(No Model.)

C. E. WHITMAN.

BALING PRESS.

No. 295,089. Patented Mar. 11, 1884.

Fig. 1.

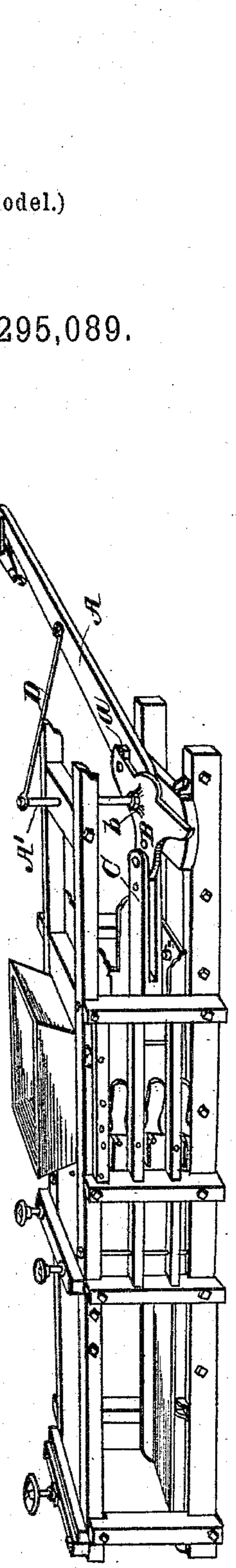


