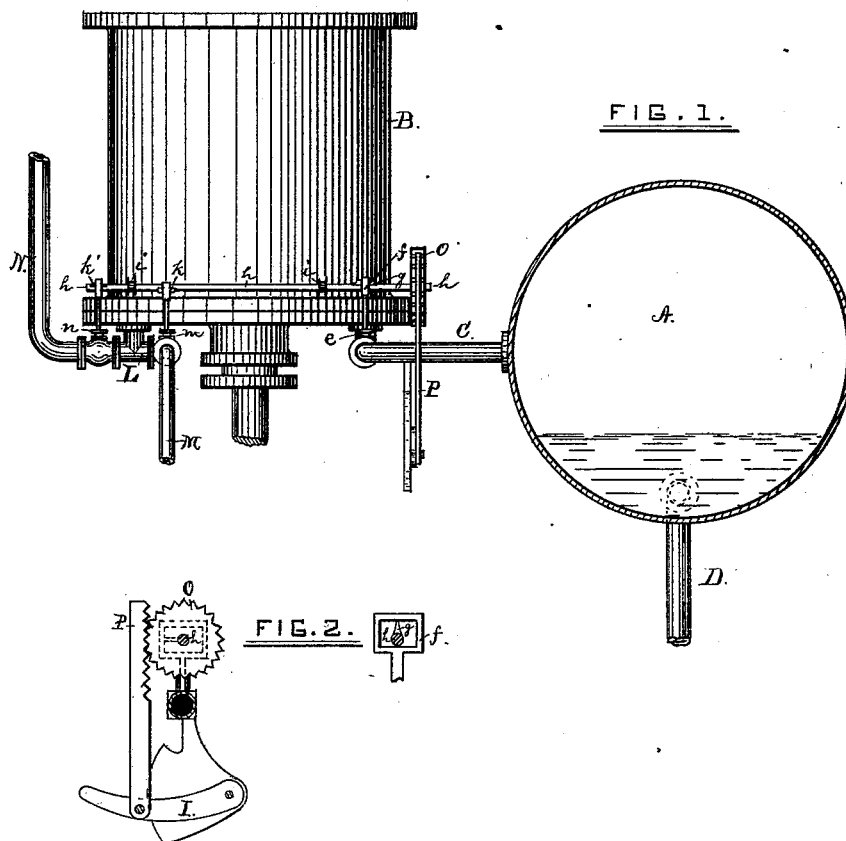


R. STENHOUSE.
Steam Cotton-Press.

No. 215,076.

Patented May 6, 1879.



WITNESSES.

J. C. Hubbell
J. N. Müller

INVENTOR.

Richard Stenhouse

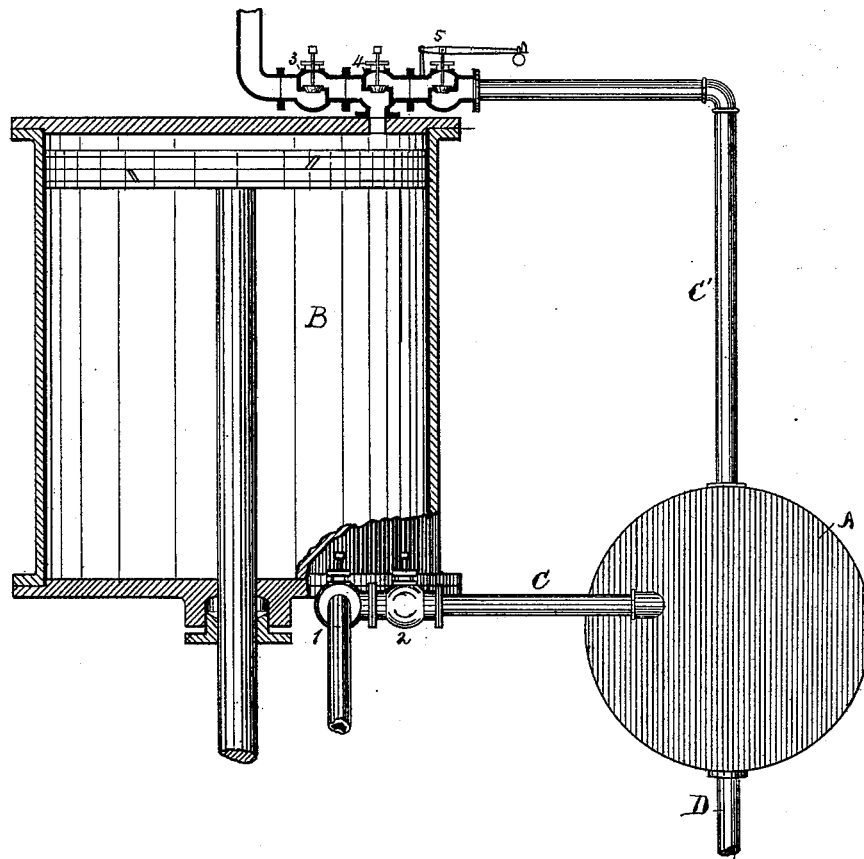
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UNITED STATES PATENT OFFICE.

RICHARD STENHOUSE, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN STEAM COTTON-PRESSES.

