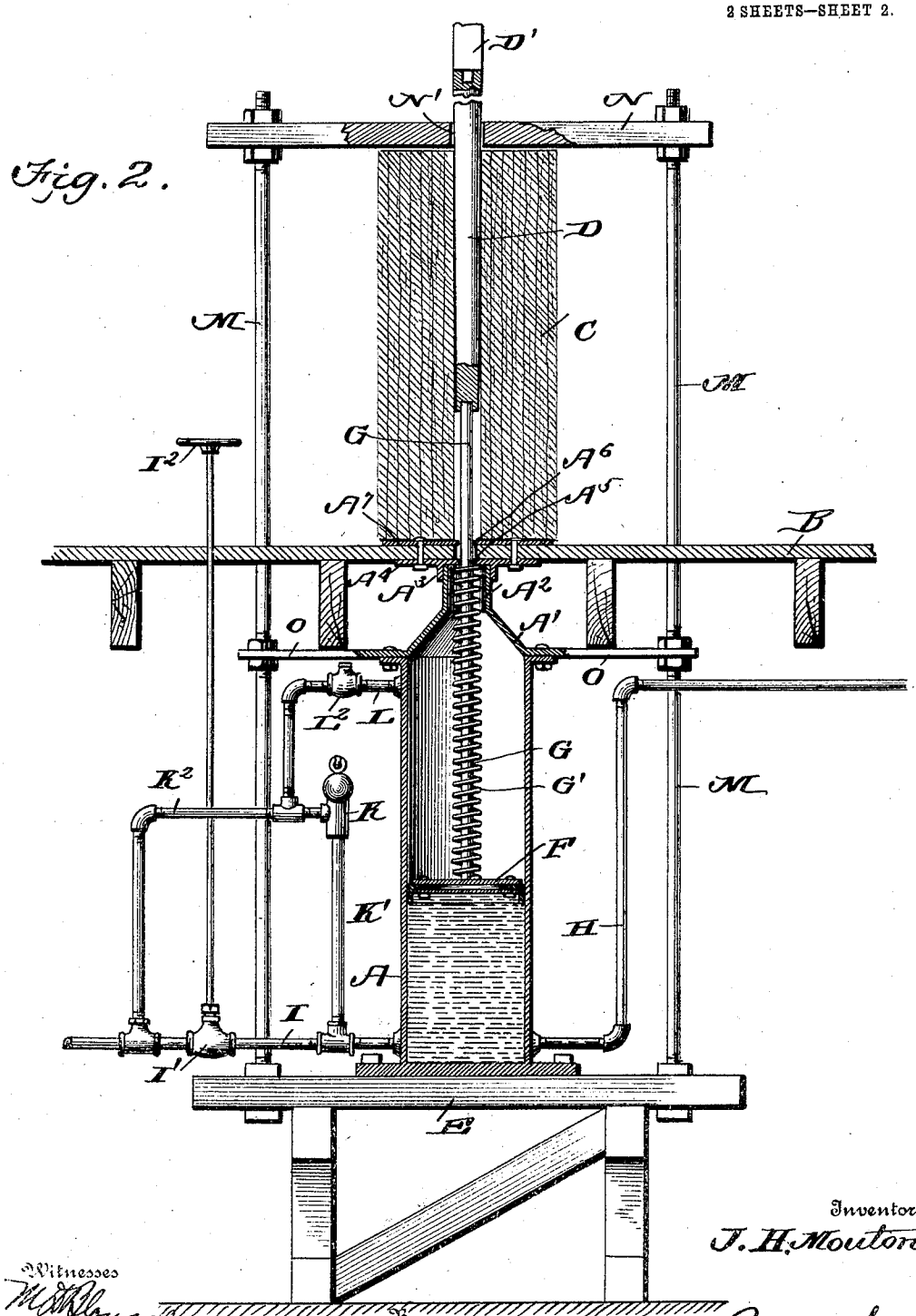
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2 SHEETS—SHEET 2.

Fig. 2.



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No. 778,881. Patented January 3, 1905.

UNITED STATES PATENT OFFICE.

