

J. O. SMITH.
Construction of Canal Boats.

No. 232,081.

Patented Sept. 7, 1880.

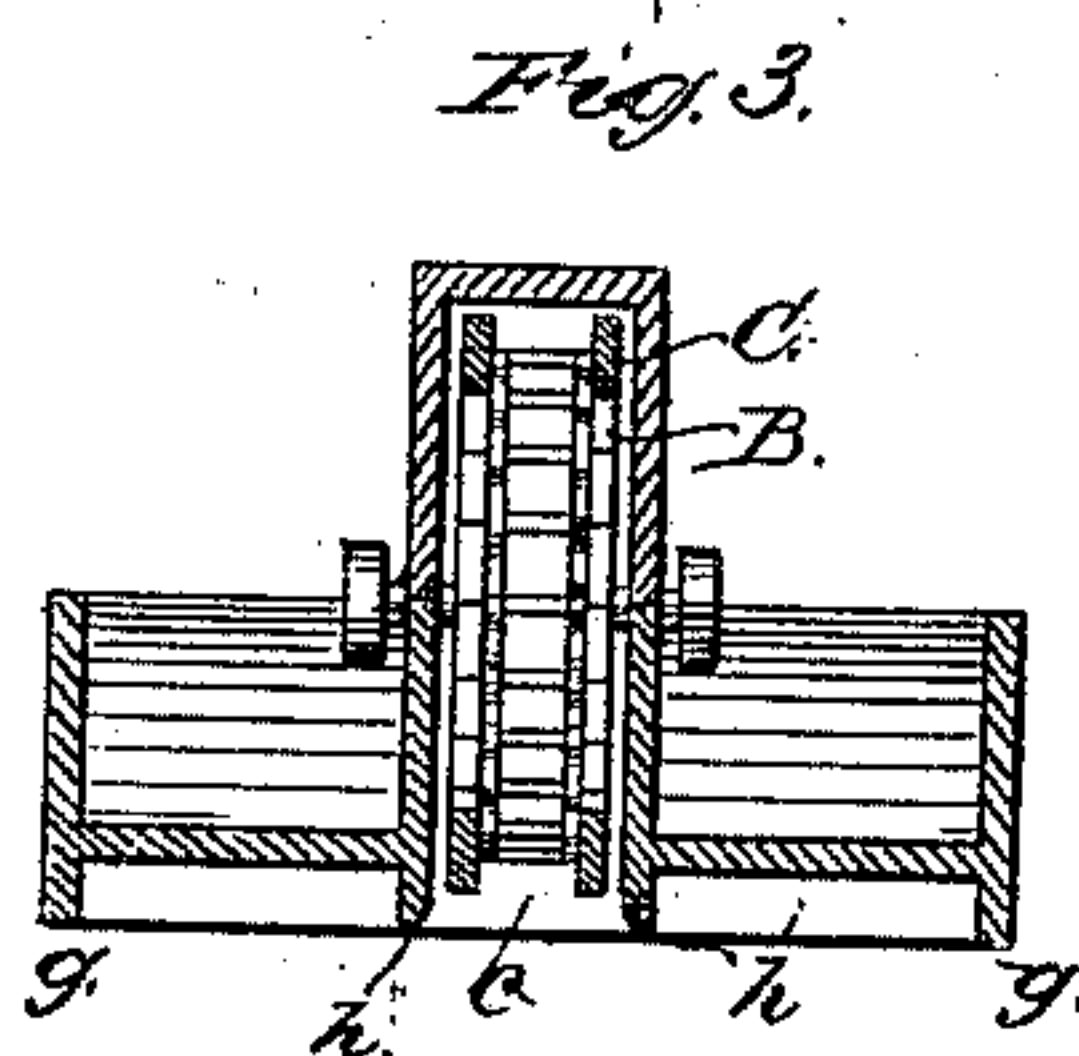
