July 9, 1957 O. F. JURGENS 2,798,588

LOG DECKING MACHINE

Filed Sept. 16, 1954 3 Sheets-Sheet 1

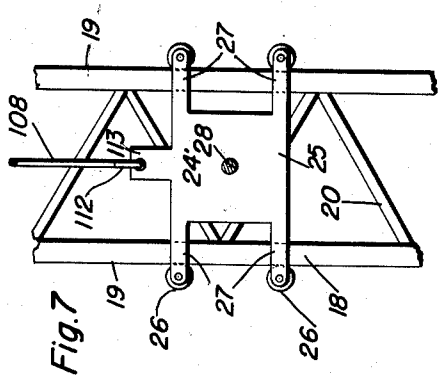


Fig. 7

Fig. 1

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LOG DECKING MACHINE.

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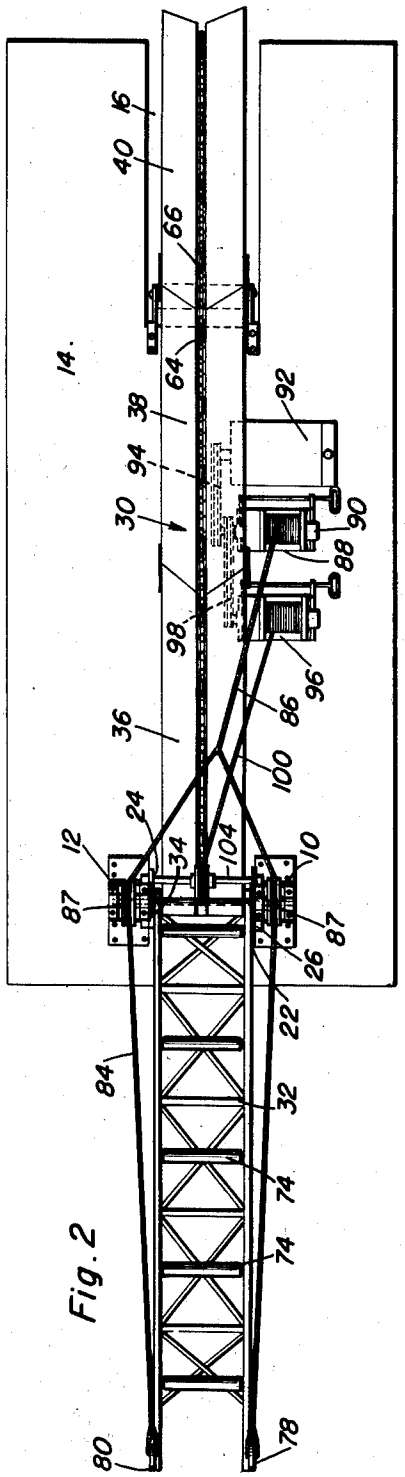


