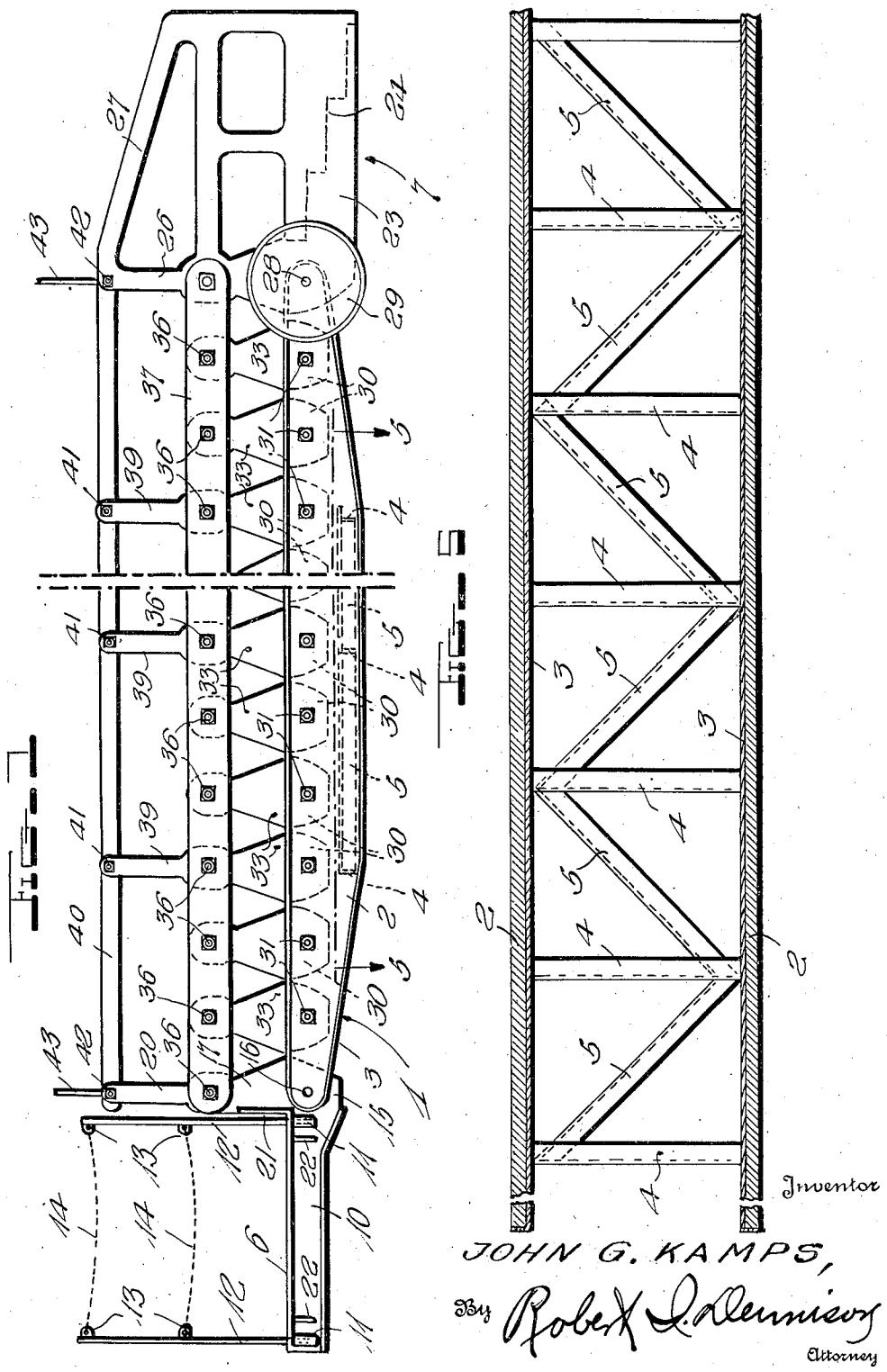
April 12, 1949. J. G. KAMPS 2,466,708

GANGWAY FOR SHIPS