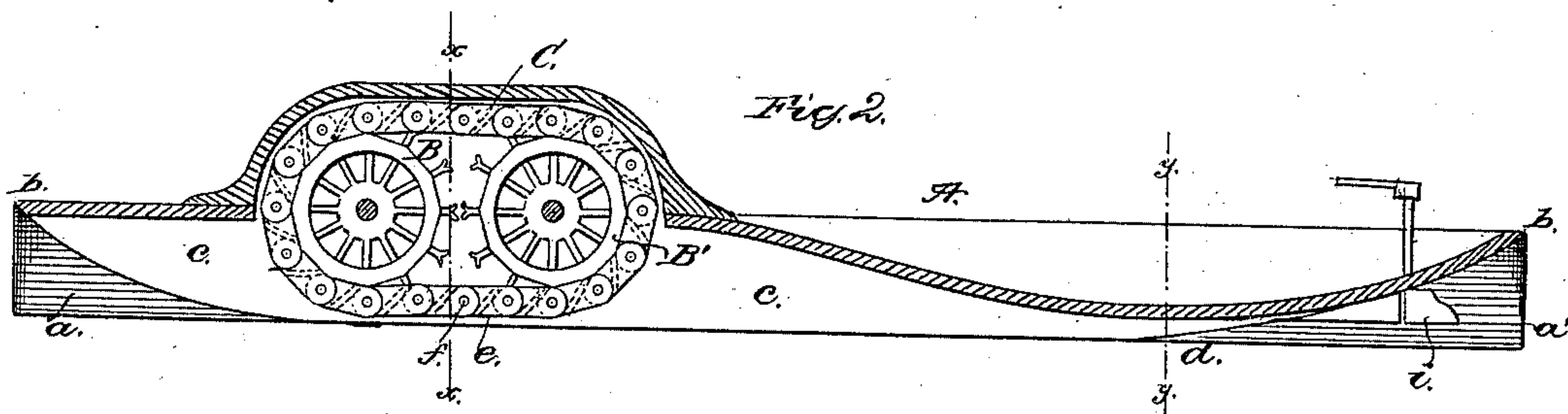
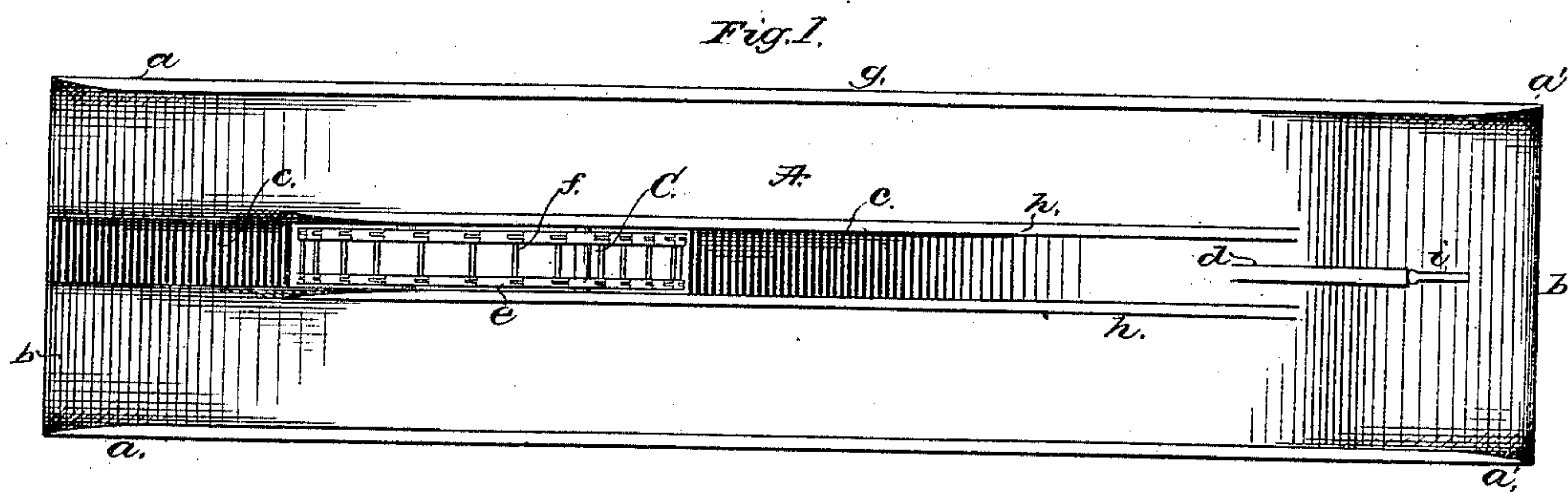


Fig. 4.

