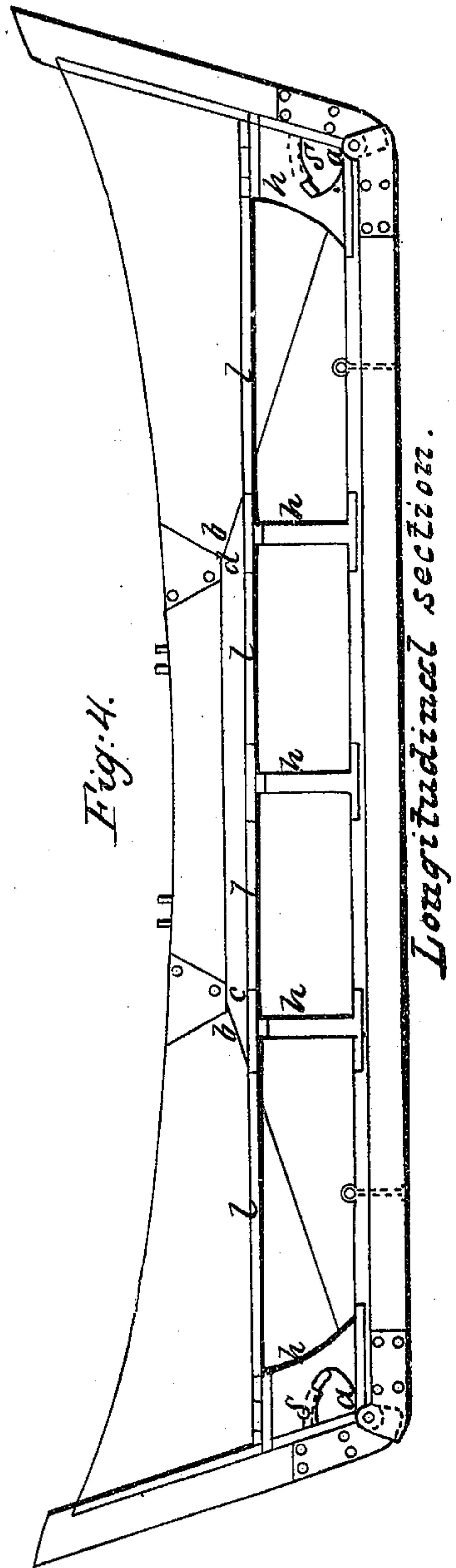
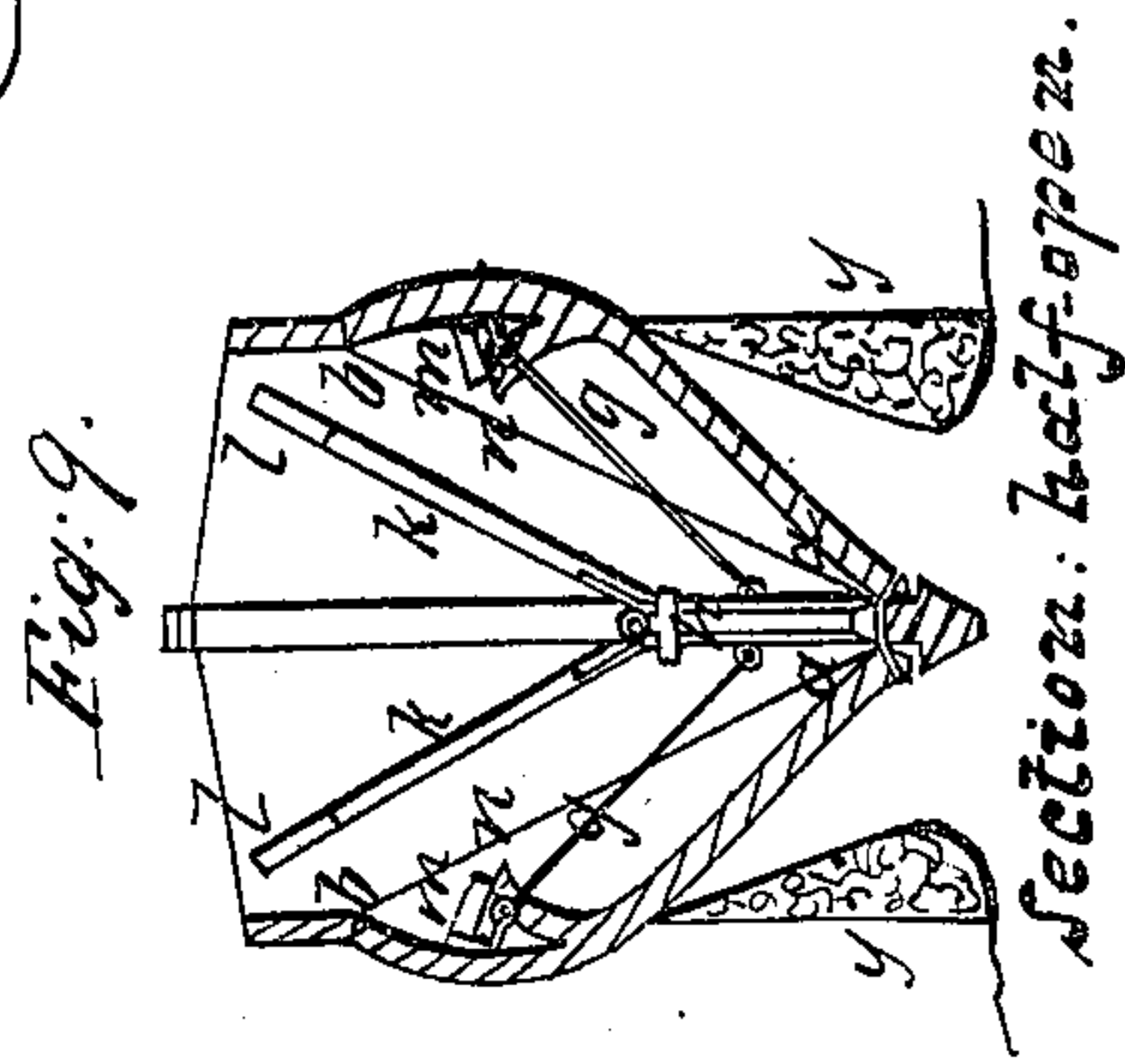
