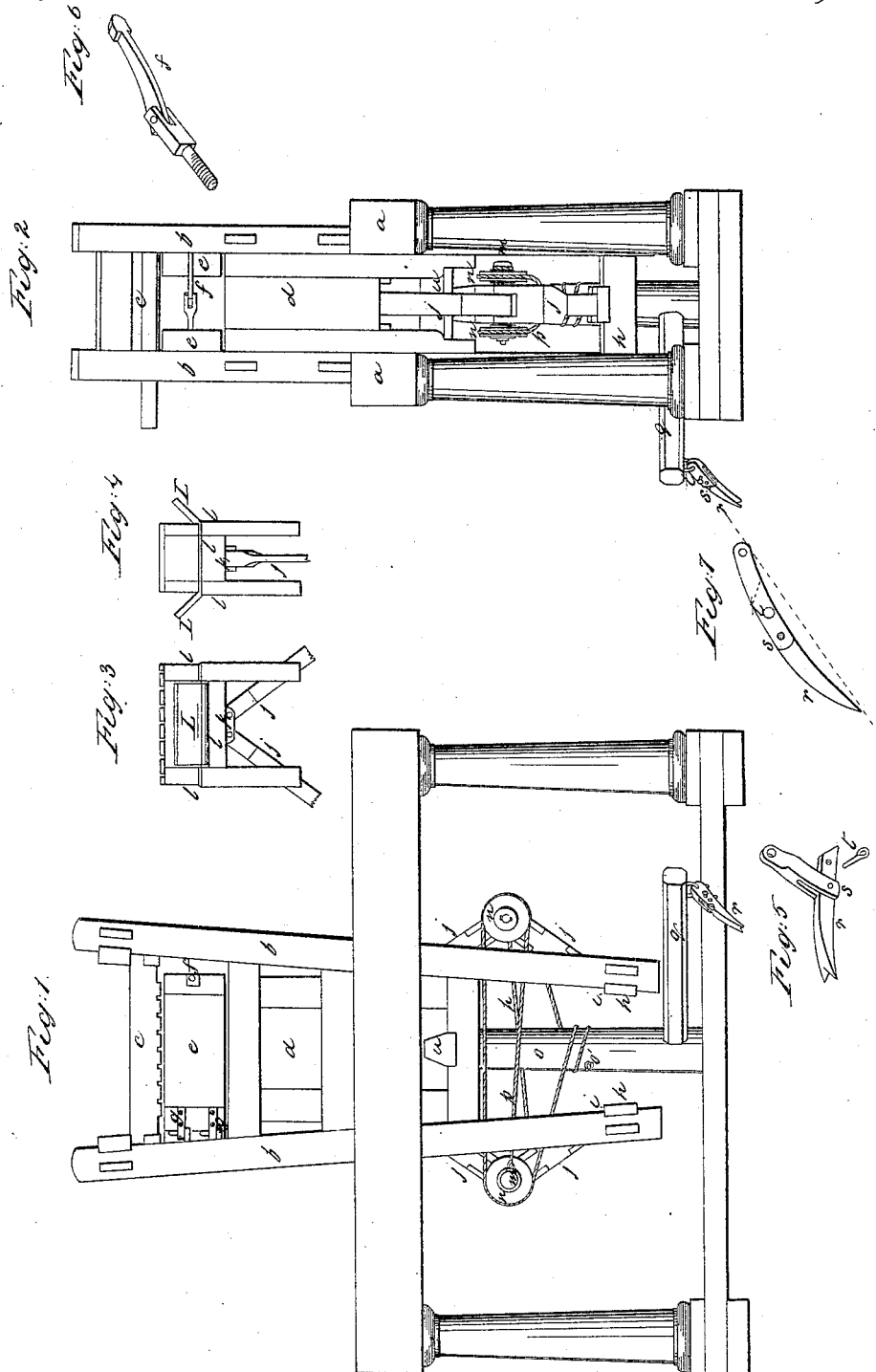


D. M^c Comb Cotton Press.

N^o 6141.

Patented Feb. 27, 1849.



UNITED STATES PATENT OFFICE.

DAVID McCOMB, OF PORT GIBSON, MISSISSIPPI.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. 6,141, dated February 27, 1849.

