Feb. 16, 1932. W. L. HANCOCK 1,845,148

COTTON PRESS CENTERING AND RETAINING DEVICE

Filed April 30, 1928 2 Sheets-Sheet 1

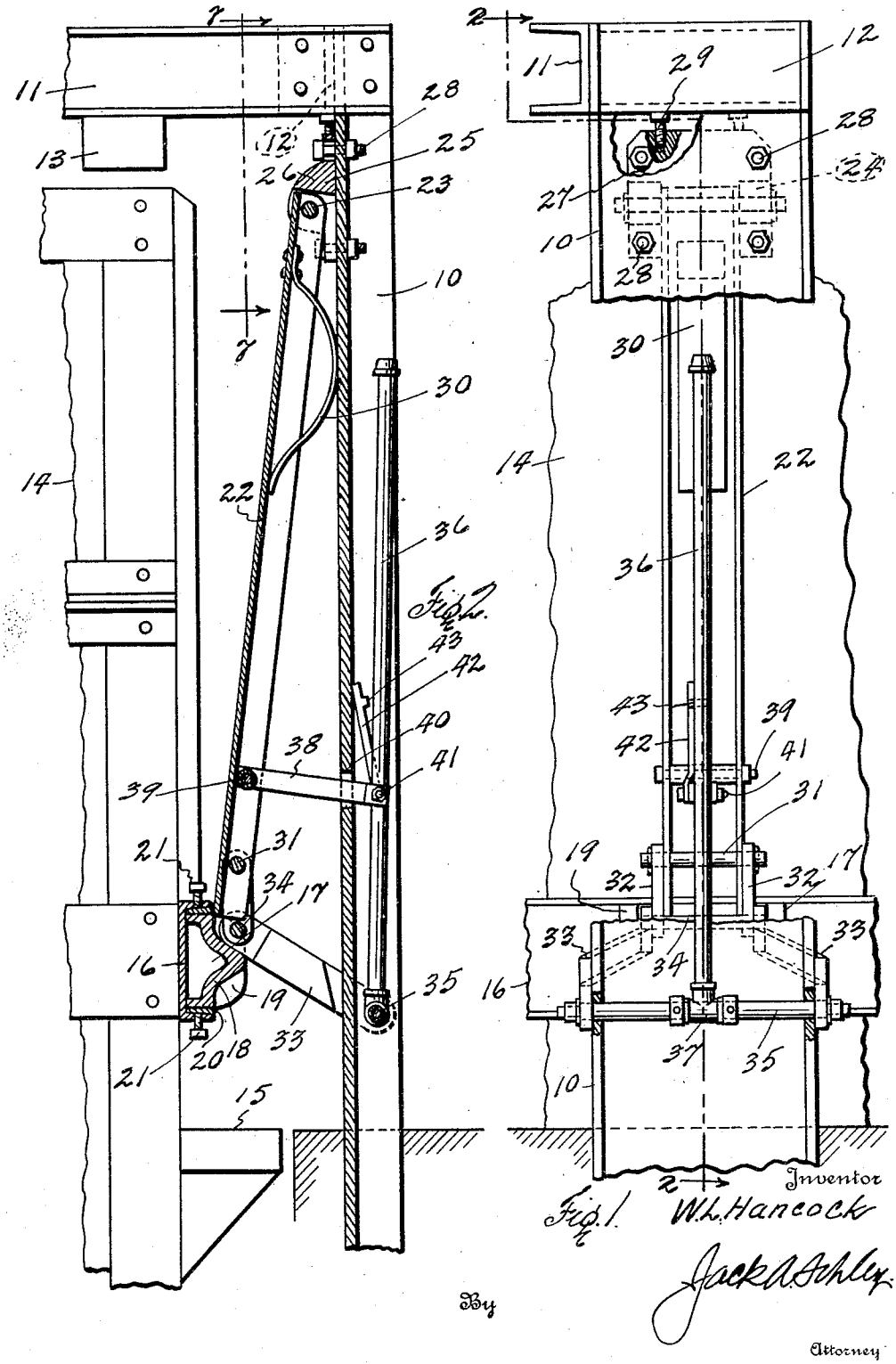

Fig. 1

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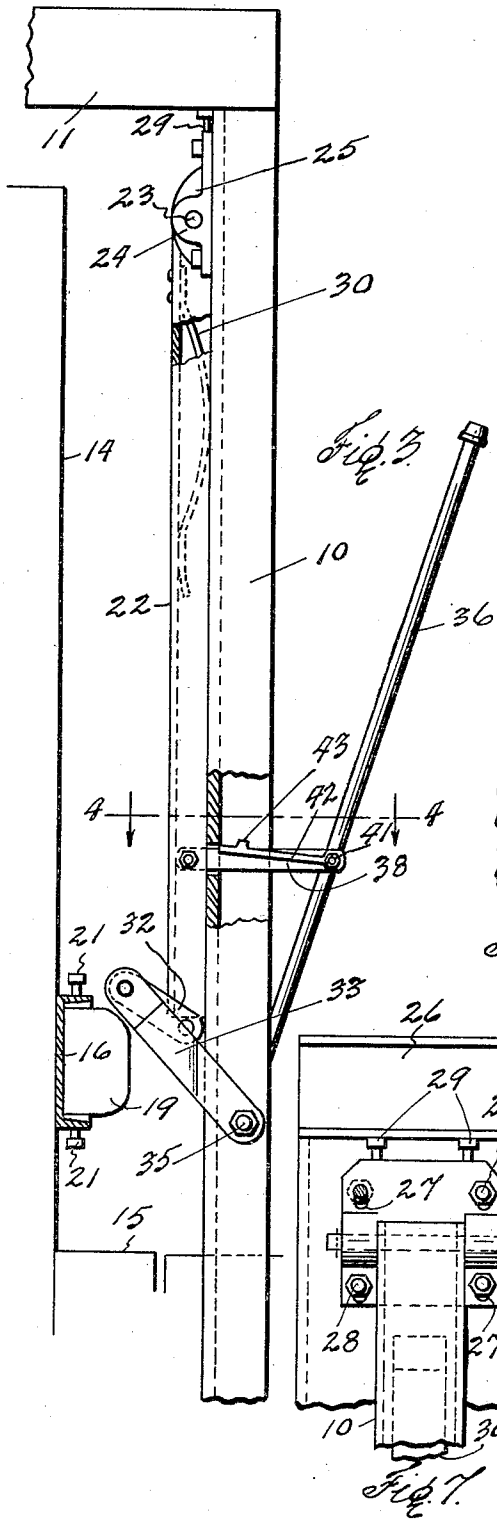

Fig. 3.

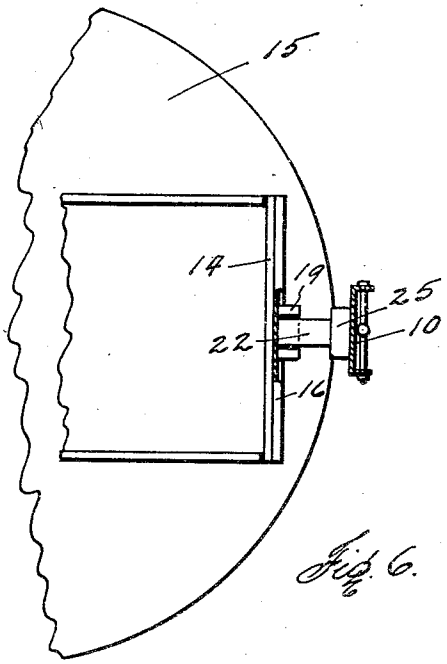

Fig. 6.

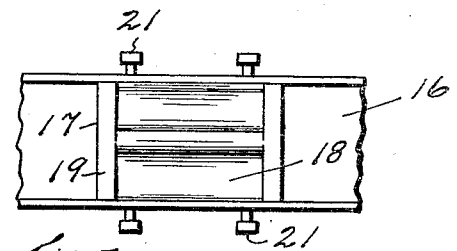

Fig. 5.

Fig. 7.

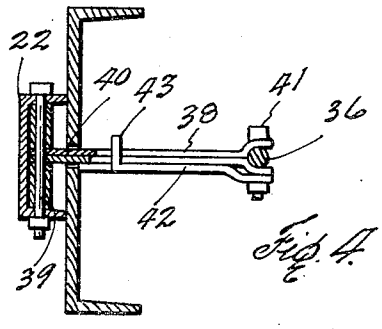

Fig. 4.

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UNITED STATES PATENT OFFICE

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COTTON PRESS CENTERING AND RETAINING DEVICE

Application filed April 30, 1928. Serial No. 274,031.

This invention relates to new and useful improvements in cotton press centering and retaining devices.

The invention has particularly to do with the double box type of cotton press commonly used in gin houses for forming the ginned cotton into bales.

One of the objects of the invention is to provide a box retaining and centering device which will be entirely free from connection with the platform, thus having the advantage of being out of the way of the operators and reducing the hazard of accidents, as well as saving labor.

A particular object of the invention is to provide a device mounted on the press frame instead of on the platform and adjacent floor, and located to be engaged with the press box for locking said box and the platform against rotation as well as centering the box under the top platen.

A further object of the invention is to provide a box-centering and retaining device arranged so that when engaged with the box, to co-act with the press frame in sustaining the upward thrust contributed to the box by the ram and lower platen, whereby a more symmetrical bale is formed, canting of the centrally pivoted platform and the press box is eliminated; and also whereby the press box is held down and its spaced relation from the top platen is maintained, thus obviating the danger of catching the workman's fingers therebetween.

