2 Sheets—Sheet 1.

J. H. MATTHEWS & C. R. MOREHEAD, Jr.

Cotton-Press.

No. 214,163. Patented April 8, 1879.

Fig. 1.

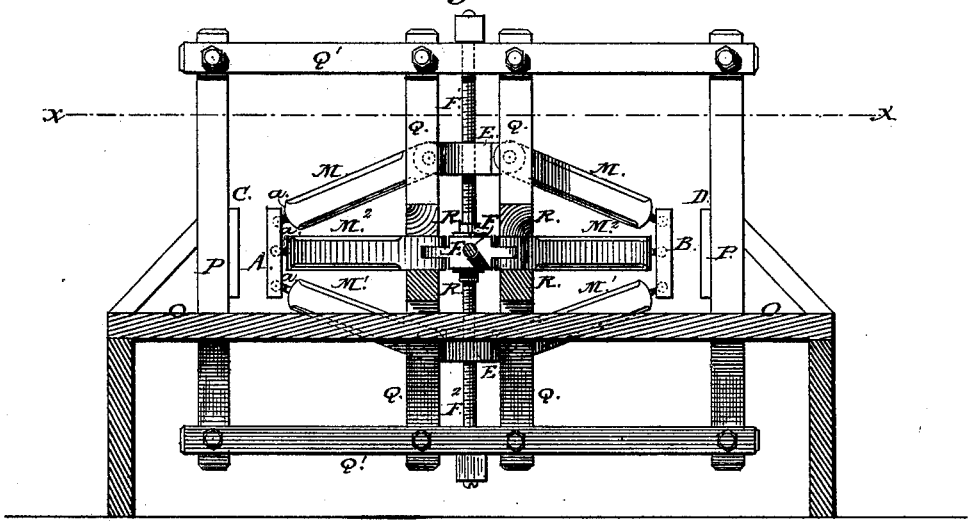
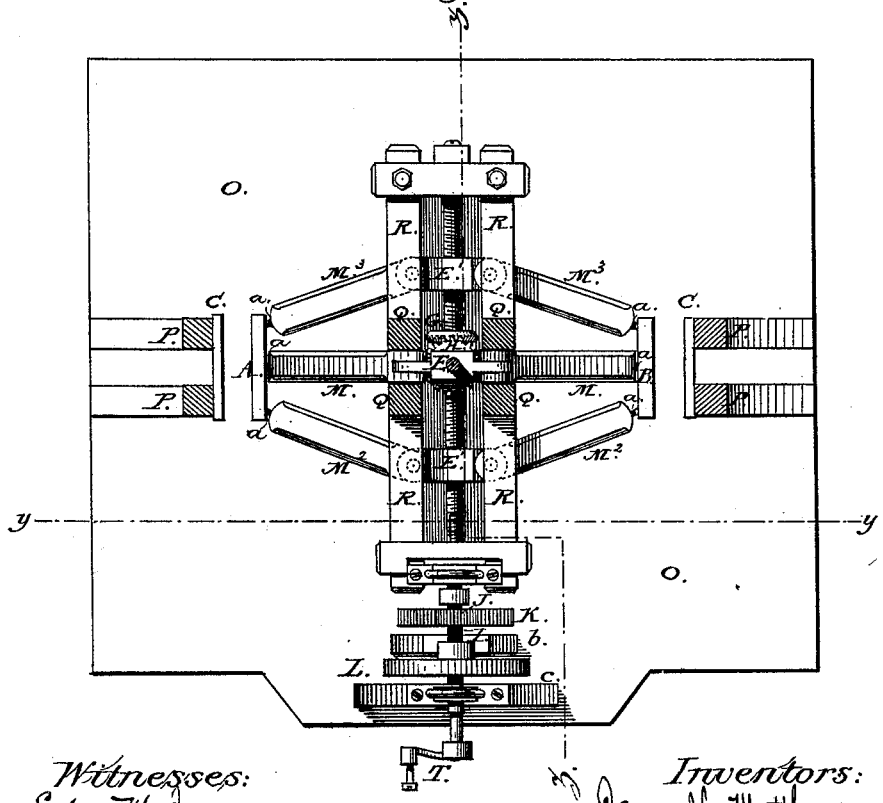


Fig. 2.



