J. A. PRESTON.

Canal Boat or Barge.

No. 208,334. Patented Sept. 24, 1878.

Fig. 4.

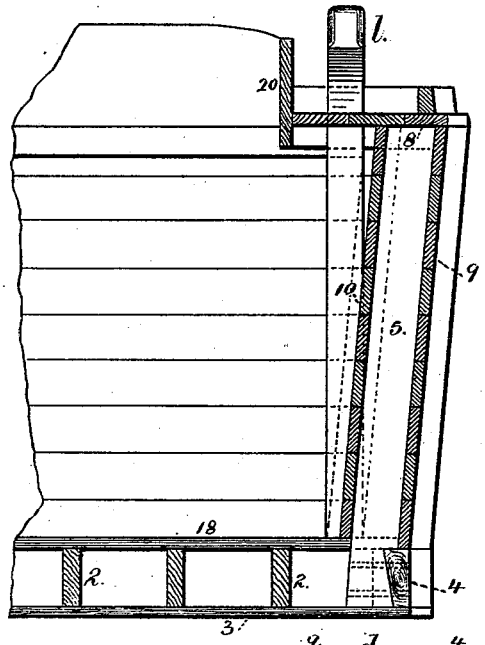


Fig. 3.

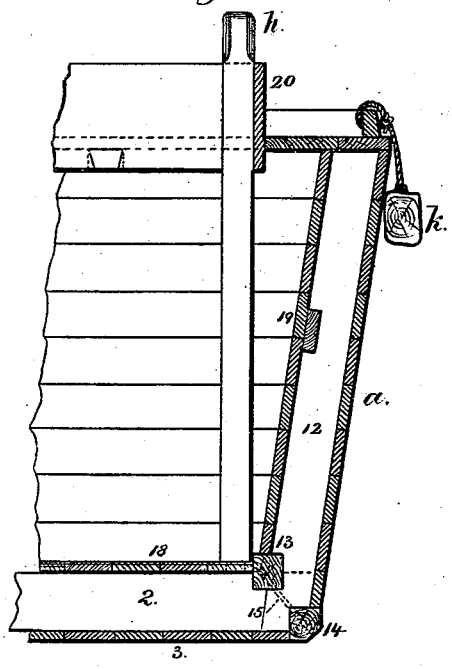


Fig. 2.

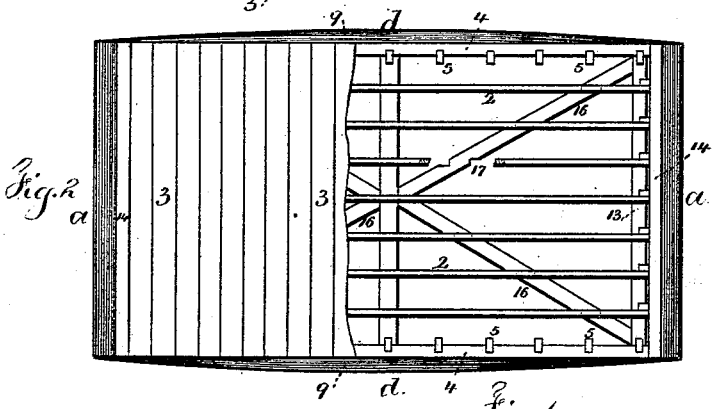
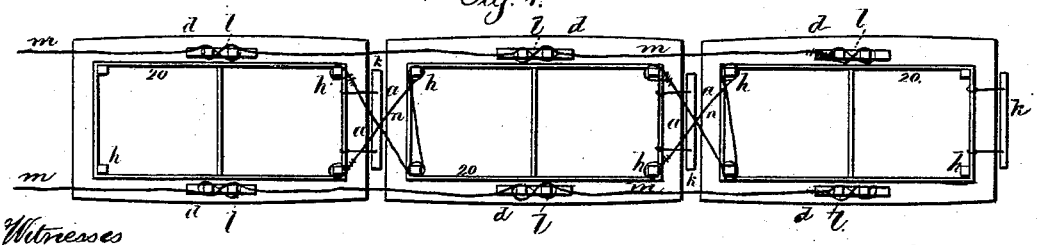


Fig. 1.



Witnesses

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UNITED STATES PATENT OFFICE.

JULIUS A. PRESTON, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN CANAL BOATS OR BARGES.

Specification forming part of Letters Patent No. **208,334**, dated September 24, 1878; application filed March 4, 1878.

To all whom it may concern:

Be it known that I, JULIUS A. PRESTON, of New Haven, in the State of Connecticut, have invented an Improvement in Canal Boats or Barges, of which the following is a specification:

Canal-boats have been made with one flat end and one inclined end, so that the two flat ends of two boats can be brought together and connected by hinges, and there will be less resistance in drawing the two boats thus coupled through the water than there would be if they were separate. The object of thus connecting such boats is to allow them to go through short locks separately.

