

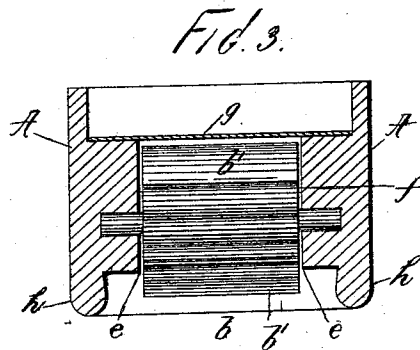
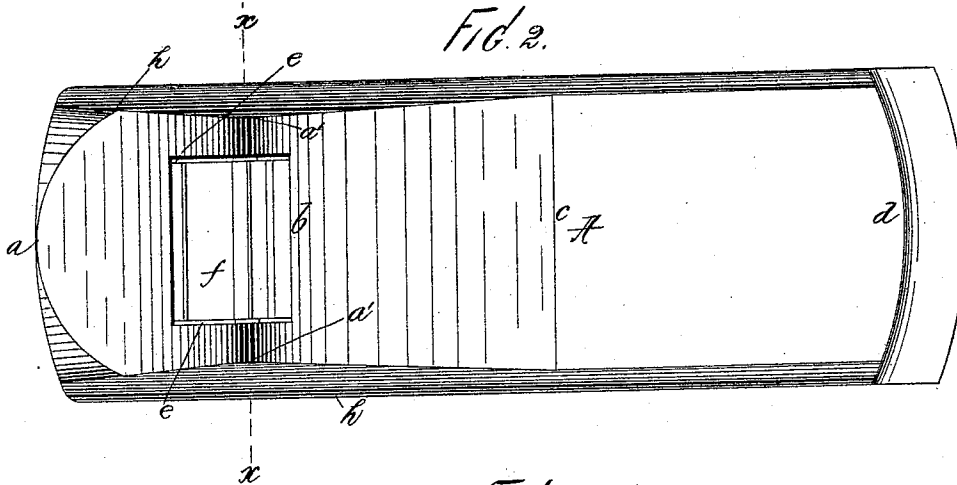
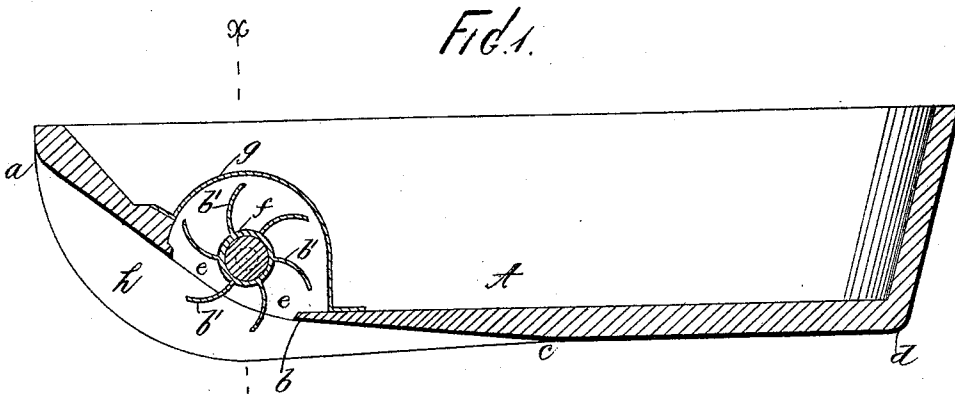
(No Model.)

C. G. KELLOGG.

VESSEL FOR SHALLOW WATER NAVIGATION.

No. 497,325.

Patented May 16, 1893.



WITNESSES:

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VESSEL FOR SHALLOW-WATER NAVIGATION.

SPECIFICATION forming part of Letters Patent No. 497,325, dated May 16, 1893.

Application filed March 30, 1892. Serial No. 426,999. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. KELLOGG, of Wyoming, in the county of Wyoming and State of New Jersey, have invented a new and useful Improvement in Vessels for Shallow-Water Navigation; 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, making a part of this specification, in which—

Figure 1 is a longitudinal sectional view of a boat embracing my said invention. Fig. 2 is an inverted plan or bottom view of the same and Fig. 3. a transverse sectional view of the same taken in the line $x x$ of Figs. 1 and 2.