Fig. 2

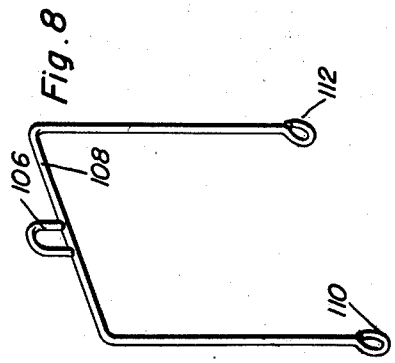


Fig. 8

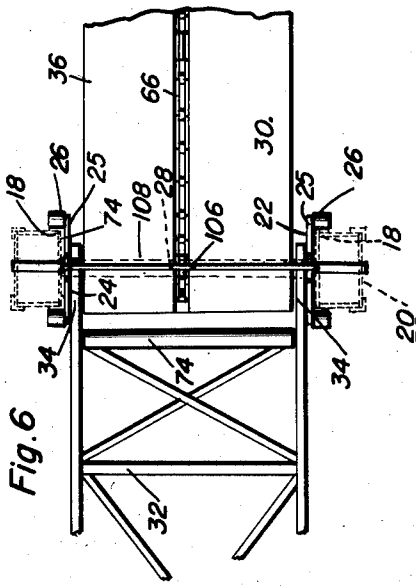


Fig. 6

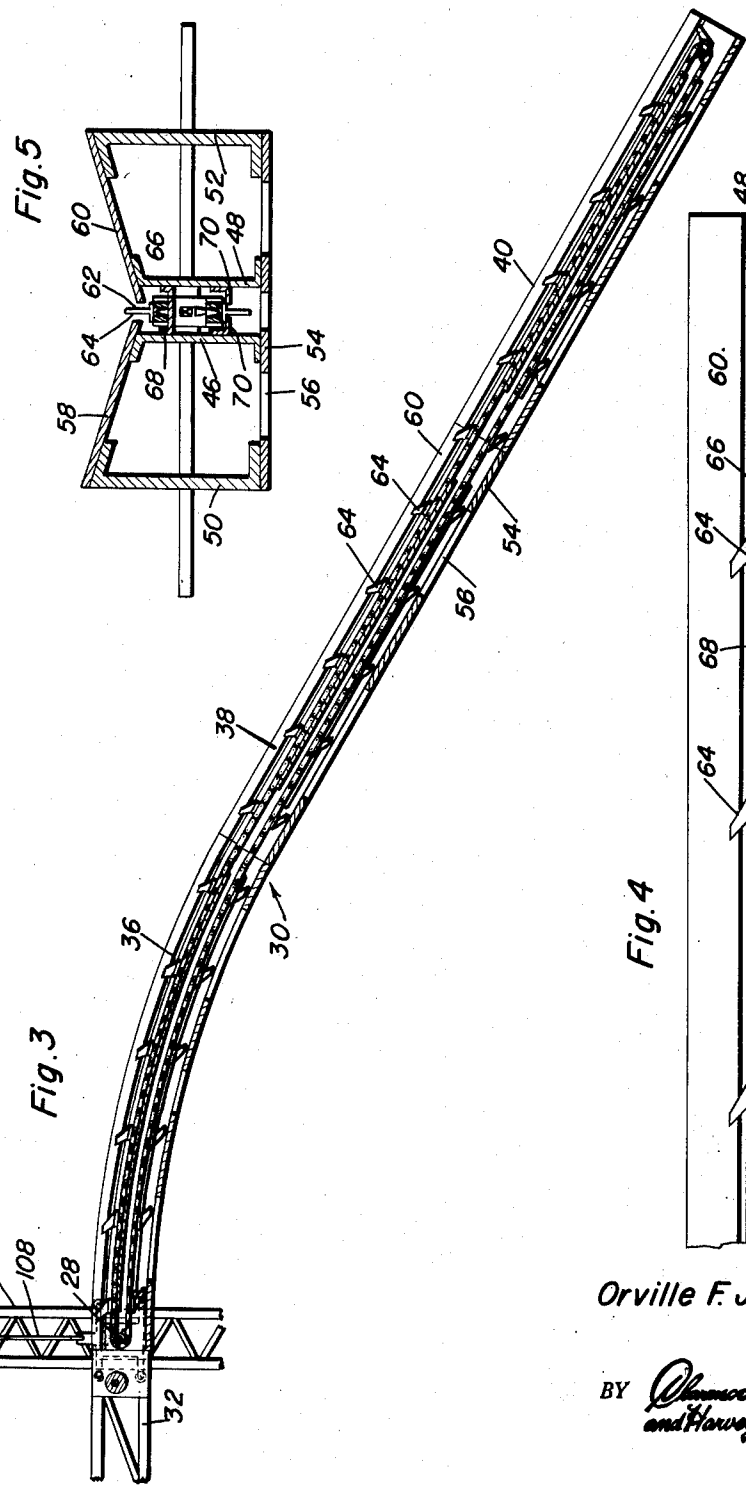
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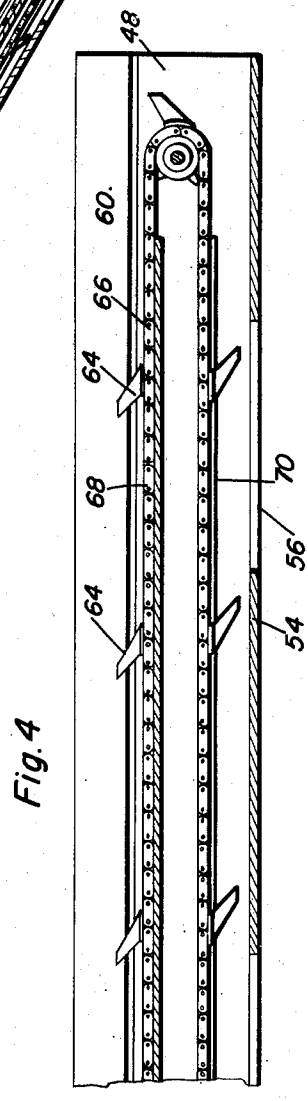
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LOG DECKING MACHINE

