F. M. Ray,

Cotton Press,

№ 1,738, Patented Aug. 25, 1840.

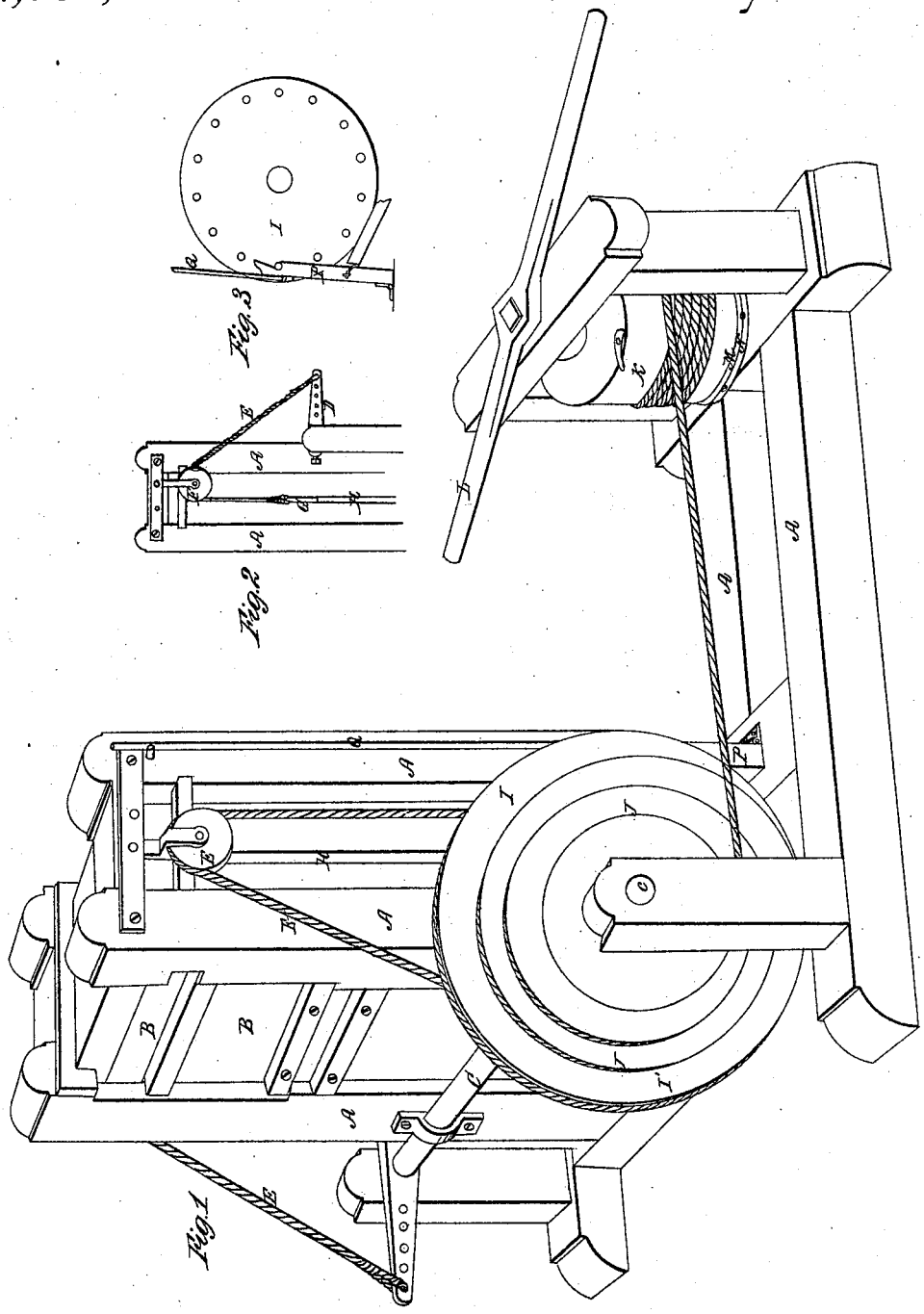

Fig. 3

Fig. 2

Fig. 1

UNITED STATES PATENT OFFICE.

FOWLER M. RAY, OF CATSKILL, NEW YORK.

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. **1,738**, dated August 25, 1840.

To all whom it may concern:

Be it known that I, FOWLER M. RAY, of Catskill, in the county of Greene and State of New York, have invented an improvement in the manner of constructing presses for pressing cotton, hay, and other articles of a like character; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawings, Figure 1 is a perspective view of my press in the form in which I intend ordinarily to construct it, and which will serve fully to illustrate the principle upon which it operates.

