3 Sheets--Sheet 1.

M. BRUNER, Jr.

Improvement in Baling-Presses.

No. 131,424. Patented Sep. 17, 1872.

Fig. 1

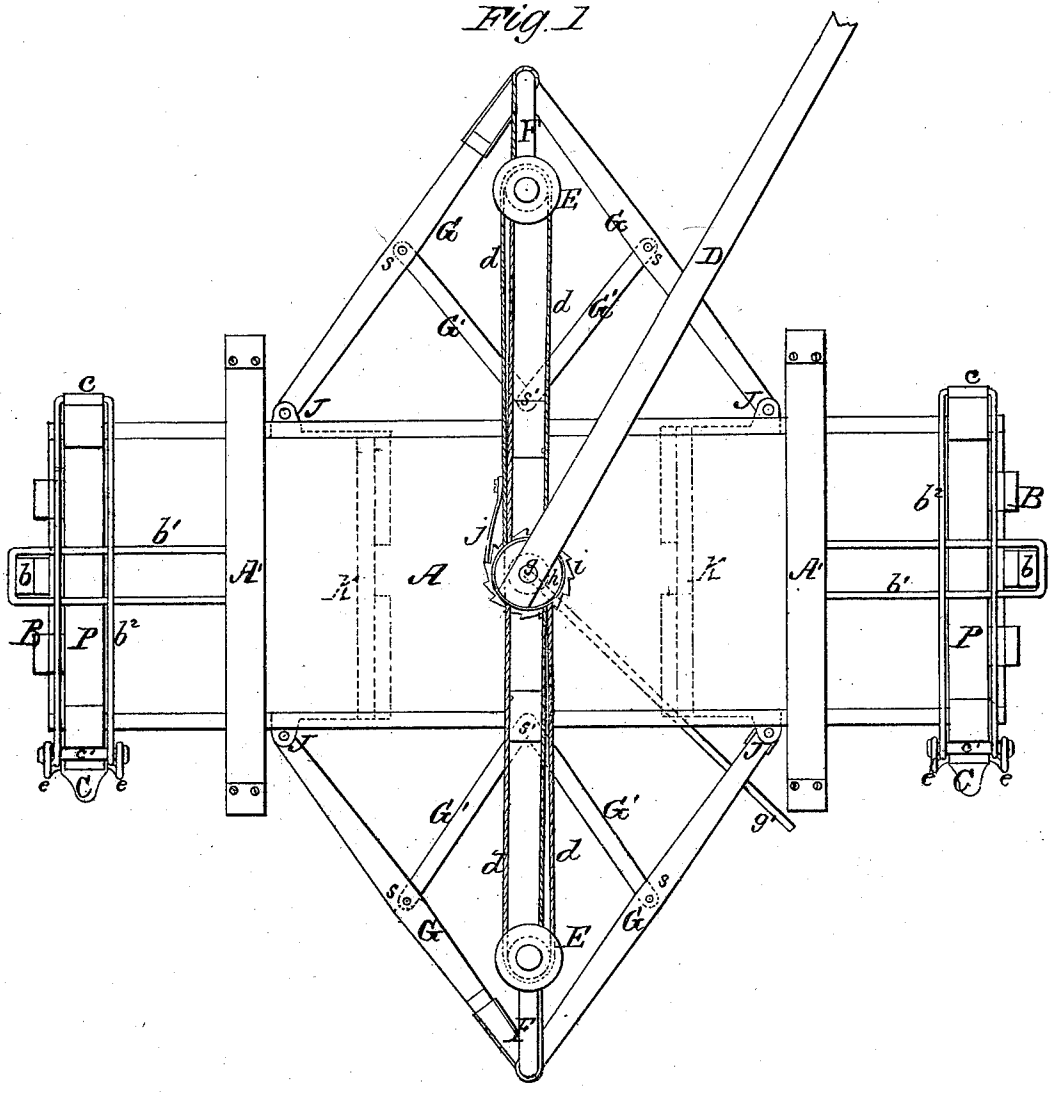

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Fig. 2

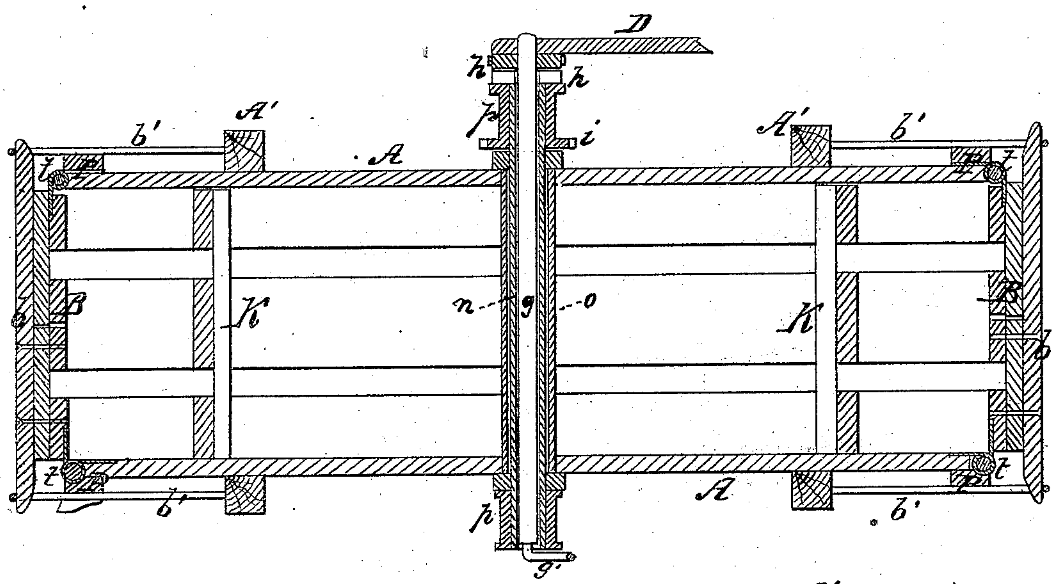
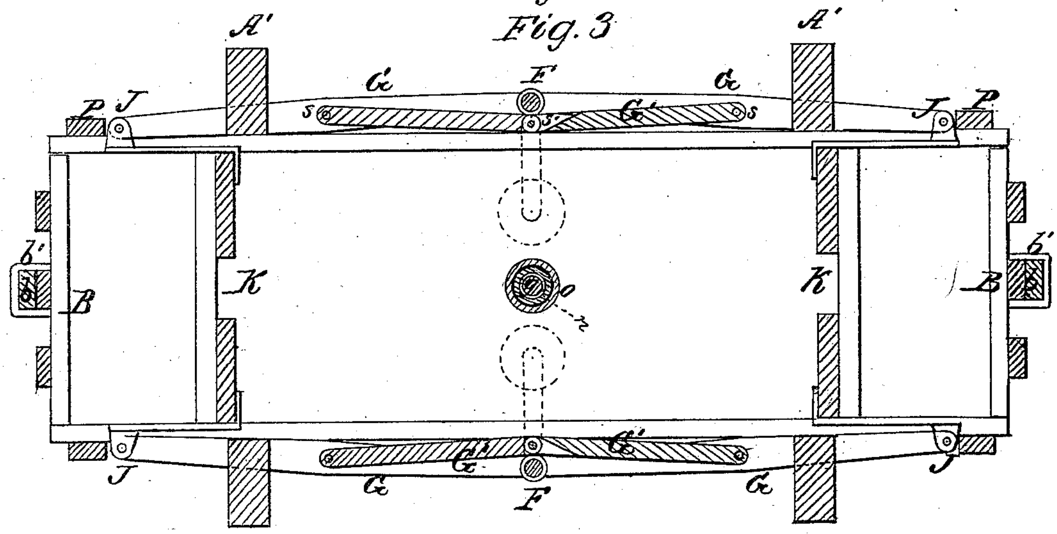


Fig. 3



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M. BRUNER, Jr.

