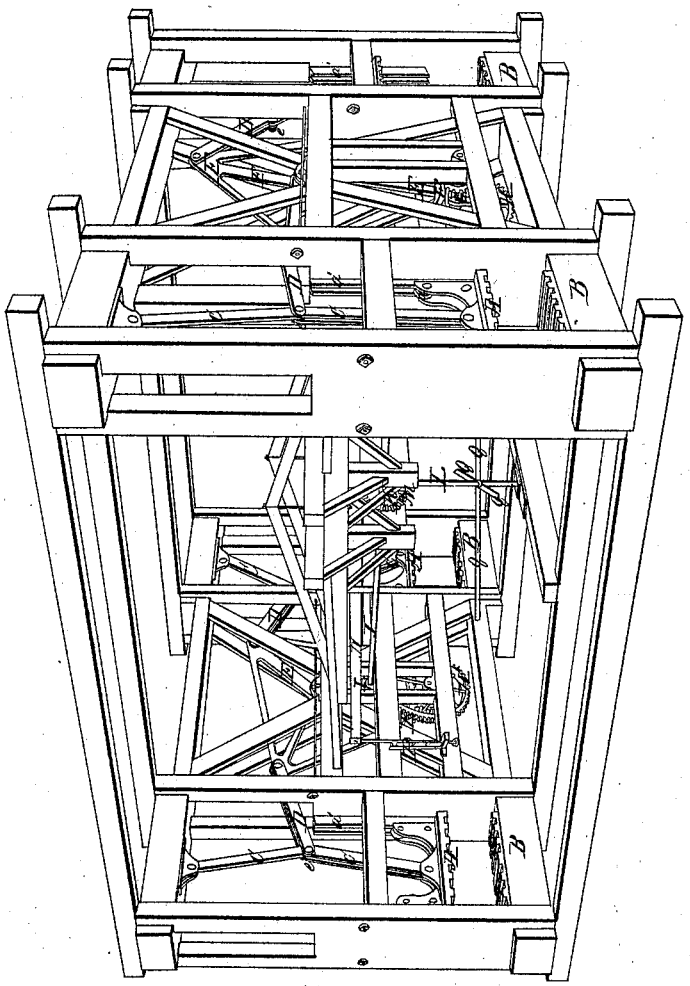
2 Sheets. Sheet 1.

P. G. Gardiner,

Cotton Press.

No. 3,503. Patented Mar. 20, 1844.



2 Sheets. Sheet 2.

P. G. Gardiner,

Cotton Press.

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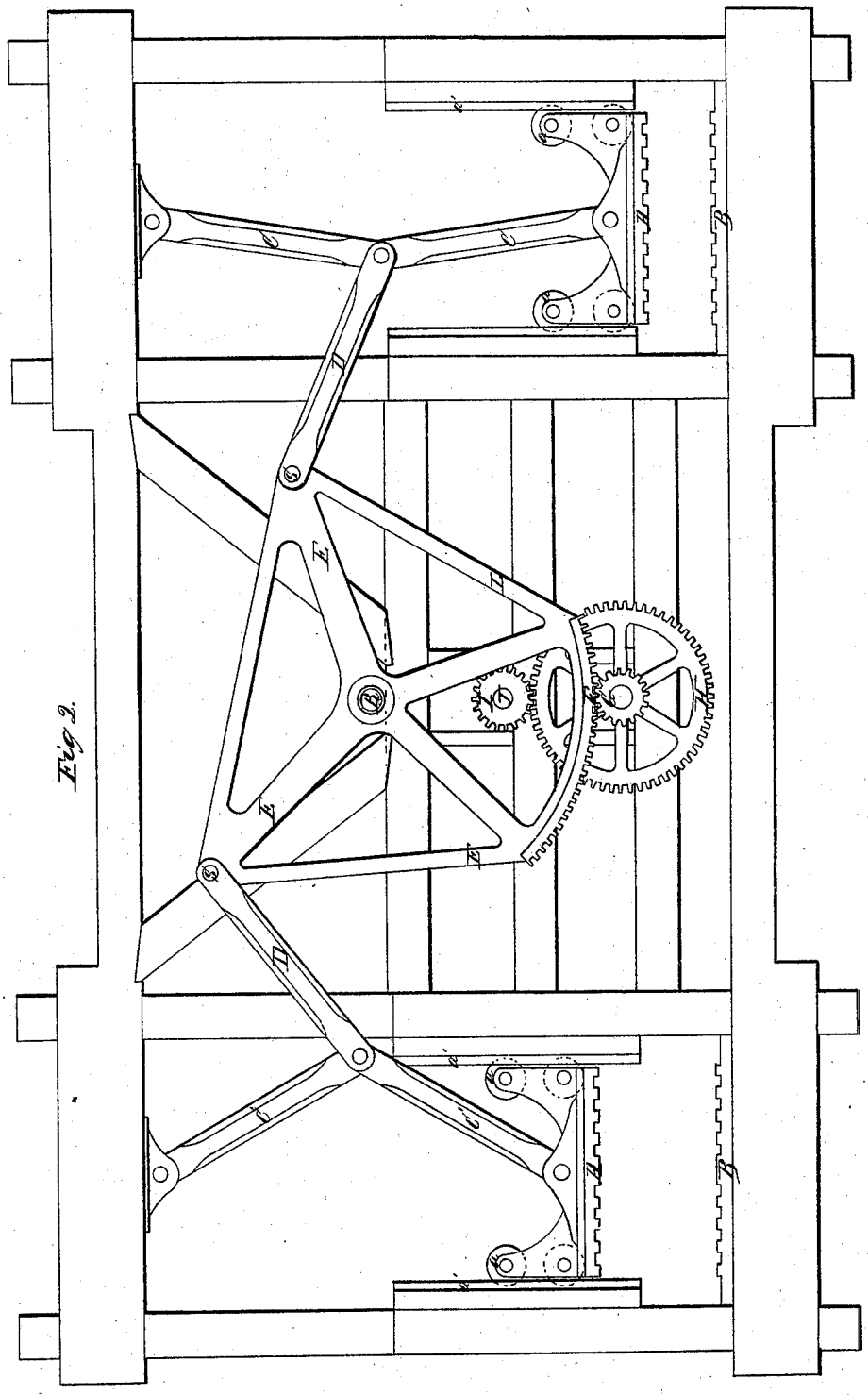

Fig. 2.

UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. **3,503**, dated March 20, 1844.

To all whom it may concern:

Be it known that I, PERRY G. GARDINER, of the city of New York, in the State of New York, have invented a new and Improved Manner of Constructing a Press for the Pressing of Cotton and other Substances, which press I denominate the "combined alternating toggle-joint press;" and I do hereby declare that the following is a full and exact description thereof.

My improvement in the toggle-joint press consists in the particular manner in which I combine two or more presses in pairs, so as that while the platen or follower of one is ascending the follower of the other shall be descending. In the perspective drawing, which accompanies this specification, and is marked Figure 1, I have represented two pairs of such presses, as this constitutes the most economical arrangement for the application of the power. But the combination of two presses is absolutely necessary in all cases for the carrying out of my principle. In the single toggle-joint press the loss of time incident to the raising of the follower has been found to interfere with its utility to such an extent as to have caused its rejection where rapidity of action is an essential element in its use. And this is more especially the case in the pressing of bales of cotton. It has been proved by actual experience in the large way, with two pairs of presses, combined in the manner in which I have combined them, that by the application of the same power four times the number of bales may be packed in a given time as can be packed with a single press, and by the combining of two presses a corresponding advantage is obtained.

In the accompanying drawings, Fig. 1 is, as above indicated, a perspective view of two pairs of combined toggle-joint presses; and Fig. 2 is a side elevation of a single pair of such presses, the exterior frame-work of the structure being removed for the purpose of exhibiting the respective levers constituting the toggle-joints, together with their immediate appendages.

In each of these figures, A A are the platens or followers of the presses. B B are the bed-pieces; and C C C′ C′ the progressive levers, that constitute the toggle-joints of each press.

D D are the shackles or levers by which the beam shown at E E is connected to the levers C C C′ C′. Under this arrangement each of the presses may be said to be actuated by a double toggle-joint, the beam E and the shackles or levers D D coming into a direct line with the fulcrum R of said beam at the same time that the levers C C are also in a line with each other.

F is a toothed segment forming a part of the beam E E, said beam having motion communicated to it, in a manner to be presently described, through the intermedium of said segment, and the joint-pins S S of the shackles D D′ being, by the angle form of the beam, so placed as not be in a line with the fulcrum R.

In the perspective drawing, the apparatus is represented as so arranged as to be driven by horse-power, which is that usually employed, whether two or four presses are combined.

L is a vertical shaft, having sweeps Q Q on it, to which the horses are to be attached.

J J are horizontal shafts leading to the two pairs of presses, said shafts being driven by bevel-wheels K and M, the latter being affixed to the shaft L below the wheel K, and each of the shafts J J being furnished with a bevel-wheel similar to K, into which the wheel M gears. A second bevel-wheel, like that shown at M, but reversed in position, is placed on the upper end of the shaft L, above that seen at M. The design of this is to enable the attendant to reverse the motion of the shaft J J, while the horses continue to move in the same direction. This is effected by alternately raising or lowering said shafts to throw one or other of the bevel-wheels on L into gear with those on J J. These shafts may be raised and lowered by means of a lever, N, to which may be attached a handle, O, and this handle may have a pin or projection upon it which may engage with holes or notches in the bar P.

G is a pinion (seen most distinctly in Fig. 2) which works into the segment F, and H is a spur-wheel on the same shaft with G.

I is a pinion on the outer end of the shaft J, which, meshing into the spur-wheel H, communicates the required motion to the beam E, and to the respective toggle-joints C C and C′ C′.

a a a are friction-rollers on the followers A, which rollers work up and down in grooved pieces *a′ a′* on the cheeks of the presses.

The peculiar arrangement of the toggle-

joints, the beam, and the gearing of this press, as distinctly shown in Fig. 2, is that upon which its superior action is dependent, which action is such as to facilitate the operation of packing beyond that of any other. The centers of the joint-pins S S are at the same distance from the fulcrum R of the beam E E with the pitch line of the segment-rack F, an arrangement by which an equal bearing on the fulcrum and the segment is always preserved.

Having thus fully described the manner in which I combine one or more pairs of toggle-joint presses with each other, I do hereby declare that I do not claim to have made any improvement in the single press, nor do I claim either of the parts or devices herein described, when taken alone; but

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

The combining of one or more pairs of such presses, so as to give to the followers or platens of each pair an alternating or reciprocating motion by an arrangement of the operating parts such as is represented in Fig. 2—that is to say, by the combined operation of the segment F on the beam E E, and on the double toggle-joints formed by one arm of the beam E, the shackle or lever D, and the progressive levers or toggle-joint C C, the whole being combined and operating substantially in the manner or on the principle herein set forth.

I do not claim the mere employment of double toggle-joints to work two platens or followers, this having been before done, but in a manner essentially different from and not producing a like effect with that above described.

P. G. GARDINER.

Witnesses:

THOS. P. JONES,

EDWIN L. BRUNDAGE.