

(No Model.)

D. NEALE.

PRESS FOR PRESSING COMPOSITE BUILDING MATS, FASCINES, &c.

No. 535,071.

Patented Mar. 5, 1895.

Fig. 2.

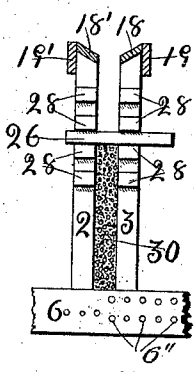


Fig. 1.

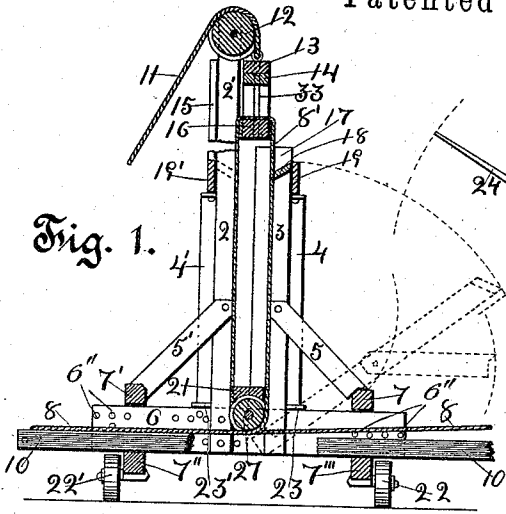


Fig. 3.

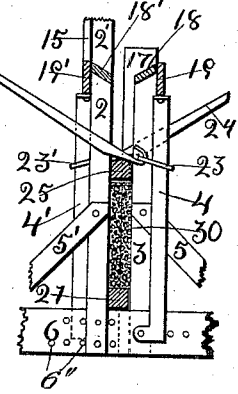


Fig. 4.

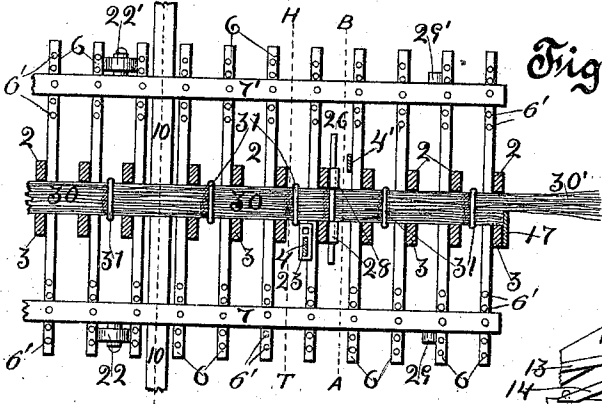


Fig. 5.

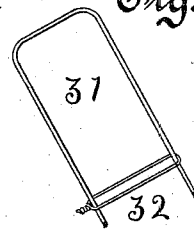


Fig. 6.

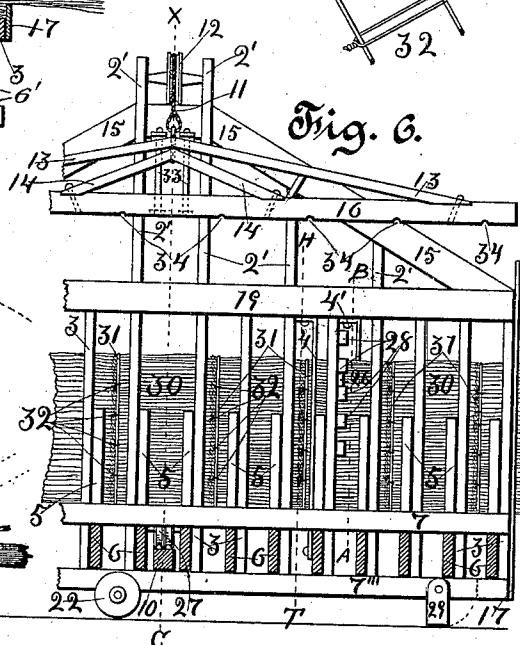
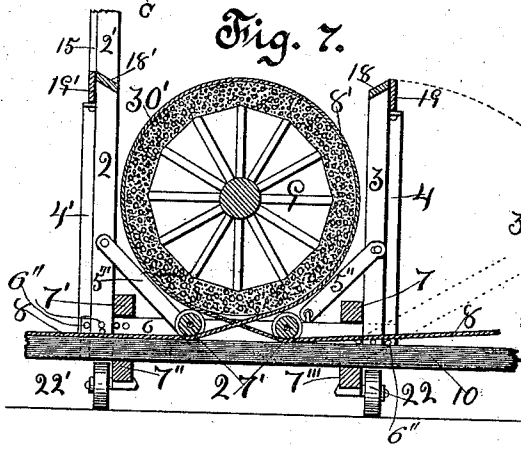


