

Aug. 14, 1951

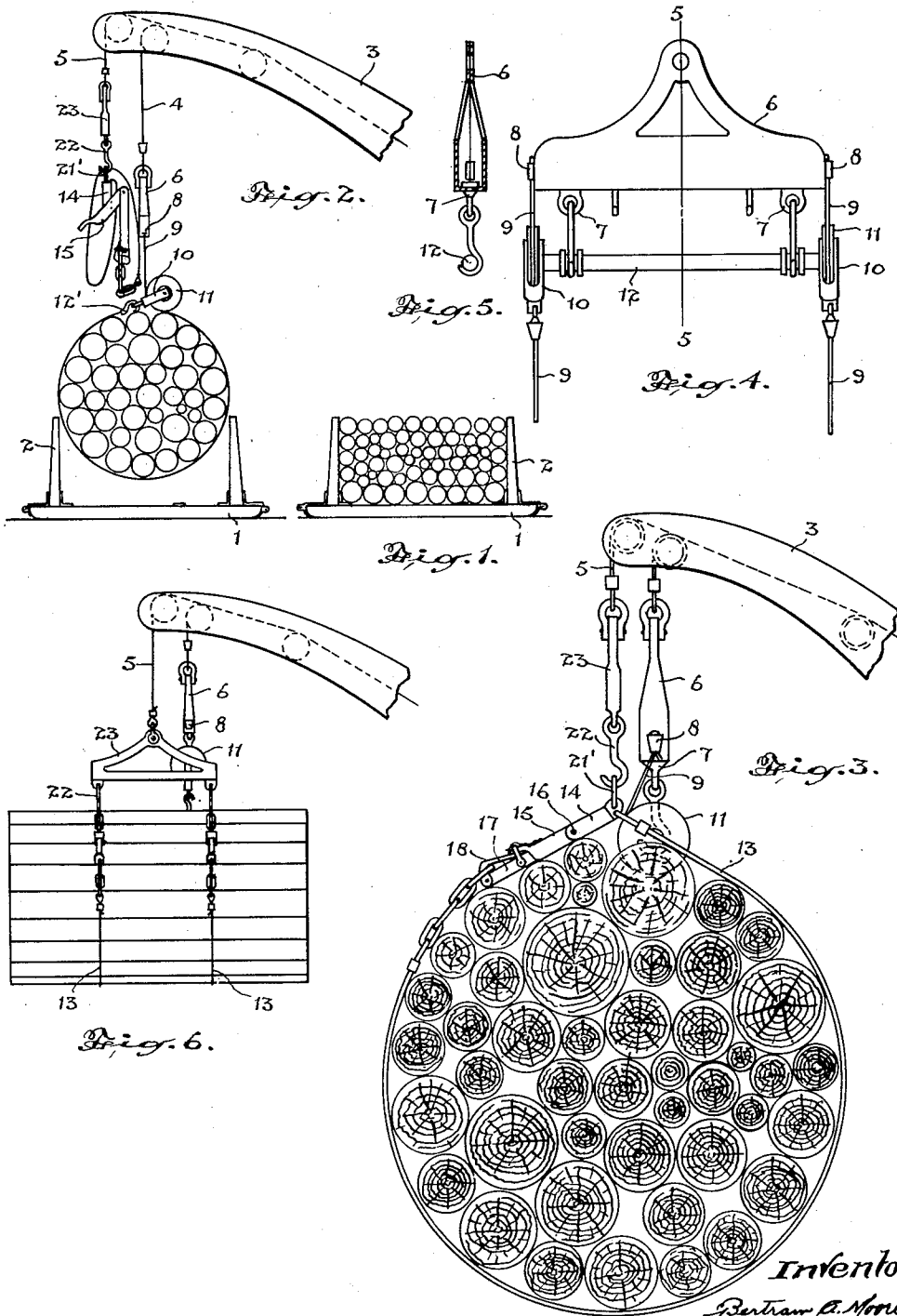
B. A. MOORE

2,564,442

BUNDLE BINDER

Filed March 22, 1946

2 Sheets-Sheet 1



Inventor
Bertram A. Moore
by
A. B. Dennison
att'y.

Aug. 14, 1951

B. A. MOORE

2,564,442

BUNDLE BINDER

Filed March 22, 1946

2 Sheets-Sheet 2

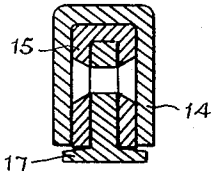


Fig. 9.

