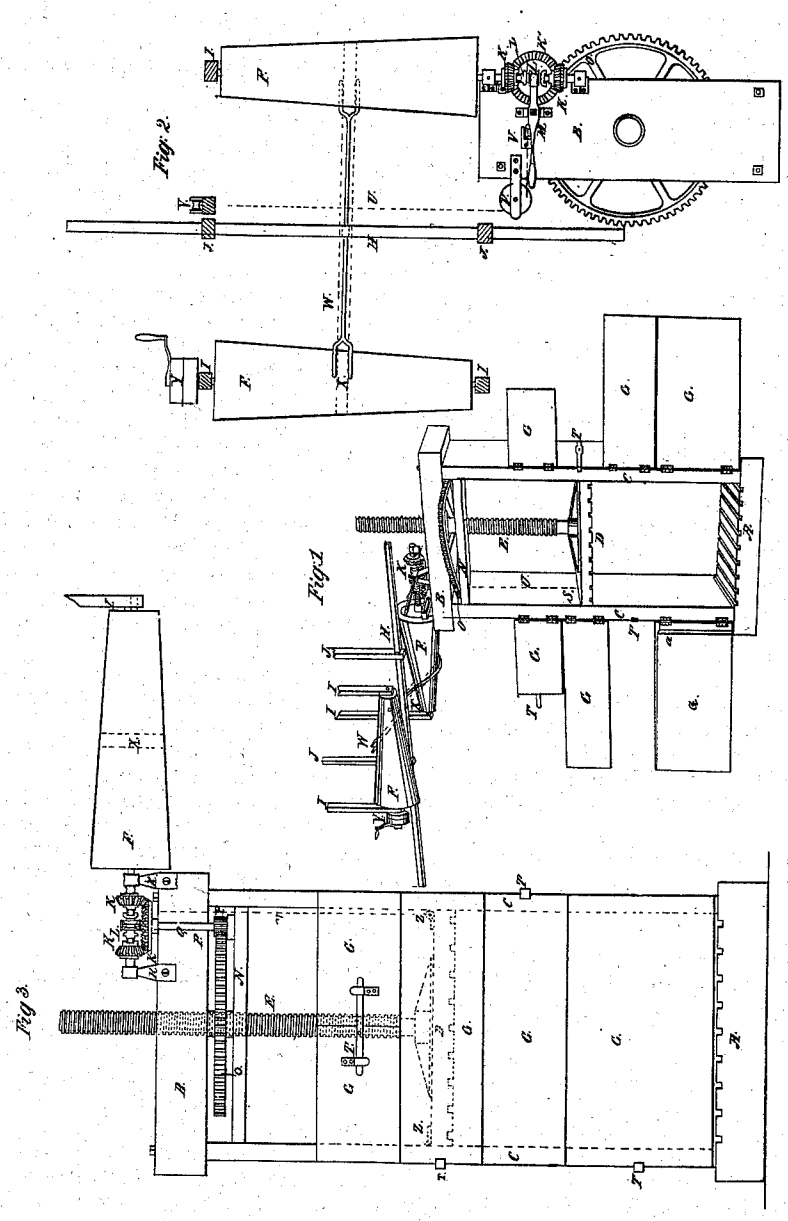
J. P. ARNOLD.

HEMP PRESS.

No. 12,615. Patented Apr. 3, 1855.



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UNITED STATES PATENT OFFICE.

JAMES P. ARNOLD, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. **12,615**, dated April 3, 1855.

To all whom it may concern:

Be it known that I, JAMES P. ARNOLD, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Hemp-Presses; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1 represents a perpective view with the doors thrown open. Fig. 2 represents a top plan, and Fig. 3 represents a side elevation.

Similar letters in the several figures denote like parts.

The nature of my invention relates to the method of applying the gradually-increasing power, with the proportionate diminution of speed, of a system of cone-pulleys through the medium of an automatic shipper worked with the platen to the operating of a hemp-press, so that the power in pressing shall increase with the resistance on the platen, and the platen run back with a highly-increased velocity over that of its forward motion when the bale is roped and ready to be removed from the press.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents the bottom sill, and B the head-block, firmly united by the jambs or side pieces, C C.

