

N. W. L. BROWN.

OIL PRESS BOX.

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953,317.

Patented Mar. 29, 1910.

2 SHEETS—SHEET 1.

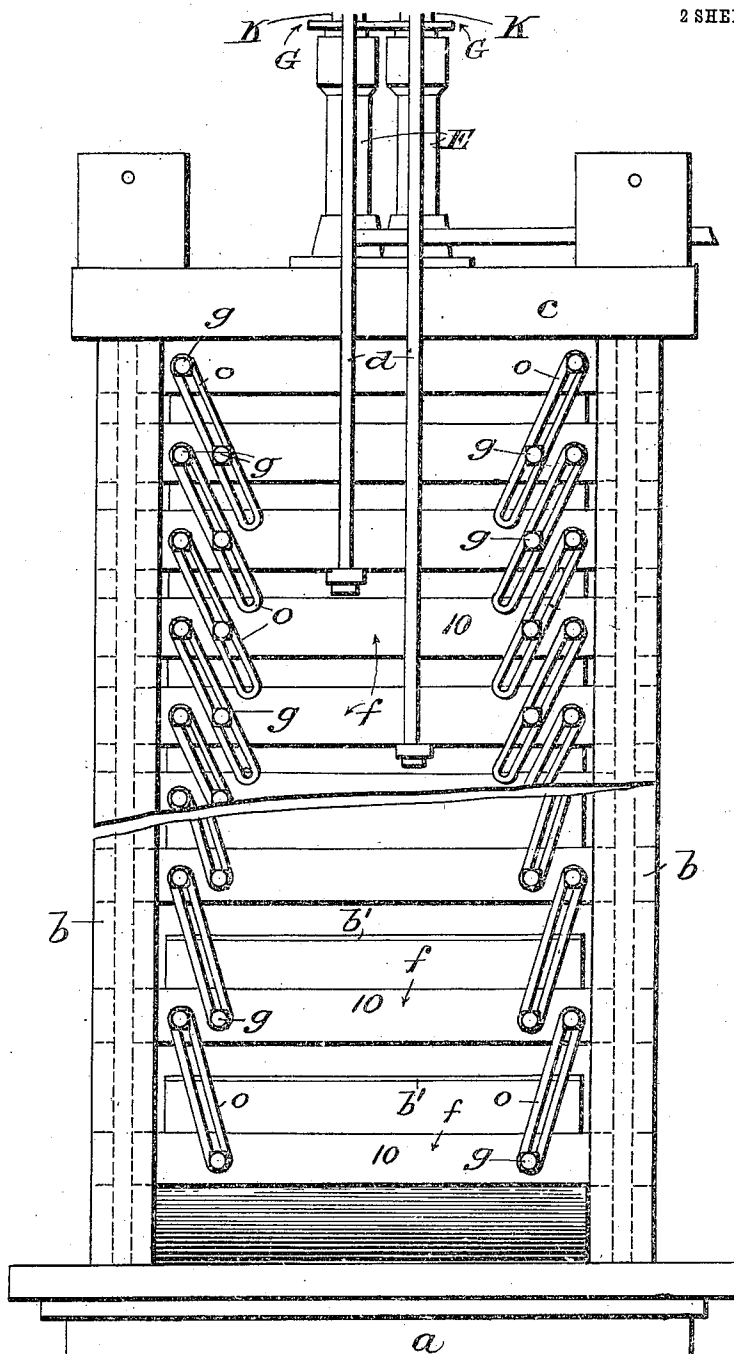


Fig. 1

WITNESSES:

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To all whom it may concern:

Be it known that I, NIMROD W. L. BROWN, residing at Thomasville, in the county of Clarke and State of Alabama, have invented certain new and useful Improvements in Oil-Press Boxes, of which the following is a specification.

My invention relates to that class of hydraulic presses employed for extracting the oil from cotton seeds, and other oil-bearing materials, and comprehends, generally, an oil press box which is well drained, readily accessible on the inside, and yet closed on all four sides.

In its more subordinate features, my invention embodies a press box, solidly closed on all four sides, of a strong, and durable nature, readily adaptable for use in place of the press boxes now commonly seen, and especially designed so that a cake which might stick in the box can be quickly and positively removed, without removing the ends, sides, or without disconnecting in any way the several parts which constitute the main side and end portions of the box.

My invention consists of certain details of construction, specifically pointed out in the appended claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a general type of cotton seed press, with my improvements applied. Fig. 2 is a top perspective view of my improved press box, the closure gates being in place. Fig. 3 is a similar, but inverted view of my improved press box, the closure gates being omitted. Fig. 4 is a cross section of three of the boxes, showing them in their relative positions at the beginning and end of the pressing operation (the cake and press-cloth not being shown). Fig. 5 is a horizontal section of part of one end of the press box, and shows the plug and gate in place.