Fig. 7.



Witnesses  
Frank Loomis  
G. M. Fletcher.

David Neale Inventor  
By his Attorney for Vaughan

# UNITED STATES PATENT OFFICE.

DAVID NEALE, OF FORT CALHOUN, NEBRASKA.

PRESS FOR PRESSING COMPOSITE BUILDING-MATS, FASCINES &c.

SPECIFICATION forming part of Letters Patent No. 535,071, dated March 5, 1895.

Application filed December 26, 1893. Serial No. 494,739. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID NEALE, a citizen of the United States, residing at Fort Calhoun, in the county of Washington and State of Nebraska, have invented a new and useful Press with Skeleton Bale-Box for Pressing Composite Building-Mats, Fascines, or Bales, of which the following is a specification.

My invention relates principally to an improved skeleton bale-box, to be used in connection with the compressor—for which I received a patent January 17, 1893, No. 489,980; and the objects of my improvement are, first, to provide a skeleton box adjustable in size for pressing rectangular bales, and pressing and quilting composite building-mats—for which I have this day made application for a patent; second, to provide such a box that may be easily shifted and arranged for building and compressing round bales and fascines; third, to provide means for forcing the material to be pressed into the box before the rope compressor is applied, or to take the place of the rope compressor when less compression is sufficient, and, fourth, to retain the partially compacted material until the follower and rope compressor are applied. I attain these objects, with others of minor importance to be more fully set forth hereinafter, by mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical cross-section on the broken line *xc* of Figs. 4 and 6. Fig. 2, is a vertical cross-section, on the broken line *B A*, looking toward center. Fig. 3, is a vertical cross-section on the broken line *H T* of Fig. 6 looking toward the adjacent end. Fig. 4, is a plan showing a composite building-mat in the box. Fig. 5, is a perspective detail showing how the mat is quilted. Fig. 6, is a side view of more than half of the machine; and Fig. 7, is a vertical central cross-section of the machine arranged for compressing and binding around bales or fascines.

Similar numerals refer to similar parts throughout the several views.

To form a strong floor support and base for the frame-work a set or series of joists 6, 6, 6, &c., are disposed between the timbers 7, 7', 7'', and 7''', a pair near each end of joist one above and one below and all bolted together as indicated in Figs. 1 and 4. The two sets

of uprights 2, 2, 2, &c., and 3, 3, 3, &c., forming the sides of the box, have their lower ends attached to the joist each set equal distance from center of joist and such distance apart as desired for thickness of bale or mat. To reinforce these sides, each set of uprights has attached about midway its height, a like number of braces 5, 5 and 5', 5', &c., extending diagonally downward to the top timbers 7 and 7', and seated thereon. The uprights 3, 3, 3, &c., are attached each with a single bolt at bottom. The braces 5 are adapted to swing up from the timber 7, which allows the side to fall over as shown by the broken lines in Fig. 1, to facilitate the removal of the bale or mat.

To facilitate shifting the positions of the cross-timbers 7 and 7', toward and from the centers of the joists to bring the brace footings in correct relations to the sides, each joist is provided at its ends, with a row of vertical perforations 6', 6', to receive the bolts fastening the cross-timbers. The joists are also provided with the rows of horizontal perforations, 6'', 6'', 6'', spaced to agree with the vertical perforations, to receive bolts to secure the lower ends of the uprights to the joists, at such distances from the centers of the joists as required for the desired thickness of bale or mat.