Advantages of the invention are to be found in the general stability of the device and the elimination of warping and distorting strains during the pressing action, as well as the the convenience of operation and location, together with the positive locking of the device whereby it cannot be unlocked by the upward thrust of the ram and the requirement that the box be in an exact predetermined position before it can be locked, thus making for automatic centering.

A construction designed to carry out the invention will be hereinafter described, together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawing, in which an example of the invention is shown and wherein:

Fig. 1 is a view in elevation showing a device constructed in accordance with my invention and mounted on one end of a cotton press form,

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1, the box being locked,

Fig. 3 is a similar view to Fig. 2, certain parts being in elevation and the box being unlocked,

Fig. 4 is a horizontal cross-sectional view taken on the line 4—4 of Fig. 3,

Fig. 5 is a detail of the locking block,

Fig. 6 is a horizontal cross-sectional view showing a portion of the platform and press box with the centering and retaining device,

Fig. 7 is a vertical sectional view taken on the line 7—7 of Fig. 2.

In the drawings the numeral 10 designates the channel upright of a cotton press frame and 11 the top platen channels which are braced by a bracket 12 secured to the inner side of the upright as is shown in Figs. 1 and 2. The channels 11 have suspended therefrom the top platen 13 under which the press box 14 is centered. The box is secured in one side of the circular platform 15, there being two boxes to a platform.

Each box has a transverse channel sill 16 across one end at the bottom of the end door and when the platform is rotated this sill is brought adjacent the upright 10. In the central portion of each sill is secured a block 17 having an outwardly curved transverse boss 18, the upper side of which forms a seat. Guide wings 19 are formed on the block at each end of the boss.

The block is invertible and in order to position the boss at the desired height, shims 20 are inserted between the top and bottom of the block and the flanges of the sill and held by set screws 21. By removing the upper shim and adjusting the screws the block may be raised, or by removing the lower shim the block may be lowered. By this arrangement the block may be nicely adjusted to the proper point to receive the locking means.

Elements of the retaining and centering

device are mounted on the upright 10. A strut channel 22 is pivoted at its upper end upon a short shaft or pintle 23 journaled in ears 24 of a head block 25. The block is recessed to receive the upper end of the strut and has an overhanging abutment 26 (Fig. 2) for receiving the upward thrust of the strut.

The block has reduced portions provided with slots 27 for receiving supporting bolts 28 secured in the upright, whereby the block may be adjusted vertically on the inner flat side of the channel upright. A pair of spaced set screws 29 mounted in the upper edge of the head block bear against the bracket 12, thus protecting the bolts from shearing.

The strut 22 has its channel side toward the upright and a bowed leaf spring 30, having its upper end secured to the upper portion of the strut within the channel, engages the upright and acts to swing the strut toward the box from said upright.

Near the lower end of the strut a pintle 31 extends through the flanges and has keyed thereon external links 32. The lower ends of the links are pivoted to outwardly bent yoke bars 33 by a cross bolt 34. The bars 33 straddle the upright and are pivoted at their outer ends on a rock shaft 35 journaled in the flanges of the upright 10.

When in locking position the inner ends of the yoke bars 33 rest upon the seat formed by the boss 18 and adjacent the side wings 19. The pintle 31 is displaced toward the box 14 with relation to the cross bolt 34, whereby the toggle joint formed by the parts is sprung far enough out of line to prevent unlocking of the parts by an upward thrust of the box.

The holes in the strut 22, which receive the pintles 23 and 31, are large enough to permit a slight longitudinal movement of the strut, whereby its upper end may engage the abutment 26 and the bolt 34, may engage its lower end upon an upward thrust of the box. These parts normally have just a passing clearance so that only a slight movement of the strut is necessary.

It will be seen that with the parts in their locked position, the box is centered under the top platen 13 and the box is also braced against the upward thrust of the ram. The platform 15 is also held against rotation.

To swing the parts into their locked and unlocked positions a hand lever 36 is centrally fastened on the shaft 35 by a coupling 37. A pitman 38 has one end pivoted to a bolt 39 mounted in the strut (Fig. 4) and the other end pivoted on a bolt 41 passing through the lever. The pitman extends through a slot 40 in the upright. A latch 42 is pivoted to the bolt 41 and has a finger 43 extending at right angles near its free end and resting upon the pitman when the lever is pulled outwardly, whereby the free end of the latch is held in engagement with the upright and the lever so maintained.

When it is desired to unlock the box the lever is pulled outward from the position shown in Fig. 2 to the position shown in Fig. 3. The latch 42 will drop from the upright position in Fig. 2 to the horizontal position shown in Fig. 3, where the finger 43 supports it. The outward swing of the lever will pull the pitman 38, which will first "break" the toggle joint and then swing the strut against the upright 10.

