

P. G. Gardiner.

Cotton Press.

No 2,555.

Patented Apr. 16, 1842.

Fig. 1.

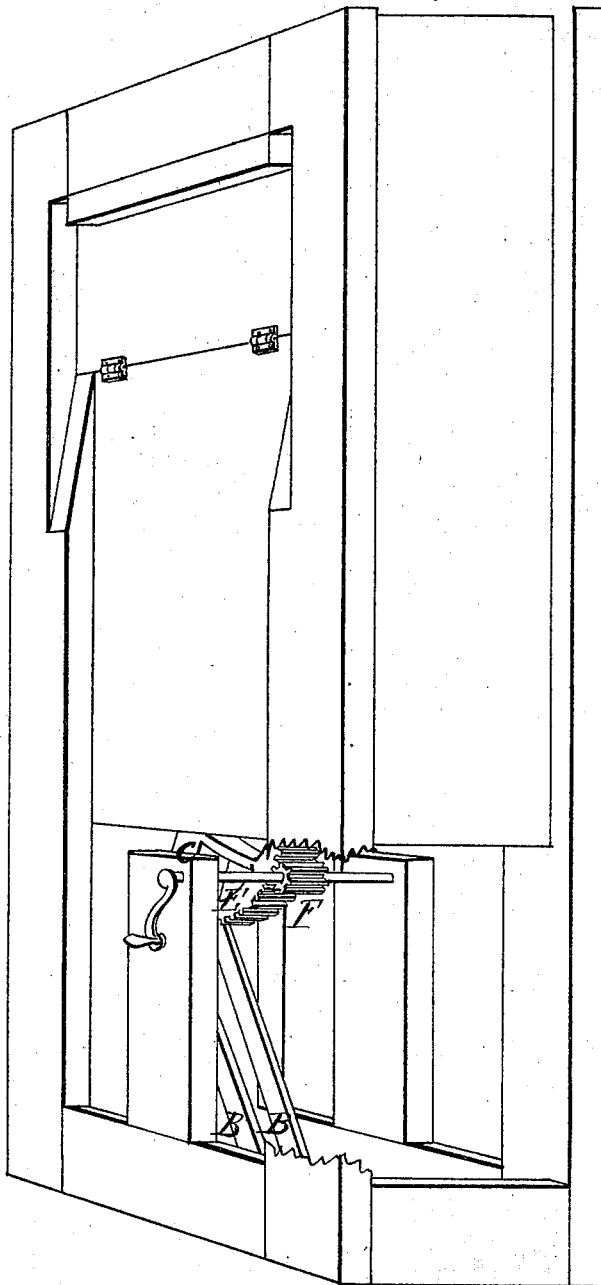
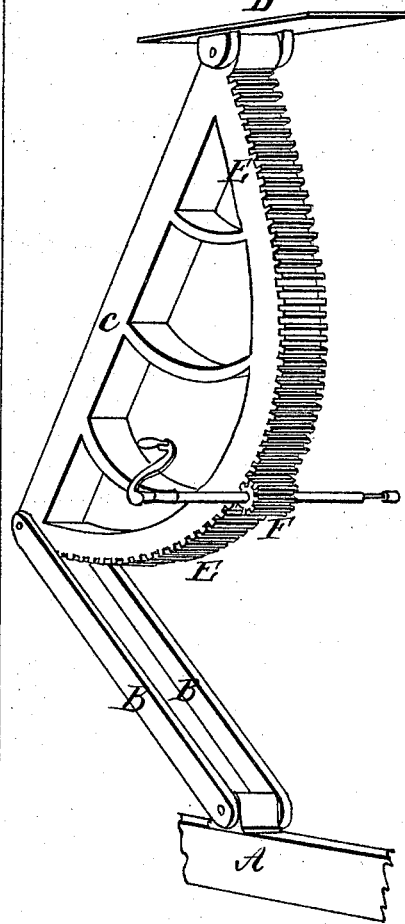


Fig. 2.



UNITED STATES PATENT OFFICE.

P. G. GARDINER, OF NEW YORK, N. Y.

IMPROVEMENT IN COTTON AND HAY PRESSES.

Specification forming part of Letters Patent No. 2,555, dated April 16, 1842.

To all whom it may concern:

Be it known that I, P. G. GARDINER, of the city of New York, in the State of New York, have made a new and useful Improvement in the Manner of Constructing a Press for the Pressing of Cotton, Hay, and various other Articles; and I do hereby declare that the following is a full and exact description thereof.

I denominate my press the "improved progressive lever and toggle-joint press," the follower being moved by the progressive levers, usually denominated the "toggle-joint;" and my improvement consists in the particular manner in which I actuate or apply the power to said levers.

In the accompanying drawings, Figure 1 is a perspective view of my press in its ordinary form; but the frame-work and the construction of the part for containing the goods to be pressed may be varied, both in form and material, so as to adapt it to the particular purpose for which it is intended, my improvement being limited to the manner of actuating the follower.

Fig. 2 is a perspective view of the progressive levers and of the other parts immediately concerned in raising or depressing the follower on my improved plan of effecting this object. The explanation given of this part will embrace everything that is necessary in making the nature of my invention fully known. In this figure, A is a part of the stationary frame-work of the press, to which the arm or arms B B of the progressive levers are attached by a joint-pin, the other ends of B B being connected to the arm C by a suitable joint. D is the follower, to the center of which the arm C is also in like manner connected. To the arm C is attached the curved rack or toothed segment E E, this and the arm C being cast in one piece. Into the teeth of this segment or rack the pinion F is geared, the shaft of which may be turned by means of a winch or by any adequate power applied thereto. The pinion F is so situated as that when the lever B is in a horizontal position and the follower D at its lowest point the uppermost teeth of the segment or rack E E will be in gear with it, and when the follower is raised to its greatest elevation the lowermost teeth of the seg-

ment will be in gear with said pinion and the levers B and C will be in a line with each other. It is not necessary to give a mathematical demonstration of the nature of the curve of the toothed segment, as the manner of laying it out mechanically will be obvious to every workman, and would in practice always be resorted to.

When the press is placed in a vertical position, as represented in the drawings, the tangent of the curves formed by the segment and pinion will be in a vertical or nearly vertical line when the follower is at its lowest point, and when at its highest, said tangent will be a horizontal line, or nearly so, and between these points it will progressively vary during the motion of the follower.

This press may be placed either vertically or horizontally, and the progressive levers may be situated either above or below the follower, as may be preferred. In some cases it may be found best to dispense with the toothed gearing, and to let chains or bands wind around the shaft, which in the drawings is represented as the pinion-shaft, one end of such chains or bands being attached to the extreme ends of the segment and the other ends to the shaft. It is believed, however, that the toothed gearing will be preferred to any other arrangement.

Having thus fully described the nature of my improvement and shown the manner in which the same is carried into operation, it is to be understood that I do not claim the attaching of a curved rack or toothed segment to one of the arms of that kind of progressive levers usually denominated the "toggle-joint," and the combining therewith a toothed pinion by means of which said levers shall be actuated; but

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

1. The particular manner in which I have arranged and combined the toothed segment, the pinion, and the toggle-joint, as above set forth, the curved segment being attached to and extending from end to end of the upper arm of the progressive levers, and having the requisite eccentricity to enable the pinion to operate upon it under an arrangement of parts

substantially the same with that herein fully described.

2. As a modification of said arrangement, the substitution of chains or bands for the toothed gearing, such chains or band passing over a plain segment and being operated upon by a shaft around which they wind, this

latter answering the purpose of the toothed pinion, the principle of action being the same in either case.

P. G. GARDINER.

Witnesses:

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