J. F. TAYLOR.

Combination Cotton Press.

No. 167,363. Patented Aug. 31, 1875.

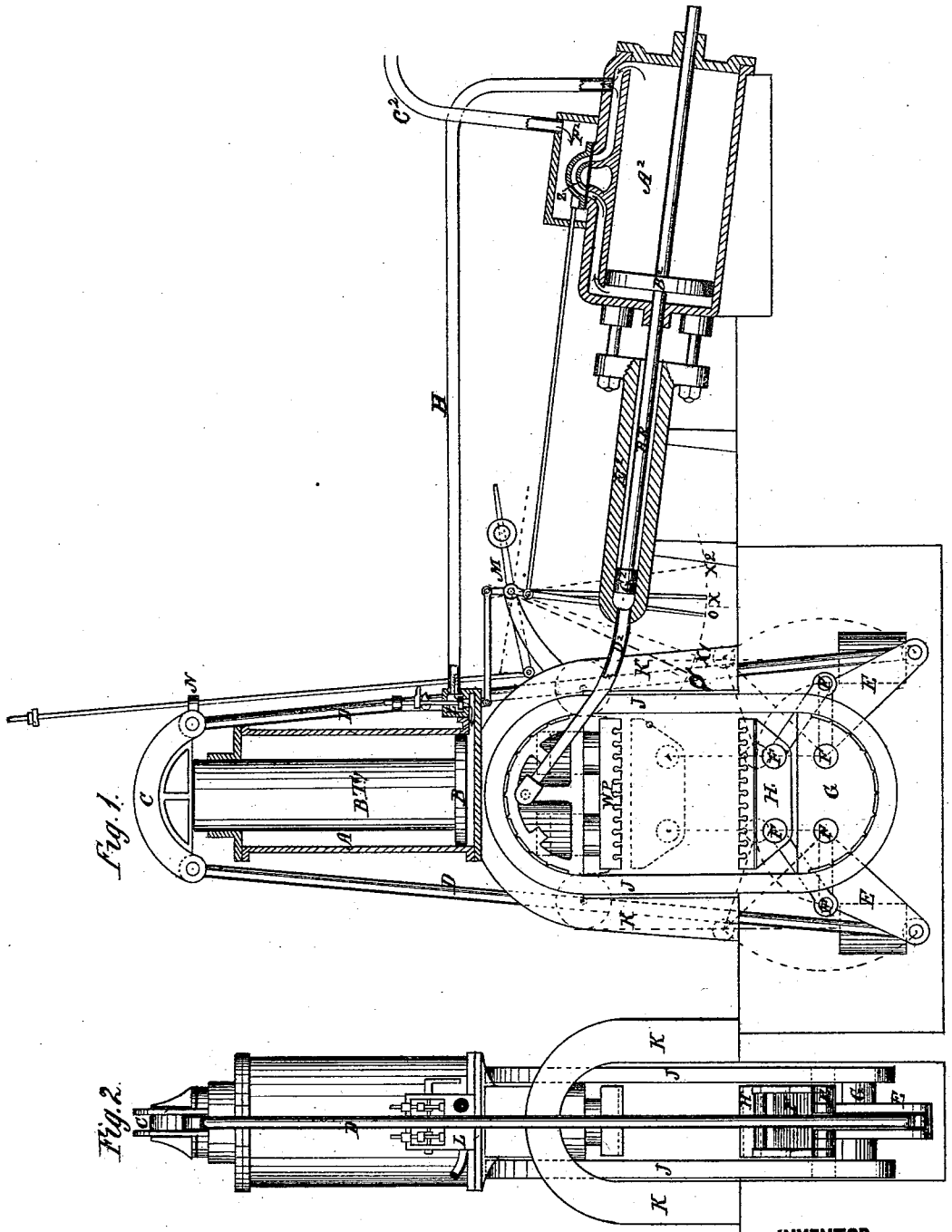

Fig. 1.

Fig. 2.

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JOHN F. TAYLOR, OF CHARLESTON, SOUTH CAROLINA.

IMPROVEMENT IN COMBINATION COTTON-PRESSES.

Specification forming part of Letters Patent No. **167,363**, dated August 31, 1875; application filed June 12, 1875.