To all whom it may concern:

Be it known that I, DAVID McCOMB, of Port Gibson, in the county of Claiborne, in the State of Mississippi, have invented a new and useful Improvement in the Press for Pressing Cotton, Hay, and other Substances, called "the Quadrupled Pulley and Toggle-Press," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a side elevation of the machine. Fig. 2 is an end elevation. Fig. 3 is a side elevation of the follower detached from the toggles, showing one of the doors for securing the bagging partly open. Fig. 4 is an end elevation of the follower, showing the doors partly open. Fig. 5 represents the drag unkeyed and folded. Fig. 6 is a perspective view of the hinged arrow for securing the doors. Fig. 7 is a side elevation of the segment-drag.

Similar letters in the several figures indicate similar parts.

a a are two horizontal parallel timbers of the gin-house or other building, between which the press is constructed.

b is the frame of the press, suspended between the aforesaid horizontal timbers *a a*, the four corner-posts inclining inward.

c is the sliding head-block, against which the bale of cotton is pressed, made to slide in and out between timbers fastened to the frame, said timbers forming two horizontal parallel grooves.

d is the box in which the follower works, made in the usual manner.

e e are the hinged doors of the cotton-box, secured by the dart-shaped fastener *f* while the bale is being pressed, and opened on the hinges *g g* after the bale has been pressed, also made in the usual manner.

h h are two horizontal timbers of the hanging frame, upon which are supported the castings *i*, forming the boxes or bearings for the lower ends of the toggles.

j j j j are the four arms or limbs of the toggle-joints.

k is the box, to which the upper ends of the two upper limbs of the toggles are connected.

l is the follower, to which the aforesaid box *k* is secured.

L are two doors or shutters for securing the bagging to the follower, turning on gudgeons projecting from their lower corners inserted into corresponding openings in the end piece of the follower.

m m are two connecting pins or bolts for connecting the limbs of the toggle-joints passed through the same, and extended beyond the sides thereof to admit pulleys *n* to be placed thereon, and cords *p* to be attached thereto.

n n n n are four channeled pulleys on the aforesaid pins or bolts *m m*, around which cords are passed leading to a vertical windlass, *o*. Placed under the center of the cotton-box *o* is the windlass or central shaft aforesaid, to which the power is applied for operating the toggles. The upper gudgeon turns in a box in a timber, *u*, arranged below the center of the cotton-box. The lower gudgeon turns in the center of the middle sill.

p is the rope, passed through an opening, *o'*, in the shaft, having its ends attached to the joint-pins, upon which the channeled pulleys are arranged, and passed over and under said pulleys in the manner represented in the drawings.

q is the sweep or lever inserted into the central shaft, and by which it is turned.

r is the jointed drag, attached to the sweep by a staple, eyebolt, or any convenient fixture.

s is the joint-pin that connects the two parts of the drag together.

t is the key for unkeying and keying the parts of the drags. The drag forms the segment of a circle when keyed. When unkeyed and folded it assumes the form represented in Fig. 5.

The operation of this machine is described as follows: Open the doors *L* of the follower. Insert the cords and arrange the bagging over the follower and secure the ends by closing the doors *L L* upon them. Let down the follower to the bottom of the cotton-box. Fill the box with cotton, close the hinged doors *e* and secure them by the hinged dart-fastening. Then fill in cotton to the level of the edges of these doors *e*. Now place the upper bagging over the doors *e* and cotton. Then slide in the head-block *c* till its position is perpendicularly over the box and insert the cords. Apply sufficient power to the vertical shaft *o* to turn the

same. This operation will wind up the rope *p* and draw the pulleys toward the shaft, causing them to rise in the arcs of circles scribed from the boxes *i i*, the pulleys acting on the principle of the running pulley and flexible cord, the rope being wound around the shaft without bringing the several coils in contact, and thus preventing them from rubbing or chafing against each other. The segment-jointed drag at the same time takes hold of the floor or ground and prevents the sweep or lever from moving back. The doors are then opened, the bagging adjusted, and the ropes tied. The key is then withdrawn from the drag and the latter caused to fold by striking it a smart blow on the convex surface directly over the joint-pin. The resistance being thus removed, the reaction of the press causes the motion of the press to be reversed and the sweep to move back in a contrary direction and carry back the drag with it until the bale is relieved. The descent of the follower is then arrested and the bale removed. Another piece of bagging is secured to the follower and the operation repeated.