In the drawings, *a* designates the main press cylinder, *b* the four corner posts, *c* the cap, *d—d* the lift rods, *E—E* the lift cylinders, *G—G* the lift cross-heads, *K—K* the lift plungers, *g—g* the box suspension bolts, *o—o* the box suspension links, all of which are of well known construction, and herein-after only generally referred to, with a view to making clear the construction and method of operation of my improved press box.

Referring now more particularly to Figs. 2 to 5, it will be noticed that the box 1 comprises essentially a main casting 10, and a

perforated cover plate *b'*. The drainage grooves in the top of the main casting 10 extend the full length of the cover plate *b'*, are wider and deeper at the rear than at the front of the mat, to facilitate drainage and cleaning, and the interior lower edges *d'* of the main casting 10 are slightly tapered outward toward the bottom to facilitate the telescoping of the boxes as the press comes under pressure, as will be clearly understood by referring to Fig. 4. The main casting 10 has bifurcated lugs *e*, laterally projected at the opposite sides, for engaging the guide posts of the press.

The top plate *b'* contains numerous small perforations for drainage. These perforations may be in the form of round holes as shown in Fig. 2, or they may be in the shape of slots, if preferred.

The side walls *f* are continuous, and made heavy so as to provide for a maximum bracing of the sides and ends. At this point it should be stated that the making of the side and end walls of the box solid with each other, forms an important feature of my invention, since this, in connection with the lift shown in Fig. 1, overcomes the elements of weakness, complication, costliness, difficulty of charging and discharging, incident to the use of the ordinary types of oil press boxes, in which, one or both ends are removably or hingedly connected to the sides. Further, the making of the ends and sides solid, insures uniform and hard-ended cakes, and relieves the excessive strain on the press-cloth at the ends of the cakes.

In Fig. 1 the boxes are shown suspended by the bolts *g—g*, and the links *o—o*. Almost any other standard method of suspension now in use might have been shown instead.

In suspending the boxes in the press frame, it is necessary to space them far enough apart so that the cakes can be passed entirely below the front end wall in being placed upon the cover plate *b'*. Thus it will be seen that when these boxes are first charged, the spaces within the continuous side and end walls are empty, the cakes being placed entirely below these spaces. After the cakes have been placed upon the mats, the lifts, shown at *E—E* in Fig. 1, serve to lift them up into the boxes, thus closing up these empty spaces, making room for more boxes in the press frame than could otherwise be used, and avoiding excessive

travel on the plunger of the main hydraulic cylinder *a*. When these boxes have been made ready for charging, it will be noted that all the screws, or other fastenings which
 5 secure the plate *b'* to the castings 10, are accessible, so that the plates *b'* can be conveniently removed at any time for the cleaning out of the grooves in the top of the castings 10.

10 While I have considered it important to have the ends and sides of this box immovable, I have recognized the positive necessity of providing a simple means for quickly and positively removing any cake that
 15 might be found stuck in the box after having been pressed. To provide for the ready removal of the cake when stuck, the ends of the box are formed with small horizontally extended slots or windows 30—30, and
 20 these are about in line with the under pressing surface of the box, and the upper side of the wrapped cake, as shown in Fig. 4, such placing of the slots making it easy to insert a flat, knife-shaped bar, or other suitable member in above the stuck cake for
 25 loosening the same. This simple means for removing a stuck cake without the necessity of having to remove the whole end of the box, and without sacrificing the strength of
 30 the box, is an essential point in my invention. But it is desirable to have the inner faces of the box smooth and continuous while the cake is under pressure, so that the press-cloth may not be injured, and so that
 35 the cakes may be the more easily removed. To accomplish this I insert the plugs 40 in the openings 30 and then, to hold the plugs 40 securely in position, I insert the gates 50, slidable in the guide flanges 60, on the
 40 outside of the box, as shown in Fig. 2. The plugs 40, which fit closely in the openings 30 are preferably, but not necessarily tapered, as shown in Fig. 5, and said plugs 40 are preferably flush with the inner face of

the box, still this plug 40 can be made to 45 project through the end wall without special objection, and without injuring the press-cloth.

For the convenient removal of the plug 40, a small vertical hole *y* is provided 50 through this plug, and a small place is chipped out of the casting above, so that a pin can be inserted in this hole.

From the foregoing, the advantages and manner of operation of my invention will 55 be readily apparent.

Having thus described my invention, what I claim is:

1. A press box having solid end and side walls, one at least of said walls having an 60 aperture therethrough to permit the insertion of a tool to loosen the cake within the box.

2. A press box having a wall provided with an aperture to receive a tool to loosen 65 and remove a cake within the box.

3. An oil press box, having solid end and side walls, one or more of said walls having openings therethrough, and removable closure means for said openings. 70

4. An oil press box, having continuous solid side and end walls, one or more of the walls having horizontally extended slots, plugs that removably fit in and close the 75 slots, and means for locking the plugs in the slots.

5. An oil press box, having continuous solid side and end walls, one or both of the end walls having horizontally disposed slots, 80 about in line with the under or pressure surface, said slots being tapered, wedge plugs that fit the tapered slots, and closure gates removably mounted on the outside of the box over the plugs, as set forth.

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Witnesses:

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