Fig. 2.

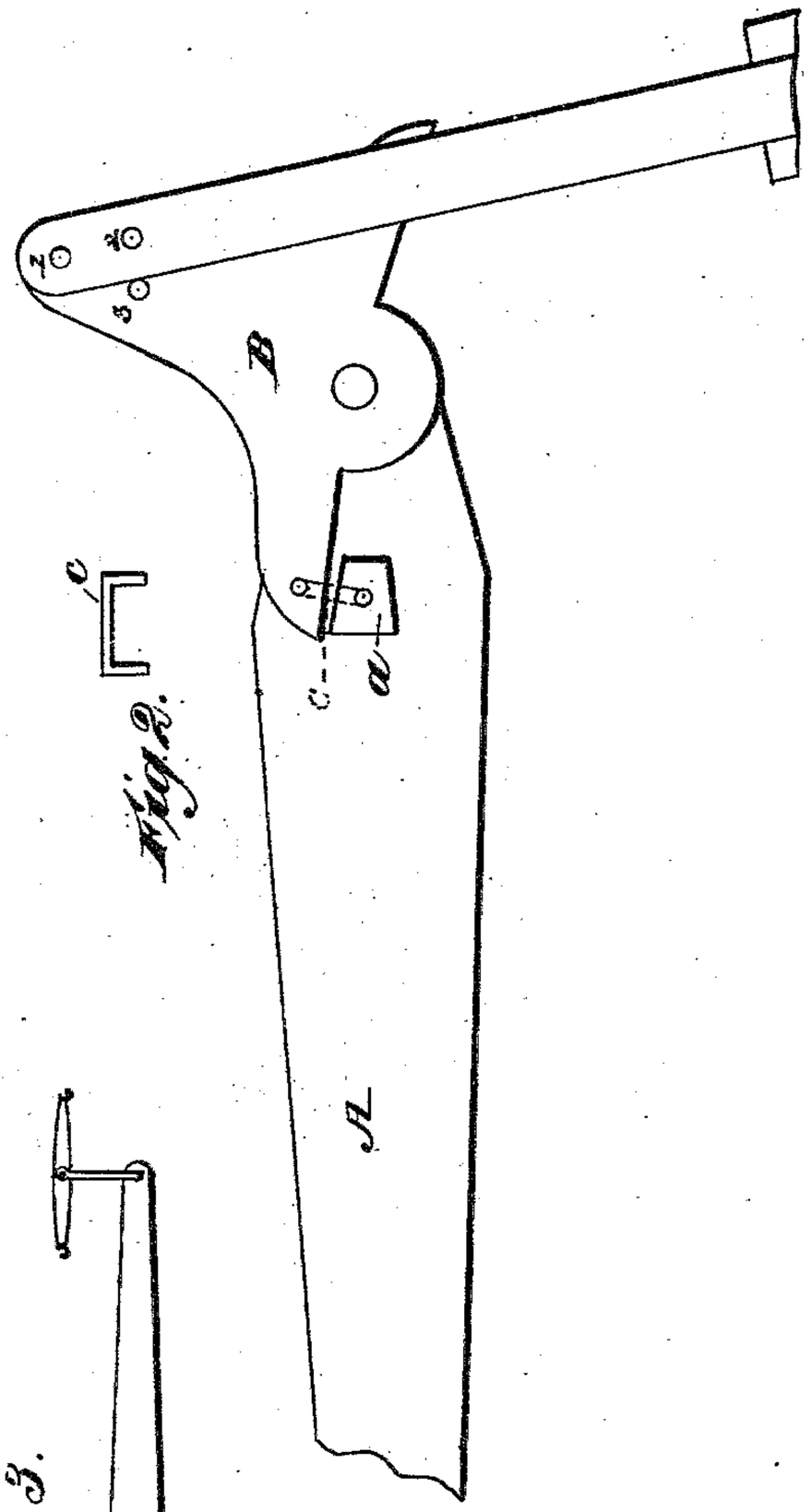
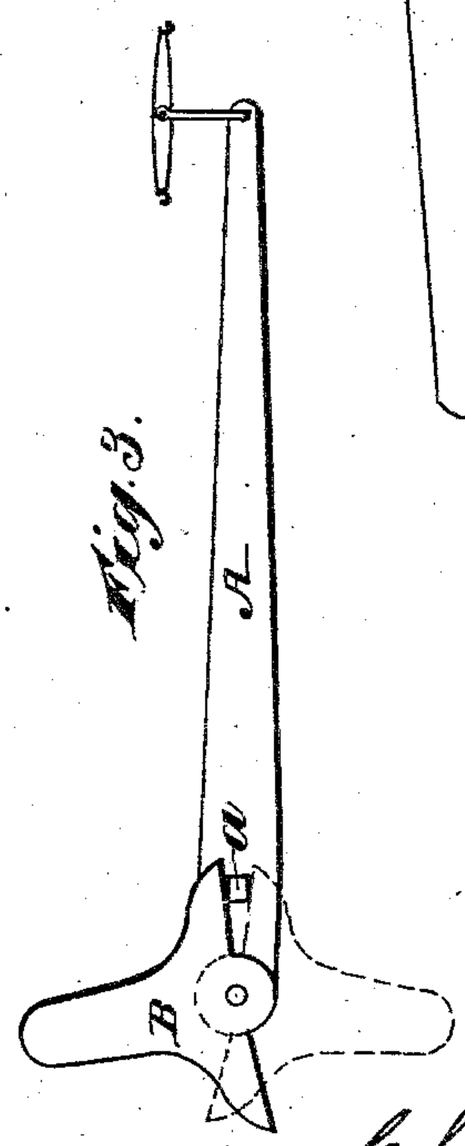