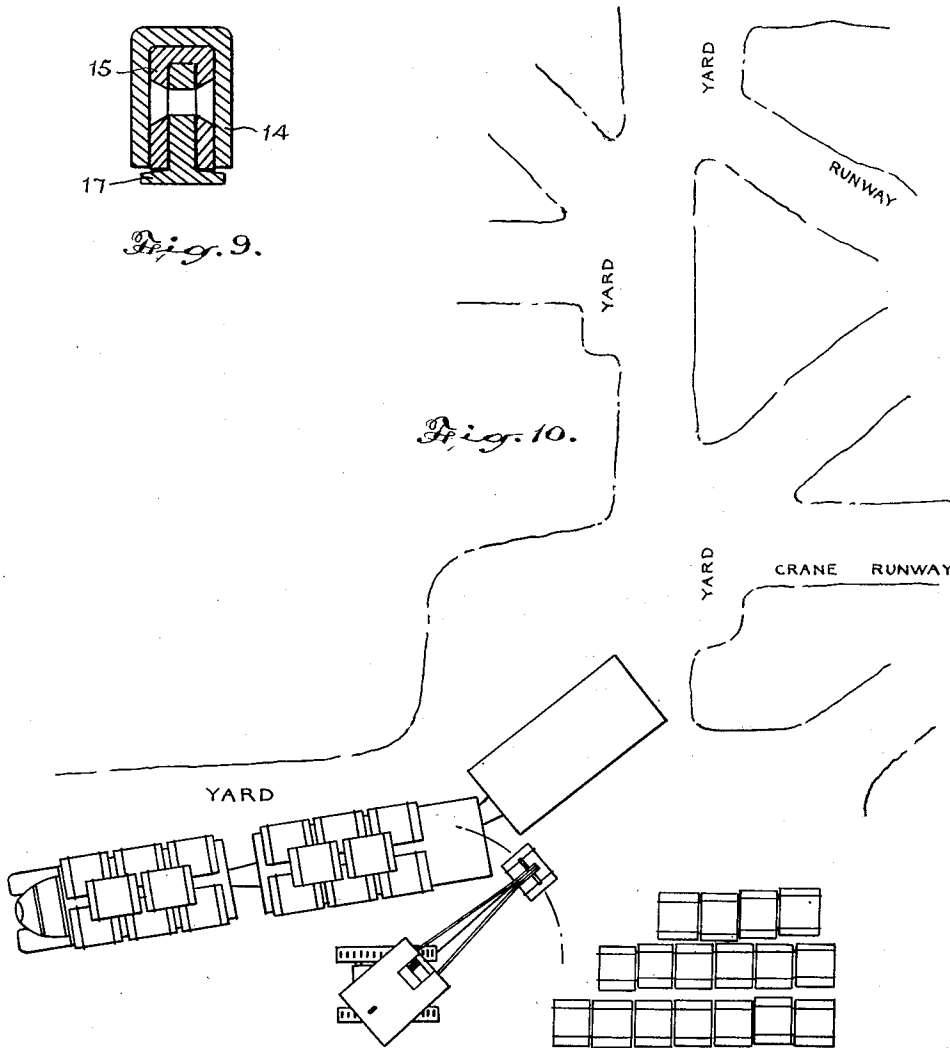


Fig. 10.

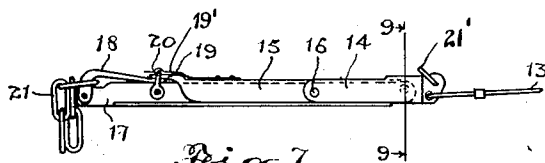


Fig. 7.

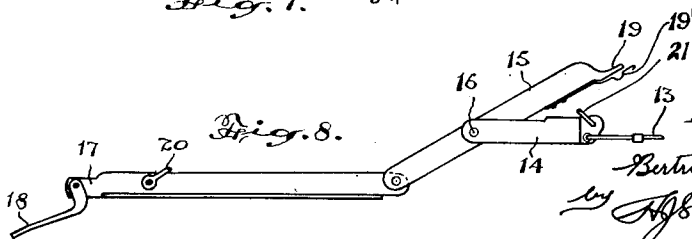


Fig. 8.

Inventor.

Bertram A. Moore
by J. B. Drummond
att'y.