Specification forming part of Letters Patent No. **215,076**, dated May 6, 1879; application filed November 25, 1878.

To all whom it may concern:

Be it known that I, RICHARD STENHOUSE, a resident of the city of New Orleans, parish of Orleans, and State of Louisiana, have invented a certain new and useful Improvement in Steam Cotton-Presses; and I do hereby declare the following to be a full, clear, and correct description of the same, reference being had to the annexed drawings, making a part of this specification.

This invention affords a means whereby steam cotton-presses may be worked to better advantage and with more economy than heretofore; and it consists in the addition of an exhaust-steam reservoir and of an arrangement of valves, all of which are clearly shown in the drawings, and hereinafter more fully described.

Sheet 1, Figure 1, represents my invention as applied to an open-top cylinder, and Fig. 2 details of the valve-gearing. On Sheet 2 the invention is shown in connection with a double-headed cylinder.

Similar letters of reference indicate corresponding parts in the several figures.

If a Tyler press or open-top cylinder is employed, the connection is made between the reservoir A and cylinder B by a single pipe, as shown at C in Sheet 1. This pipe is furnished with a valve, *e*, having a vertical stem, which is surmounted by a rectangular frame, *f*, in which operates a cam, *g*, so as to open or close the valve as often as required during the progress of the work.

The rod *h*, upon which the aforesaid cam is secured, is journaled in suitable bearings, as at *i i'*, and is provided with two additional cams *kk'*, set at different angles, so as to operate two other valves, *m n*, both of which communicate with the interior of the cylinder through a common pipe, L. The steam is conveyed from the boiler through a pipe, M, to the valve *m*, by which it is let into the cylinder, so as to operate the piston thereof.

N is an exhaust-pipe, for discharging all steam left in the cylinder after the reservoir has been charged.

To the rod *h* is keyed or otherwise secured a pinion, O, the teeth of which are engaged by a rack, P, the lower end of which is pivoted to a lever, I, whereby the operation of the

valves is controlled. The cams, as before stated, are set at different angles, in order that but one valve shall be operated at a time.

In starting the press the valve *m* is first opened, so as to admit steam to the under side of the piston-head, and thereby impart motion to the same. When the full extent of stroke desired has been attained the operating-lever I is raised, so as to partially rotate the shaft *h*, and thereby cause the cam *k* to release its valve *m*, which, by reason of its weight, will immediately drop and shut off any further passage of steam. The motion of the lever I being continued will cause the second cam, *g*, to raise its valve *e*, and thus permit the steam from the cylinder to flow into the reservoir A until an even balance has been attained in each, when the movement of the operating-lever is continued, so as to close the valve *e* and open valve *n*. The remaining steam is permitted to escape from the cylinder through valve *n* into the exhaust-pipe. The operating-lever is now reversed, which causes the exhaust-valve *n* to be closed and the valve *e* to be opened, and through the latter the steam from the reservoir enters the cylinder, and presses forward the piston thereof until the steam in the cylinder and reservoir is again at an equal pressure. The said valve *e* is then closed, and live steam let in through the valve *m* until the extent of stroke desired has been reached.

The hot water accumulating in the reservoir from the condensation of steam therein is conveyed through a pipe, D, to a suitable pump, (not necessarily shown in the drawings,) by which it is forced back into the steam-boiler.

If a double-headed cylinder is employed the reservoir should be connected therewith by means of pipes C C' and valves 1, 2, 3, 4, and 5, as shown in Sheet 2.

A press thus provided is operated by first opening the steam-valve 1 and exhaust-valve 3, the former admitting steam from the boiler to the under side of the piston, and the latter relieving the same from pressure on its upper side. When the said piston has reached a sufficient height to reduce the bale to its smallest compass the aforesaid valves 1 3 are closed and that marked 2 opened, which will cause the steam to pass from the cylinder into the reservoir A and pipe C', the latter com-

municating with the safety-valve 5, through which the steam above a certain pressure is permitted to reach the valve 4, from whence it passes into the cylinder, wherein it acts against the upper side of the piston, and thus serves to lower the press. To raise the press again, shut the valve 4 and open the exhaust-valve 3. The valve 2, being left open, permits the steam contained in the reservoir to pass back into the cylinder, raising the piston thereof for a limited distance, when 2 is shut and the main valve 1 opened, to admit sufficient live steam to complete the stroke. The lowering of the press is again effected as hereinbefore stated.

The valves may be provided with ordinary levers, so as to be operated by hand; or they may be arranged to operate automatically by any known mechanical means.

From the above description it will be seen that this invention dispenses with the ordi-

nary heater, inasmuch as the condensed steam of the receiver is carried back to the boiler, while at the same time it effects a saving of some forty per cent. in amount of steam ordinarily employed for pressing cotton and other merchandise.

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

In a steam cotton-press, the combination, with cylinder B, reservoir A, supply-pipe C, discharge-pipe M, exhaust-pipe N, and valves *e m n*, of rotating cam-shaft *h*, pinion O, rack P, and lever I, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name.

RICHARD STENHOUSE.

In presence of—

JAMES C. KIDDELL,
P. FINNEY.