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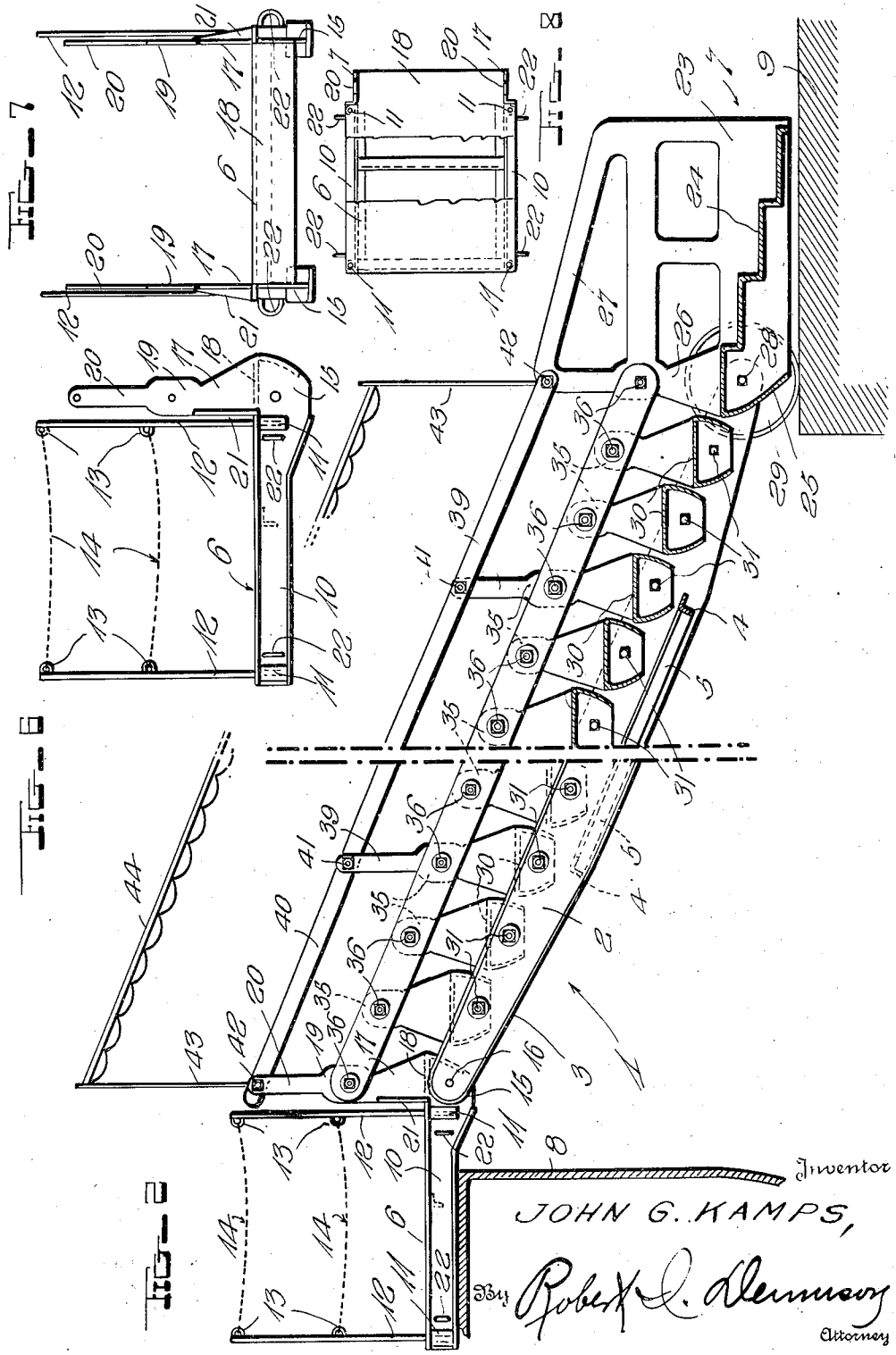