As the strut swings toward the upright, the links 32 will be swung on the pintle 31 and thus exert a pull on the bolt 34, whereby the yoke bars will be carried upwardly and their inner ends raised from the seat on the boss 18 of the block 17. Referring to Fig. 3, it will be seen that the yoke bars are sufficiently elevated to permit the wings 19 to freely pass thereunder, so that the platform 15 and the box 14 may be rotated with ample clearance.

Before the retaining device can be engaged with the seat of the block 17, the box 14 must be centered under the top platen 13. This is an important point as the workman must bring the platform and the box to the proper point, before the yoke bars 33 can be dropped between the wings 19 and seated. The sill 16 of each box is, of course, provided with a block 17 and by means of the shims 20, each block can be adjusted to the proper height to seat the bars on the boss 18, when the toggle is sprung.

Because the latch 42 will retain the parts in the unlocked position (Fig. 3) until the box is centered, the workman is not required to hold the lever 36, while the box is being centered. The spring 30 being compressed will aid in swinging the strut to lock the box, when the latch 42 is raised to release the lever. The stability of the lock, whereby the strut 22 and block 25 sustain the upward thrust, is a feature making long life of the press, as well as aiding in maintaining the parts in first class working order.

Various changes in the size and shape of the different parts, as well as modifications and alterations, may be made within the scope of the appended claims.

What I claim, is:

1. In a cotton press centering and retaining device, a head block, a strut pivoted at its upper end to the head block, a pair of links pivoted to the lower end of the strut, a pair of yoke arms pivoted to the links, a pivotal support for the said arms, an operating lever, and a pitman connecting the lever with the strut.

2. In a cotton press centering and retaining device, a head block, a strut pivoted at its upper end to the head block, a pair of links pivoted to the lower end of the strut, a pair of yoke arms pivoted to the links, a pivotal support for the said arms, an operating lever,

a pitman connecting the lever with the strut, and a latch connected with the lever.

3. As a sub-combination in a press box centering and retaining device, a seat block having a longitudinal seat and transverse guide wings at each end, and shims for mounting said block at different elevations on a press box.

4. In a cotton press centering and retaining device, the combination with the press frame and boxes, of a head block adjustably mounted on the frame, set screws on the upper end of the block engaging the frame for taking the upward thrust of said body, a strut having its upper end pivoted to said block, said block having an abutment overhanging the upper end of the strut for taking the upward thrust of the strut, a seat block for mounting on a press box, linked means for sustaining the lower end of the strut, and means for swinging the strut and the linked means into engagement with the seat block.

5. In a cotton press centering and retaining device, the combination with the upright of the press frame and the boxes, of a strut pivoted at its upper end to the upright of said frame, a leaf spring carried by the strut and engaging the upright, a rock shaft journaled in the lower portion of the upright, an operating lever mounted on said shaft on the outside of said upright, a pitman pivoted to said lever and extending through the upright and also pivoted to the strut, a pair of yoke bars mounted on the rock shaft and straddling the upright, a pair of links connecting the lower end of the strut with the inner ends of the bars, and a seat block fastened on the sill of the adjacent press box and engaged by the yoke bars.

6. As a sub-combination in a press box centering and retaining device, a block having a longitudinal seat and a retaining wing at each end of the seat extending outwardly therefrom and at an angle thereto, and means for securing said block to the vertical end of a press box.

7. In a cotton press centering and retaining device, the combination with the press boxes, of a seat block carried on one vertical end of each box, a locking and centering member mounted on the press frame, means for moving the member into and out of engagement with the block, and means for adjusting the block on each box to position it to be engaged by the locking member when the box is centered under the press platen.

8. In a cotton press centering and retaining device, the combination with the rotary press boxes, of seats affixed to the outer ends of the boxes, and locking means including a rigid thrust member pivoted on the press frame and movable successively into locking engagement with the seats, whereby the press boxes are fastened against rotation, the seats being located above the ram of the press, whereby the locking thrust member sustains the upward thrust of the ram and the box prevented from tilting.

9. A cotton press centering and retaining device as set forth in claim 8, with an upright lever for swinging the thrust member to and from the seats, a connection between the thrust member and the lever, and means separate from the lever for fastening the thrust member out of the path of the seats.

10. In a cotton press centering and retaining device, the combination with the rotating press boxes, of seats affixed to the outer vertical ends of the boxes below the end doors thereof, a vertical thrust member pivoted at its upper end to the press frame, a swinging support for the lower end of the member, an operating lever, and a connection between the lever and the member for swinging the lower end of the member to and from the seat.

In testimony whereof I affix my signature.

WILLIAM L. HANCOCK.