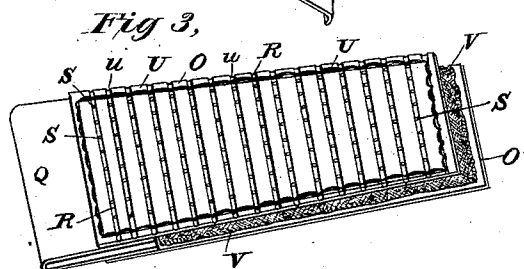
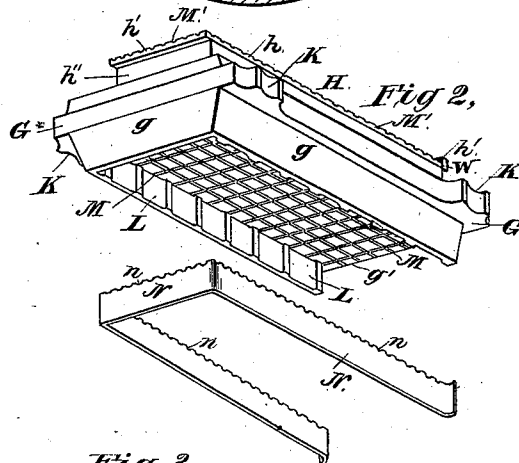
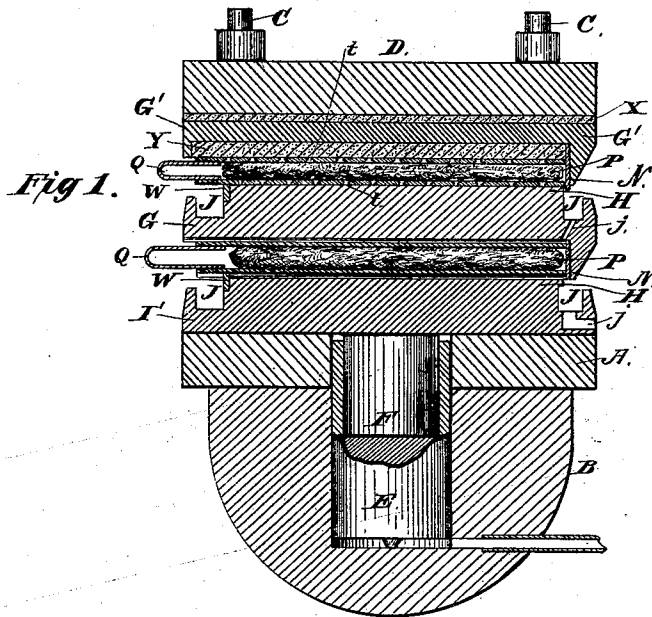


(No Model.)

G. M. VENABLE.
Oil Press.

No. 236,283.

Patented Jan. 4, 1881.



Attest:
Geo. T. Smallwood Jr.
Walter Allen

Inventor:
Gilbert M. Venable

By *Knights*
attys

UNITED STATES PATENT OFFICE.

GILBERT M. VENABLE, OF MEMPHIS, TENNESSEE.

OIL-PRESS.

SPECIFICATION forming part of Letters Patent No. 236,283, dated January 4, 1881.

Application filed June 7, 1880. (No model.)

To all whom it may concern:

Be it known that I, GILBERT M. VENABLE, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented Improvements in Oil-Presses, of which the following is a specification.

The invention relates to presses for extracting oil from cotton-seed, linseed, &c., in which the seed, after being filled into bags and placed between porous or perforated mats, is introduced into boxes in which slide suitable followers, and subjected to pressure either by screw or hydraulic power, whereby the oil is forced out of the seed, which is left in the form of a solid cake or mat.

The press I am about to describe is constructed with the ordinary bed, standards, and top, and with the hydraulic cylinder cast in one piece with the bed, and having its ram or plunger acting directly upon the lowermost platen of a tier of boxes and followers adapted to receive the mats and bags containing the seed to be pressed, to which boxes and mats my invention more particularly relates.

The sides, tops, and bottoms of the boxes have grooves, which grooves serve to conduct the oil to a channel surrounding the base of the follower, from which it descends to a receptacle at the base of the press. Each follower is secured to the box below it, so as to form one piece with it, except the top box, which may be secured to a spring attached to the top of the press, and the bottom follower, which rests upon the platen against which the ram or plunger presses. Rubber springs or cushions may also be placed in the boxes, in order to equalize the pressure on the mats. A metallic lining having notches or indentations in its upper edge is placed around the inner sides of the boxes, through which notches the oil flows to the side grooves. On the delivery end of each follower is secured a wiper of leather, rubber, or other suitable material, which serves to wipe off the oil from the mats as they are drawn out.

The mats are made of two plates of sheet metal, celluloid, vulcanized india-rubber, or other suitable material, connected together at one end by a spring of similar material, and are perforated with numerous holes counter-

sunk on the inner side of the plate and entering rounded grooves in the outer side, thus making an effective draining-mat without any sharp angles liable to cut the bags or sacks. These mats may also have grooves and holes around their edges for the purpose of attaching hair-cloth or other fibrous material to the inside of said mats.