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES E. WHITMAN, OF ST. LOUIS, MISSOURI.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 295,089, dated March 11, 1884.

Application filed February 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WHITMAN, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has reference to certain improvements in the application of power in horizontal baling-presses for baling hay, cotton, &c., and relates to that class of horizontal baling-presses comprising a press-box, plunger, or traverser, retainers, pitman, and sweep, and in which the plunger is thrown back in position to receive another charge of the material to be pressed by the expansion of the pressed material against the head of the plunger independent of the movement of the sweep and horse.

My improvements consist of a slotted pitman, a bell-crank lever, and a lug or roll on the sweep, arranged in relation to each other, as hereinafter described; also, in a rigid connection between the sweep and lever.

Referring to the drawings, making a part of this specification, Figure 1 is a perspective view of the character of press described, with my improvements in connection therewith. Fig. 2 is a detail of the sweep, bell-crank lever and pitman, and attaching staple or link. Fig. 3 shows the bell-crank lever in two positions.

Like letters of reference indicate corresponding parts in the different views.

A is the sweep, to which the horse is attached by means of a single-tree or other known appliance. The sweep A is provided with a lug, *a*, near its inner end, adjacent to where it revolves, or is turned on a horizontal plane on a vertical rod or shaft, A′, which is secured to the top and bottom of the frame of the press. Just above the sweep, and also arranged to revolve on the shaft A′, is a bell-crank lever, B. This lever has an aperture at one of its sides, through which the shaft or rod A′ passes. In one of its other arms it is provided with one or a series of holes or apertures, through one of which it is pivoted to the slotted end of the pitman C. The pitman consists of a straight arm or lever, the inner end of which is pivoted to the plunger or traverser, and the outer end is slotted to receive one arm of the bell-crank lever. The slotted end of the pitman is also provided with one or more holes or apertures corresponding with those in the arm of the lever B, and the two levers are pivoted together by a suitable bolt or pin. By means of the two series of holes 1 2 3 or apertures, when more than one hole is used in the bell-crank lever B and pitman C, they may be readily adjusted to increase or diminish the throw of the plunger in a manner that will be readily apparent, and thus increase or diminish the pressure against the bale, and at the same time throw the plunger or traverser forward to the same point. A rod, D, is attached to the sweep at one of its ends and pivoted to the top of the shaft A′ at the other, for the purpose of holding the sweep in a horizontal position, its tendency being to drop downward. The bell-crank lever B is provided with an enlarged bearing, *b*, which holds it more firmly in position. I propose to use two of these levers in certain instances—that is to say, one above and one underneath the sweep. The slot in the end of the pitman would then be dispensed with, and the two levers would be pivoted to the top and bottom of the pitman. The sweep would also be provided with a lug on its lower as well as its upper side in this instance; or, if desired, one of the ends of the bell-crank lever may be slotted and the end of the pitman be inserted therein and pivoted thereto. I deem these variations merely equivalents, and I do not restrict myself to the use of any one of them. The parts may also be reversed by providing the bell-crank lever with lugs and dispensing with them on the sweep. The operation would be precisely the same and wholly within the spirit of my invention.

The frame-work of the press, the form of the traverser, and the retainers shown in the drawings are well known, and I do not claim them as a part of my present invention, excepting in combination with my improvements.

In the operation of the press, the horse is hitched to the sweep and driven on a curved path until the sweep has made nearly a half-revolution in horizontal plane. When the end of the pitman passes the vertical rod or shaft A′, one of the arms of the bell-crank lever is disengaged from the lug, and by the expansive force of the compressed material the pitman

is thrown back on the opposite side, while the sweep remains stationary, the plunger or traverser then being in position to receive the next charge of material to be pressed. The horse is then moved in the opposite direction and the operation may be repeated indefinitely, causing a continuous forward movement of the plunger while the horse is in motion, thus obtaining the longest possible throw of the plunger, and at the same time moving the horse in the shortest possible path.

The series of holes in the arms of the bell-crank lever and the corresponding holes in the end of the pitman are for the purpose of increasing or diminishing the power, as before stated. For example, by adjusting the pitman so that its outer hole or aperture will coincide with the inner hole of the series of the lever the greatest amount of power is obtained, and the plunger is nevertheless still thrown forward to the same point, in order that the retainers may receive and hold the compressed material.

In the operation of baling, it is apparent that until the bale is formed in the press-box sufficiently compact to throw back the plunger by its elasticity some means must be devised for this purpose. To obviate this difficulty in the beginning of the baling operation, when the press-box is empty, and until one bale is formed, I couple the bell-crank lever and sweep rigidly together.

I prefer to use the staple-shaped device *c*, (shown in Fig. 2 of the drawings,) but any other well-known means may be used. One of the lugs of the staple is inserted in a hole in one arm of the bell-crank lever, and the other lug in a hole in the sweep. As soon as a bale is formed, as before stated, the staple or link is removed, and the plunger is thereafter thrown back by the expansive force of the pressed material.

A stop, X, may, if desired, be placed on the base of the press-box to prevent the traverser from rebounding too freely.

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

1. In a horizontal baling-press, the combination of a bell-crank lever with a pitman, traverser, sweep, and press-box, substantially as described.

2. In a horizontal baling-press, the combination of the slotted pitman with the traverser, bell-crank lever, and sweep, substantially as described.

3. In a horizontal baling-press, the combination of the sweep provided with a lug or lugs, bell-crank lever or levers, or the equivalent thereof, as set forth, with the pitman and traverser, substantially as described.

4. In a horizontal baling-press, the combination of a bell-crank lever provided in one of its arms with a series of holes or apertures, a pitman also provided with a series of holes, and a suitable connecting pin or bolt for increasing or diminishing the power, and yet advancing the traverser to the same point, substantially as set forth.

5. In a horizontal baling-press, a connecting-link between the bell-crank lever and sweep, for securing them rigidly together at the commencement of the baling operation, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES E. WHITMAN.

Witnesses:

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