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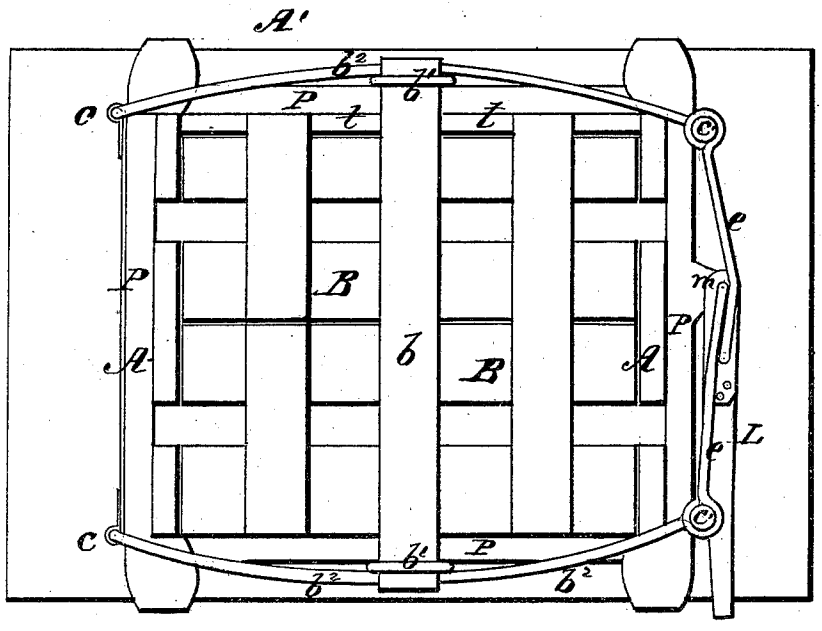
Fig. 4



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UNITED STATES PATENT OFFICE.

MARTIN BRUNER, JR., OF FREMONT, OHIO.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. **131,424**, dated September 17, 1872.