UNITED STATES PATENT OFFICE

2,564,442

BUNDLE BINDER

Bertram A. Moore, Toronto, Ontario, Canada

Application March 22, 1946, Serial No. 656,191

3 Claims. (Cl. 100—31)

1

2

The present invention relates to improvements in equipment for the gathering of pulpwood, ties and the like from the woods where such materials are cut, and transporting such cut wood to its final destination, and the principal objects of the invention are to provide equipment by means of which the wood, as it is cut, is gathered into measured units then formed into bundles and securely tied so that such bundles may be easily and quickly shifted to and from transport equipment.

A further important object is to provide a mechanical equipment which will form a measured load of cut wood into a round compact bundle, permitting lifting ties to be secured around the bundle while held by the forming apparatus.

A further object is to provide a bundle-lifting means in close association with the bundling means so that the bundle may be quickly shifted from the forming means to the lifting means.

The principal features of the invention consist in the provision of measuring receptacles to receive, measure and hold the cut wood and in providing a suspension means adapted to be carried by a crane to be placed around the measured quantity of wood and operated to form a round, tight bundle.

A further feature consists in the provision of flexible tie members to be bound around the ends of the bundle and to provide means for lifting the bundle by means of a crane and to retain the bundle in shape in secure form until ready for final disposal of the wood.

In the accompanying drawings Figure 1 is a side elevational view of a wood measuring and holding equipment containing a measured load of wood.

Figure 2 is a side elevational view showing the apparatus for forming the measured load of wood into a bundle and supporting same from a crane.

Figure 3 is an enlarged side elevational view of the end of a crane boom showing the arrangement of the tie means for binding and holding the bundle suspended from the crane and also illustrating the crane suspended bundling device.

Figure 4 is an elevational detail showing the bundling yoke and bundling cable arrangement.

Figure 5 is a vertical section taken through the line 5—5 of Figure 4.

Figure 6 is a view on a reduced scale showing the end of the crane supporting a bundle by the tie loops.

Figure 7 is an enlarged side elevational view of the tie locking member.

Figure 8 is a side elevational view of the tie locking member shown in its open position.

Figure 9 is an enlarged cross sectional view through the line 9—9 of Figure 7.

Figure 10 is a diagrammatic plan illustrating the method of woods operation with apparatus as herein described.

In the ordinary operation of cutting pulpwood and ties, after the trees are felled they are cut into uniform lengths. The cut wood is then piled as near as possible to tote roads where it is loaded on sleighs or trucks to be taken out of the woods.

Such procedure entails a great deal of duplicate handling of loose wood and it is the particular purpose of this invention to provide equipment which will obviate the handling of loose wood from the period immediately after it is cut until it is delivered to its destination.

This objective is accomplished by providing equipment as hereinafter described.

Small land scows, such as illustrated in Figures 1 and 2, are formed of a pair of spaced-apart longitudinal skids 1, which are rigidly connected by cross braces, and adjacent to each end of these skids is arranged a stake 2. These stakes are spaced apart longitudinally and of such a height as to form a measuring unit, and the wood as it is cut into lengths is placed cross-ways of the skids and piled between the stakes until level with the top, which thus forms a definite unit of measurement.

A suitable type of mobile crane may be used in the woods' paths so that its boom may operate close in to where these scows are located. The boom 3 of the crane is preferably provided with double hoisting cables 4 and 5.

In the end of the cable 4 is attached a yoke 6, here shown in Figures 4 and 5, preferably fabricated of sheet metal and having a pair of eyes 7 welded or otherwise secured at the bottom edge and spaced inwardly from the ends. On the ends of the yoke 6 are arranged sockets 8, in which are tied or secured by wedges in a well known manner, the ends of a pair of cables 9. These cables are threaded through clevis loops 10 around the grooved sheaves 11 which are mounted on a spreader shaft 12 which holds the sheaves the required distance apart.

The ends of these cables 9 are provided with hooks 12' to hook into the clevis members 10, thus forming a cable loop at each end of the yoke member 6. The cable loops thus formed may be placed around the end of the cut wood lengths packed in the land scow and when the cable 4 is raised by manipulating same through

the crane mechanism the flexible loop rove through the sheaves 11 pulls around the ends of the logs or ties and form them into a round cylindrical bundle.

When the cable 4 is thus manipulated to operate the forming loops to form the bundle they are held in suspension for a brief period, during which period flexible tie members are placed around the bundle outside of the looping cables.