The set of uprights 2, 2, 2, &c., are, except as shifted to vary the thickness of bale or mat, made stationary, and with their braces 5' are all securely fastened to the joist 6, and timber 7'. A portion of these uprights 2' 2' extend, above and with the tie braces 15, attached to their upper ends form a truss to reinforce the strength and stiffness of the whole frame vertically. The two central uprights 2' are extended still higher above the truss and support the pulley 12, which carries the rope 11 by means of which the follower is raised from the box. The top of the sides 2 and 3, are capped with the inwardly inclined plank 18 and 18' to facilitate filling the box, and are further reinforced and stiffened by the plank 19 and 19' as shown.

A timber 21 of dimensions to match the required thickness of bale or mat is placed as shown to form the floor of the box when a tight floor is desired.

The follower consists of the beam 16, reinforced by two pairs of rafters or braces 13 and

14, footed on top of beam, and the pair of vertical straining bolts 33, as shown in Fig. 6. The lower surface of follower has the transverse grooves 34, 34, &c., to facilitate placing the bale wires or binders.

Two pairs of grapple-bars 4 and 4' are attached to the frame, a pair about midway of each half, and one bar on each side of box. These bars are each provided with a double gripping-link 23, 23', &c., having one eye to loosely slide on and grip the bar, and another eye to receive the hooks at the ends of the levers 24, 24', &c. See Figs. 3 and 4. The levers are used in pairs so that when one is forced down the link in the hook of the opposite lever slides down on the bar, and gives it a new bite; being worked alternately. Each alternately presses and retains what is gained by the other. The hooks on the ends of the levers are open so that they may be readily disengaged from the links, when the latter slide down and rest on the joist. When the levers are used for pressing other than around bales or filling the box, a follower 25 made from a suitable timber having grooves on its lower face like the trussed follower, is placed beneath the levers on top of the bale or mat, but, when the levers are used only in filling the box—which is of great advantage as it facilitates getting in the required amount of material without having the sides of the box very high—the follower is omitted.

In pressing composite building mats, filled mostly or entirely with brush that are quite crooked and stiff, and therefore, when assembled in the box, lay up very loose, the levers and the key 26 are used to partially compress and retain the said brush during the process of filling, thus enabling the placing of a sufficient amount to make the necessary width of mat; the operation being as follows: As much material in its unpressed condition as the box will hold is placed therein, the operators standing on opposite sides of the box, hook the levers into the links and alternately force the levers down across the contents of the box until they are sufficiently compacted, when the key 26 is inserted,—see Fig. 2—and the space above the key refilled with more brush. This may be repeated, or the follower and rope compressor applied to give the required compactness to the whole ready for binding and quilting.

To lock the followers, or retain the partially pressed material until the followers and rope compressor are applied, the cleats 28, 28, &c., are attached to a pair of the uprights, adjacent to where the levers are used, beneath which the key 26 is inserted at any desired height, and is easily slipped out after the follower is brought down. See Fig. 2.

The beam or spar 10, with the cable or rope 8 attached at one end are parts of the compressor mentioned above, the spar having a windlass at its opposite end to receive the free end of the rope 8, a portion of which be-

tween the attached end and the windlass is bent to form a single encompassing loop 8'. The top of this loop 8' rests on the top of the follower 16, or top of the hollow fascine 9, as shown in Figs. 1 and 7. The top part of the loop does not move with reference to the object being compressed but, as the windlass draws on one branch of the loop, it forces the spar in an opposite direction with the other branch making the draft equal on each end of the rope, the spar being free to move endwise beneath the floor of the box or to be entirely withdrawn. To prevent friction a pair of pulleys 27 and 27' are placed beneath the floor of the box to carry the two lines of rope running from the loop. By separating the pulleys 27 in Fig. 1, placing one on each side of the box, so that the distance between them is equal to the width of the box the rope may be run up over the follower in a simple open loop, giving the same result.

