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H. RUTLEDGE

2,045,875

LOG RAFT

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Fig. 2

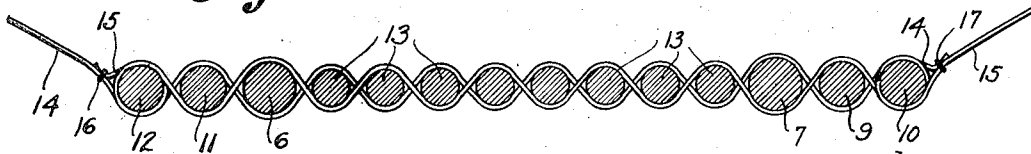


Fig. 1

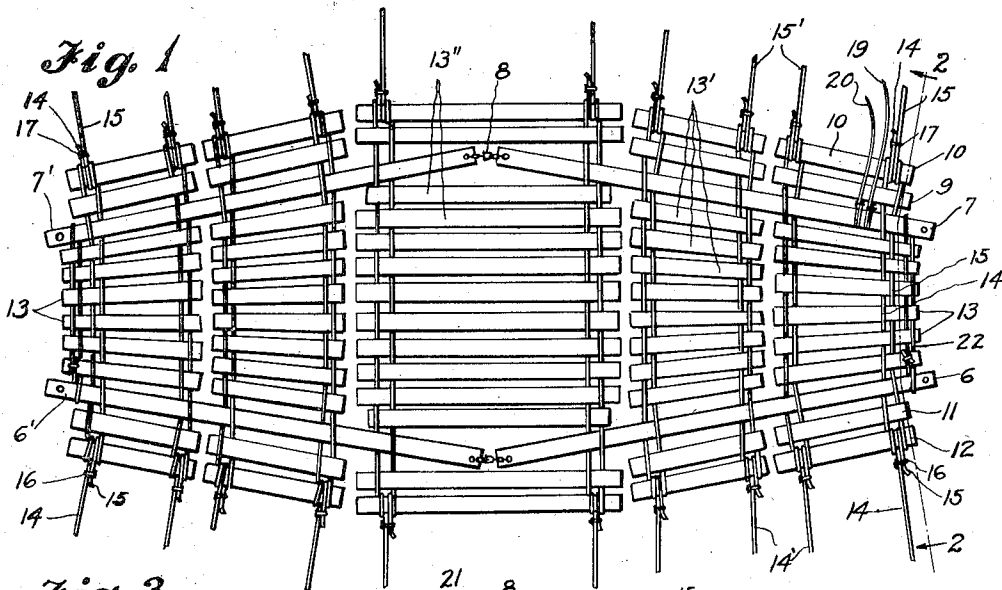


Fig. 3

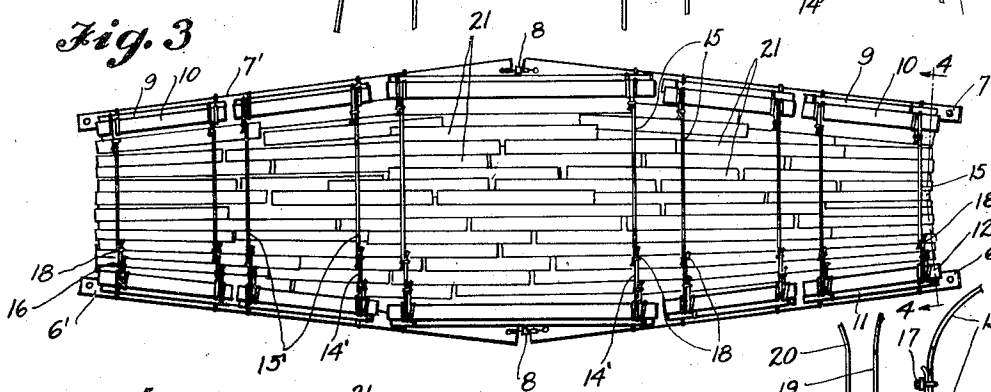


Fig. 4

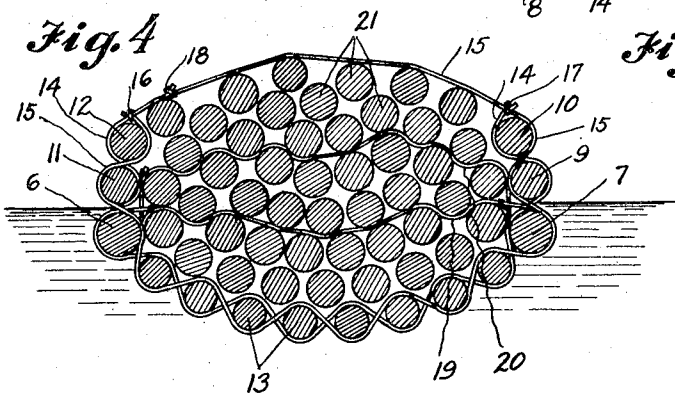
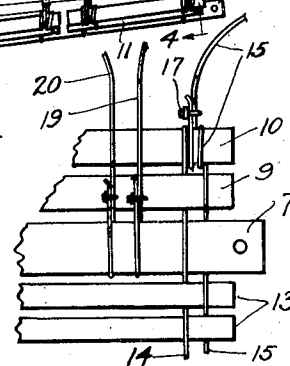


Fig. 5



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LOG RAFT

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3 Claims. (Cl. 9—15)

This invention relates to rafts and particularly to log rafts to be towed on oceans.

Great economy is found in transporting lumber along coasts in form of logs, when the logs can be towed without loss.

Difficulty has been met in attempts to move log rafts on ocean waters, as the high waves and swells, particularly in sudden storms frequently break up the rafts and scatter the logs. This not only results in loss of the logs, but creates peril to shipping. Attempts have been made to use flexible rafts and other forms of rectangular rafts, but these have been found unsatisfactory, and have been often broken up by swells, and also by logs slipping out from the ends of the rafts.

It is therefore an object of this invention to provide a form of log raft which is approximately rigid, like a ship, and held together by a cradle of floor logs and boom sticks on each side of the raft, all laced together by a plurality of cables, and the cables connected on top of the raft.

A particular object is to provide such a rigid raft wider at its center than at its ends with a plurality of lengths and tiers of logs. The end tiers of logs positioned with their smaller ends outward and tied with cables passed around and cross cables connected between the outer ends, and attached to the boom sticks to prevent the logs from spilling out.

A further object is to provide such a raft with the several tiers of logs between the end sections and over the cradle floor and positioned so that the ends of all the intermediate logs do not match but are extended beyond each other in staggered arrangement, so forming a rigid body when bound together by the overwrapped cables.

A still further object is to provide such a raft with rows of logs outside the boom sticks and connected thereto by the cables wound thereover. Such outer logs to be drawn up over the boom sticks when the raft is completed, and so form a protecting sheathing for the sides of the raft. Said cables being connected above the water line, and in such manner that they may be easily disconnected and the raft broken up when it has reached its destination.

