(No Model.)

C. W. KING.

PORTABLE BOAT.

No. 343,244. Patented June 8, 1886.

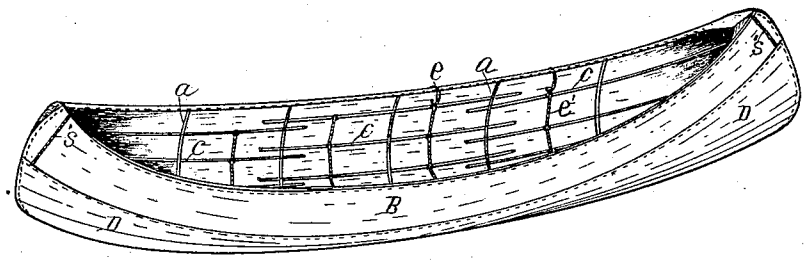


Fig. 1

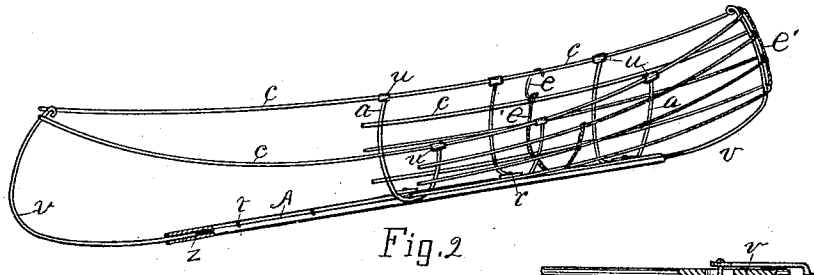


Fig. 2

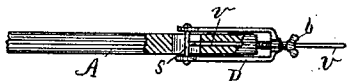


Fig. 7

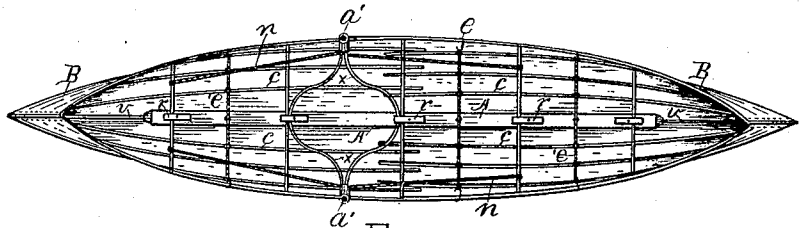


Fig. 3

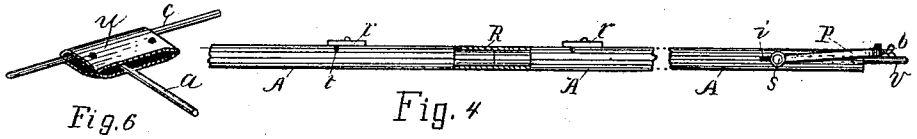


Fig. 6

Fig. 4

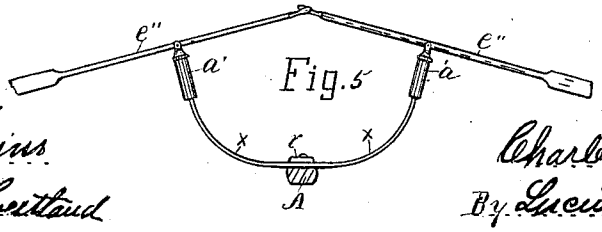


Fig. 5

Witnesses.
John C. Perkins
Charles A. Sweetland

Inventor.
Charles W. King
By Lucius C. West
Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

CHARLES W. KING, OF KALAMAZOO, MICHIGAN.

PORTABLE BOAT.

SPECIFICATION forming part of Letters Patent No. 343,244, dated June 8, 1886.

Application filed September 1, 1885. Serial No. 175,882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. KING, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Portable Boat, of which the following is a specification.

This invention relates to that class of knock-down boats which have a fabric or other flexible covering, and are adapted to be taken apart and folded into a portable bundle for carrying from one place to another; and it has for its objects certain improvements hereinafter described and claimed.

A general description of a construction embodying my invention consists in a keel with upwardly-curved end extensions, longitudinal ribs, cross-ribs, and a flexible covering constituting the exterior wall of the boat, all detachably connected together, as will appear plain by the following detailed description.

In the drawings forming a part of this specification, Figure 1 is a perspective view; Fig. 2, a view of the keel and part of the ribs with outer covering removed; Fig. 3, a top view; Fig. 4, a portion of a keel enlarged; Fig. 5, a view of the oars and their support with the keel in cross-section; Fig. 6, an enlarged detail in perspective of parts in Figs. 1 and 2; and Fig. 7 is a top view of the right-hand end of Fig. 4.

Referring to the letters marked on the drawings, A is the keel, constituting a central longitudinal base-bar in the bottom of the boat. To each end of the keel A are detachably and adjustably connected the upwardly-curved keel-extensions *v*, made of elastic wire, the same as the ribs of the boat. The connection of the part *v* with the keel A is effected by loosely inserting the end of the wire in a hole, *z*, Fig. 2. The longitudinal ribs *c* may consist of one or more sections, viz: The top rib, *c*, in Fig. 2, illustrates the idea of one section, the ribs being as long as the boat. The other ribs in this figure show them as when in two sections, Fig. 3, their ends lapping in the center, and in Fig. 1 three sections are shown. This feature of the construction may be modified or changed to suit in accordance with the size of the boat, so long as a series of longitudinal detachable ribs are employed. Of course if the boat is very long, by using three sections the boat when folded into a bundle would not make as long and inconvenient a bundle as would be the case if the ribs *c* were in one section or as long as the boat. These ribs *c* at each end of the boat are substantially in a hair-pin form. They are spaced and tied together with cords *e'*, Fig 2. The cords may be provided with a hook to catch over the upper rib, *c*, to hold up the ribs below, as at *e*, Fig. 1; but this will be rarely necessary.

