

(No Model.)

W. A. DICKSON.
WOOD BALING CRATE.

No. 542,845.

Patented July 16, 1895.

Fig. 1.

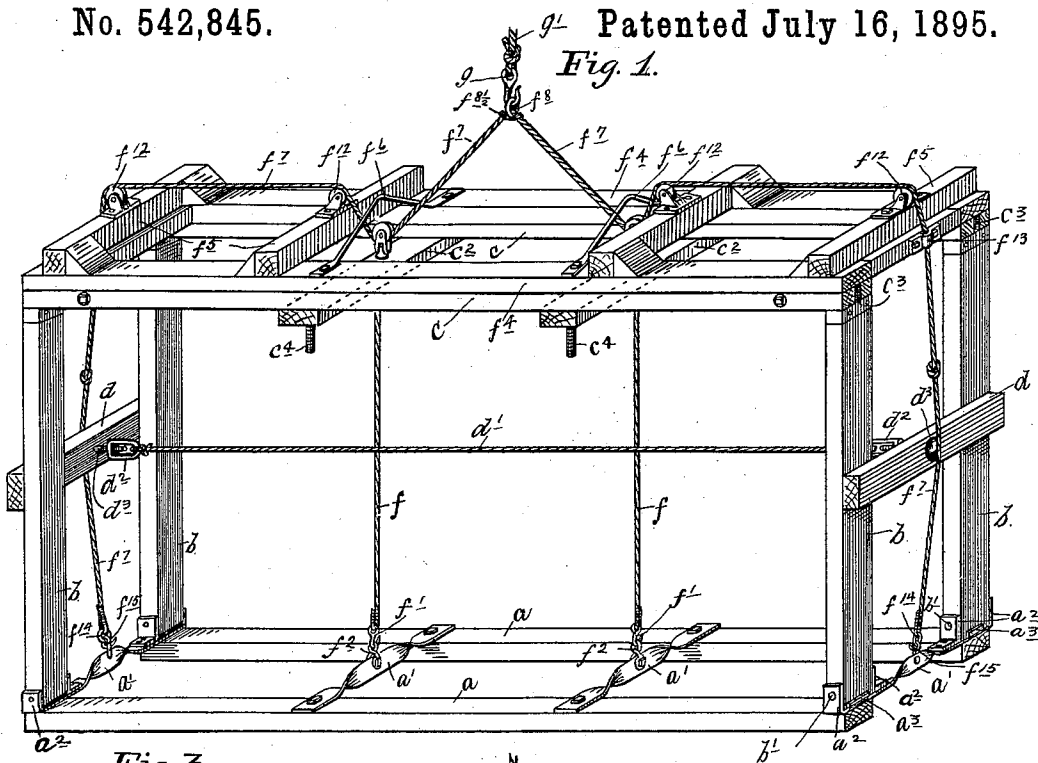


Fig. 3.

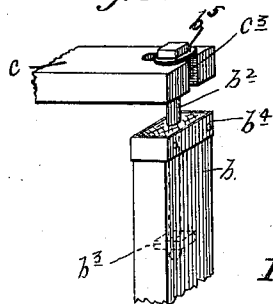


Fig. 2.

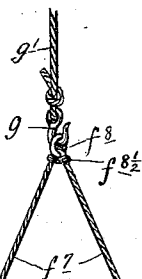


Fig. 4.

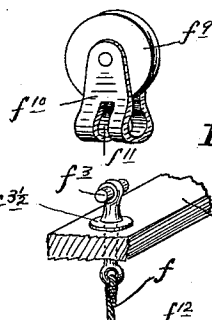
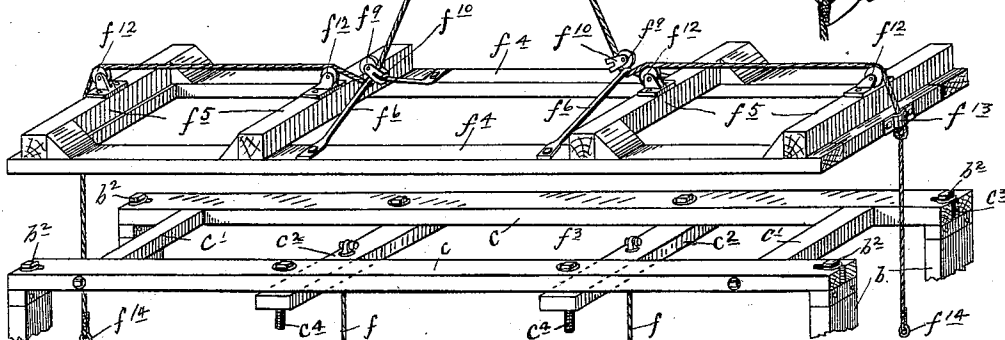


Fig. 5.



Witnesses:

E. F. Elmore

C. F. Kilgore

By his Attorney.

Inventor:

William A. Dickson

Jas. F. Williamson.