To all whom it may concern:

Be it known that I, MARTIN BRUNER, Jr., of Fremont, in the county of Sandusky and State of Ohio, have invented a new and Improved Baling-Press; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1, Plate 1, is a top view of the press ready for receiving the material to be baled. Fig. 2, Plate 2, is a section taken vertically and longitudinally through the center of the press. Fig. 3, Plate 2, is a section taken horizontally through the press, showing the levers and followers in the position they assume at the completion of pressing. Fig. 4, Plate 3, is a view of one end of the press with the doors shut and locked.

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

This invention relates to certain novel improvements on baling-presses, designed for pressing into bales cotton, hay, or other substances, wherein I employ two followers in the same press-box, and operate them by means of toggle-levers arranged on opposite sides of the box, and actuated by means of ropes or chains, pulleys, and windlasses, to which a sweep is applied, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing, A represents the press-box, which may be made of any desired length and capacity, and which is arranged horizontally, either in an established place, or it may be mounted on wheels and thus made portable. This box is strongly braced by means of braces A′ A′ and P P, which are applied around the box at those places where the bales necessarily receive the greatest resistance to internal pressure. The sides of the box are slotted longitudinally for the purpose of allowing the followers or pressing-heads *k k* to be moved by means of four pairs of levers, G G, the ends of which are pivoted to ears J J, which are secured to the ends of the said followers, as shown in Fig. 3. The levers G G on both sides of the press-box are alike, and each pair of these levers is pivoted to a vertical cranked rod, F, carrying pulleys E E on its ends. The levers G G are connected, by movable fulcrum pieces G′ G′, to the press-box at *s′*, and the outer ends of these pieces G′ G′ are pivoted to the said levers at *s s*, thus forming a compound toggle, from which great force is derived. Between the pulleys E E on top and bottom of the press-box are windlasses *p p*, around which ropes or chains *d d* are wound. One end of each rope or chain is secured to a cranked rod, F, thence carried across the box, passed around a pulley, E, thence carried back and around a drum or windlass, *p*, so that when the drums are turned so as to wind up the four ropes or chains *d* the rod F will be slowly and forcibly drawn toward the press-box, which operation will spread apart the ends of the levers G and thus move the two followers toward their respective ends of the press-box, the leverage increasing as the work progresses. The two windlasses *p p* are secured to the ends of a hollow vertical shaft, *n*, which is arranged exactly in the center of the press-box, and inclosed by a cylindrical case, *o*, as shown in Figs. 2 and 3. Just beneath the upper windlass *p*, and secured to its shaft *n*, is a ratchet-wheel, *i*, the teeth of which engage with a pawl, *j*, that prevents the windlass-shaft from rotating backward during the operation of pressing bales. On top of the upper windlass *p* is a face-ratchet, *h*, which engages with a corresponding ratchet, *h*, on a shaft, *g*, which passes through the hollow windlass-shaft *n*, to which latter ratchet the sweep D is secured. When the two ratchets *h h* are engaged motion given to the sweep in one direction will rotate the windlass-shaft *n* and wind up the ropes or chains *d* on their respective windlasses *p p;* and after each operation of pressing, by raising the shaft *g* by means of a lever, *g′*, applied to its lower end, the ratchets *h h* will be disengaged, and the followers can be easily and quickly returned to the positions indicated in Fig. 1 for repeating the operation of pressing without moving the sweep D at all. By these means the press can be readily placed in a condition for receiving material to be pressed after the removal of each bale, and this can be done without backing the animal attached to the sweep or unhitching him. Each end of the press-box A is closed by doors B B, which are hinged at *t t*. The lower door B has a vertical bar, *b*,

applied centrally to it, which, when the doors are shut, as shown in Fig. 2, receives over its ends metal loops b^1 b^1, thus securely holding the doors shut. For the purpose of firmly sustaining the ends of the press-box against the great strain to which they are subjected I employ, in addition to the braces P at each end of the box, binding-rods b^2 b^2, which are pivoted at *c c* to a metal strap, and, after arching across the box above and below it, are pivoted to the ends of rods c' c'. To these rods arms *e e* are connected, which are again connected to a hand-lever, L, on opposite sides of its fulcrum *m*, as shown in Fig. 4.

By pressing down the hand-lever the free ends of rods b^2 will be forcibly drawn over the ends of the braces P, thus securely strengthening the press-box against the pressure which it must bear while pressing a bale. By simply throwing up the levers L L the doors B can be opened and the bales removed in a convenient manner.

It is, of course, understood that the bales are strapped while in the press-box under pressure, and that any of the well-known straps and ties may be employed for this purpose.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of two followers within the press-box A, connected to levers G G, in combination with fulcrum pieces G G′, cranked rods F, pulleys E E, ropes or chains *d d*, and windlass *p p*, substantially as described.

2. The hollow windlass-shaft *n*, sweep-shaft *g*, and lifting-lever *g′*, combined with the ratchets *h h*, substantially as described.

3. The loops b^1 and bar *b* applied to the doors of the press, substantially as described.

4. The braces b^2 b^2, connected to lever L by arms *e e*, substantially as described.

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