To all whom it may concern:

Be it known that I, JOHN F. TAYLOR, of the city and county of Charleston, and State of South Carolina, have invented a new and Improved Combination Cotton-Press; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a vertical front elevation with the steam-cylinders in section. Fig. 2 is a vertical end elevation, the same letters referring to the same parts in each.

The object of my invention is to produce a press of great power, especially adapted to compressing cotton-bales to the smallest possible dimensions for shipment, and that with the greatest possible speed and with the least possible consumption of fuel. To accomplish this I have made a combination of well-known mechanical devices.

A is a steam-cylinder; B, the steam-piston, which operates the toggle-arms; B T, the piston-trunk; C, the cross-head above piston-trunk; D, rods connecting cross-head with levers E; F, toggle-joints; G, pedestal suspended in the bottom part of the links; H, lower platen; J, links hung upon a projection of the framing K; L, steam-chest and valve; M, valve-gearing; N, tappet on cross-head to open valve Z; W P, water-platen; X, hand-lever to operate valve L; Z, equalizing-valve; A^2, the second steam-cylinder; B^2, steam-piston operating water-piston; B R, piston-rod; G^2, water-piston attached to same rod as B^2; D^2, water-pipe connecting cylinder of water-platen with cylinder E^2; F^2, steam-chest; C^2, steam-pipe from boiler; H^2, steam-pipe connecting the cylinders A and A^2; O, hand-lever to operate valve Z.

Having thus named the different parts, the operation will be as follows: The cylinder A^2 being full of steam that compressed the previous bale, a fresh bale is placed on the platen H. The hand-lever X is moved to X′, thereby raising the steam-valve L, when the steam will flow from cylinder A^2 to cylinder A and push up the piston B, which, through the medium of piston-trunk B T, cross-head C, connecting-rods D, levers E, toggle-joints F, and lower platen H, will raise the cotton-bale and force it against the water-platen W P, the movable part of which will offer little resistance, merely pushing the water out of the cylinder part of the platen, through water-pipe D^2, against water-piston G^2, and that, through the medium of the piston-rod B R, pushes back piston B^2, which will offer no resistance, the steam being free to flow from one end of the cylinder to the other, through the equalizing-valve Z. This piston will continue to move back so long as the valve Z remains in that position, and until pressure in A and A^2 is equalized. But when the toggles have reached a certain point the valve Z will be moved either by hand or by the tappet N on the cross-head, the hand-lever moving to O′. This movement can be so adjusted that steam from the boiler can flow into that cylinder A^2 at a time when the boiler-pressure would merely stop it from going farther back, or it can be so fixed that when the toggles have reached a certain point this piston can be set in motion to meet the toggle-power, and so press the bale (large or small) to whatever the boiler-pressure will give it. The bale being tied and ready to come out of the press, the lever O is moved back from O′ to O, bringing the equalizing-valve over both cylinder-ports, thus equalizing the steam on both sides of the piston, which will remain perfectly still until moved by the toggles again on the next bale. When the toggles have reached their ultimate point the lever X, being at X′, is moved back to X, closing the steam-valve. The lever X is now moved to X^2, raising the exhaust-valve to cylinder A, allowing the piston B to return again to the bottom of the cylinder A, and so ends the operation of pressing one bale of cotton.

The lower or movable part of the water-platen will require to be counterbalanced, which I propose to do in any convenient way. I have shown one way in Fig. 1, by pulleys and weights.

Having thus described my invention, what I claim as new is—

1. The combination, with a steam-piston, of rods D, levers E, toggle-joints F, and lower platen H, substantially as described.

2. The combination of the links J with the

projections cast upon the framing K to receive the same, and the pedestal G, supported within the links, as and for the purpose described.

3. The combination, with the steam-piston B^2 and water-piston G^2, working in their respective cylinders A^2 E^2, of the valve Z, constructed with a port, as shown and described, which adapts it to establish communication between the spaces in the steam-cylinder, on opposite sides of the piston, as and for the purpose specified.

4. The combination of the valve Z with the valve-gear M and the tappet N, operated by the piston B, as and for the purpose described.

5. The combination of the cylinder A^2, having an equalizing-valve, Z, the cylinder and piston A B, which operates the toggle-arms, the communicating pipe H^2, the water-platen and cylinders, the water-pipe and cylinder D^2 and E^2, and the pistons G^2 and B^2, upon one and the same rod, as and for the purpose set forth.

JOHN F. TAYLOR.

Witnesses:
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