Jan. 15, 1924. 1,480,895

F. W. CUTLER

BOX PRESS

Filed Nov. 19, 1920

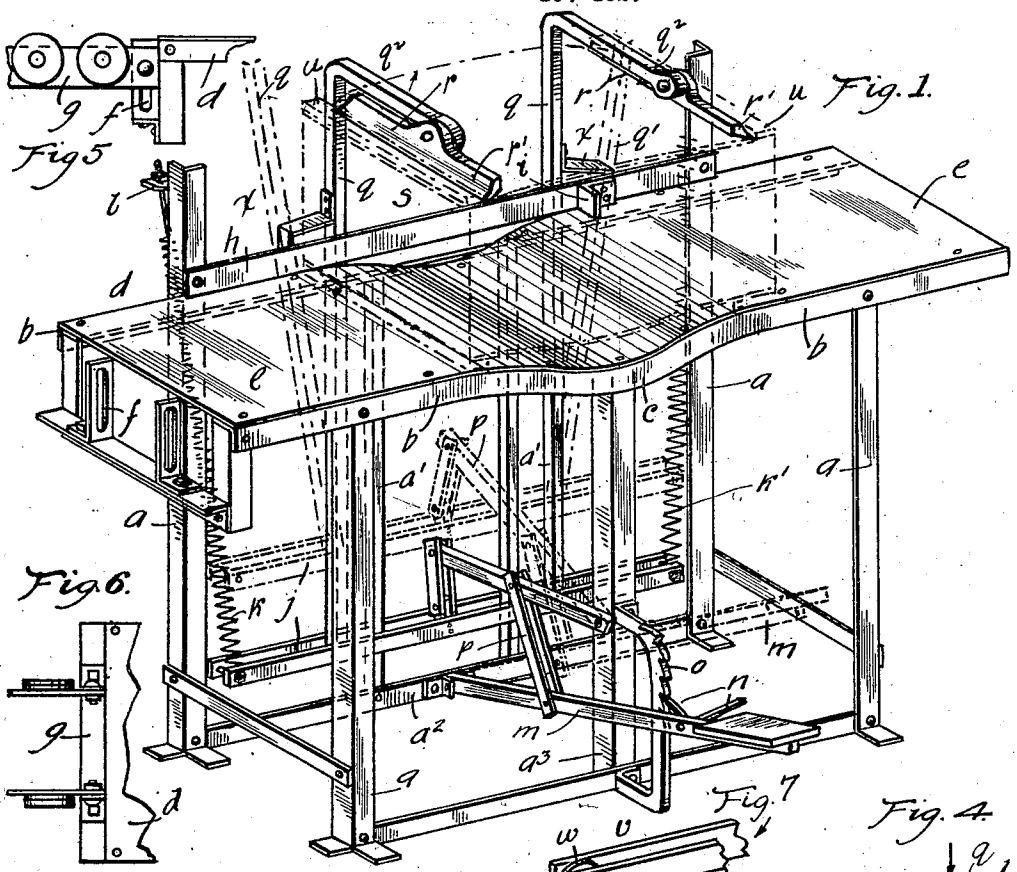


Fig. 1.

Fig. 6.

Fig. 7

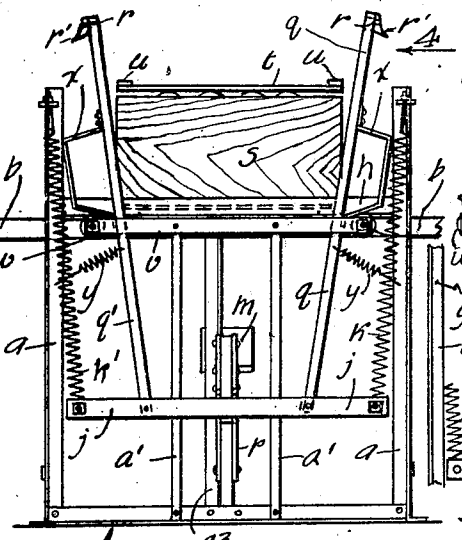


Fig. 2.