When hydraulic power is used I prefer to insert an india-rubber, steel, or other suitable spring between the ram or plunger and the lower platen, which will act as an elastic follower to maintain a constant pressure upon the platen.

In order that my invention may be more fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section through the center of the press. Fig. 2 is a perspective view of a box and follower, the lining of the former being shown detached. Fig. 3 is a perspective view of my improved mat or sack holder.

A represents a suitable base, having hydraulic cylinder B cast in it, and supporting standards C, to which is secured the top D.

E is the ram or plunger of the press, in the upper end of which is seated an india-rubber, steel, or other suitable spring, F.

G G' represent the press-boxes, the uppermost of which, G', may be permanently secured to the top D, as shown, while the other ones, G, are secured to the followers H immediately above them. The lowermost follower rests upon the platen I, against which the ram E presses. The tops *h* of these followers project slightly, as shown at *h'*, so as to leave a narrow space between the body *h''* of the follower and the sides *g* of the press-boxes G G'. Surrounding the base of each follower is a channel, J, for collecting the oil and conducting it to passages *j*, from the lowermost of which it may be led off into a receptacle. The concave projections K, sliding against the standards C, serve to prevent lateral displacement of the press-boxes and followers. The sides *g* of the boxes G G' have vertical grooves L, while the interior faces, *g'*, of the boxes, as well as the tops *h* of the followers, have longitudinal and transverse grooves M M', these grooves serving as

ducts for the oil. The sides *g* of the boxes are lined with plates *N*, of sheet metal or other suitable material, having indentations *n* in their upper edges, so as to allow passage-way for the oil to the grooves *L* in the sides of the box.

O O' represent my improved plates or mats, made of steel, vulcanized rubber, celluloid, or other similar elastic and flexible material, and between which the bags or sacks *P*, containing the seed to be pressed, are placed. These plates are connected at one end by a flexible hinge, *Q*, made of leather, india-rubber, celluloid, steel, or other suitable material, and secured to the plates by rivets, cord, or equivalent means. The plates are made with rounded grooves *R* on their outer sides, in line with which are numerous perforations *S*, which pass from said grooves to the inner side of the plate, where they are countersunk or beveled outward, as shown at *t*, so as to readily conduct the oil to the grooves *M M'* in the press-boxes and followers, and at the same time, by virtue of their flaring shape, present no sharp angles or cutting-edges to the bag or sack *P*. A single line of perforations, *u*, around the edge of the plates, in line with groove *U*, are provided for the purpose of sewing onto the plates a hair-cloth or similar porous lining, *V*, which is preferably made somewhat thicker at its edges than the middle, so as to more snugly fit the seed-sack *P*. The cord or thread lies in the groove *U*, and consequently does not project above the surface of the plate.

A strip, *W*, of leather, rubber, or other suitable material, secured to one end of the followers and projecting a slight distance above them, acts as a wiper to remove the oil from the lower plate of the mat as it is drawn from the press, and also to catch the oil that would otherwise be spurted from the press when in action.

In order to equalize the pressure as much as possible, an elastic cushion or spring, *X*, is placed between the uppermost press-box, *G'*, and the top *D* of the press.

Pads or cushions *Y*, of india-rubber or similar elastic material, may also be placed inside the press-box, so as to present a somewhat yielding surface to the mats, so that no part of the bag of seed can escape being pressed.

I am aware that oil-press mats have been constructed of sheet metal having corruga-

tions on both the inner and outer side, communicating with each other through perforations; but such I do not claim, as I consider that the perforations flaring at their inner ends are less liable to cause the rupture of the bag, and at the same time do not necessitate such a weak construction.

I am also aware that it is not new to connect the two plates of an oil-press mat together; but such I do not claim, as my improvement consists in making the hinge of steel or other springy material, so as to cause the plates to press upon the bag and hold it in position.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The oil-press having the spring *F* seated in the ram or plunger of the hydraulic press and pressing against the lowermost follower, *H*, for the purpose set forth.

2. The combination, in an oil-press, of the press-boxes *G G'*, having grooves *M*, and followers *H*, having grooves *M'*, the plates or mats *O O'*, perforated as shown, and having grooves *R* on their outer sides, for the purpose set forth.

3. The plates or mats *O O'*, having perforations *S*, opening into the grooves *R* on the outside and countersunk or beveled on the inside, substantially as and for the purpose set forth.

4. In combination with the spring-cushions *Y*, the mats or plates *O O'*, made of sheet-steel, vulcanized rubber, celluloid, or other elastic and flexible material, so as to present a somewhat yielding surface to the seed-bags *P*, for the purpose set forth.

5. The press-boxes *G G'*, having vertical grooves *L*, in combination with the removable lining *N*, having notches or indentations *n* in its upper edge, substantially as and for the purpose set forth.

6. In an oil-press, the elastic cushion *X*, or equivalent, between the uppermost press-box, *G'*, and the top *D* of the press.

7. The wiper *W*, of leather, rubber, or equivalent material, attached to one end of the followers and projecting slightly above the same, substantially as and for the purpose set forth.

GILBERT M. VENABLE.

Witnesses:

GEO. W. MILLER,
L. B. MCFARLAND.