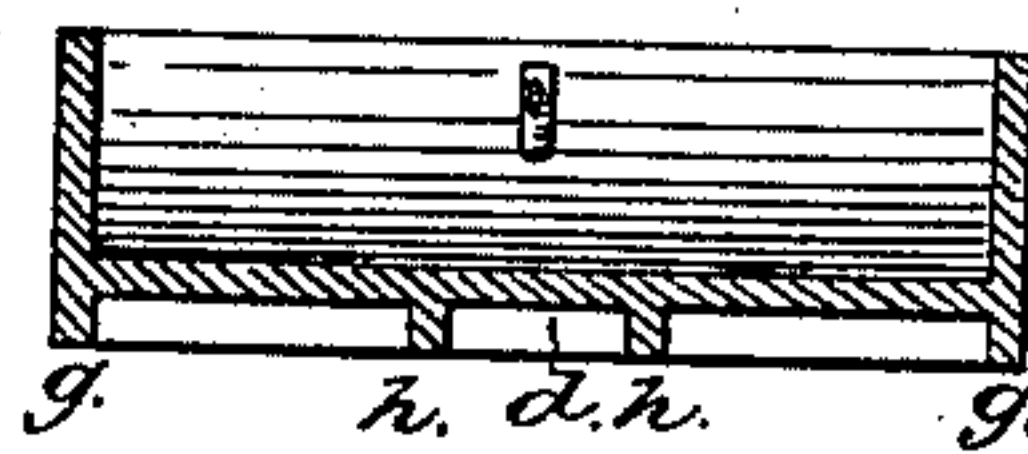


Fig. 5.

