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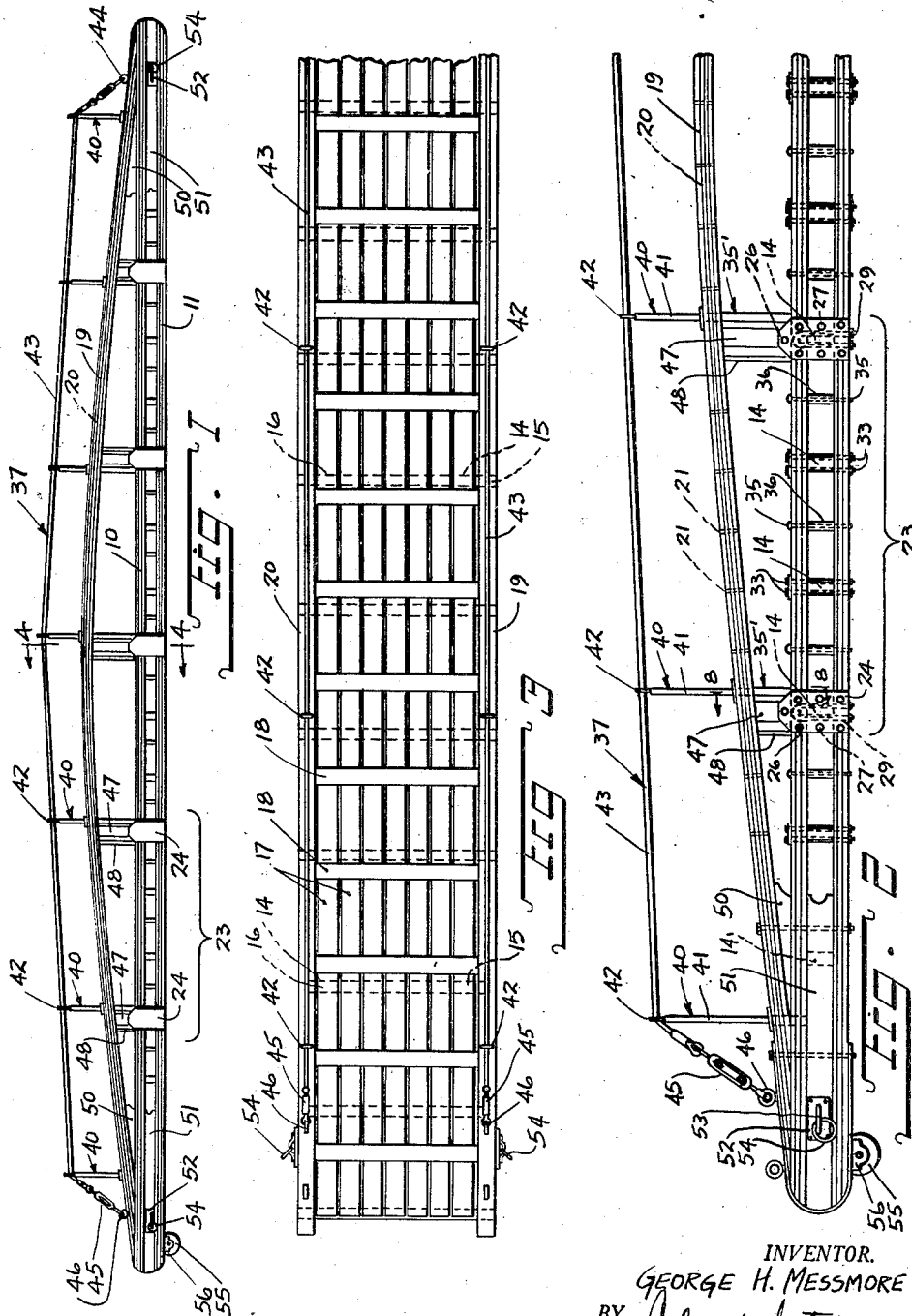
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2,380,060