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2 Sheets—Sheet 2.

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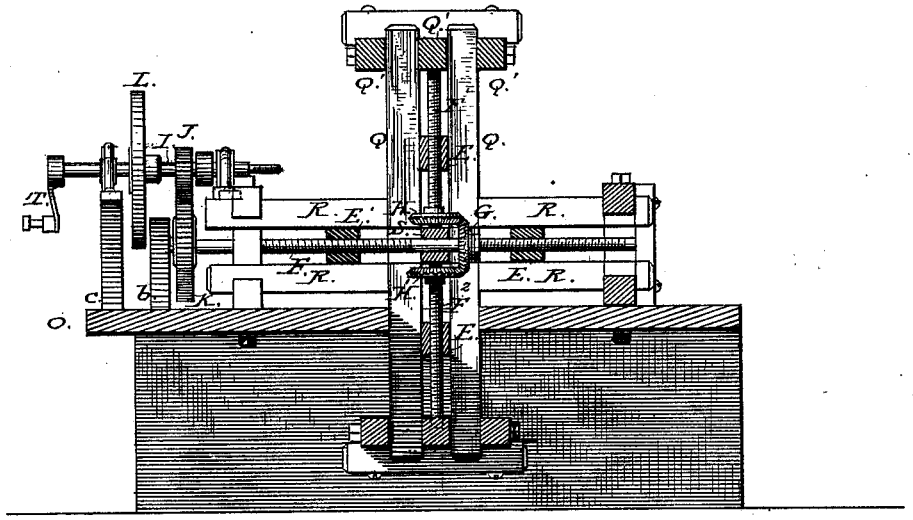
Fig. 3.



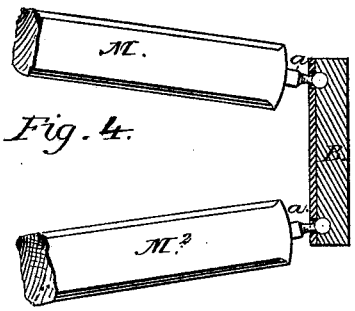


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES H. MATTHEWS AND CHARLES R. MOREHEAD, JR., OF FORT WORTH, TEXAS.

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. **214,163**, dated April 8, 1879; application filed March 4, 1879.

To all whom it may concern:

Be it known that we, JAMES HAMILTON MATTHEWS and CHARLES ROBERT MOREHEAD, Jr., of Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Cotton-Presses; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Our invention relates to that class of power-presses in which action is given from an applied power to operate the plungers or followers of two presses simultaneously.

It consists, principally, of two plungers or followers, arranged at opposite ends of a frame composed of upright, longitudinal, and lateral timbers, which are caused to approach or recede from suitable beds or abutments fixed against upright end timbers, being moved by arms hinged to said plungers and certain combined yokes and nuts jointed between said arms, which are caused to approach toward or separate from a point at the center of the press-frame by means of screw-threaded shafts, operated in a manner hereinafter to be described.

The object of our invention is to furnish a machine that will give double work from an applied power, taking the best advantage of mechanical devices in the economy of time and labor.

In our drawings, Figure 1 is a section on line *y y* of Fig. 2. Fig. 2 is a plan or horizontal section on line *x x* of Fig. 1. Fig. 3 is a vertical section on line *z z* of Fig. 2. Fig. 4 is a view of the follower attached to the toggle-arms by globe-sockets.

Similar reference-letters indicate like parts in all of the figures.

