

W. M. DUCKER.

Sectional Folding-Frames for Boats.

No. 141,860.

Patented August 19, 1873.

FIG. 1.

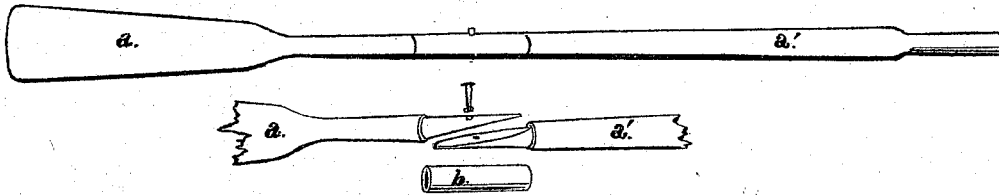


FIG. 2.

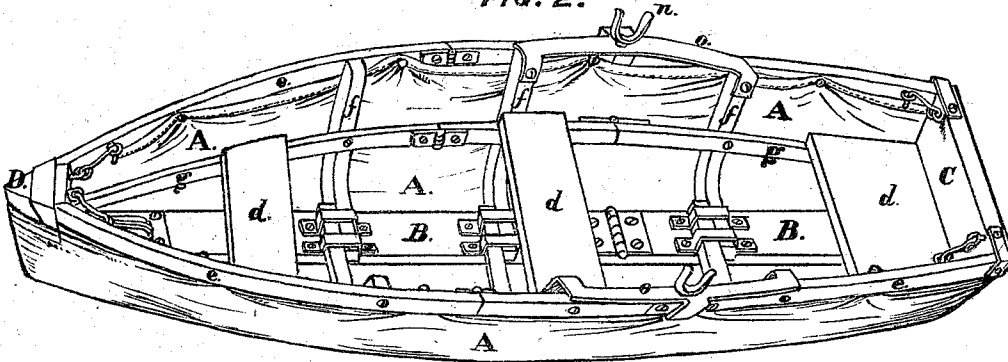


FIG. 3.

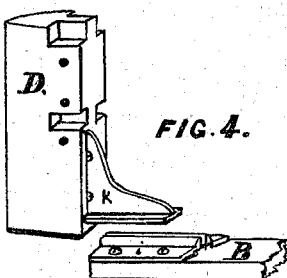
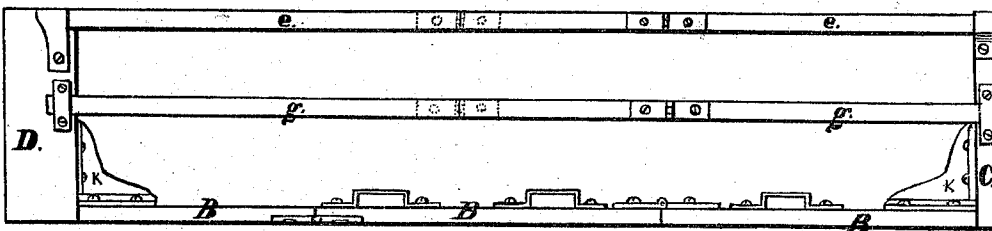


FIG. 4.

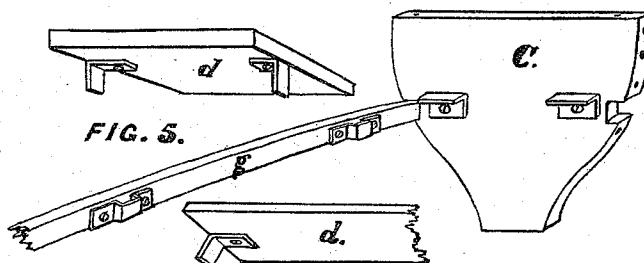


FIG. 5.

WITNESSES

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IMPROVEMENT IN SECTIONAL FOLDING-FRAMES FOR BOATS.

Specification forming part of Letters Patent No. 141,860, dated August 19, 1873; application filed August 4, 1873.

To all whom it may concern:

Be it known that I, WILLIAM M. DUCKER, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Portable Sectional Boat and Oar; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, and making a part of this specification.

The object of my invention is the construction of a boat-frame and an oar that shall be very light, and at the same time capable of being rapidly taken apart, and its parts so reduced as to occupy the smallest practicable space.

Figure 1 is the oar. Fig. 2 is a view of the boat ready for use. Fig. 3 is a section of the boat, showing the manner of connecting the parts. Figs. 4 and 5 are enlarged views of the parts shown.

Similar letters of reference indicate like parts in all the figures.