LAMINATED GANGWAY

Filed Jan. 4, 1944

2 Sheets-Sheet 1



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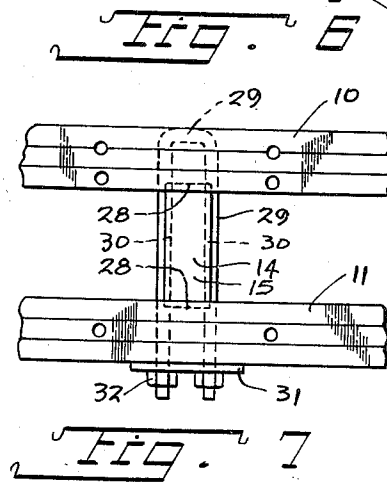
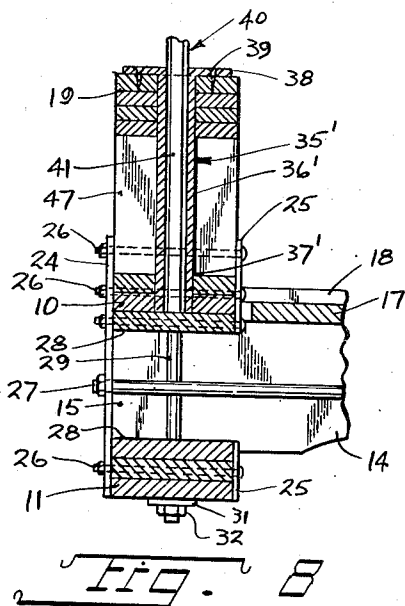
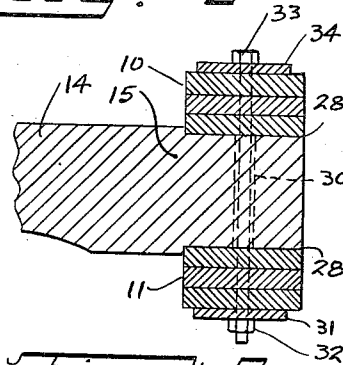
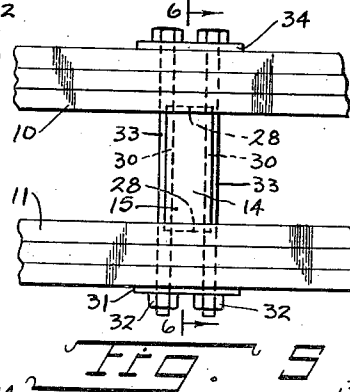
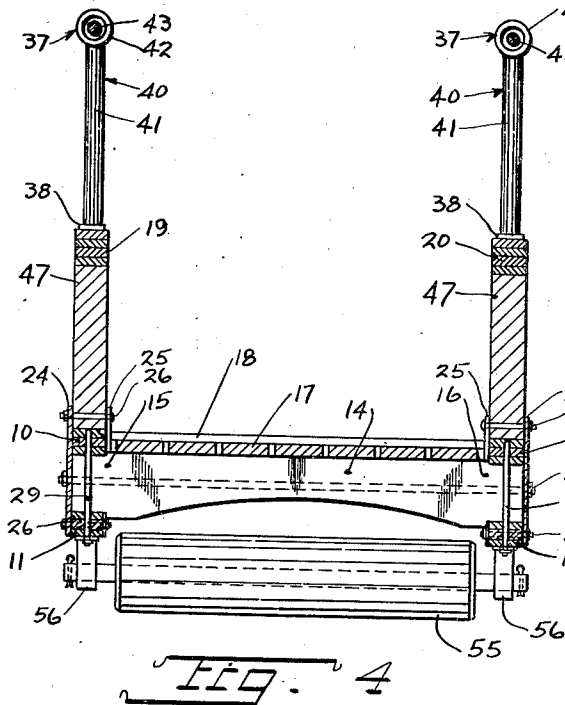
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,380,060

LAMINATED GANGWAY

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5 Claims. (Cl. 14—72)

This invention relates to new and useful improvements in gangways, and has more particular reference to a wooden gangway having certain of its longitudinals formed of laminated wood.