Where great width of box is required for large fascines as shown in Fig. 7, the uprights may be placed outside the timbers at the ends of joist, and, for these, or any round bundling, the braces 5'' and 5''' are placed inside the box, those 5'' having their lower ends loosely attached to the joist, the upper ends detachably hooked over studs on the uprights, so that the uprights 3, may be released to swing down for removing the fascine or bundle.

It is often desirable to construct the mats with a rabbet at the end, or with one half end projecting, as shown at 30'' Fig. 4, to facilitate joining the mats together where used in covering large surfaces. For this purpose the stop or divider 17, is attached to the end of the box as shown; a similar stop being used on the opposite end and side of the box, when a like rabbet is required on both ends.

The binding wires 31 are placed around the mats while the compression is on and are fastened by twisting the ends together or with bale ties. Quilting the mats is then performed as follows. The small loops or stitches 32 are then placed so as to embrace the binders on each side of the mat, and retain it in the flat shape shown, a steel needle being used to draw the stitch through the ends being fastened by twisting them together. See Fig. 5. By reference to Figs. 4 and 6, it will be readily observed how the skeleton box facilitates the binding and quilting.

Figs. 1 to 6 inclusive show the machine especially arranged for pressing the composite building-mats, which are composed of brush reeds, corn stalks, straw or bagasse, &c., bound and quilted—and are pressed edgewise, as much less power is thus required to give them the proper compactness. A pair of low wheels 22 and 22' are attached to the base of the frame a little off the center, toward the end, by which the machine is to be drawn about, and the ends of the frame are provided with the gravity legs 29, 29', &c., to support it level when in use.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a press for composite building mats, the combination of the bale-box having a floor consisting of the set of joists 6, 6, shiftable sides consisting of the sets of uprights 3, 3, and 2, 2, attached to said joists and capped with planks 19 and 19' and 18 and 18', and supported by the sets of braces 5, 5, and 5', the uprights 2', 2', extended above the capping planks and framed to the braces 15, 15, to form a truss to reinforce the bale-box vertically, the end of the box provided with the divider 17, a follower and an encompassing loop or rope to force the follower into the box, substantially as described.

2. In a press the combination of a skeleton bale-box having a floor consisting of a set of joists connected by cross-timbers, sides consisting of sets of uprights corresponding with said joists and shiftable attached thereto to vary the size of the bale-box, each set of uprights capped with a connecting rail and supported by diagonal braces footed on said cross-timbers; one of said sides adapted to swing out and down having detachable braces;

part of the uprights of the opposite side extended above the capping rail and framed to tie braces to form a vertical stiffening truss, a follower and an encompassing loop of rope to force the follower into the box, substantially as described.

3. In an adjustable skeleton bale-box the combination of a set of joists connected by shiftable attached cross-timbers, sides consisting of sets of uprights corresponding with said joists, capped with a connecting rail and shiftable attached to said joists to adjust the distance between the sides; each side supported by diagonal braces footed on said cross-timbers, one side having detachable braces and adapted to swing outward, the opposite side having braces framed to the uprights to form a vertical stiffening truss substantially as described.

Signed at Blair, in the county of Washington and State of Nebraska, this 19th day of December, 1893.

DAVID NEALE.

Witnesses:

LOU VAUGHAN  
T. E. STEVENS.

It is hereby certified that in Letters Patent No. 535,071, granted March 5, 1895, upon the application of David Neale, of Fort Calhoun, Nebraska, for an improvement in "Presses for Pressing Composite Building-Mats, Fascines, &c.," an error appears in the printed specification requiring the following correction, viz: On page 2, line 23, the word "around" should read *round*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 9th day of April, A. D. 1895.

[SEAL.]

Countersigned:

JOHN S. SEYMOUR,  
*Commissioner of Patents.*

JNO. M. REYNOLDS,  
*Assistant Secretary of the Interior.*