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Blanchard

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(54) **PLANKING VESSELS**

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Thomas Blanchard of the City and State of New York.

Letters Patent.

The schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Thomas Blanchard himself of his improvement in the art of fastening together, the planks or boards of a vessels or boats bottom sides, or deck

To all to whom these presents shall come

Be it known, that I Thomas Blanchard of the County of New York and State of New York, have invented a new and useful Improvement, in the Art of fastening together the planks, or boards, of a vessels or boats bottom sides, or deck and that the following is a full and exact description of the improvement

I lay a keel of proper length and size corresponding to the boat intended to be made, with a stem and stern piece rabbited in a proper manner to receive the planking. On the upper side of this keel at suitable distances apart, I place rods or metalic bars which I bend to a proper curve varying their curvature, according to the shape and form of the boats I intend to build, The extremities of the curves, of these rods and bars, are made fast to the keel with their ends extending upwards, as high or a little higher than the gunwale of the boat. These rods may vary in number & size and distance apart according to the size of the Boat required These rods are made fast to the keel of the boat, by a keelson timber, extending over the rods and made fast to that part of the rods, that rests on the keel by screws or nails holding them firmly upon the keel. The upper ends of these rods, are firmly

attached to a piling, & going from stem to stern, forming the curve of the gunwale of the boat and which serve for the purpose of steadying and keeping them in their proper place while planking the boat, thus forming the skeleton of the boat, similar to the ordinary way of boat-building. The planks are cut to the length, width, and shape, as in the ordinary way of planking except that their edges are cut to such a bevel, or angle as will form a perfect joint and are placed against the outside of said rods, The rods may be partly bedded into them or only rest against them over said rods, and near each edge of the plank may be fixed, a clamp, or bracket, which may be a piece of sheet iron, or other metal, bent curving over the rods with each end fitting to the plank, with sufficient bearing to admit of one or more holes in each end for the purpose of inserting nails or screws, which hold them firmly to the plank, but not so close as to prevent the planks from selling together to form a perfect joint These brackets, or, Clamps must be fixed to all the plank wherever the rods cross them, Then all the plank may be fastened to the rods except the wale-plank, which are the uppermost, and which form the Gunwale of said boat, into which the row-locks are fixed, These planks instead of being fastened by brackets are made at least one thirteenth thicker than the other planks and have holes bored through them of a proper size to receive the end of each rod on which is cut a male screw, These rods must pass through the end extending above the Gunwale timbers sufficiently by far to receive a nut and washer on the end of each, and every rod nut by screwing down upon all of them, each and every plank is brought to a perfect joint and the whole boat rendered firm and stiff, a small round pin should be inserted into the centre of the planks at their joints between the rods, to prevent their slipping by each other, The inner of the whole plank but mentioned that come in contact with

the stem, and these timbers must not be firmly fastened to them, till the planks are all brought to their proper joint as above described after which they may be fastened with screw bolts or otherwise. The thwarts or cross timbers of the boat are placed at the usual height above the floor for a seat or bench to be placed on them, the ends of these timbers are cut to an angle that will fit the inside of the plank and are butted against them resting on a cleat under them, which is made fast to the plank and extending inside nearly the whole length of the boat, cross'g all of the ribs which are bedded into them and the cleats firmly fastened to one of the planks on each side running nearly or quite their whole length on the under side of said thwarts or cross timbers, a groove is cut large enough to admit a small rod, which extends the whole length of the thwarts, and through the sides of the boat above the water line, are brought and held firmly against the butts of the thwarts above described, Thus all the cross timbers are firmly born against the sides of the boat which keeps the boat from spreading, while at the same time it forms a foundation for all the seats. A Stanchion is fixed in an upright position, the downward end resting on, or framed in the described keelson, the upper ends bearing against the under side of the thwarts, near their centre which will prevent them from sinking down, Diagonal braces may be fixed, when useful, one end of which may rest against the thwarts, near their centre, and extending at their downward ends and coming in contact with the sides of the boat, about half the distance from the floor to the ends of the thwarts and made fast to a short cleat extending only over the two nearest ribs at the ends of the braces above described, these diagonal braces will serve to keep the boat from buckling and prevent it

right and true, that I have described the method of applying my mode of fastening together ordinary split & whale boats, and planing boats &c. I will now describe the manner of forming the deck by this mode of fastening and attaching it to a boat as above described.

Rods of sufficient length to reach from one gunwale to the other are passed through them a sufficient distance to admit of a screw, nut and washer outside of the gunwale, these rods are bent to a curve or crowning corresponding to the curve or crown of the deck, and put at convenient distances apart the whole length of the boat, The deck boards or plank are cut to the width, length and shape required for ordinary boats placed on the upper side of said deck rods, and fastened to them by brackets in the same manner as the sides of the boat are fastened as above described and by the same method brought to a perfect joint that is by the screws on each end of the rods, outside being drawn up till every plank of the deck is brought as close as will render it impervious to water, while at the same time the screws that pass through the gunwale before described, hold the deck down and bring the underside of the gunwale timber to a joint with the sides of the boat, To render the deck capable of sustaining the necessary weight I fix stanchions to the keelson as above described with their upper ends resting to a timber which runs horizontally under the whole length of the decks, on which the deck rods rest, which prevents the deck from settling down.