I make the side pieces *e g* and keel *B* of the frame or skeleton of my boat of any suitable wood or material, and about one-third of the length of the boat desired, and connect or join the pieces together by hinges, as shown, so that when they are taken apart they may be folded up into a space about one-third their length when extended for use; or, if desired, there may be more than three divisions to each of these pieces. The hinges are put upon opposite sides of the pieces, in order to allow the pieces to fold over upon each other, and to strengthen the hinged part a sleeve, like the sleeve *b* of the oar, may be made for each joint, although in a boat for two or three persons such strengthening will not be necessary. The side pieces *e* and *g* are fastened to the ribs by screws or pins, or in any appropriate manner. The upper side piece *e* may be fastened to the outside of the ribs, as shown in Fig. 2, and is provided with hooks or pins for the purpose of fastening the covering of the boat thereto, as well as rings or loops near the bow and stern ends, for engaging the hooks fastened on the bow *D* and stern *C*. The lower side piece *g* may be fastened to the inside of the ribs. Upon this rest the seats *d*, and it is provided with sockets into which fit

the staples or pins at the bottom of the seats, as shown in Fig. 5, to secure and retain them in position.

If desired, the keel may be braced or stiffened by bolts set into it on the sides, or top, or bottom, and opposite the hinges by which it is folded up. To the keel are secured three or more sets of double angle-irons, according to the number of ribs used, and of a size into which the ends of the ribs will fit snugly. The ribs may be made with a shoulder or projection to fix the distance of their insertion into these irons. When the ribs have been inserted into the irons, as shown in Fig. 2, a pin or rod is passed through them between the irons and parallel to the keel, which fixes the ribs *f* and secures them in their position.

D is the bow-piece, which is so arranged that when it is attached to the keel its bottom will be even with the bottom of the keel, as shown in Fig. 3. For connecting it to the keel it is provided with a metal slide, *k*, having its lower part broad, and made to correspond and fit into the metal piece *i* in the keel, as shown in Fig. 4. This piece *D* has notches cut in it to receive the ends of the side pieces *e* and *g*, over which notches a strip of metal is secured to retain those side pieces in position.

If desired, a rod may be run through the side pieces and bow *D* to fasten them when in use; but I find that the hooks on the bow, which engage in the loops on the piece *e*, as shown in Fig. 2, are sufficient for all practical purposes.

C is the tail piece or stern, and is attached to the keel like the bow-piece *D*, being, like that, provided with a slide, *k*, fitting into a corresponding piece on the stern end of the keel, as shown in Fig. 3. This stern-piece *C* has also a notch cut in it for the side piece *g*, covered with a metal strip like the bow; but to make the boat broader at the top a loop or angle of the metal may be formed for the reception of the ends of the pieces *e*, as shown in Fig. 3. The piece *C* is also provided with hooks to engage in the loops in the side piece *e*, to fix and secure it in position, as is described, in reference to the bow *D*, and shown in Fig. 2.

The ribs *f* may be made of wood, and bent

or shaped as desired, and to them the side pieces *e* and *g* are secured, as described.

The row-lock *n* is made, preferably, of metal, and is pivoted in the metallic arm *o*, which arm is made long enough to be secured at its ends to two of the ribs and the side piece *e*. This arm is shaped to correspond with the configuration of the side of the boat, and may have one or more shoulders on each side. Through the shoulders at its ends it is secured to the ribs, while the shoulder on the opposite side acts as brace or support, as shown in Fig. 2.

The frame or skeleton of the boat is covered with a covering, *A*, made of any suitable material impervious to water. I find good, strong, heavy canvas as good as anything, and make it of double thickness on the bottom of the boat and for a short distance up the sides. This covering is made to fit the frame or skeleton, and around its upper edge are arranged loops or holes to engage in the hooks or pins on the side piece *e*, as shown in Fig. 2.

In fastening together the parts of the skeleton which are separated when the boat is disconnected for transportation, and also in unit-

ing the section of the oar, ordinary bolts with thumb-nuts may be used.

In connecting the sections of the side pieces *e* and *g*, and of the keel-piece *B*, instead of the hinges described, sleeves of proper shape may be made for the joints of such pieces, and the uniting ends secured by bolts through them and the sleeve.

The oar is made in two sections, *a a'*, divided, as shown in Fig. 1, with a sleeve, *b*, to pass over the joint, and a bolt and nut used to fasten the sections and sleeve together when in use.

Having now described my invention, what I claim as new is—

The frame or skeleton of a boat constructed of sectional side pieces *e* and *g*, and keel-piece *B*, in combination with the ribs *f*, bow-piece *D*, stern-piece *O*, constructed and operating substantially as described, and for the purposes set forth.

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Witnesses:

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