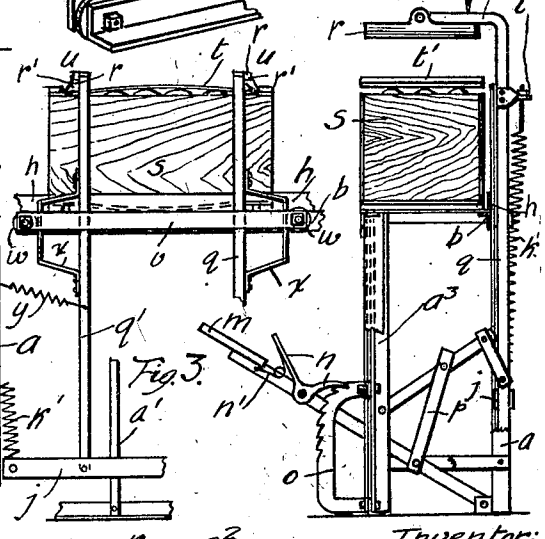


Fig. 3.

Fig. 4.

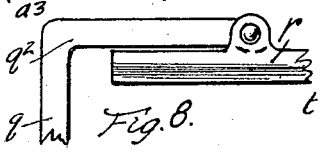


Fig. 8.

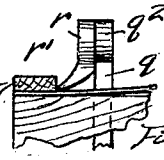


Fig. 9.

Inventor:
Frank W. Cutler
by Atty.

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UNITED STATES PATENT OFFICE.

FRANK W. CUTLER, OF PORTLAND, OREGON, ASSIGNOR TO CUTLER MANUFACTURING COMPANY, OF PORTLAND, OREGON, A PARTNERSHIP COMPOSED OF FRANK W. CUTLER AND ASA B. CUTLER, BOTH OF PORTLAND, OREGON.

BOX PRESS.

Application filed November 19, 1920. Serial No. 425,067.

To all whom it may concern:

Be it known that I, FRANK W. CUTLER, a citizen of the United States, and a resident of Portland, county of Multnomah, and State of Oregon, have invented a new and useful Improvement in Box Presses, of which the following is a specification.

My invention relates to machines commonly called "box presses" designed for forcing down the cover of a wooden box, such as used for packing apples, and holding the same in place while being nailed down.

These presses usually include a table on which the box is supported in place for being operated upon by the press; and, as heretofore generally constructed, it was necessary for the box to be moved along the full length of the table, that is, over one end into place, and off the other end; the cover-holding work, however was done in the middle of the table. The time consumed in moving the box from the middle of the table over the far end of the latter was considerable.

One of the objects of my invention is to eliminate such waste of time by providing an improved press, of simple construction, so arranged that as soon as the box has had its cover nailed down, it may be pushed off the table backwards from the middle of the latter onto a conveyor provided to receive it.

A further object of my invention is so to construct the means as to assure holding the cover firmly down on the box top, while being nailed thereon. In order to attain this result it is necessary that said means are adapted to adjust themselves to any transverse unevenness in the surface of the cover.

Such unevenness is frequently present, because the covers are very apt to be made of pieces varying in thickness, and hence, the thinner piece would not be held firmly in place.

A still further object of my invention is that the pressure of the holding means will be applied to the ends of the cover, and only along a narrow transverse surface portion thereof, which assures that the cover will be firmly held in place during the nailing operation notwithstanding the convexity of the cover due to the same bearing on pieces of fruit projecting over the top of the sides of the box.

I attain my object in a press having cover holding devices so arranged that they will normally stand clear of the box when placed in position on the table, and after having been operated to force the cover down said devices will again, automatically, move away from the box thereby clearing the latter, and thus permitting the operator to push it backwards off the table onto the conveyor. And furthermore said cover holding devices bear down on the latter close to its ends, and are adapted to adjust themselves to any unevenness in the cover, so as to bear firmly notwithstanding variations in the thickness of the cover.

My invention furthermore provides a strong and efficiently operating box-press.

The novel combination of parts by which I attain the above stated and incidental features are hereinafter fully described.

In the accompanying drawings, referred to in such description,

Fig. 1 is a perspective view looking at the front of my box-press. The devices for forcing and holding the cover of the box down on the body of the box are shown in full lines, where not covered by other parts, in the positions which they assume when they have been operated to bear down upon and hold the box-cover in place while being nailed down; the box and its cover are shown in broken outline, and said cover operating devices are also partly shown in broken outline in their initial or normal positions;

Fig. 2 shows a rear side elevation, on a smaller scale, of my box-press, the ends of the table being broken away;

Fig. 3 shows a fragmentary rear side elevation of my box-press, showing the operating parts as positioned when the treadle or foot-lever has been depressed;

Fig. 4 is an end elevation of my box-press corresponding with Fig. 2, and looking in the direction indicated by the arrow 4 in latter figure;

Figs. 5 and 6 are respectively a side elevation and top view of a convenient type of wheeled conveyor to be attached to the receiving end of the table of my press for moving the box onto the latter;

Fig. 7 shows a detail of construction of the guide *v;* and

Figs. 8 and 9 show details of construction of the claws *r* pivoted to the arms *q*.