To prevent the sides of the boat from spreading by the pressure upon the deck, rods are fixed under the deck at suitable distances apart passing through each gunwale in a straight line from one gunwale to another, these rods being in a straight line and not crowning like

the ends of the deck on which the deck planks are fastened
with when brought to a proper tension by the screws outside
of the gunwale, rather serve to raise the deck still more
crowning, and prevent the pressure on the deck from spread-
ing the sides of the boat apart, knees may be placed under
the deck at suitable distances, after the sides and deck are brought
to their proper bearings; by this method above described, carlings
or timbers may be also placed under the deck made fast at each
end to the gunwale and rests on cleats bolted or fastened to the
sides of the boat for the purpose of sustaining the deck, where
great strength is required, boats of great length may be built
with their sides rising higher towards midships, than the
Bow and Stern, which seems to stiffen them, and prevent their
hogging; their sides above the water line may rise perpendicularly
and be decked over, Cross timbers should be placed at suitable
distances below the deck to serve as braces, with ends grooved into
them passing through the sides of the boat, & with screws outside
of the boat, will bring the sides of the boat against the ends of the
cross timbers to hold the sides firm, and prevent them from spreading

When two boats are connected together for a steam boat for
instance, above the gunwales of each boat, carlings or beams may
extend across both boats extending over the outside of each boat,
sufficiently far for the guards of the boat. These beams may be fastened
to each boat by the rods that form the sides of the boat extending above
the gunwales of the boats high enough to pass through said beams
and by screwing them fast to the gunwales of both boats. Both
boats may be connected together and a deck formed above them
covering both boats, And the space between them on which
cabins may be erected, It may be however more convenient to have
separate rods, or bolts passing through the deck beams, and
through the gunwales of the boats, than to increase the height of
the rods or sides of the boat for that purpose, This mode of
fastening may be applied to many long boats, and boats made

sharp at both ends, without a keel or stem and sternimbers, in the ordinary way, which is done by diminishing the circle or curvature of the body towards the ends of the boat, to a small compass, and also covering the planks narrower towards the ends in the same proportion, by which means, a boat may be brought almost to a point. By this mode of fastening the planks may be made much thinner than in the ordinary mode of fastening there being no necessity for caulking, The screws that hold on the brackets should not go through for they will interfere with the dressing of the outside of the boat, and forming a smooth surface, In making very small boats with thin sides or planking, too thin to fasten the brackets with wood, screws, wrought iron or copper nails, may be substituted with proper clinches, outside of the planking, which may be dressed down smooth, and made level with the outside surface of the boat, Stiffenings such as knees, futtocks and other kinds of frame work may be put into boats or vessels, having this method of fastening, after the fastenings are properly made, and the planking brought to a proper joint for the purpose of greater solidity, but which I do not claim as my improvement, Instead of round rods, wide flat bars may be used bent to the curve of the boat agreeing which will serve to stiffen the boat more than round rods or flat bars bent flat wise, when extreme long bars are necessary they may be put in in several pieces and bolted or riveted together, or the lower ends of them may be made fast in the keel with heads or screws, which might in some cases be more convenient, or round rods may be passed through the centre of the plank, and supercede the necessity of brackets, instead of cutting a male screw on the end of the rods or bars, the ends may be made with a hooked or bent at right angle and a female screw made in them and a bolt with a bow on one end, and the other passed through the beams or

gunwales, having a male screw cut, to enter the female screw just mentioned. This arrangement would prevent the necessity of having the thread of the screw outside of the vessel and exposed to the salt water which would be likely to waste or corrode them. Flat bars may also be put outside of the planking, and bedded into them and screws attached to their ends in the same manner as those inside which would add a greater degree of solidity to the work. The principle of this invention, is to be found in the mode of joining together planks or boards of a ship's, or vessel's or boat's bottom, in the form or curvature intended and also the decks of vessels, and fastening them to each from the keel or bottom, or deck of vessels or boats with less material and yet of equal strength, in comparison with vessels or boats, of ordinary construction. This mode is cutting the edges of the planks, or boards, and fitting them together according to the forms intended with, or without dowels, or tongues or grooves so that when the plank or boards are placed in their proper position and the edges thus cut are pressed together by a mechanical power acting with sufficient force, and these planks or boards are by suitable mechanical means, drawn, or forced inwards at the same time, and kept firmly in the intended form or curvature by such mechanical power, and by suitable cross braces, corresponding with the form, or curvature intended. The edges of said planks or boards will form permanent close joints. The mechanical force and means used being so constructed substantially as aforesaid, that the action of said force and means will be simultaneous on the edges to press them together, and on the planks or boards to draw and force them inwards. The braces applied to the inner side of the planks or boards, and iron rods, with screws extending from gunwale to gunwale where no keel or keelson is used or from the keel or keelson where there is one, and the braces or cross beams placed with

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and extending from side to side according to the form or curvature, intended as above described are the mechanical means deemed most expedient by the applicant, Yet there are divers mechanical means which may be used instead of these in part, as for example, keys instead of screws, and also wedges might be used to force and press the edges of the planks or boards inwards, so that after forcing the edges of the planks or boards together, these may be secured by any common fastening to the frame floor timber futtocks, or ribs of a vessel or boat or the plank or boards may be bored through from edge to edge, so that the rod may pass through them and this may be relied upon instead of the bracket, or rings or staples may be used instead thereof, and so chains may be used instead of rods, and elastic and even substituted for the rods in small constructions

But the principle of this improvement consists in the simultaneous action, and continued force of Mechanical means upon the edges of the planks or boards of a ships, or vessels, or boats, bottoms and sides, and decks as aforesaid, the edges of said plank or boards, being cut according to the form or curvature intended, so that the mechanical force used, will act fairly & equally on the surface of said edges, and on the planks and boards to press the edges closely together, and draw the planks or boards inwards by the same operation, substantially in the manner herein first above described, in respect to the fastening of the bottoms, and sides, and decks of vessels respectively.

Witnesses }
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