This invention is more especially designed for canal boats but may be employed in vessels intended for shallow water navigation generally.

It comprises certain novel combinations of parts whereby, among other advantages, the flotation of the vessel in a relatively slight depth of water is provided for, whereby the propelling wheel is caused to act and react in the most effective manner upon the water to secure the propulsion of the vessel, whereby the water set in motion by the impact of the propeller wheel is prevented from spreading laterally to wash or injure the banks of the canal, and whereby the boat, in the event of being grounded upon the bottom of the canal is prevented from becoming fixed thereto and consequently hindered from floating when access of water to the waterway is provided.

A is the hull of the vessel. The bow of this hull is made sloping as shown from, a , to b , in Fig. 1. Behind this sloping bow the bottom of the boat, at its front end, is made inclined, higher at front and lowest at rear, as from b to c . Behind this front bottom as from c to d . In advance of the front bottom b, c , is an opening, e , in which is placed the propelling wheel f , and which should be covered by a wheel house g . As this wheel is placed in advance of the front bottom b, c , and within the rear part of the sloping bow $a b$, it follows that the opening e , is higher at the front of the wheel than at its lower part, as illustrated in Fig. 1. At the sides of the sloping bow $a b$, and extended back along the sides of the

inclined front bottom $b c$, are wings $h h$, which project forward and longitudinally as shown in Fig. 1, and which are contracted in their backward reach to a point, a' , substantially coincident with the shaft of the propelling wheel f , and thence recede from each other in a rearward direction to their rear ends as represented in Fig. 2. The vanes or paddles b' of the propelling wheel f , are of the curved form represented more fully in Fig. 1, and so arranged that as the wheel revolves the vanes at the front of the wheel present their rounded or convex surfaces in their impact upon the water.

In the operation of the invention the water in front of the vessel as the latter advances is held against lateral displacement by means of the wings h , which thereby enable the vanes of the propelling wheel to take effective hold thereof. The rounded surfaces of the said vanes acting upon the water in front of the wheel tend by their impact to lift the bow of the vessel simultaneously with the advance of the latter due to the propelling action of the wheel. This lifting of the bow is assisted by the inclined position of the front bottom $b c$, and thereby the vessel is caused to ride the water with a less or lighter draft than is obtainable with vessels of the usual character and construction, and this diminution of draft insures a corresponding diminution in the resistance of the water to the advance or propulsion of the vessel. Further the termination of the wings, h , at or about, c , causes the major part of the bottom of the vessel to be substantially flat and without downward projection.

By the structure described I am able to insure the ingathering of the water to the wheel as aforesaid and at the same time present so great a flat surface at the bottom of the vessel that in the event, a not uncommon contingency of the grounding of the vessel in mud or silt the vessel will readily float when the depth of water is increased, whereas if the wings were lower than the bottom and back, the whole, or substantially the whole, length of the vessel they would, in the contingency just remarked, sink into the mud or silt and anchor the vessel fast upon the bottom of the water way and thus prevent subsequent flotation

even with a good depth of water and under other favorable conditions.

What I claim as my invention is—

1. In a boat or vessel the combination of the
5 sloping bow *a b*, the inclined front-bottom *b c*,
and the flat bottom *c d*, the wings *h*, extended
from said bow backward to the rear of the
said front bottom and a propelling wheel *f*,
10 placed in an opening *e*, in the rear portion of
the bow, all substantially as and for the pur-
pose herein set forth.

2. In a boat or vessel the combination with

the sloping bow *a b*, having the opening *e*, the
inclined front-bottom *b c*, and the flat bottom
c d, of the propelling wheel *f*, having the curved
15 vanes, and the wings *h*, extended from the
bow to the rear of the inclined front bottom,
all substantially as and for the purpose herein
set forth.

CHARLES G. KELLOGG.

Witnesses:

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