These tie members, as illustrated particularly in Figure 3 and in Figures 7, 8 and 9, constitute a length of cable 13 or chain, to one end of which is pivotally attached a link member 14. To the opposite end of this link member is pivotally secured a lever 15 by means of the pivot pin 16. Both of these members are, as illustrated in the enlarged cross section in Figure 9, formed of U-shaped cross section and they fit one within the other.

Pivotally attached to one end of the member 15 is a bar 17 which is preferably T-shaped in cross section and inverted. To the outer end of this T-bar is connected a locking hook lever 18.

The lever 15 is provided with an extension tongue 19 which extends over the end of the lever 18 and is held in locked position by a U-shaped link 20 which when swung on its pivot first releases the lever 15 then the hook lever 18. A cantilever spring 19' carried by the tongue 19 of lever 15 serves to engage under and hold the link 20 in the lever securing position of Figure 7 against accidental displacement.

One end of the cable 13 is provided with chain links 21 which are selectively hooked in under the hook link 18. This cable loop with a locking link mechanism described is slipped around the outer end of the bundle held by the looping cables 9 and by means of the locking lever end, they are drawn taut.

The link 14 is provided with a chain link 21' and these links are engaged by hooks 22 mounted on a yoke 23 carried by the cable 5 of the hoisting crane.

When the hooks 22 are inserted into the links 21' the cable 5 is operated to lift the bundle and when the strain is relieved from the looping cables 9 the hooks 12' may be disconnected from the sheave clevises and thrown clear of the bundle. The bundle is then lifted and swung by the crane to be placed with other bundles in a pile close to the crane runway or path in the woods from which it may be lifted to be placed on to a sleigh or truck.

The bundle is retained snugly tied by the tie cables 13 until it is delivered to its final destination. Consequently the wood lengths are held from scattering and are handled in snug, tight bundles.

It will be readily appreciated that the use of an equipment such as herein described will greatly facilitate woods' operations in the handling of pulpwood and ties and a great saving in time and labour will be effected both in the woods and on transports such as trucks, trains or boats.

What I claim as my invention is:

1. In a movable land scow equipment for wood handling having a hoist and a yoke connected with the hoist and means operated by the hoist for forming a measured quantity of wood lengths into a cylindrical bundle, tie means adapted to encircle said cylindrical bundle and to engage said hoist, said tie means comprising a pair of flexible cables each having secured at one end thereof a link of U-section, a U-section lever pivoted intermediate its length to the other end of said link, a T-section bar pivoted at one end to one end of said lever with its web being adapted to be received within said lever, a locking lever hook pivoted to the other end of said bar, said lever and locking lever hook being adapted to overlap on being swung inwardly of said bar ends, means on said bar to maintain said levers in overlapped relation, means on the other end of said cable adapted to engage said locking lever hook, and means adapted to connect said cables to said yoke in spaced relation.

2. A tie device comprising a length of flexible tie means, a link of U-cross section secured at one end to one end of said tie means, a lever of U cross section pivoted intermediate its length to the other end of said link, a bar of T cross section pivoted to one end of said lever, and adapted to be received within said lever with said lever swung inwardly of the bar end, said link with said lever swung inwardly of the bar end to receive said bar receiving therewithin said lever and said bar, a locking lever hook pivoted to the other end of said bar, said lever and locking lever hook being adapted to overlap on being swung inwardly of said bar ends, means on said bar to maintain said levers in overlapped relation, and means on the other end of said flexible tie means to engage said locking lever hook.

3. A device as claimed in claim 2 in which the means maintaining said levers in overlapped relation comprises a U-link pivoted to said bar and swingable in one direction to clear said locking lever hook and in the other direction to clear said U section lever with said levers overlapped.

BERTRAM A. MOORE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
387,086	Lum	July 31, 1888
561,714	Lynch	June 9, 1896
561,715	Lynch	June 9, 1896
994,608	Sevin et al.	June 6, 1911
1,077,195	Ferguson	Oct. 28, 1913
1,280,378	Blankenberger	Oct. 1, 1918
1,559,959	Haynes	Nov. 3, 1925
1,594,540	MacChesney	Aug. 3, 1926
2,109,907	Martin	Mar. 1, 1938
2,304,911	Harpold	Dec. 15, 1942
2,417,658	Nichols	Mar. 18, 1947