The invention particularly relates to a wooden gangway having a left superimposed pair of longitudinally extending stringers and a right superimposed pair of longitudinally extending stringers connected by a plurality of longitudinally spaced transverse spreaders having their left ends engaging between said left pair of stringers, and their right ends engaging between said right pair of stringers. It is proposed to mount longitudinally extending flooring strips upon the top edges of said transverse spreaders and to mount transverse tread strips across said flooring strips. It is further proposed to provide a left and a right longitudinally extending arch truss mounted upon said left and right pairs of stringers.

An important and dominating feature of this invention is to construct said stringers and said arch trusses of wooden laminations.

The invention further contemplates a number of minor features in the nature of the arrangement and means for joining the transverse spreaders with the stringers, and for supporting the arch trusses.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is an elevational view of a gangway constructed in accordance with this invention.

Fig. 2 is a fragmentary enlarged detailed view of the left hand portion of Fig. 1.

Fig. 3 is a plan view of Fig. 2.

Fig. 4 is a fragmentary enlarged vertical transverse sectional view taken on the line 4—4 of Fig. 1.

Fig. 5 is a fragmentary enlarged detailed view of a portion of Fig. 2.

Fig. 6 is a fragmentary vertical sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is another fragmentary enlarged detailed view of a portion of Fig. 2 but illustrated with certain side plates and bolts removed.

Fig. 8 is a fragmentary enlarged vertical sectional view taken on the line 8—8 of Fig. 2.

The gangway, in accordance with this inven-

tion, includes a left superimposed pair of longitudinally extending stringers 10 and 11 and a right superimposed pair of longitudinally extending stringers 12 and 13. A plurality of longitudinally spaced transverse spreaders 14 have their left ends 15 engaging between said left pair of stringers 10 and 11 and their right ends 16 engaging between said pair of right stringers 12 and 13.

Longitudinally extending flooring strips 17 are mounted upon the top edges of the spreaders 14 and are fixedly secured with nails or other similar fastening elements. A plurality of longitudinally spaced transverse tread strips 18 are mounted across the flooring strips 17 and are fixedly secured in position with nails or other fastening elements. A left arch truss 19 and a right arch truss 20 are mounted upon said left stringer 10 and said right stringer 12, respectively.

The stringers 10, 11, 12 and 13, and the arch trusses 19 and 20 are formed from wood laminations. These laminations are glued together and are reinforced and held joined by a plurality of bolts and nuts 21 mounted through these parts. Preferably, the top heads of the bolts are engaged in countersunk openings in these parts and the openings are then plugged.

Said transverse spreaders 14 are connected with said stringers 10, 11, 12 and 13 in repeating groups, one of these groups being indicated in Figs. 1 and 2 by the bracketed section 23. Attention is called to the fact that the first and last spreader 14 of each two adjacent of said repeating groups are the same single spreader 14. Each of these groups has full height side plates 24 located at the first and last spreaders 14 of said group and short height side plates 25 in line with said full height side plates 24 but adjacent the inner faces of the top stringers 10 to 13. Bolts 26 engage between each pair of said short height side plates 25 and full height side plates 24. Additional long bolts 27 are engaged across the full height side plates 24 at the left and right side of the gangway.

Each transverse spreader 14 has its ends 15 and 16 cut down to form shoulders or recesses 28 to accommodate the said stringers 10, 11, 12 and 13. Behind each full height side plate 24 there is a U-shaped bolt 29 binding the stringers upon the end portions of the spreaders 14. The faces of the end portions of the spreaders 14 are formed with vertical grooves 30 into which the side arms of the U-shaped bolts 29 pass. The U-shaped bolts 29 are inverted and have their

bends sunk into the top faces of the top stringers 10 and 12. The bottom ends of the arms of the bolts 29 pass through plates 31 placed against the bottom faces of the stringers 11 and 13. Nuts 32 threadedly engage upon the bottom ends of said inverted U-bolts 29.

The other spreaders 14 of each repeating group 23 are also recessed or formed with the shoulders 28 and are also bolted to the stringers in a certain manner. More specifically, the side faces of the end portions of these spreaders 14 are formed with vertical grooves 30 through which a pair of straight bolts 33 pass. These straight bolts 33 have their heads engaged through top plates 34 rested against the top face of the stringers 10 and 12. The bottom ends of these bolts 33 pass through bottom plates 31. They are provided with the nuts 32.