A A is the frame of the press, the upper part, B B, of which constitutes a box for the reception of the cotton, hay, or other article to be pressed, so as to form a bale, said box being constructed and secured in any of the known modes of constructing and securing that part. Within this box there is a follower, which, when the box is being filled, occupies the lower part thereof, and which, in the operation of pressing, is to be drawn up toward its upper end, the part of the press through the intermedium of which the power is to be applied being so constructed and arranged as that the follower shall move with much greater rapidity when it first operates, and with diminished speed and increased force as it continues to act, the results obtained by it being in this respect analogous to those produced by what is usually denominated the "toggle-joint," but with a greater range than can be conveniently obtained by that apparatus.

C C is the main shaft of the press, which is sustained in suitable bearings in front of it, and from this shaft the arms D project out at right angles, there being one arm near each end of the shaft. To these arms are attached one end of the ropes or chains E E, each of said ropes or chains passing over a pulley, F, attached to the upper end of the frame, on each side of the press. The other ends of said ropes or chains are attached to strong iron holdfasts, firmly affixed to the follower, and projecting from it through the sides of the press. In Fig. 2 a part of one side of the press is shown on a diminished scale, one of these holdfasts being seen at G. These holdfasts slide up and down in the slot or opening H. The respective parts represented are designated by the same letters as those employed in Fig. 1. A counterpoise to the weight of the follower may be used, if desired.

When the arms D are in such a position as that the ropes or chains E E form a right angle with them, any power applied to the shaft C so as to depress said arms will cause the follower to rise through a greater space in a given revolution of the shaft than when standing in any other position, and the power will go on augmenting and the speed decreasing until the ropes or chains and the respective arms have their lines of direction coincident, when the power will be neutralized. The ropes or chains may be attached to the arms at different distances from the shaft, and instead of making D D in the form of arms they may be in that of wheels should increased strength be desirable.

The shaft C may have power applied to it in various ways; but that which I have represented, and which I prefer, will now be explained. I I is a wheel firmly fixed on the end of the shaft C, and this wheel has a groove upon its face passing spirally from the circumference toward the center, as shown by the line J J. A rope from a capstan or windlass, K, passes around this groove, and on turning said capstan or windlass by horse or other power the wheel I I will be made to revolve, and as one end of the windlass-rope is attached to the periphery of the wheel, and the first action is toward the center, its power will be constantly augmenting, its action being the same in this particular as that of the fusee of spring time-pieces. Although this spiral wheel is thus used with great advantage, a simple wheel, with the rope passing around its periphery, may be employed, and will probably in some cases be preferred.

I construct the capstan or windlass in such manner as to admit of the uncoiling of the rope without the necessity of turning the axis with lever or sweep L back. The lever and axis may, in fact, be allowed to go forward without interfering with the uncoiling. For this purpose the shaft upon which the body of the capstan is placed, and to which the lever L is affixed, is made round. On the lower end of the capstan, and firmly fastened to it, is an iron plate, M, and this rests upon a simi-

lar iron plate, N, which is firmly attached to the shaft.

O is the head of a bolt, which passes down through the capstan, and through a hole in the plate M. Corresponding with this hole there are several in the plate N, surrounding it near its periphery, and when the bolt O enters one of these holes the body of the capstan and its shaft must revolve together; but when the bolt is raised the capstan-body will be free to turn upon the shaft, and the rope may be uncoiled.

To scotch or pawl the wheel I I a number of pins may be allowed to project from its inner side, near its periphery, which may catch upon the upper end of the hinged post or pawl P, to which is attached the rod or handle Q. This is shown distinctly in Fig. 3. In using this press the action of the ropes or chains E E does not terminate with the arrival of the arms D in the position in which their direction coincides with that of the ropes or chains; but it is continued by the continued turning of the shaft D, which will cause the ropes or chains to take one or two turns round said shaft in close contact with the arms, thus still operating upon the follower.

Having thus fully described the manner in which I construct my press for pressing cotton, hay, and other articles, I do hereby declare that what I claim as constituting my invention therein, and desire to secure by Letters Patent, is—

1. The using of the arms D, projecting out at right angles from the shaft C, and having ropes or chains attached to them, which pass over pulleys and raise the follower of the press, the respective parts being combined, connected, and operating substantially as herein set forth.

2. I do not claim the manner of constructing and applying the capstan and windlass to my press, although I believe that there is novelty in their mode of construction and operation; nor do I claim any of the other parts described when taken alone; but I limit my claim, as above, to what I consider to be the distinguishing feature of my patent, and this part or arrangement of press I claim, whether constructed precisely in the form and manner described, or in any other which is substantially the same.

FOWLER M. RAY.

Witnesses:
THOS. P. JONES,
B. K. MORSELL.