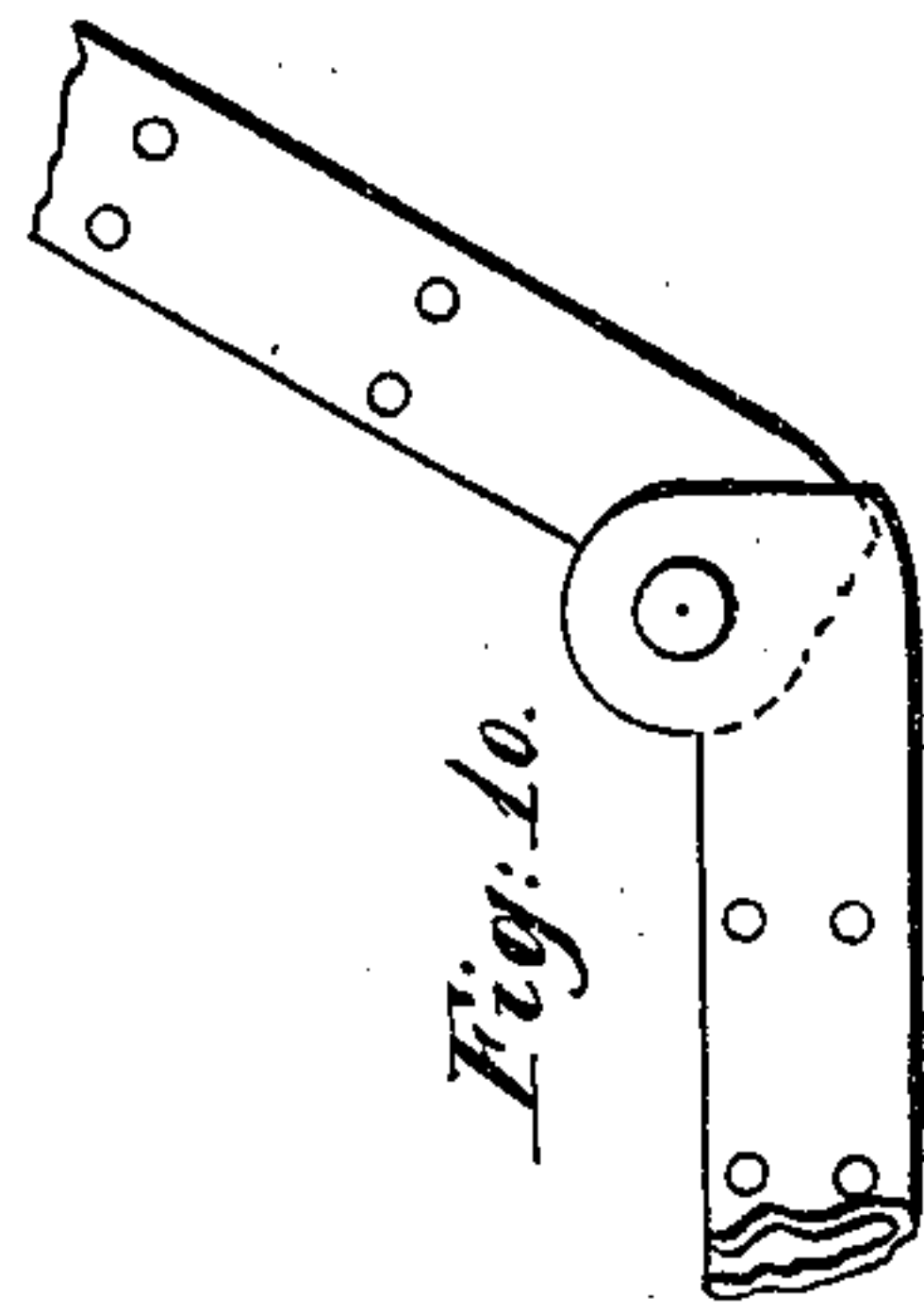