It is also an object to provide a method for constructing such a raft.

With these and other objects, I have illustrated my invention by the accompanying drawing, of which:

Figure 1 is a plan view of raft cradle before loading,

Figure 2 is section at 2—2 of Figure 1,
Figure 3 is a plan view of completed raft,
Figure 4 is a section upon line 4—4 of Figure 3,

Figure 5 is an enlarged detail showing fastening of cables to two outside logs and boom sticks.

Like numerals on the different figures represent like parts.

Numerals 6 and 6' and 7 and 7' represent boom sticks of considerable length, and flexibly connected by ordinary chains and toggles 3. These boom sticks are arranged in spaced relation to form two side frames for the raft, with the extreme ends of frame narrower than in the middle.

Outriggers or sheathing logs 9, 10, 11, and 12 are arranged in pairs parallel with and outside the boom sticks. Floor logs 13—13 are filled in between the boom sticks at each end of the frame. These end floor logs are preferably arranged with their larger or butt ends, inward, and the smaller ends outward, to aid in forming the raft in desirable shape, and for holding the end logs within the raft. Said floor logs, boom sticks and outriggers are all bound together by wire cables or chains 14 and 15 to form the end sections of a cradle for the supported logs of the raft. Any number of other rows of floor logs as 13' and 13'' may be placed between the said two end sections of the cradle floor, and are similarly connected by similar cables as 14' and 15'. The middle row of logs 13'' are preferably positioned with butts alternating and of greater number than said end sections, to fill in between the boom sticks at their central parts. The raft is then completed by loading upon the floor logs any desired number of tiers of rows of logs to be transported together as indicated in Figures 3 and 4. The floor logs are preferably selected of even length and are placed in staggered positions so that the ends thereof do not abut or match, but overlap, as shown in Figure 3. The cable lines are then fastened over the whole, whereby the entire raft is bound in rigid construction, and rides the waves like a ship.