D is the platen or follower on the end of the screw shaft or rod E.

F F are the cone-pulleys, and G G G G the doors or aprons through which the press is charged and the bale delivered. The doors next the sill are double when closed, and are hung on strap-hinges extending across the jamb, and are held in their places by means of a hook, latch, or other proper catch. One closes from right to left, the other from left to right, and thus one entirely overlaps the other and makes a double door, which gives it the necessary strength to withstand the pressure of the platen upon the hemp to be baled up. By inspection of the drawing Fig. 1, it will be seen that the open door on the left is recessed, *a*, for the purpose of presenting a plane surface when closed.

H, Figs. 1, 2, is a sliding bar supported in slotted brackets J J, which may be fastened to the joist or ceiling above, and I I I are other brackets, suspended in similar manner, for making proper supports for the cone-pulleys F F.

K K are two small bevel gear-wheels loose on their shafts, but thrown into or out of gear with the larger bevel-wheel, K′, at pleasure, by means of the double clutch L, Figs. 2, 3, operated by a lever, M, Fig. 2, so as to give the necessary forward or backward motion to the press. The cones by this means may be kept in constant motion and their power applied by means of the clutch at pleasure to the working of the platen either forward or back.

N is a substantial cross-beam for supporting the weight of the wheel O, screw-shaft E, and follower D. It is properly secured to the jambs or side pieces, C C. The large bevel-wheel K′ is attached to the upper end of a shaft, Q, and on the lower end of said shaft is secured a spur-wheel, P, working into and giving motion to the main driving-wheel O, through the hub or center of which the screw rod or shaft E passes in a female screw. and thus gives motion to the screw-rod itself and the platen upon it.

R R are the bearers or boxes in which the journals of the shaft carrying the spur-wheels K K and clutch L are supported.

S, Fig. 1, is a hook on the platen or follower, to which the shipper-chain is fastened, and T the hooks or fastenings by which the doors are secured when closed. The shipper-chain U, being fastened to the hook on the platen, passes up and over the friction-pulleys V, and being fastened to the shipper W where it crosses it, and, after passing over the rear pulley V, terminates or may terminate in a weight or counterpoise, the office of which will be mentioned in the operation of the press. The shipper W is secured to the sliding bar H, and a fork on each end of the shipper straddles the belt X, which passes around the cone-pulleys, so that as the bar H is moved toward or from the press it carries with it the shipper W and the belt X, thus changing the relative diameters, and consequently the speed, in the ratio of the resistance. Y are the driving-pulleys, through which, or the crank near to them, power may be applied to the press, and Z are friction-rolls to keep the follower from rubbing against the jambs or sides of the press, so as to bind or cramp therein.

The operation of the press is as follows: The box being properly charged, the platen run up to or near the beam N, the doors shut and secured, the chain U being first hooked to the follower, and the belt-shipper and bar run out the extreme end of the cone-pulleys, the clutch is thrown into gear with one of the spurs K, and the follower commences to descend upon the material to be pressed, and as it descends it draws with it, by means of the chain U, the shipper and belt along on the cone drums or pulleys, and thus gradually, by diminishing the speed, increases the power in the ratio of the resistance. As the belt cannot move on the cones faster than the platen descends, it must of necessity change the power in exact conformity to the increasing resistance, which would not be the case if the belt or shipper were actuated by any other means or motion than that of or corresponding with the platen. The bale being pressed, tied up, and ready to be removed, the chain U is freed from the hook S, and by means of a weight or otherwise the shipper-bar and belt are carried back to the extreme ends of the cones, and the follower is run up with a fourfold increased speed, and the press is ready for another charge and a similar operation.

Having thus fully described the nature of my invention, I would state that I am aware that conical pulleys and a traveling belt thereon have been used for various purposes where speed and power are required at variable stages. These I do not claim; but

What I do claim as new, and desire to secure by Letters Patent, is—

Operating the shipper that moves the belt along the cones by the descent of the platen while pressing, so that the power shall be increased with the resistance until the material is pressed, and then allowing the shipper to run back at an increased velocity when the bale is ready to be removed, substantially as described.

JAS. P. ARNOLD.

Witnesses:
JOHNSON MASON,
WILLIAM S. WARD.