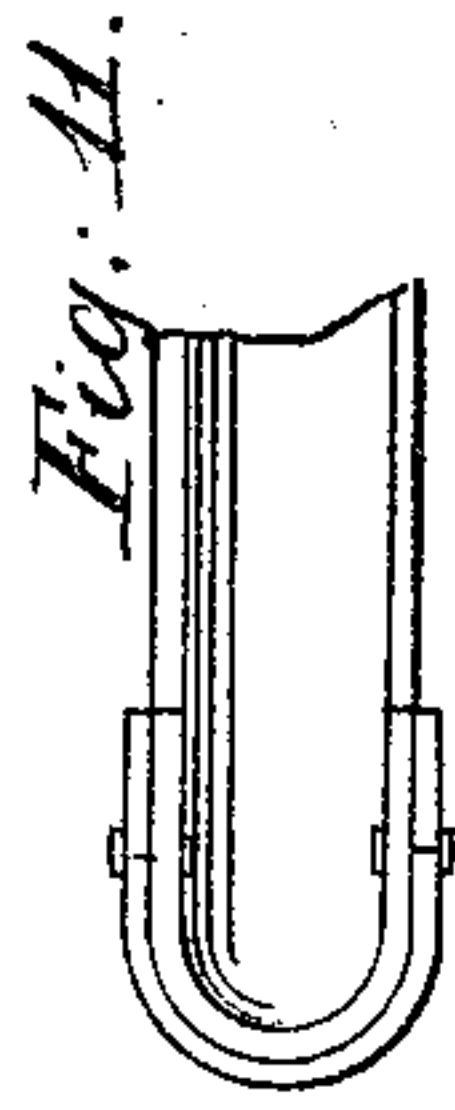
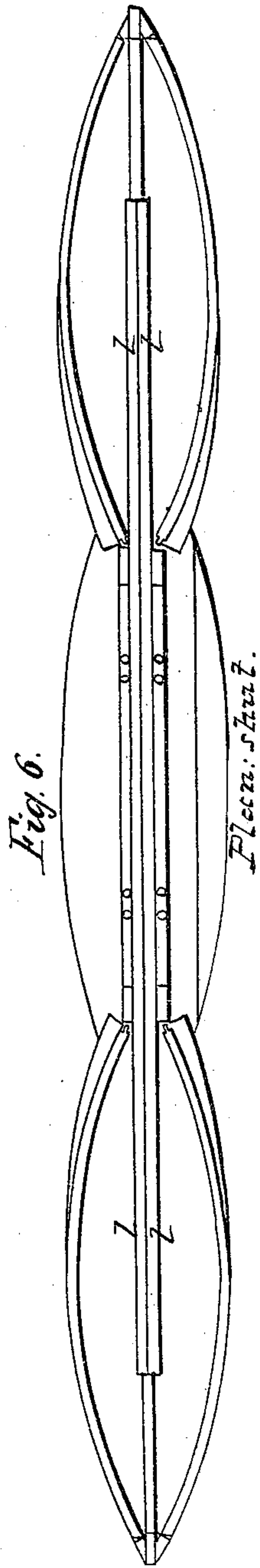


