

C. O. WHEELER.

Improvement in Hay and Cotton Presses.

No. 123,754.

Patented Feb. 13, 1872.

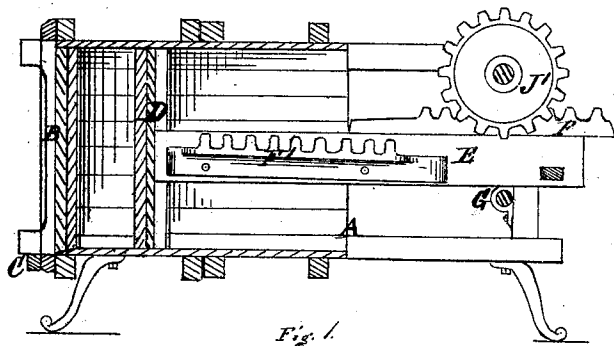


Fig. 1.

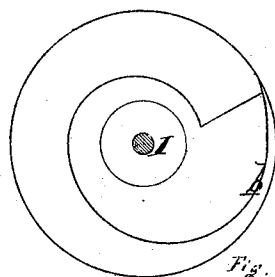


Fig. 3.

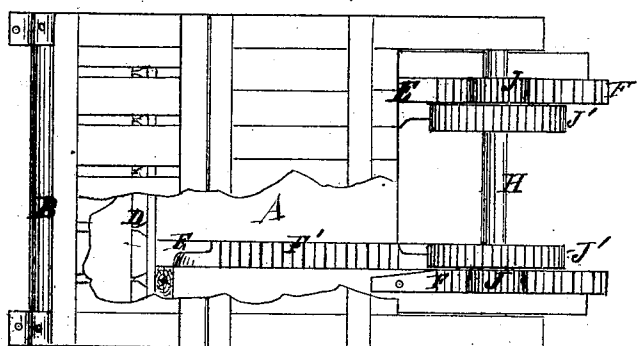


Fig. 2.

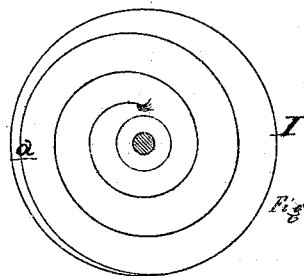


Fig. 4.

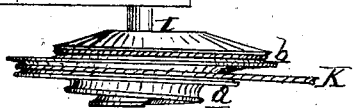


Fig. 5.

ATTEST:

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UNITED STATES PATENT OFFICE.

CHRISTOPHER O. WHEELER, OF MATTISON, ILLINOIS.

IMPROVEMENT IN HAY AND COTTON PRESSES.

Specification forming part of Letters Patent No. 123,754, dated February 13, 1872.

To all whom it may concern:

Be it known that I, CHRISTOPHER O. WHEELER, of Mattison, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hay and Cotton Presses; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 represents a longitudinal sectional elevation of my improved press. Fig. 2 is a plan view, partly broken out. Fig. 3 is an elevation of the inner face of the fusee-wheel. Fig. 4 is an elevation of the outer face of the same, and Fig. 5 is a perspective view of the rear or discharge end of the press.

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

The nature of this invention relates to an improved and simplified construction of hay and cotton presses, more especially with relation to the press for which Letters Patent were issued to McGillivrae and Wheeler, October 12, 1869; and it consists in providing the said press with an additional pair of racks and pinions whereby a differential gearing is obtained for operating the follower with greater power as the resistance is increased, and in an improvement in the construction and arrangement of the door, as more fully herein-after set forth.

In the drawing, A represents an oblong rectangular case, across the mouth of which a door, B, is hung by hinges at its upper corners, and secured in its closed position by a bar, C, across its lower end, swung on rods C', which are pivoted at their inner ends to the lower sides of the box or case. D is the follower from which a pair of bars, E, project horizontally. The outer ends of the bars have secured to their tops the toothed racks F, and to the inner sides of said bars other racks F' on a lower plane extending from the inner ends of the others to the follower. The bars are supported in their movement by a roller, G, journaled in the end uprights of the case. H is the pinion-shaft journaled in the upper part of the box-frame, deriving motion from the operating-wheel I, in the manner which I shall presently describe. On the shaft H is secured a pair of pinions, J, which meshes with

the racks F, when the latter are under them. There is also secured to said shaft another and larger pair of pinions, J', which mesh with the racks F' when the latter are moved under them.

It will be seen that if the catch-bar C be thrown down, and the door thrown up, the follower being moved back, the material can be filled into the box ready to press into a bale; in this position of the follower and its bars, the larger pinions are in engagement with the racks, so that if the pinion-shaft be rotated in the proper direction the follower will be rapidly moved forward into the box. As the larger pinions pass out of engagement with their racks the smaller ones engage with theirs, and the forward movement of the follower is continued at a much slower rate, but with a corresponding increase of power to overcome the increased resistance which the material now offers as it decreases in bulk. When the pressing of the bale is completed, the bale ropes are tied about it, the ropes being passed down the grooves in the face of the follower; thence under the bale; thence up in the grooves in the inner face of the door; thence across its top—openings or slots in the top of the box end being provided for the purpose—and then tied, when the door may be thrown open and the bale discharged by a forward movement of the follower. The press can be operated by hand or horse power through a rope, K, coiled on the operating-wheel I, which may be termed a fusee-wheel, having a spiral, a, cut or formed on its outer face, and another, b, on its inner face, (the latter consisting of but a single convolution.) The rope K has one end fastened at the initial point of the convolution. b is carried around with said convolution to the periphery of the wheel, and follows the convolutions on the other face—that is, when the follower is drawn back, by pulling on this rope to unwind it from the wheel it commences moving the latter when on the smaller convolutions, rotating the shaft rapidly; but exerting less power than later while unwinding from the periphery when its leverage is greater, and the speed proportionately less—the maximum of power being developed at the periphery, at which time the bale has been reduced to the required dimensions. After tying, the bale is ejected by opening the door and continuing the forward movement of the follower, which

is accelerated by unwinding the rope from the decreasing spiral *b*.

It will also be noticed that but a single door is required in this press in which to introduce the material and through which to discharge the bale.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In baling-presses, the employment of a differential compressing-gear, consisting of the

pinions J J', and racks F F, in connection with bars E, follower D, and pinion-shaft H, substantially as described.

2. The arrangement with relation to the horizontal press-box A of the door B, catch-bar C, and rods C', as described.

CHRISTOPHER O. WHEELER.

Witnesses:

D. L. HOLDEN,
J. M. BLACK.