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LOG DECKING MACHINE

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Application September 16, 1954, Serial No. 456,518

9 Claims. (Cl. 198—91)

This invention relates to a log decking machine which has as its particular object the raising of floating logs and timber and loading vessels therewith.

A further object of the invention resides in the provision of a floating vessel, such as a barge, scow, boat or the like which carries towers for raising and lowering suitable conveyors utilized in lifting the logs from the surface of the water and delivering the logs for stacking purposes on the deck of a ship to be loaded therewith.

The construction of this invention features the utilization of a pair of towers having carriages mounted for vertical movement relative thereto. Extending between the carriages is a shaft to which there is hingedly secured an endless chain lifting conveyor and a rolling delivery conveyor. Means are provided for adjusting the height of the carriages and for adjusting the height of the end of the delivery carrier so that the logs may be delivered onto the deck of a ship at the precise desired height for easy stacking of the logs, thereby eliminating the tedious and difficult job of loading logs which is generally done using slings and cargo booms.

Still further objects and features of this invention reside in the provision of a log decking machine that is strong and durable, which can be readily floated from one location to another thereby making the device highly utilitarian, and which is easy to operate so as to reduce the amount of labor necessary in the loading of ships with a cargo of logs.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this log decking machine, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a side elevational view of the log decking machine comprising the present invention;

Figure 2 is a plan view of this marine structure;

Figure 3 is a longitudinal sectional view of the lifting conveyor comprising one of the important elements of the invention;

Figure 4 is an enlarged longitudinal sectional view of the lifting conveyor illustrating the log engaging means;

Figure 5 is an enlarged sectional detail view as taken along the plane of line 5—5 in Figure 3 illustrating the configuration of the lifting conveyor;

Figure 6 is a detail plan view illustrating the connection between the spaced carriages and a shaft extending between as well as between the lifting conveyor and the delivery conveyor;

Figure 7 is an elevational detail view illustrating the construction of one of the carriages; and

Figure 8 is a perspective view of the yoke utilized for connecting the cable to the shaft joining the carriages.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, and with initial attention directed to Figures 1 and 2, it will be seen that

the invention consists of a pair of spaced towers 10 and 12 which are secured to and lie vertically upwardly from a vessel 14 which may be a barge, scow or the like having an opening as at 16 at the end of the vessel 14 opposed from the towers 10 and 12.

The towers 10 and 12 may be in the form of vertically extending rails or tracks 18 which are spaced from each other and provided with a reinforcing network, as at 20. A pair of spaced carriages 22 and 24 each comprising a flat plate 25 having outwardly extending leg portions 27 which suitably support rollers 26 which guidingly engage side portions 19 of the rails or tracks 18 whereby the carriages 22 and 24 may be moved vertically with respect to the towers 10 and 12.

Extending between the carriages 22 and 24 is a suitably secured shaft 28. Hingedly secured to the shaft 28 is a lifting conveyor 30 and a roller type delivery conveyor 32 is also hingedly retained on the shaft 28 by the shaft 28 extending through apertures in the end portions, as at 34, of the conveyor 32.