Large quantities of coal and other materials reach tide-water in bulk in canal boats and barges, and great risk exists in towing them from place to place on the coast, because the rough water of the ocean or of sounds and lakes is liable to break these boats in pieces, or cause them to leak, and it is very difficult to draw several of these boats in a line one after the other, because they slide toward and from each other in a rolling sea and strike against each other, and this is also the case where they are towed side by side. I remark that the expense of towing boats or barges by steamboat from place to place is such that the number of boats in the tow should be as large as possible to lessen the expense per ton for transportation.

My invention is made with reference to adapting canal boats or barges to the coasting trade, so that they can be safely towed from place to place, and reshipment avoided.

I make use of boat-sections with flat and nearly vertical ends, and I provide chocks or bits in a position adapted to receive connecting ropes or hawsers, whereby a number of these boat-sections can be connected in line, and they will rise and fall with the undulations of the waves without receiving any undue strain or impetus in consequence thereof, and, the flat ends of the boat-sections coming toward each other, they will not collide, even if in moderately close proximity, because they cannot come together until the intervening water is forced out laterally, and, in practice, before this occurs the swell or wave rolling along has moved far enough to produce a reverse action.

By this construction I am enabled practically to safely employ in the coasting trade canal boats and barges of nearly the same weight and cost in proportion to tonnage as those now in use.

In carrying this invention into practice, I have devised peculiar features in the construction of each boat, whereby the strength is greatly increased.

In the drawing, Figure 1 is a plan of several of said boat-sections in line. Fig. 2 is an inverted plan, partially in section, of one boat. Fig. 3 is a vertical section at one end of the boat, and Fig. 4 is a vertical section of one side of the boat.

The end sections or boats in the line of boats may be made somewhat similar to the divided canal-boats heretofore in use, each with one inclined end and one flat end; but they are not hinged together, as heretofore usual.

The improved boat-sections are made of the ordinary or desired width and depth, and with flat, or nearly flat, ends *a a*, and it is preferable to incline them slightly, so that each section will be shorter on the bottom than on the top, to prevent contact should the connecting-ropes at the decks be too tight. There are transverse buffer-beams *k*, suspended between each two sections or boats, to prevent injury to the ends of the sections when they are adjacent to each other or lying at a wharf; and the sides of the sections or barges are made rounding, as at *d*, to prevent the ends catching into the dock while being moved at the side of the same.

Upon the decks there are the bits or chock-blocks *l l*, near the center portions of the boat-sections, and the tow is to be made up of any desired number of these boat-sections, connected together by the longitudinal ropes or hawsers *m m*, and there should be diagonal ropes *n n* between the bits *h h*, to prevent the sections getting out of line by the action of the wind or waves.

Each boat-section may be of a length adapted to the canal-locks, and will generally be rather longer than it is wide, as shown. Each boat or section is made with reference to lightness

and strength. The longitudinal bottom timbers 2 2 are connected together by the cross-planking 3, that also is fastened at the ends to the longitudinal sills 4 4 at each side. The nearly vertical timbers 5 5 of the sides are inside the sills 4, at their lower ends, and the said sills are channeled to receive them, and the ends of these timbers 5 are notched, as seen in Fig. 4, and the parts secured by bolts. The upper ends of these timbers 5 are united by the plank-shear or deck 8, and the planking 9 is upon the outside of these timbers 5, and a planking, 10, inside.

The ends of the boat are provided with inclined timbers 12, lying at their lower ends against the sides of the timbers 2; and there are thwarts or ribs 13 and 14 applied at the outer and inner angles of the junction of such timbers, as seen in Fig. 3, and the timbers 2 and 12 are notched for the passage of these thwarts or ribs 13 and 14, and the diagonal bolts 15 secure the parts very firmly together, so that there is no risk of the boat springing a leak at this point, even if the bottom comes in contact with mud or sand when in use.

It will be apparent that only one of the thwarts 13 or 14 might be used, although it is preferable to use both; but in either case the thwart, being inserted into the notched timbers, serves to support those timbers and prevent them being displaced by pressure upon any portion of the planking. It is to be understood that where but one thwart is used the planking is employed in place of the other thwart.

To aid in stiffening the boat against diagonal strain or concussion the braces 16 are placed from the corners to the middle of the boat, and notched, as shown at 17, to pass into the upper notched edges of the timbers 2. The interior planking 18 and 19 is of ordinary character, and the combings or guards 20 are made in the usual manner.

I am aware that boats with rounded ends have been connected by longitudinal lines to form a tow; but I find in practice that under the action of the waves the round ends will collide, while the flat ones will not, for the reason before mentioned. Furthermore, that if the sections are hinged together, or if the tow-lines are connected near the ends, the hinges or lines will be broken. By connecting the tow-lines near the middle of each barge-section, where there is but little motion, this difficulty is avoided.

I claim as my invention—

1. The boat-sections with flat, or nearly flat, ends, in combination with flexible connections from the middle part of one section to the next, to allow the separate sections to move independently without the risk of one section colliding with the next, the intervening water acting as a cushion, substantially as set forth.

2. The boat or barge made with the thwart 13 or 14 across the ends of the boat at the junction of the bottom timbers 2 and inclined end timbers 12, secured by bolts, substantially as specified.

Signed by me this 28th day of February, A. D. 1878.

JULIUS A. PRESTON.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.