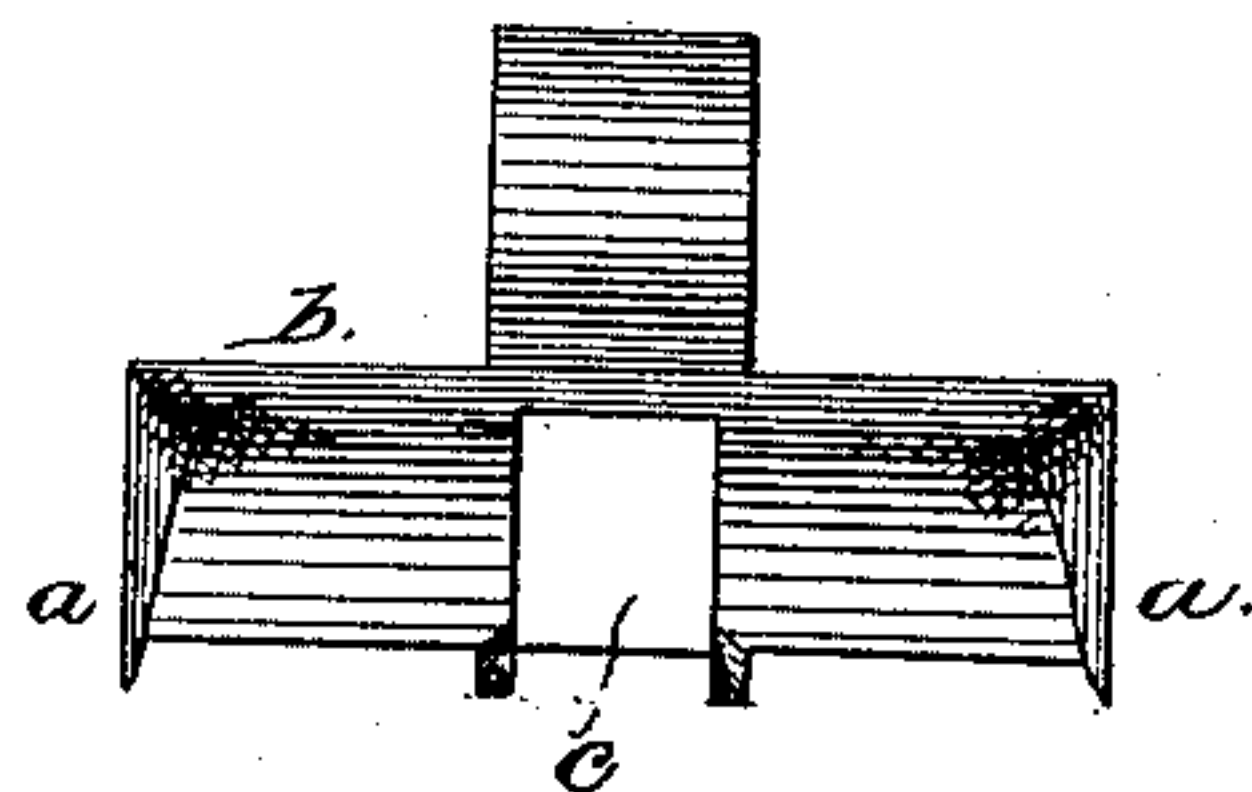
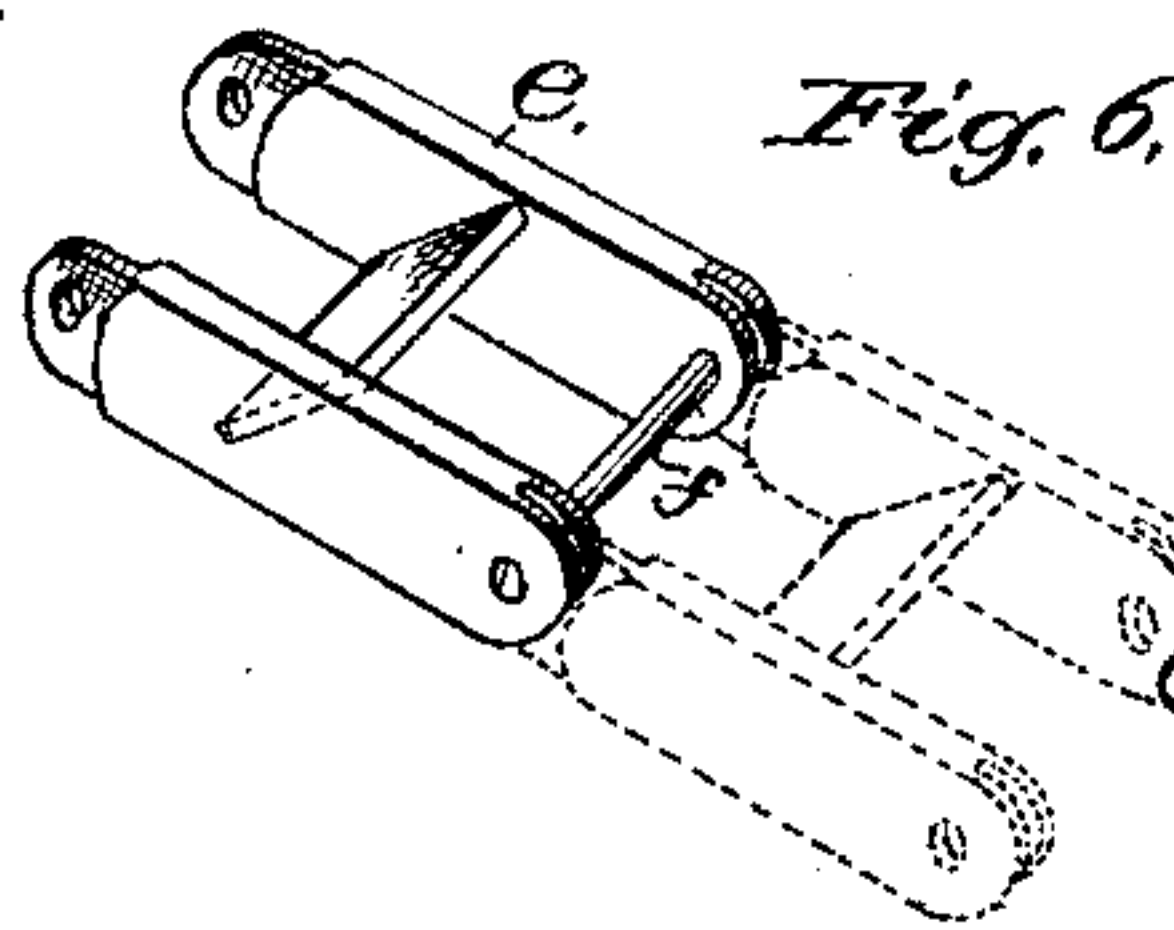


Fig. 6.



WITNESSES:

John F. E. Prentiss
Edward W. Byron

INVENTOR:

John O. Smith

BY

James O. L.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN O. SMITH, OF SAVANNAH, GEORGIA.