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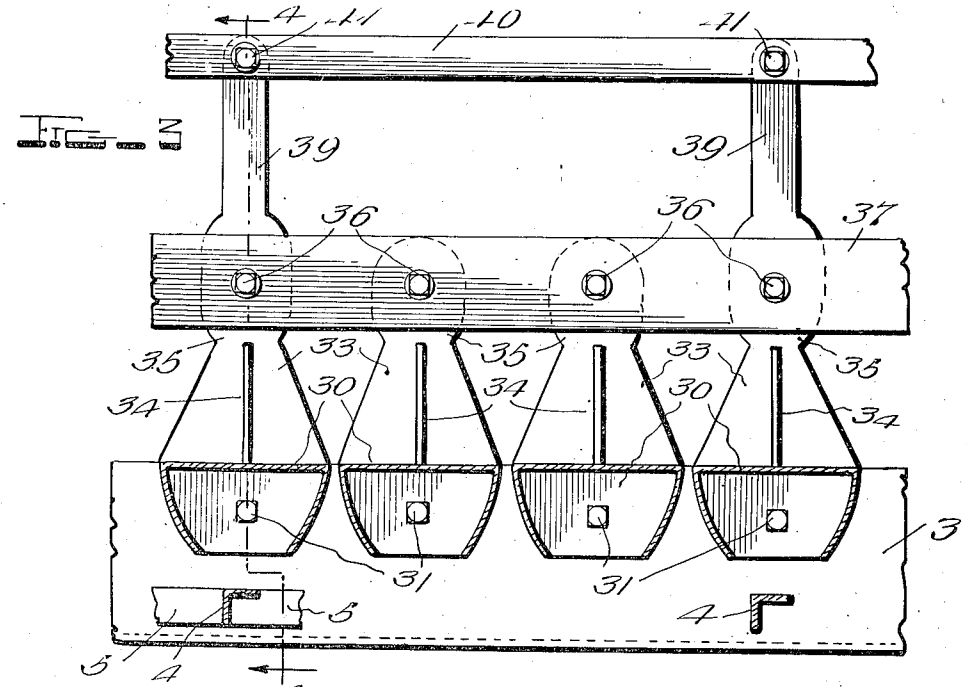