UNITED STATES PATENT OFFICE.

WILLIAM A. DICKSON, OF BONNIWELL MILLS, MINNESOTA.

WOOD-BALING CRATE.

SPECIFICATION forming part of Letters Patent No. 542,845, dated July 16, 1895.

Application filed March 9, 1895. Serial No. 541,127. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. DICKSON, a citizen of the United States, residing at Bonniwell Mills, in the county of Meeker and State of Minnesota, have invented certain new and useful Improvements in Wood-Baling Crates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a wood-baling crate for use in loading and unloading and in transporting stove-wood or other similar material.

To this end my invention consists in the novel features of construction hereinafter described, and defined in the claims.

The accompanying drawings illustrate my invention, wherein like letters refer to like parts.

Figure 1 is a perspective view illustrating the crate when drawn into its most compact form as required for baling and with the loading device in working position thereon. Fig. 2 is a perspective view with some parts broken away, showing the top part of the crate and the loading device as detached and pulled away a short distance from the crate. Fig. 3 is a detail in perspective, showing the draw-bolt for connecting one of the end plates to the top plate of the crate. Fig. 4 is a detail in perspective, showing the sheave and sheave-block carried by the top cable of the loading device; and Fig. 5 is a detail in perspective, showing the lug on one of the vertical cables of the loading device for detachably connecting the sheave-block shown in Fig. 4 to the cable shown in Fig. 5.

A pair of parallel bars a , connected by metallic cross-ties a' , constitute the base plate or bottom of the crate. The end members of said cross-ties a' are provided with upturned lugs a^2 , to which are pivoted the lower ends of pairs of parallel bars b , which are connected to the said lugs a^2 by pivot-pins b' . The said pivoted bars b are each provided at their upper ends with headed draw-bolts b^2 , extending upward therefrom and working through joint-nuts b^3 , fixed in the said bar. The pairs of bars b constitute the end plates or ends of the crate. Upturned lugs a^3 on the end mem-

bers of the base cross-ties a' prevent the end bars or post b from turning inward and folding down over the base-plate of the crate; or, in other words, said lugs a^3 serve to hold the end bars or post b in substantially vertical positions when free from the top plate of the crate and turned inward slightly beyond the vertical line.

A pair of parallel bars c , connected by cross-bars c' , constitute the top plate or top of the crate. The ends of the top bars c are provided with open slots c^3 for receiving the stems of the draw-bolts b^2 when the end bars or posts b are turned up, so as to engage or join with the top bar c , as shown in Fig. 3. The end bars or posts b are shown as provided with marginal bands b^4 at their tops for preventing the same from splitting, and the draw-bolts b^2 are shown as provided with washers b^5 , which are engageable over the top of the bar c for taking the wear from the heads of the draw-bolts b^2 in the clamping action.

The cross-bars c' of the top plate are rigidly secured to the side bars c in the same plane with the said side bars; but the cross-ties c^3 extend under the side bars c and connect therewith by means of draw-bolts c^4 for the purpose of making said cross-bars c^2 cooperate with other parts, which will be presently noted, to afford a center clamp for the bale.

Head-blocks d engage the outer surfaces of the end posts b and are connected by the horizontal turnbuckle-cable d' , the buckles d^2 of which parts engage with screw-threaded bolts d^3 , which are fixed in the said head-blocks d , as shown in Fig. 1. The said parts d d' d^2 d^3 co-operate to afford a longitudinal central clamp for the bale.

The cross-bars c^2 , which are connected to the side bars c of the top plate by the draw-bolts c^4 , as above noted, are connected by vertical cables f to the cross-ties a' of the base-plate of the crate, as shown in Fig. 1. The said cables f are provided at their lower ends with hooks f' , which engage with eyes f^2 , fixed to the cross-ties a' . The said cables f are provided at their upper ends with lugs f^3 , the stems of which work through the cross-bars c^2 and are prevented from dropping down therethrough by washers or collar-flanges f^{3a} ,

as shown best in Fig. 5. The upper ends of the said lugs f^3 are T-headed for engagement with sheave-blocks on the loading-cable, as will be presently noted.