Sheet 2. 2 Sheets.

N. Thompson, Jr.
Life Boat.

N^o 19,317.

Patented Feb. 9, 1858.



UNITED STATES PATENT OFFICE.

NATHAN THOMPSON, JR., OF BROOKLYN, NEW YORK.

COLLAPSIBLE BOAT.

Specification of Letters Patent No. 19,317, dated February 9, 1858.

To all whom it may concern:

Be it known that I, NATHAN THOMPSON, Jr., of the city of Brooklyn, eastern district, county of Kings, and State of New York, have invented a new and useful Collapsible Boat, or Boat Capable of Being Shut Up in a Small Compass When Not in Use, and that the following specification, taken in connection with the drawings, is a full, clear, and exact description thereof.

In the drawings Figure 1 is a side elevation of the boats folded or shut up. Fig. 2 is a side elevation of the boat open and ready for use. Figs. 3, 4 and 5 are respectively, a top view, vertical longitudinal and cross section of the boat in the same condition. Figs. 6 and 7 are respectively a top view and vertical cross section of the boat when shut up. Fig. 9 is a vertical cross section through the boat half open and Figs. 10 and 11 are detail views of hinges for connecting the ends of the keel to the stem and stern pieces.

The same letters refer to the same parts in all the figures.

I have been led to my present invention by the desire of producing a collapsible boat, which shall be simple, more durable and seaworthy, and easier to prepare for use or storage than the boats now known, and one that shall accommodate itself to the prejudices of seafaring men who are unwilling to use anything materially different in shape and appearance from ordinary small boats, no matter what may be its efficiency and utility. And to this end I experimented on a great variety of models cut up and hinged together in various ways. My experiments led me to a model having in it straight lines, or nearly so, leading from a point, at or near the junction of the stem and stern with the keel, diagonally upward to points near or in the gunwale of the boat. It being absolutely necessary only to have four such lines. A model having four such lines on its surface is easily made after its necessity is once determined. The model was then slit along these lines and also on each side of the keel stem and stern, and also along other lines horizontal or nearly so, extending along the sides of the boats from one straight line to another, sections of a boat were then built in correspondence with these sections of the model, and the various parts were hinged together so that the boat might be shut up till its two sides or parts of them touched

each other; or might be opened out till it assumed the shape and appearance of an ordinary boat and in a boat formed of such sections and hinged together is to be found the chief feature of my invention. The slitting in horizontal lines was found necessary in order that a boat having a tolerably flat floor might be shut up into a small space, it being well known that boats of such model have more capacity, buoyancy and stiffness than boats having a great deal of dead rise.