Each repeating group 23 also has additional bolts 35 located between the transverse spreaders 14. These bolts 35 pass through the top and bottom stringers. Pipe sections 36 are mounted on the bolts 35 and engage between the top and bottom stringers, acting as spacers on the bolts for holding the stringers supported in their spaced positions.

A railing 37 is mounted upon and along each of the arch trusses 19 and 20. Each railing 37 includes stanchion sockets 35' consisting of a pipe section 36' engaging through said arch trusses and at their bottom ends engaged into openings 37' formed in the top stringers 10 and 12. Each stanchion socket 35' also includes a top flange 38 disposed at an angle to the pipe section 36' so as to engage against the top face of the arch truss. These flanges 38 are secured to the arch trusses by fastening elements 39, or other fastening element. A stanchion 40 engages into each stanchion socket 35'. Each stanchion 40 includes a rod section 41 which engages into the pipe 36' and a top eye 42.

Ropes 43 are threaded through said eyes 42. One of the ends of each of said ropes is connected with an eye 44 mounted upon one of the ends of said arch trusses 19 and 20. The other ends of the ropes 43 connect with turn buckles 45 which in turn are connected with eyes 46 mounted upon the other of the ends of the arch trusses 19 and 20. Wooden posts 47 are mounted upon the top faces of the stringers 10 and 12 at the ends of the repeating groups of spreaders 14, and engage beneath the arch trusses 19 and 20 for assisting in supporting the latter. The bottom ends of these posts 47 are engaged in between the top portions of the side plates 24 and 25 and are held by bolts 26. Adjacent each post 47 there is a bolt 48 which engages through the arch trusses 19 and 20 and the top stringers 10 and 12.

Wedges 50 are mounted between the ends of the trusses 19 and 20 and the ends of the stringers 10 and 12. Filler members 51 are mounted between the ends of each pair of said stringers 10 and 11, and 12 and 13. Side lashings are mounted on the outer faces of said filler members 51. These side lashings include plates 52 mounted upon the filler members 51 and provided with loops 53 supporting the rings 54. A roller 55 is mounted upon pillow blocks 56 which in turn are mounted upon the front ends of the stringers 11 and 13.

The gangway is used in the regular way to provide a passage from ship to shore, or dock.

While I have illustrated and described the preferred embodiments of my invention, it is to be

understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. In a gangway, a left superimposed pair of longitudinally extending stringers, a right superimposed pair of longitudinally extending stringers, a plurality of longitudinally spaced transverse beam-like spreaders having their left ends engaging between and supported by said left pair of stringers and their right ends engaging between and supported by said right pair of stringers, longitudinally extending flooring strips mounted upon the top edges of said beam-like spreaders, longitudinally spaced transverse tread strips mounted across said flooring strips, and a left and a right longitudinally extending arch truss mounted upon said left and right stringers, said transverse spreaders being connected with said stringers in repeating groups in which the first and last spreader of each two adjacent groups are the same single spreaders, each of said groups having outer full height side plates extending between said superimposed stringers and located at the end of the first and last spreader of said group, short height side plates in line with said full height plates but adjacent the inner faces of the top stringers, and bolts between each pair of short height and full height side plates.

2. In a gangway, a left superimposed pair of longitudinally extending stringers, a right superimposed pair of longitudinally extending stringers, a plurality of longitudinally spaced transverse spreaders having their left ends engaging between said left pair of stringers and their right ends engaging between said right pair of stringers, longitudinally extending flooring strips mounted upon the top edges of said spreaders, longitudinally spaced transverse tread strips mounted across said flooring strips, and a left and a right longitudinally extending arch truss mounted upon said left and right stringers, said stringers being made of longitudinally extending wooden laminations said transverse spreaders being connected with said stringers in repeating groups in which the first and last spreader of each two adjacent groups are the same single spreaders, each of said groups having outer full height side plates extending between said superimposed stringers and located at the end of the first and last spreader of said group, short height side plates in line with said full height plates but adjacent the inner faces of the top stringers, and bolts between each pair of short height and full height side plates and U-shaped bolts behind said full height side plates and engaged between the stringers of each of said pair of stringers and having their side arms engaging through grooves formed in the faces of the end portions of said spreaders.