Referring to drawings, A B are the plungers or followers, which are, respectively, hinged by ball-and-socket joints to arms or beams M M^1 M^2 M^3. These arms or beams are yoked together in couples by yokes E E′, which, together with said arms, form four sets of toggle-levers. The yokes E E′ are fashioned with tongues, which fit into corresponding grooves in said beams, to form, together with suitable pins, knuckle-joints, as shown.

The frame of our press is formed, principally, of upright and horizontal beams P Q Q′ R, fixed in a platform, O, which forms the base of the structure, said beams being secured and braced together in a substantial manner by short cross-beams, bolts, &c.

The beams Q R, which centrally intersect, are so placed as to form guides or ways for the free movement of the yokes E E′, which unite the beams.

F is a horizontal screw-shaft, provided with suitable journal-bearings fixed in the frame, which runs through a central bearing, S, and yokes E′ E′, and has attached to it a bevel-gear wheel, G. Vertical shafts F^1 F^2, which are suitably journaled in the press-frame and the central bearing, S, are provided with bevel-gear wheels H H′, which mesh with the bevel-gear wheel G in the horizontal shaft. The said shafts F F^1 F^2 are screw-threaded right and left, and work in corresponding screw-threads formed in the yokes E E′, which yokes serve the purpose of nuts in their relation to said shafts. Against the vertical beams P are fixed beds or abutments C, which form bearings or rests for the bales as they are forced into reduced spaces by plungers A B. Suitable boxing may be provided in connection with these abutments, to resist the vertical and lateral pressure of the stock composing the bale.

The plungers A B are each provided with four globe-sockets, to receive the globe ends of bolts *a*, which are fixed in the ends of the beams M M^1 M^2 M^3. This style of connection we prefer to a simple link-connection, as it forms a universal combination joint, to allow a free movement of the arms, while the faces of the plungers are kept in true vertical planes during the movement toward and from the bales.

The horizontal shaft F is extended outside of the frame of the machine on one side to a block, *b*, which forms an end support. A spur-wheel, K, is fixed to this extension, and meshes with a pinion, J, which is keyed to a crank-shaft, I. This crank-shaft is provided with

suitable journal-bearings, fixed on the horizontal beams of the press-frame and support *c*, and has fixed or hinged to it a balance-wheel, L, and a crank, T.

In operating our press power is applied to the crank T, and motion is imparted to the horizontal shaft F^1 through pinion J and spur-wheel K. The vertical shafts F^1 F^2 are moved in opposite directions by the bevel-wheel G, which gears with wheels H H′. The screw-threads on the main or horizontal shaft F and vertical shafts F^1 F^2, playing in the yokes E E′, draw them inward toward or force them outward from a common center, while the toggle-levers control the plungers and force them in opposite directions, causing them to approach to or withdraw from their respective abutments.

In our drawings we have shown a single crank, although in practice we may find it to advantage to use a second crank on the end of the shaft I opposite to that now shown.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The beams M M^1 M^2 M^3, united by yokes E E′ and connected to plungers A B, in combination with screw-threaded shafts F F^1 F^2, provided, respectively, with bevel-gear wheels G H H′, as and for the purpose set forth.

2. The plungers A B, provided with globe-sockets, in combination with the ends of the beams M M^1 M^2 M^3, having globe-end bolts *a*, as and for the purpose set forth.

3. In a double-acting cotton-press, the frame fixed in platform O, composed of upright and horizontal timbers P Q′ Q R, the latter, Q and R, forming horizontal and vertical ways or guides for the toggle-levers, and the former, P Q′, forming abutment-bracing to the abutments C D, as and for the purpose specified.

4. In a double-acting cotton-press, the combined mechanical arrangement for operating the plungers, composed of the quadruple toggle-levers, the screw-shafts F F^1 F^2, bevel-gear wheels G H H′, spur-wheel K, pinion J, fixed on shaft I, and crank T, all arranged to operate as and for the purpose set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JAMES HAMILTON MATTHEWS.
CHARLES ROBERT MOREHEAD, JR.

Witnesses:
T. H. McMAHAN,
J. G. WILLIAMS.