JOSEPH HORACE MOUTON, OF LAFAYETTE, LOUISIANA.

DEVICE FOR REMOVING COTTON-BALE AXLES.

SPECIFICATION forming part of Letters Patent No. 778,881, dated January 3, 1905.

Application filed March 24, 1903. Renewed April 13, 1904. Serial No. 203,032.

To all whom it may concern:

Be it known that I, JOSEPH HORACE MOUTON, a citizen of the United States, residing at Lafayette, in the parish of Lafayette and State of Louisiana, have invented a new and useful Device for Removing Cotton-Bale Axles, of which the following is a specification.

This invention is a device for removing the axle or core from round cotton-bales.

The object of the invention is to provide a simple and effective device by means of which the said axles or cores can be quickly or easily removed without damaging either the axles or the bale of cotton. Heretofore these axles or cores have been removed by driving them out by means of a hammer, and this operation very frequently damages the end of the core or axle and also results in damaging the bale. By means of my invention, however, these objections are avoided and the axle or core of the round bale is quickly and easily forced therefrom; and my invention consists, essentially, in the employment of a rod adapted to engage one end of the axle or core, said rod being connected to a piston arranged within a cylinder into which is introduced water, oil, steam, or other fluid for the purpose of operating the piston and rod, together with a suitable guiding-frame whereby the axle or core is guided and kept straight as it is forced from the bale.

The invention consists also in the employment of certain exhaust and safety devices by means of which all accidents to the apparatus are avoided.

The invention consists also in certain details of construction and novelties of combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view illustrating an apparatus constructed in accordance with my invention, said apparatus being shown in operation. Fig. 2 is a vertical view of the same.

In constructing an apparatus in accordance with my invention I employ a cylinder A, which is preferably arranged in an upright or vertical position and beneath the floor B, upon which the bale rests. The cylinder A is preferably mounted upon a suitable platform E; but it will of course be understood that the cylinder may rest upon any suitable support or base. The bottom of the cylinder is closed, and at the upper end the cylinder has a conical-shaped head A′, terminating in a reduced cylindrical portion A^2, which is adapted to fit into the collar A^3, formed upon the under side of a plate A^4, attached to the bottom of the floor, said plate having a central aperture A^5, which aperture is arranged in alinement with the aperture A^6, produced in the plate A^7, fastened upon the upper face of the floor and upon which the bale C rests. A piston F fits snugly within the cylinder and has a rod G rigidly connected thereto and extending upwardly therefrom, said rod being adapted to be projected through the openings in the plate and engage the socket end of the axle or core for the purpose of forcing said axle or core from the center of the bale, and in order to move the piston upwardly to accomplish this purpose a supply-pipe H conducts water, oil, or other fluid to the lower portion of the cylinder, said pipe being provided with a suitable controlling-valve H′. An exhaust-pipe I leads from the opposite side of the cylinder, said pipe being provided with a suitable controlling-valve I′, the stem of which projects upwardly through the floor B and is provided with a suitable hand-wheel I^2. A safety-valve K is arranged upon the upper end of a pipe K′, which communicates with the exhaust-pipe I, and a second pipe K^2 leads from the safety-valve to the exhaust-pipe I at a point beyond the valve I′. An overflow-pipe L communicates with the upper end of the cylinder and is connected at its lower end to the pipe K^2, said overflow-pipe being provided with a check-valve L^2, which will permit the fluid to pass from the cylinder out through the overflow-pipe, but will not permit said fluid to enter the cylinder through the overflow-pipe. A spring G′ surrounds the piston-rod G and bears upon the piston, the tendency of said spring being to

return the piston to its lower position as soon as the actuating fluid is exhausted. Upright rods M are connected to a platform E and pass upwardly through the floor B and are connected at their upper ends by a cross-piece N, having an opening N′, through which the axle or core is forced, said cross-piece, with the opening therein, serving as a guide for the said axle or core, and when the operation is first started a pin D′ is inserted in the upper socketed end of the axle or core, said pin being placed within the opening N′, so that when the apparatus is operated to force the axle or core upwardly the upper end of said axle or core will be guided into or through the opening N′.