The frame a supports a table b made with a depression c at the middle to accommodate the usual bulge at the bottom of a box in which fruit such as apples is packed; the table has lateral extensions d and e, the extension d having brackets f adapted for affixing thereon a gravity carrier, as shown by g in Figs. 5 and 6, or a similar conveyor.

At the back of the table b is provided a rib h to which is affixed an angle-piece i, said rib and angle-piece serving as alining elements for properly positioning the box with respect to the means for holding the cover of the box in place during the nailing operation. The alining element i is shown only in Fig. 1.

On the frame members a' is mounted vertically slidable a horizontal bar j conveniently made of two members as shown in Fig. 1. To the ends of this horizontal bar j are fastened the lower ends of the coil springs k, k', the upper ends of which are fastened to perforated lugs l by devices providing for the adjustment of the tension of the spring, as shown in Figs. 1 and 4.

On the frame-member a^2 (see Fig. 1) is pivoted a treadle or foot-lever m, on which is pivoted a pawl n controlled by a spring n' (see Fig. 4) and adapted for engagement with a rack o on frame-member a^3. The treadle is connected through the medium of a lever-and-links element p with said horizontal vertically movable bar j. On the latter bar are pivoted arms q and q', the upper ends q^2 of which are bent horizontally, and to such upper ends are pivoted horizontal claws r adapted to overlie the ends of the box s when said arms q and q' are thrown into vertical position. The claws r may thus adapt themselves to any unevennesses in the upper surface of the box cover due to variations in thickness of the boards composing the box cover. Furthermore the faces of the claws r of the arms q and q' are beveled to one side, as illustrated at r' in Figs. 1, 3 and 9 so that when the claws bear down on the top of the cover t of the box adjacent to the cleats u, they will not interfere with the nailing of the cleats in place.

On the upper ends of the frame-members a' is carried a guide v for the arms q and q', such guide being preferably made of two bars one of which is an angle iron, and in such guide are journalled cam-rollers w. (See detail Fig. 7.) The arms q and q' are provided with cams x, the lower faces of which are adapted, in cooperation with the cam-rollers w of the guide v, to move the arms q and q' together when the latter arms are given a downward pull.

Said arms q and q' initially, and normally, stand in inclined positions, and when moved together assume a vertical position; and when said arms have been moved into vertical positions the claws r will be positioned to bear down upon the ends of the box-cover. By then bearing down with the foot upon the treadle m, the box-cover is forced into place as illustrated in Fig. 3, ready for nailing, the nails being driven through the cleats u. See also in Fig. 1, in which the box, its cover, and the cleats u are shown in broken outline.

Upon the release of the treadle, m, and the lifting of the horizontal bar j by the springs k and k', the arms q and q' will be pulled back into their inclined position, thus out of the way of the box, as illustrated in Fig. 2, and also by broken outlines in Fig. 1, thereby clearing the box and permitting the same to be thrown back over the rail h on to a suitable conveyor.

From the foregoing description it will be seen that my box-press is contrived to facilitate and expedite the cover nailing work, since the box, after having its cover nailed on, does not have to be moved the full length of the table but may be thrown off the latter on to a conveyor, not shown, but in practice located at the middle of the back of my box-press, and usually extending at right angles therefrom, and thus saving the time which would be consumed in requiring the box to be moved from the middle of the table over the end e.

I claim:

1. In a box press, a table, a pair of arms located at one side of the table, said arms being movable vertically, and also together and apart, the upper ends of the arms being provided with portions extending horizontally cross-wise of, and above the table top, means normally holding the arms uplifted and spaced apart, means for pulling the arms downward, means moving the arms together while moved downward, said arms being so adapted that a box may be moved lengthwise over the table top under their said horizontal arm-portions, and also pushed across, and from the table between the arms, when the latter are arranged in their said normal position.

2. In a box press, a table, a pair of pivoted, vertically movable arms, located at one side of the table, the upper ends of the arms being provided with portions extending horizontally cross-wise of, and above the table top, means normally holding the arms uplifted and spaced apart at an angle with each other, means for pulling the arms downward, means throwing the arms into parallelism while moved downward, said arms being so adapted that a box may be moved lengthwise over the table top under their said horizontal arm-portions, and also pushed across, and from the table between the arms, when the latter are arranged in their said normal position.

FRANK W. CUTLER.