The boat-covering is made, in the form desired for the boat, from oiled canvas, hide, rubber, or any suitable flexible material from which such boats are made. A loop is made around the top by folding over and sewing, Fig. 1. Each end of the loop is left open, and the upper rib or ribs, *c*, are inserted endwise in said loop through the opening. The other longitudinal ribs are then placed in the boat, as shown in the drawings. At suitable points in the loop of the covering are sewed or fastened metal pockets or loops *u*, Figs. 2 and 6. The upper longitudinal rib passes through the loop, as in said figures, when it is inserted in the loop of the covering B. The cross-ribs, which are substantially in the form of a flaring letter **U**, are placed in the boat against the longitudinal ribs *c*, and detachably connected with the keel, either in a groove beneath the buttons *r*, or in any suitable and detachable manner. The upper ends of the cross-ribs are inserted in the loops *u*, Figs. 2 and 6, and when thus sprung to place tensions the entire boat, holding out the longitudinal ribs and giving a suitable contour to the fabric covering B. The cross-ribs being made with upper end free and flaring and from elastic material, the boat swells out in the central portion at the sides, making each end of the boat higher than the sides, and imparting a natural appearance to the boat. These ribs prevent the covering from falling in or being forced inward by the pressure of water, and, being elastic, will spring to place and rebound against any concussion of the boat with obstructions.

The keel A may be in sections, as shown at R, so as to be detached from each other when folding the keel with the other parts of the boat. A suitable plan would be to make the keel or keel-sections the same length as the

longitudinal rib-sections, so as to be packed parallel with each other in folding up the parts of the boat, and thus not make the bundle unduly long.

In some instances in long boats it will be of advantage to lengthen the keel after the boat is up, in order to tension the canvas or boat-covering B lengthwise. I provide for this by slotting the keel, as at the right in Fig. 4, at *i*, said slot intercepting or cutting through the hole *z* and extending back of the same.

P is the U-shaped draw-bar, having a thumb-screw through the loop end, which screw comes against the end of the keel A above the extension *v*. A transverse bar is passed through the slot *i*, back of the end of the wire *v*, Fig. 7, and the ends of the draw-bar P connect with the ends of the transverse bar S. Thus by turning the thumb-screw *b* the keel-extension *v* is forced outward. Any suitable means other than those here shown may be employed to effect an end lengthening of the keel.

In Fig. 5 a support is shown for the oars *e''*, which may be employed when using this style of oars. The bars *x x* bow outward from each other at the bottom, forming a base, which is detachably connected with the keel A, either by means of a recess and button, in the manner of holding the cross-ribs, or by other means. The bars *x x* then curve upward to the top of the sides of the boat, where they join and terminate in thimbles or sockets *a'*, in which the oar-locks are inserted. The bars are braced against laterally tilting over by ropes *m*, secured to them and to some suitable part of the boat. The cross-ribs or the keel will serve the purpose, Fig. 3.

In Fig. 1 a protection, D, is shown drawn over the bottom and lower portion of the covering B and stayed by ropes S'. This, when unduly worn by the action of the water, may be removed and a new protection, D, substituted.

In taking down the boat and folding it up the cross-ribs are first removed, then the longitudinal ribs and keel, the two latter packed together and folded within the covering, the end extensions, *v*, having been removed and nested with the cross-ribs, said keel-extensions and cross-ribs being then packed with the bundle and strapped thereto, the whole thus making a small long bundle readily carried under the arm.

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

1. The combination of the flexible covering having a folded loop in its upper edge, provided with loops adapted to receive the upper rib therethrough and the upper ends of the cross-ribs therein, one or more detachable sections of elastic metal longitudinal ribs, the end bows thereof being clamped between the covering and the upper extensions of the keel, the bottom keel provided with grooves and buttons, or equivalents, and cross-ribs of elastic metal, all constructed and detachably connected with the covering, substantially as set forth.

2. In a portable boat, the combination of a flexible covering, sections of elastic metal, longitudinal ribs detachably placed in the covering, a detachable keel clamping the end bows of said ribs between its bowed ends and the covering, and U-formed elastic metal cross-ribs, the free ends thereof detachably connecting the upper edge of the covering and their bows detachably connecting the bottom keel, all substantially as set forth.

3. A portable or folding boat, in combination with the oar-support consisting of the base-bars flaring apart, thence extending upward where the bars join each other, oar-sockets terminating the upper ends of said bars, and side braces preventing them from tilting, all detachably connecting with the boat, substantially as set forth.

4. A boat capable of being taken apart or folded into a bundle, consisting of a flexible covering having loops in its upper edge for receiving the longitudinal ribs therethrough and the free ends of the cross-ribs therein, one or more sections of elastic longitudinal ribs detachable in the covering, cross-bows elastic and detachable, and a keel, substantially as set forth.

5. A boat having a flexible covering provided with a detachable flexible protection drawn over the base of the boat, substantially as set forth.

In testimony of the foregoing I have hereunto subscribed my name in presence of two witnesses.

CHARLES W. KING.

Witnesses:
E. C. SOUTHARD,
C. D. SWEETLAND.