Brace rods or plates O connect the cylinder-head to the upright rods M, thereby holding the cylinder fast in its upright position.

In operation the bale is placed upon the floor, resting upon the apertured plate A^7, the center thereof being arranged directly over the aperture A^6. The valve H′ is then opened, and the fluid passing through the pipe H enters the cylinder at the lower end and forces the piston upwardly, carrying with it the piston-rod G, which passes upwardly through the perforated plates A^4 and A^7, the upper end of the piston-rod engaging the lower end of the axle or core, and the continued upward movement of the piston and rod forces the axle or core out through the aperture cross-piece N, the axle or core being slightly tapered, as shown, and it will of course be understood that the piston-rod engages the smaller end thereof. If for any reason the apparatus should fail to work, the safety-valve K will permit the fluid to escape as soon as a predetermined pressure has been reached, and all damage to the apparatus is thereby avoided. As soon as the axle or core has been forced from the bale the fluid-pressure is cut off and the exhaust-valve opened and the cylinder will then be drained, and the spring G′ will immediately force the piston to its normal or lower position, thereby withdrawing the piston-rod out of the bale, and the bale can then be removed from beneath the cross-piece N. In case any liquid should be forced beyond the piston it will immediately escape through the overflow-pipe L; but it will be impossible for the liquid to enter the cylinder through this overflow-pipe L, inasmuch as said overflow-pipe is provided with a check-valve. As before stated, the pin D′ is inserted in the upper end of the axle or core and serves to guide the said axle or core during the first moment of its movement. I have shown my apparatus as arranged in a vertical position, as that position is believed to be the most convenient; but it will be understood that I do not limit myself to a vertical upward movement of the piston and rod, as it is obvious that the same results could be accomplished with the apparatus arranged in a horizontal position.

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

1. An apparatus of the kind described, comprising a cylinder a piston arranged therein, a rod connected to said piston and passing through the head of the cylinder, the apertured plates through which the piston-rod passes, the upright rods, the connecting cross-piece having an aperture therein, and the spring for returning the piston and rod to their lowermost positions, substantially as set forth.

2. In an apparatus of the kind described, the combination with a suitable base, of a cylinder arranged thereon, a piston within the cylinder, a rod connected to the piston and passing through the head of the cylinder, the apertured plates through which the rod passes, the upright rods, the connecting cross-piece having a central aperture, the inlet, outlet and overflow pipes, the outlet-valve, safety-valve and check-valve arranged substantially as described, and the spring for returning the piston and rods to their lowermost positions, substantially as set forth.

3. An apparatus of the kind described, comprising a cylinder, a piston arranged therein, a plunger connected to said piston having a spring coiled around it within the cylinder, said plunger extending through the head of the cylinder, inlet and outlet pipes connected to the lower end of the cylinder, an overflow-pipe connected to the upper end of the cylinder, and rods extending upwardly having their ends connected together by an apertured cross-piece, substantially as shown and described.

4. An apparatus of the kind described, comprising a base, a cylinder mounted thereon, apertured plates, a piston working therein, a rod connected to said piston and extending through the head of the cylinder and the apertured plates, a spring surrounding the rod within the cylinder, an inlet-pipe connected to one side of the cylinder having a controlling-valve, an exhaust-pipe connected to the opposite side of the cylinder provided with a controlling-valve, a pipe extending upwardly from the exhaust-pipe provided with a safety-valve, an overflow-pipe connected to the upper end of the cylinder and to the exhaust-pipe beyond the controlling-valve, a check-valve arranged on the overflow-pipe, rods extending upwardly having their ends connected by an apertured cross-piece, and a guide-pin adapted to fit in the aperture in the cross-piece, substantially as shown and described.

5. An apparatus for forcing the core out of a bale of cotton or the like, comprising a base, a cylinder mounted on the base, a piston

mounted in the cylinder and having a piston-rod extending out through the cylinder-head, means for admitting a fluid under pressure to the lower end of the cylinder, an apertured support for a bale above the upper end of the cylinder, and through which the piston-rod is adapted to pass, and means for holding the bale on the support with its core over the aperture of said support.

JOSEPH HORACE MOUTON.

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