The lifting conveyor 30, as can be best seen in Figures 1 and 3, is of an arcuate shape and is formed in three sections, 36, 38 and 40, which are detachably secured to each other by means of plates, as at 42 and 44, which overlap the junctures between these sections of the conveyor 30.

The various sections 36, 38, 40 of the conveyor 30 are formed from pairs of opposed inner and outer substantially channel-shaped frame members 46, 48 and 50, 52 which are preferably joined at the bases thereof by suitable transverse members 54 which may have suitable drainage slots, as at 56, therein. Upper plates 58 and 60 slant inwardly and downwardly convergingly to form a substantially V-shaped supporting surface with a space 62 therebetween so that the log engaging members 64 carried by the endless chains 66 can extend thereabove for hooking engagement with a log for lifting the log upwardly. The endless chains 66 are supported on a channel-shaped upper support 68 and angle-shaped lower supports 70.

The delivery conveyor 32 consists of a suitable framework 72 for supporting rollers 74 spaced somewhat downwardly from the upper rails 76 of the framework 72. End plates, as at 78 and 80, are provided, and have apertures, as at 82, therethrough for reception of the ends of a bridle 84 which is journalled over pulley 87 rotatably supported on the upper ends of towers 10 and 12, the bridle being connected to a cable 86 the cable 86 being wound about the drum 88 of a winch 90 driven by a suitable motor 92 mounted on the vessel 14. A suitable pulley and belt power transmission arrangement 94 is provided for driving engagement between the motor 92 and the winch 90.

Another winch 96 is provided and driven through the pulley arrangement 98 by the motor 92 and has a cable 100 attached thereto, the cable 100 being entrained over a pulley 102 mounted on shaft 104 extending between the towers 10 and 12. The cable 100 is secured to the eye member 106 of a yoke 108 having eyes 110 and 112 at the ends thereof, see Figures 6 and 8. The shaft 28 may extend through the eyes 110 and 112 or they may be connected to suitable connecting portions 113 on the carriages 22 and 24 as seen in Figure 7. Hence, upon actuation of the winch 96, the cable 100 will be activated, causing the carriages 22 and 24 to be raised or lowered, thereby raising and lowering the adjacent ends of the conveyors 30 and 32. It is noted that the lower end of the section 40 of the conveyor 30 extends through the opening 16 in the vessel 14 and logs are adapted to be picked up by the hook-like engaging members 64 and carried upwardly. The logs are successively delivered to the roller delivery conveyor 32 which has its end ad-

justed to a desired height for delivery of the logs onto the deck of a ship to be loaded.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction described and claimed, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A log decking machine comprising a floating vessel, a pair of spaced towers secured to and rising upwardly from said vessel, carriages mounted for vertical movement on and relative to said towers, a shaft extending between said carriages, means for raising and lowering said carriages engaging said carriages, a delivery conveyor and a lifting conveyor, the adjacent ends of said delivery conveyor and said lifting conveyor being hingedly fixed on said shaft, said lifting conveyor including an opposite end portion extending below the water line of the floating vessel.

2. A log decking machine as set forth in claim 1 wherein said means for raising and lowering said carriage includes a winch mounted on said vessel, a pulley on said towers, and a cable entrained over said pulley and actuated by said winch, a yoke attached to said carriage, said cable being connected to said yoke.

3. A log decking machine comprising a floating vessel, a pair of spaced towers secured to and rising upwardly from said vessel, carriages mounted for vertical movement on and relative to said towers, a shaft extending between said carriages, means for raising and lowering said carriages engaging said carriages, a delivery conveyor and a lifting conveyor, the adjacent ends of said delivery conveyor and said lifting conveyor being hingedly fixed on said shaft, and means for raising and lowering the remote end of said delivery conveyor, said lifting conveyor including an opposite end portion extending below the water line of the floating vessel.