3. In a gangway, a left superimposed pair of longitudinally extending stringers, a right superimposed pair of longitudinally extending stringers, a plurality of longitudinally spaced transverse spreaders having their left ends engaging between said left pair of stringers and their right ends engaging between said right pair of stringers, longitudinally extending flooring strips mounted upon the top edges of said spreaders, longitudinally spaced

transverse tread strips mounted across said flooring strips, and a left and a right longitudinally extending arch truss mounted upon said left and right stringers, said stringers being made of longitudinally extending wooden laminations said transverse spreaders being connected with said stringers in repeating groups in which the first and last spreader of each two adjacent groups are the same single spreader, each of said groups having outer full height side plates extending between said superimposed stringers and located at the end of the first and last spreader of said group, short height side plates in line with said full height plates but adjacent the inner faces of the top stringers, and bolts between each pair of short height and full height side plates, and U-shaped bolts behind said full height side plates and engaged between the stringers of each of said pair of stringers and having their side arms engaging through grooves formed in the faces of the end portions of said spreaders, said U-bolts having the ends of their arms engaging through plates rested against one of the faces of said spreaders, and nuts engaged on the ends of the arms of said U-bolts and engaging against said plates.

4. In a gangway, a left superimposed pair of longitudinally extending stringers, a right superimposed pair of longitudinally extending stringers, a plurality of longitudinally spaced transverse spreaders having their left ends engaging between said left pair of stringers and their right ends engaging between said right pair of stringers, longitudinally extending flooring strips mounted upon the top edges of said spreaders, longitudinally spaced transverse tread strips mounted across said flooring strips, and a left and a right longitudinally extending arch truss mounted upon said left and right stringers, said stringers being made of longitudinally extending wooden laminations said transverse spreaders being connected with said stringers in repeating groups in which the first and last spreader of each two adjacent groups are the same single spreader, each of said groups having outer full height side plates extending between said superimposed stringers and located at the end of the first and last spreader of said group, short height side plates in line with said full height plates but adjacent the inner faces of the top stringers, and bolts between each pair of short height and full height side plates, and U-shaped bolts behind said full height side plates and engaged between the stringers of each of said pair of stringers and having their side arms engaging through grooves formed in the faces of the end portions

of said spreaders, said U-bolts having the ends of their arms engaging through plates rested against one of the faces of said spreaders, and nuts engaged on the ends of the arms of said U-bolts and engaging against said plates, the spreaders between said full height side plates having the faces of their rear end portions formed with grooves and straight bolts mounted between the stringers of each of said pairs of stringers and passing through said grooves.

5. In a gangway, a left superimposed pair of longitudinally extending stringers, a right superimposed pair of longitudinally extending stringers, a plurality of longitudinally spaced transverse spreaders having their left ends engaging between said left pair of stringers and their right ends engaging between said right pair of stringers, longitudinally extending flooring strips mounted upon the top edges of said spreaders, longitudinally spaced transverse tread strips mounted across said flooring strips, and a left and a right longitudinally extending arch truss mounted upon said left and right stringers, said stringers being made of longitudinally extending wooden laminations said transverse spreaders being connected with said stringers in repeating groups in which the first and last spreader of each two adjacent groups are the same single spreader, each of said groups having outer full height side plates extending between said superimposed stringers and located at the end of the first and last spreader of said group, short height side plates in line with said full height plates but adjacent the inner faces of the top stringers, and bolts between each pair of short height and full height side plates, and U-shaped bolts behind said full height side plates and engaged between the stringers of each of said pair of stringers and having their side arms engaging through grooves formed in the faces of the end portions of said spreaders, said U-bolts having the ends of their arms engaging through plates rested against one of the faces of said spreaders, and nuts engaged on the ends of the arms of said U-bolts and engaging against said plates, the spreaders between said full height side plates having the faces of their rear end portions formed with grooves and straight bolts mounted between the stringers of each of said pairs of stringers and passing through said grooves, and additional bolts mounted between said pairs of stringers and having short lengths of pipe located between the stringers of each of said pairs of stringers.

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