Fig. 3

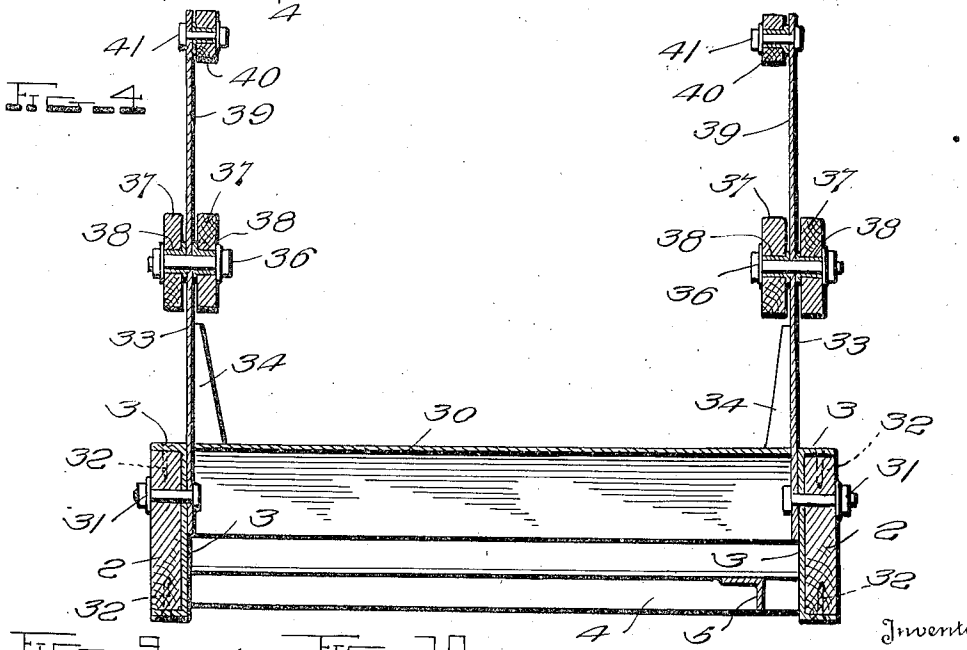


Fig. 4

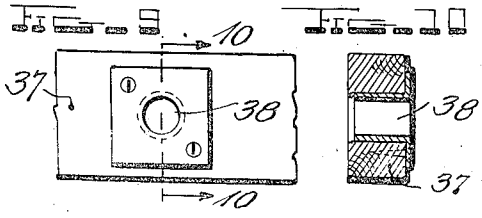


Fig. 5 Fig. 6

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GANGWAY FOR SHIPS

John G. Kamps, Long Beach, Calif.

Application July 10, 1945, Serial No. 604,174

1 Claim. (Cl. 228—54)

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This invention relates to an improved gangway for ships and it is one object of the invention to provide a gangway having end portions for resting upon a boat and a dock and a main frame extending between the end portions or platforms and being pivotally connected therewith, so that as a boat moves vertically between high tide and low tide, the main frame may tilt and follow vertical movements of the ship, the main frame having associated with it steps which are pivotally mounted so that treads of the steps will always be horizontal and thus allow persons to walk along the gangway without likelihood of slipping and falling.

Another object of the invention is to provide a gangway wherein tilting of the steps about their pivotal mountings is in direct response to the tilting of the main frame of the gangway and thus cause the steps to be gradually moved as the frame tilts and their treads at all times maintained in a horizontal position.

Another object of the invention is to provide a gangway having its main section or frame provided with side rails which are pivoted at their ends to standards at the ends of the platforms and are caused to tilt and maintain parallel relation to the main frame as the tide rises and falls, the steps being pivoted to the main frame and also to the side rails so that they serve as braces for the side rails and insure proper angular relation between the side rails, the main frame, and the steps.

Another object of the invention is to provide a gangway which is very strong and will not easily become broken or out of working order.

Other objects and advantages of the invention will become apparent from the following description.

In the accompanying drawings forming a part of this specification and wherein like references designate corresponding parts:

Figure 1 is a side view showing the gangway as it will appear when the deck of a boat is level with the dock;

Figure 2 is a view partially in side elevation and partially in longitudinal section and showing the incline assumed when the deck of the boat is higher than the dock;

Figure 3 is a view showing a portion of the gangway in longitudinal section;

Figure 4 is a transverse sectional view taken along the line 4—4 of Figure 3;

Figure 5 is a sectional view taken longitudinally through the gangway along line 5—5 of Figure 1;

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Figure 6 is a side view of the end platform which rests upon the deck of a boat;

Figure 7 is an end view of the platform shown in Figure 6;

Figure 8 is a view looking down upon the platform;

Figure 9 is a side view of a fragment of one side rail of the gangway; and

Figure 10 is a sectional view taken along the line 10—10 of Figure 9.

This improved gangway has a main frame having side bars 2 which are encased in metal sheaths 3 so that they will be very strong and not be liable to become warped or broken. Cross bars 4 extend between the side bars and there have also been provided diagonally extending bracing bars 5, the bars 4 and 5 being formed of angle metal to increase their strength and prevent them from easily bending.

At its ends, the main frame of the gangway is connected with platforms 6 and 7 which are to rest upon the deck of a boat 8 and on a dock or pier 9 as shown in Figure 2. The platform 6 has side beams 10 formed with sockets 11 to receive stakes 12 which are provided with eyes 13 so that ropes 14 may be strung between the stakes and serve as hand holds for persons stepping upon the platform when approaching or leaving the gangway.