The nature of my invention therefore consist in a sectional collapsible boat made up of sections from a model having in it straight lines and hinges each to each so that they may be opened out for use or shut up for storage the whole construction being substantially such as is hereinafter specified.

In order to build my boat in its simplest form I procure a model having on its surface four straight lines such as *a b a b* extending diagonally upward from the meeting of the stem and stern pieces with the keel to points at or near the gunwale. I mark these lines on the model and also two other lines such as *c d c d* connecting the two straight lines on the same side of the boat, from the point of junction of these lines I draw on the model other four lines leading upward vertically or nearly so to the gunwale.

I next cause to be made sections of a boat corresponding with the sections bounded by these lines four on each side, these sections being constructed in any proper manner either of metal or wood or compounded of both or of other material. I prefer two or more thicknesses of plank with the joints crossing and embracing a sheet of canvas or felt. These sections if of metal may be hollow, or may be of a single thickness corrugated or plain. A proper keel and stern and stern pieces are next procured, the former being secured to the latter by appropriate hinges such as shown in detail in Figs. 10 and 11. The sections are then hinged to each other along the lines *a b c d* and also the stem and stern pieces and keel so as to make up a boat such as is shown in the drawings, the hinges being so attached that the boat may be shut up or opened out into the positions shown in the drawings. These hinges may be of metal only when it will be necessary to make a cushion along one or both of the meeting edges such cushions being compressed when the boat is

opened so as to serve as calking; or they may be of metal used in combination with strips of canvas or india rubber or fibrous fabric coated with india rubber or some equivalent material for the purpose the two edges of the strips being secured either by nailing or battening or in other proper way along the whole length of the meeting edges of the sections. If these strips be sufficiently strong they may be employed without any metal hinges and this latter is the plan that I prefer.

As the boat is opened or shut its length on top increases and diminishes, the boat being shortest when wide open ready for use and the hinges at the ends of the keel allow the stem and stern pieces to accommodate themselves to these varying positions. The short joints between the bow and stern and upper midship sections will also open and shut, the edges approaching and receding from each other as the boat is expanded or collapsed. If any strip be used at these points it must be sufficiently wide to accommodate these changes, but as this joint is usually out of water I intend generally to use no strip there, but to affix to the ends of the upper midship section two plates of metal clearly shown in the drawings between which plates the ends of the bow and stern sections may slide. Inspection of the drawings will show that the opposite bow, stern and lower midship sections of the boat approach each other as the boat is shut up; while the upper midship sections also approach as a whole, but at the same time roll outward on the lower midship sections to which they are attached.

My boat is described above as constructed with stem and stern pieces and a keel, but these may be dispensed with without departing from the principles of my invention, as the lower edges of the lower midship sections, and the ends of the bow and stern sections may be hinged directly to each other or the whole or one half (split longitudinally) of these pieces may be secured permanently to those sections which they adjoin in which case there will be a hinge uniting the two halves of the keel, stern and stern pieces. My boat is also above described as made of eight sections only, such a number being deemed by me sufficient to attain saving of space while not impairing materially the stiffness of the boat, but nine sections may be used if properly hinged and constructed substantially on the same principle, that is to say one or more lines may be drawn upon the model parallel or nearly so to the lines *c d* and the model may be constructed with more than four lines leading from the bottom of the stem and stern pieces diagonally upward such other lines proceeding to points such as *f f* and the sections may be more numerous corresponding

with the division of the model by such lines provided all the sections are properly hinged at their meeting edge.

To a boat thus constructed any sort of ordinary thwarts may be applied, by shipping them into sockets fastened to the upper or lower midship sections, after the boat is opened and such thwarts will serve as braces preventing the boat from being collapsed. I also intend to apply check chains or jointed rods such as are shown at *g g* fastened to opposite sections by their opposite ends, and of such length that they will prevent undue expansion or opening out of the boat. Such chains will when the boat is shut assume positions as in Fig. 7 and occupy no useful space.