As a further protection against possible spilling of any logs from the ends of the raft, two or more cross cables or center end lines 19 and 20 are connected between the ends of the boomsticks adjacent or above, the tiers of logs across each end of the raft substantially horizontal across the raft, or above the boomsticks if placed between the tiers of logs, and the ends brought down; and the ends of these lines are attached to the boom sticks at each side. Said lines 19 and 20 are indicated in Figure 5 extended out-

ward before being carried back to boom stick 12. Such cross lines prevent the boom sticks from spreading and any flattening of the raft and so prevent any of the end logs and particularly any of such end logs submerged beneath the water line from working out of the raft. The positioning of the end logs with their larger ends inward causes such logs to tend to work inward and not outward from the raft.

The proper arrangement of the binding cables is material, and is preferably carried out in the following manner:

One end of cable 14 is wrapped completely around the outrigger log 10, and the other extending end or bight is woven alternately over and under all of the logs across the floor, and then twice around the opposite outrigger log 12, and the free end 14 extended loosely from beneath 12, for final attachment over the raft. Next, one end of cable 15 is attached to said cable 14 near the log 12 by any suitable clamp as 16. The free end and bight of 15 is then wrapped around said log 12, and woven alternately over and under each intervening log up to the first outrigger 10. It is there wrapped once and a half around the latter, and the first end of cable 14 there attached to 15 by a similar clamp 17. The free end of 15 is left extended outward a sufficient distance or length to permit the same to be later carried over the top of the completed raft and made fast to the extended end of cable 14, at a point along the breaking side of the raft as indicated by clamp 18.

The number of floor logs is preferably divisible by two, so that the free ends of cables 14 and 15 will extend outward from the under sides of logs 10 and 12. When sufficient logs have been loaded on the floor as a cradle, the extending ends of said cables 14 and 15 are then brought together over the raft and suitable tightening power applied, whereby the outrigger logs 9, 10, 11, and 12 may easily be rolled up and over the side boom sticks, and there held. They thus provided protecting walls or sheathing for the sides of the raft as shown in Figures 3 and 4.

All of the cable fastenings are arranged above the water line to be accessible for releasing when the raft is to be broken up. The clamps are preferably what is commonly known as the Crosby type, or others that may be easily operated.

Rafts constructed as described have been successfully operated along the Pacific coast through high seas.

While I have shown and described a particular form or embodiment of my invention I am aware that minor changes will suggest themselves to those skilled in the art, without departing from

the spirit and scope of my invention. I therefore desire to avoid being limited to the specific construction of my invention, which I have hereinabove shown.

Having described my invention I claim as new for patent protection:

1. A log raft comprising two lines of boom sticks for side frames, the ends of said two lines spaced apart closer in relation at their ends than at their center, rows of logs placed parallel between the lines of boom sticks laced for a floor and rows of logs parallel with the boom sticks outside thereof, cables woven over and between the floor logs for holding the same together, said cables wound around said outlying logs for connecting the same to the boom sticks and for rolling said outlying logs up and over the boom sticks, a cargo of logs loaded over the floor and between the boom sticks in staggered relation, and the ends of the cables attached together over the cargo, for binding the same rigidly together for towing on an ocean.

2. A cradle to log rafts comprising two lines of boom sticks spaced apart closer at ends than at the center, floor logs between the boom sticks, cables woven alternately over and under the floor logs and serving to connect the floor logs to the boom sticks, one line passed under and the other passed over the same, rows of outrigger logs positioned outside the boom sticks, and said cables wound around such outriggers at each end thereof, the ends of such cables extended beyond said outriggers and adapted to roll and draw such outriggers up and over the top of such boom sticks to provide sheathing for the sides of the raft, the ends of said cables further adapted to be drawn together over the top of the raft, for holding the same together, said cables clamped together at points above water line for convenience in breaking up the raft and releasing the logs at destination.

3. The method of constructing a log raft, comprising the lacing of logs together by cables for a floor, attaching boom sticks along each side of the floor logs by said cables, winding the cables outside the boom sticks around outlying rows of logs for sheathing, placing a cargo of logs in staggered positions over the floor between the boom sticks, tying the boom sticks together by cross cables between tiers of cargo logs, so that the boom sticks are nearer together at each end of the raft than at the center thereof, rolling the outlying logs up and over the boom sticks for side walls to the raft and drawing the ends of the cables over the top of the raft, and clamping the same together above the water line.

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