Heads 15 are formed at inner ends of the side beams 10 and ends of the side bars 2 are pivotally connected with these heads by pins 16. The heads 15 are extended upwardly to form side walls 17 of a step 18 and at their upper ends the side walls are formed with heads 19 from which project standards 20. Webs 21 brace the side walls 17 and eyes 22 project from outer sides of the beams 10 in order that ropes may be tied to opposite sides of the platform and prevent the platform from slipping off the deck of the boat.

The platform 7 has side walls 23 which are preferably formed of metal and between these side walls are arranged steps 24 which may be cast integral with the side walls or formed separate therefrom and firmly secured to the side walls in any desired manner. A web 25 braces the inner end of the platform and at its inner end each side wall is formed with a standard 26 with which the inner end of the handrail 27 is united.

Shafts or bolts 28 pivotally connect outer ends of the side bars 2 of the main frame with lower portions of the inner ends of the side walls 23 and have portions projecting outwardly so that they serve as axles for wheels 29 which are of such diameter that they may rest upon a dock

and hold the platform out of contact therewith. Therefore, the outer platform 7 may readily move relative to the dock as the boat moves vertically during rise and fall of the tide. This also permits the platform to be easily shifted along the dock in case the boat has slight movement towards or away from the dock while the gangway is in use.

Passengers boarding a boat or leaving the same must walk along the gangway and in order that they may do so there have been provided steps 30 which extend between the side bars 2 and are pivotally connected therewith by bolts 31. The bolts not only pivotally mount the steps but also serve to assist in holding the side bars 2 and their sheathings together in case the screws 32 should work loose.

Arms 33 which are braced by webs 34 project upwardly from opposite sides or ends of the steps and have their upper portions formed with heads 35 formed with openings through which are passed bolts 36 by means of which inner and outer bars 37 are connected with the arms 33 of the steps 30 and the standards 17 and 26 of the platforms. Metal bushings 38 are mounted through the bolt-receiving openings of the bars 37 to prevent wear upon the bars during tilting of the gangway as the tide rises and falls.

Certain of the arms 33 have standards 39 projecting upwardly from their upper ends and to these standards hand rails 40 are secured by bolts 41, ends of the hand rails being pivotally connected with the standards 20 and 26 of the platform by bolts 42.

Referring to Figures 1 and 2, it will be seen that the side bars 2, the bars 37 and the hand rails 40 are held in parallel relation to each other since they have their ends pivotally connected with the standards of the platforms and that, since the side arms of the steps are pivoted to the bars and the hand rails, they will be maintained horizontal in an even plane, as shown in Figures 1 and 3, or in parallel planes when the gangway is tilted and extends at an upward incline from the dock, as shown in Figure 2, or downwardly therefrom. Since the steps always have their treads horizontal, passengers may easily walk along the gangway onto or off of a boat without danger of slipping and falling. By mounting rods 43 upon the bolts 42, an awning 44 may be

mounted over the gangway and shield passengers from rain while walking along the gangway.

While I have shown the preferred embodiment of my invention, it is to be understood that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention and the scope of the appended claim.

Having thus described the invention, what is claimed is:

A gangway comprising a platform for resting flat upon a boat, a second platform for resting flat upon a dock, vertical standards extending upwardly from opposite sides of the inner end of each platform and rigid therewith, and a bridge extending between said platforms and consisting of side beams pivoted at their ends to opposite sides of inner walls of the platforms at lower ends of the standards, steps extending transversely of the bridge between the side bars and having flat depending end walls, bolts passing through the side bars and the end walls of the steps and pivotally mounting the steps, inner and outer side rails disposed in upwardly spaced parallel relation to the side bars and having their ends pivoted to said standards in overlapping relation to inner and outer side faces thereof, arms extending upwardly from ends of said steps and pivotally mounted between the inner and outer side rails, certain of said arms having portions extending upwardly from the side rails, and hand rails disposed in upwardly spaced relation to the said rails and pivoted to upper ends of the standards and to upper ends of the upwardly extending portions of the last mentioned arms.

JOHN G. KAMPS.

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