The plan I prefer for thwarts acting also as traces is that shown in the drawings where *h h* are standards of wood or metal mortised into or otherwise firmly secured to the keel, the two at each end of the boat being by preference stronger and so shaped at their bottom and one end as to fit nicely both at the keel and a stem or stern piece when the boat is ready for use. To the upper ends of these standards are fastened thwarts *k k* such thwarts being sawed into two amidship and each side hinged to the standards as shown in the drawings, so that they may assume the positions shown in Fig. 5 or Fig. 7 or intermediate positions as in Fig. 9. The outboard ends of these thwarts are connected by a frame *l l* forming a seat if desirable and sawed or divided at the ends and there hinged to the endmost standards, in the same way that the thwarts are, this frame should fit the interior contour of the boat nicely when in position as in Figs. 3, 4 and 5, or its sides should abut closely against a ledge or shelf such as *m* secured to the inside of the boat and when the boat is open these thwarts or the frame connecting them are to rest upon brackets *n n* also attached to the sides of the boats. If these thwarts and frame be strong and fit the boat or boats and shelf nicely on their outward edge, the boat will be strengthened when they are in place almost as much as she would be by a deck, and I intend to use ordinary spring latches such as *p p* to hold this frame in place when the boat is open. I also intend at times to put screw buckles into the check chains so as to compress the sides of the boat against the thwart frame if necessary.

The outboard or endmost standards may have mortises formed in them, into which fit tongues *s s* like those shown in Fig. 4. These tongues will slide out as the boat is shut, and into their sockets as she is opened and will prevent lateral motion of the stem and stern pieces upon the keel and make the attachment firm when the boat is open ready for use.

It needs no argument to prove that this boat will be sufficiently strong and staunch when opened out and also that it will be an easy matter to change her from the open to the shut position and vice versa, and these changes may be partially effected by the mere acts of lowering into or hoisting her from the water, for if falls leading from the stem and stern, and slightly approaching each other be hooked on to the boat when collapsed, she will open partially by her own weight owing to the facts that the upper ends of the stem and stern rise and approach each other as the boat is opened. If the same falls are hooked into spans extending across the boat at or near the points *f f* when she is open, and the thwarts be raised up and the falls strained on, then the boat will wholly or partially shut up by the mere act of lifting her.

I intend to fit these boats with all the appliances of ordinary boats, thole pins, rudder, steps for masts etc. and also to convert them into life boats in various ways, by making the sides double and air tight or by attaching air chambers or vessels or masses of buoyant material in such shape and to such portions of the boat that will not cause her to occupy more space when folded up. The plan that I prefer above all others is, to provide bags of fibrous material filled with cork as long as the boat or nearly so and of cross section like that shown at *y y* in the drawings. These bags are to be se-

cured to the outside of the boat at or near the turn of her bilge by one edge and at the opposite edge are to be provided with lanyards; when the boat is collapsed they will occupy positions as indicated in Fig. 7 when the boat is opened ready for service they are to be lifted into positions as in Fig. 5, and the lanyards are then to be secured to pins or cleets somewhere within the boat. This buoyant bag will occupy no useful space when the boat is closed up, will be in the best position to prevent capsizing when she is open, will serve as a fender and will also tend to hold the various sections firmly together.

Having thus fully described my boat in the form I deem best and having set forth at greater or less length various modifications of her construction within the scope of my invention I claim as of my own invention—

A sectional, collapsible boat, made up of eight or more sections hinged together and constituting a boat similar in appearance to an ordinary small boat, the whole constructed substantially in the manner described.

In testimony whereof I have hereunto subscribed my name in the city of New York on this 16th day of January 1858.

NATHAN THOMPSON, JR.

In presence of—

F. B. WAKEMAN,
DANL. D. MILLER.