5 With the construction so far described it is obvious that the end plates and the top plate of the crate will spread with respect to each other and with respect to the bottom plate or base of the crate, if necessary, to permit the wood to be loosely piled between the same to an extent beyond the interior dimensions of the crate and that the said plates may then be clamped tightly together for securing the load of wood in the form of a bale.
10 More specifically stated, when loading the wood the top plate of the crate will be raised slightly above the end plates, as shown, for example, in Fig. 3. The end plates will be permitted to spread by loosening the turn-buckle-cable, and the clamping cross-ties c^2 will be lowered or the side bars c will be raised in respect thereto by loosening the draw-bolts c^4 . The wood will then be placed in position, beginning on the bottom plate of the
25 the crate and will be piled up between the bottom and top and end plates of the loose crate to the limit, or until a bulk or pile is made of greater area than the inside dimensions of the crate when all the plates are joined together in their most compact form. The bolts d^3 of the central longitudinal clamp d d' d^2 d^3 may then be operated to draw the end plates of the crate toward each other until the draw-bolts b^2 of the end posts b reach
35 their inner limit in the slot c^3 of the top plate side bar c . The draw-bolts b^2 may then be operated to draw downward the ends of the top plate to their limit on the bale of wood toward the bottom plate a a' of the crate. The draw-bolts c^4 may then be operated to draw down the central parts of the side bars c of the top plate against the central part of the bale of wood, in which action of the central clamp the cross-ties c^2 at the top and the cross-ties a' at the bottom, together with the connecting-cables f , serve as the base of resistance. In this way the bale of wood will be tightly clamped together endwise of the bale,
50 sidewise, or from top to bottom, of the bale, and centrally of the bale in both longitudinal and vertical directions thereof. Otherwise stated, the plates of the crate will surround the bale of wood and securely clamp the same together.

55 Turning now to the device for handling and loading the bale of wood, f^4 represents a pair of parallel bars which are connected by cross-bars f^5 and arched cross-ties or trusses f^6 , as shown in Fig. 2, which parts, taken together, constitute a false top for co-operation with the vertical cables f and a top or loading-cable f^7 . The top cable f^7 is shown as provided with a central ring f^8 for engagement with the hook g of the tackle-rope g' , which
65 is operated from a derrick. (Not shown.) The ring f^8 on the cable f^7 is kept from slipping thereon by a wrap or twist strand f^{8a} ,

or in any other suitable way. The cable f^7 is provided with a pair of sheaves f^9 , mounted in sheave-blocks f^{10} , which have vertical slots f^{11} , which adapt the said blocks for engagement with the heads of the cable-lugs f^3 . The relation of these parts will be best understood by reference to Fig. 4, from an inspection of which it will be seen that the said lugs f^3 may be made to engage with the sheave-blocks f^{10} by bringing the slots f^{11} in line with the bearing-pins or lengthwise dimension of the lug-heads f^3 , to enter the lug-heads in the said slot, and by then turning the said parts in respect to each other until the heads of the lugs stand at right angles to the slots in the blocks. From the sheaves f^9 the two sections of the top cable f^7 pass under the trusses f^6 , and thence outward over the sheaves f^{12} on the cross-bars f^5 to the ends of the false top, and thence down through keepers f^{13} , fixed to the false top, to a position for engagement with the end members of the cross-ties a' of the bed-plate of the crate. At their extremities the said cable sections f^7 are provided with eye-rings f^{14} , which are engageable with hooks f^{15} secured to said cross-ties a' . When the said loading devices are thus applied in working position with respect to the crate, they will appear as shown in Fig. 1 of the drawings. Hence under the lift from the derrick the tendency of the strain on the cables will be to increase the endwise and top-to-bottom clamping action of the crate on the bale of wood, the false top being drawn down and clamped to the top plate of the crate and the end plates of the crate and the bottom plate of the crate receiving the greater portion of the strain from the lifting-cables.

Any desired number of bales may thus be placed in position on the wagon, sled, or other vehicle with the use of a single loading device, inasmuch as the said loading device may be readily detached from the loaded bale and applied to another bale for loading the same as often as desired.

When the bales have been transported on the vehicle to the place of unloading, the bales may be removed either by a similar device to that used for loading the bale or in any other suitable way. When the bales are again on the ground or other support for the same, the clamps will be released and the wood be permitted to drop out endwise, or the clamps may be entirely detached and the end plates be permitted to fold down in line with the bottom plate after the top of the crate is removed, when the bottom and end plates of the crates may be pulled out from under the pile of wood.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a suitable base plate, of end plates pivoted to the base plate and provided with draw bolts extending from their upper ends, and a top plate having slots engageable with said draw-bolts, for uniting and drawing said plates together about a mass

or load of wood placed between said plates and thereby forming a bale, substantially as described.

2. The combination with a wood baling crate, of loading devices, for handling the bale, comprising the vertical cables *f* having the sheave block lugs *f*⁸ at their upper ends, the false top *f*⁴ *f*⁵ *f*⁶ having cable guide sheaves, *f*¹², and the top cable *f*⁷ having the sheaves *f*⁹ and sheave blocks *f*¹⁰ with slots *f*¹¹, engageable with said lugs *f*⁸ on the vertical cables and provided with the end rings *f*¹⁴, engageable with the end cross-ties of the crate bottom, substantially as and for the purpose set forth.

3. The combination with a suitable base plate, of end plates pivoted to the base plate and provided with draw bolts, of a top plate having slots engageable with said draw bolts, cross-bars connected to the side-bars of said top plate by draw-bolts and cables connecting said cross-bars to said base plate, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM A. DICKSON.

Witnesses:

SIMON J. DIETEL,
A. H. ROGER.