The shutters *L* may be hinged to the lower cross-bars of the follower, or they may be secured in any convenient way. The shutters close into corresponding depressions made in the sides of the follower. These shutters serve to keep the ends of the piece of canvas and cords from becoming twisted and entangled between the follower and the insides of the cotton-box in lowering the follower to the bottom of the box and keep them in proper order for use when the cotton is pressed. The channeled pulleys, by being arranged on the axle of the toggle-joints outside the joints, may be made of any required diameter, according to the power required to operate the toggles. The distance apart of the pulleys should be equal to the diameter of the shaft or windlass, in order to cause the ropes to be drawn in parallel lines on either side of the shaft. This arrangement will prevent the chafing, rubbing, or wearing of the ropes against the flanges of the pulleys, and will cause them to wind and unwind freely and with very little friction. The movement of the pulleys in the arcs of circles, as they rise will cause the ropes to be wound on the windlass without the several coils riding or rubbing each other.

The drag should be made in the form of a segment of a circle, whose cord line is coincident with the angle of the required prop or support, and in folding or bending the drag the blow should be sufficient to bend it below this cord line, which is represented by dots, Fig. 7. The drag will not fold until it is bent below or beyond the said cord line.

In pressing cotton it is found to be a very difficult matter to disengage a straight drag without a joint from the ground or floor, when the reaction of the press is equal to a horsepower or more. It sometimes requires the aid

of a crow-bar or other lever to disengage its lower end from the ground, and sometimes while the attendant has been engaged in this duty and standing behind the sweep he has been knocked down by the sweep, caused by the sudden reaction of the press.

The central position of the windlass beneath the cotton-box gives this press advantages over other presses which will be manifest to the mechanic. The frame of this press being made of the shape above described, having the post inclining inward at the bottom, enables the builder to bring the foot-blocks of the lower branches of the toggles very nearly perpendicularly under the boxes of the upper extremities of the upper branches of the toggles attached to the center of the follower, causing the greatest pressure and resistance to be in lines approximating to perpendicularity and parallelism, when the joints are nearly straight, in which position the maximum of power will be obtained nearly. The lower foot-blocks of the toggles will be perpendicularly under the ends of the follower. By inclining the four hanging timbers of the frame inward toward the center, not only are the foot-blocks or bearings of the main toggles brought perpendicularly under the outer ends of the followers, but the cotton-box will be retained of its required width.

I do not claim the invention of a toggle-joint press; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The before-described combination and arrangement of the pulleys *n*, rope *p*, and central vertical shaft, *o*, by which the power is applied beneath the center of the follower in such manner that the rope, in winding on the shaft, will not ride or touch the adjacent coils, and consequently will not be liable to wear, rub, or chafe, said rope being in a single length conveyed through an opening, *o'*, in the shaft, and attached by its extremity to the connecting-pins *m* of the two toggles, the pulleys, around which the rope is passed, being arranged in pairs on the horizontal joint or connecting-pins *m* of the toggles outside the same, by which arrangement their diameter can be increased or diminished at pleasure, and the shaft being of the diameter of the width apart of the pulleys, so that the rope shall be drawn in straight parallel lines, as described, to prevent rubbing against the flanges of the pulleys.

2. The combination and arrangement of the hinged shutters *L*, with the followers for shutting the bagging and ropes into corresponding depressions in the sides of the same, so as to prevent them from getting out of place while the follower is descending, as before described, preventing entanglement and derangement of the ropes and ends of the bagging in lowering the follower into the box.

3. Making the drag in the form of a segment

of a circle with a joint and key, arranged and operated in the manner and for the purpose herein described and set forth.

4. Inclining the four hanging posts of the frame *b* inward, by which the shoes *i* of the toggles are sustained perpendicularly under the outer ends of the follower *l*, while the required length and width of the cotton-box is obtained.

In testimony whereof I have hereunto signed my name, before two subscribing witnesses, this 22d day of May, 1848.

D. McCOMB.

Witnesses:

WM. P. ELLIOT,
L. WASHINGTON, Sr.