CONSTRUCTION OF CANAL-BOATS.

SPECIFICATION forming part of Letters Patent No. 232,081, dated September 7, 1880.

Application filed February 20, 1880.

To all whom it may concern:

Be it known that I, JOHN OWEN SMITH, of Savannah, in the county of Chatham and State of Georgia, have invented a new and Improved Construction of Canal-Boats; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an underneath view of the hull. Fig. 2 is a central longitudinal section; Fig. 3, a section through the line *x x* of Fig. 2; Fig. 4, a section through line *y y* of Fig. 2; Fig. 5, an end view. Fig. 6 is an enlarged detail, showing the construction of the links of the propeller-chain.

My invention relates to an improved construction of boat designed more particularly for use on canals, shallow rivers, &c., and formed with a view to the production of the least possible waves in the water, so as to avoid the washing of the bank. It is an improvement in that general class of boats which are propelled by an endless chain revolving in a longitudinal channel around two sprocket-wheels.

My invention consists in the peculiar construction of the boat-hull in connection with the propeller, and in the peculiar construction of the endless chain forming the propeller, as hereinafter fully described, and pointed out in the claims.

In the drawings, A represents the lower portion of the hull of a boat. The general shape is rectangular, the sides being straight, perpendicular, and parallel, and the ends square or right-angular. The sides of the hull are extended at *a a'* their full depth to the end, while each end, between the sides, is cut away and tapered to a horizontal edge, *b*, leaving the sides to form walled extension at each end.

Through the middle of the bottom portion of the hull is formed the longitudinal channel *c*, which channel opens with its full area at the front end, but does not run out at the rear end, but dips down at a point, *d*, about one-third the distance from the stern, into the plane of the lowest portion of the hull. In the forward portion of this channel, and near the bow of the boat, are arranged the two sprocket-wheels B B', being placed just far

enough apart to clear each other. These wheels have sprockets or forks and polygonal rims, as shown, and around them passes the endless propeller-chain C, composed of link *e*, formed of buckets or paddles and side bars of equal width jointed upon cross-rods *f*, the cross-bars fitting in the sprockets and the side bars resting on the polygonal rims of the wheels.

The object in making the side bars of the links of the propeller-chain equal to the depth of the buckets is to prevent the water from bursting sidewise from the buckets. The buckets have also their lower edges in advance and their top edges inclined to the rear, the object being to prevent the buckets from carrying dead water when rising at the stern and permit them to be more easily cleared of the same.

Now, as the boat advances through the water, it will be seen that the side walls, *a a'*, in front cut the water, and as the sides are perfectly straight there is no wave or ripple given off from the boat, any disturbance which takes place between the walls being smothered under the boat.

The propelling-chain takes the water which enters through the open channel in front, and, after having exerted a pull thereupon for the propulsion of the boat, discharges the water to the rear. This water, if discharged freely at the stern, would produce considerable wave motion; but being forced down by the termination of the channel at *d*, it becomes quieted before it gains the open surface of the water. The stern of the boat also being provided with side walls, *a' a'*, any disturbance of the water which takes place at the rear is contained between said side walls, and is broken without resolving itself into progressive waves.

To serve the purpose of a keel, longitudinal flanges *g g* are left on the bottom edges of the sides, and *h h* on each side of the channel, the rudder *i* being located in the rear of the channel, as shown.

I have thus far only described the lower portion of the hull of the boat, as my invention is confined to these parts, it being obvious that the deck or superstructure may be made to conform to the special use for which the boat is to be employed.

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

1. The boat-hull, tapered at its ends to a horizontal edge and having perpendicular side walls, *a a'*, and a channel, *c*, opening at its front and throughout its length into the water, and
5 terminating short of the length of the boat, in combination with the sprocket-wheels B B', located in the forward part of channel *c*, and the endless chain passing around said wheels, substantially and for the purpose described.
10 2. In combination with the boat-hull and the sprocket-wheels, the propelling-chain con-

sisting of links *e*, formed of inclined buckets and side bars of equal depth, and cross-rods *f*, for coupling the same, as shown and described.

The above specification of my invention
signed by me this 19th day of February, 1880.

JOHN O. SMITH.

Witnesses:

EDWD. W. BYRN,
SOLON C. KEMON.