4. A log decking machine comprising a floating vessel, a pair of spaced towers secured to and rising upwardly from said vessel, carriages mounted for vertical movement on and relative to said towers, a shaft extending between said carriages, means for raising and lowering said carriages engaging said carriages, a delivery conveyor and a lifting conveyor, the adjacent ends of said delivery conveyor and said lifting conveyor being hingedly fixed on said shaft, said vessel having an opening at one end thereof, the remote ends of said lifting conveyor passing through said opening and below the water line of the floating vessel.

5. A log decking machine comprising a floating vessel, a pair of spaced towers secured to and rising upwardly from said vessel, carriages mounted for vertical movement on and relative to said towers, a shaft extending between said carriages, means for raising and lowering said carriages engaging said carriages, a delivery conveyor and a lifting conveyor, the adjacent ends of said delivery conveyor and said lifting conveyor being hingedly fixed on said shaft, said lifting conveyor including an endless chain having log engaging means carried thereby, said lifting conveyor including a substantially V-shaped upper support surface, said log engaging means extending above said support surface, said lifting conveyor including an opposite end portion extending below the water line of the floating vessel.

6. A log decking machine comprising a floating vessel, a pair of spaced towers secured to and rising upwardly from said vessel, carriages mounted for vertical movement on and relative to said towers, a shaft extending between said carriages, means for raising and lowering said carriages engaging said carriages, a delivery conveyor and a lifting conveyor, the adjacent ends of said delivery conveyor and said lifting conveyor being hingedly fixed on said shaft, said vessel having an opening at one end thereof, the remote ends of said lifting conveyor passing through said opening, said lifting conveyor including an endless chain having log engaging means carried thereby, said lifting conveyor including a substantially V-shaped upper support surface, said log engaging means extending above said support surface.

7. A log decking machine comprising a floating vessel, a pair of spaced towers secured to and rising upwardly from said vessel, carriages mounted for vertical movement on and relative to said towers, a shaft extending between said carriages, means for raising and lowering said carriages engaging said carriages, a delivery conveyor and a lifting conveyor, the adjacent ends of said delivery conveyor and said lifting conveyor being hingedly fixed on said shaft, said means including a winch mounted on said vessel, a pulley on said towers, and a cable entrained over said pulley and actuated by said winch, a yoke attached to said carriages, said cable being connected to said yoke, and means for raising and lowering the remote end of said delivery conveyor, said lifting conveyor including an opposite end portion extending below the water line of the floating vessel.

8. A log decking machine comprising a floating vessel, a pair of spaced towers secured to and rising upwardly from said vessel, carriages mounted for vertical movement on and relative to said towers, a shaft extending between said carriages, means for raising and lowering said carriages engaging said carriages, a delivery conveyor and a lifting conveyor, the adjacent ends of said delivery conveyor and said lifting conveyor being hingedly fixed on said shaft, said means including a winch mounted on said vessel, a pulley on said towers, and a cable entrained over said pulley and actuated by said winch, a yoke attached to said carriages, said cable being connected to said yoke, and means for raising and lowering the remote end of said delivery conveyor, said vessel having an opening at one end thereof, the remote end of said lifting conveyor passing through said opening.

9. A log decking machine comprising a floating vessel, a pair of spaced towers secured to and rising upwardly from said vessel, carriages mounted for vertical movement on and relative to said towers, a shaft extending between said carriages, means for raising and lowering said carriages engaging said carriages, a delivery conveyor and a lifting conveyor, the adjacent ends of said delivery conveyor and said lifting conveyor being hingedly fixed on said shaft, said means including a winch mounted on said vessel, a pulley on said towers, and a cable entrained over said pulley and actuated by said winch, a yoke attached to said carriages, said cable being connected to said yoke, and means for raising and lowering the remote end of said delivery conveyor, said vessel having an opening at one end thereof, the remote end of said lifting conveyor passing through said opening, said lifting conveyor including an endless chain having log engaging means carried thereby, said lifting conveyor including a substantially V-shaped upper support surface, said log engaging means extending above said support surface.

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