No. 635,035. Patented Oct. 17, 1899.

B. BROWN.

MEANS FOR PROPELLING VESSELS, &c.

(Application filed July 7, 1899.)

(No Model.)

Fig. 1.

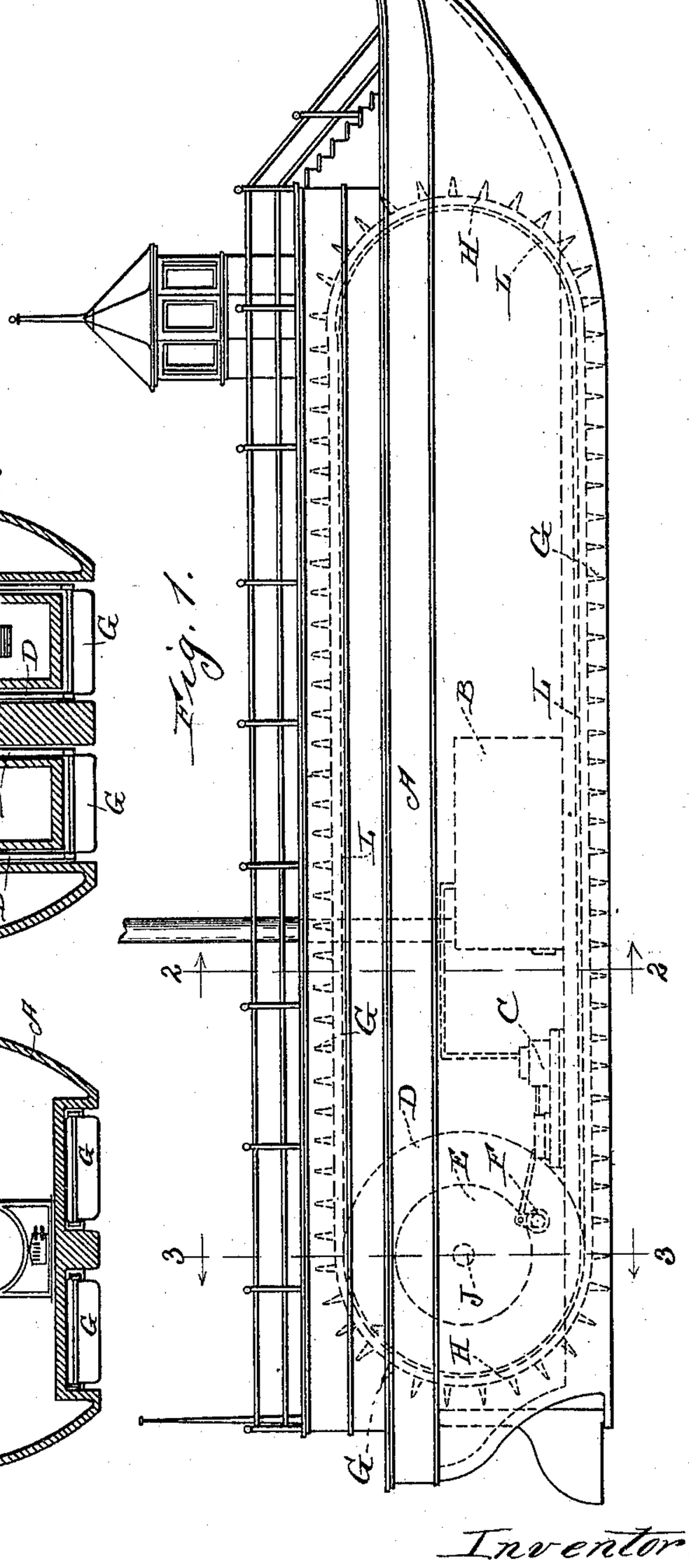


Fig. 2.

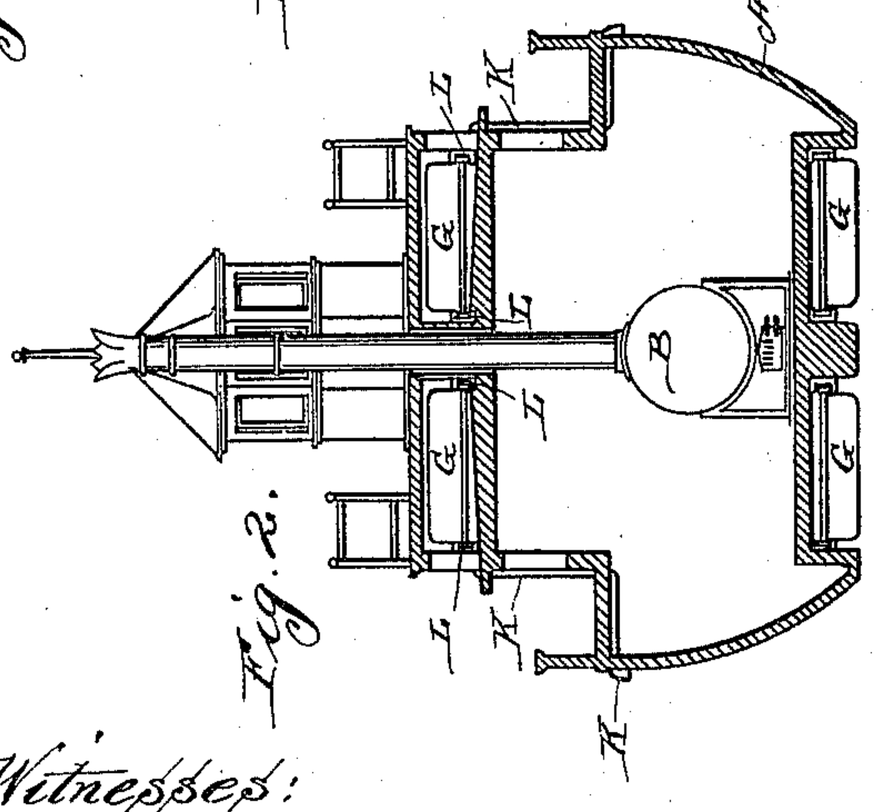


Fig. 3.

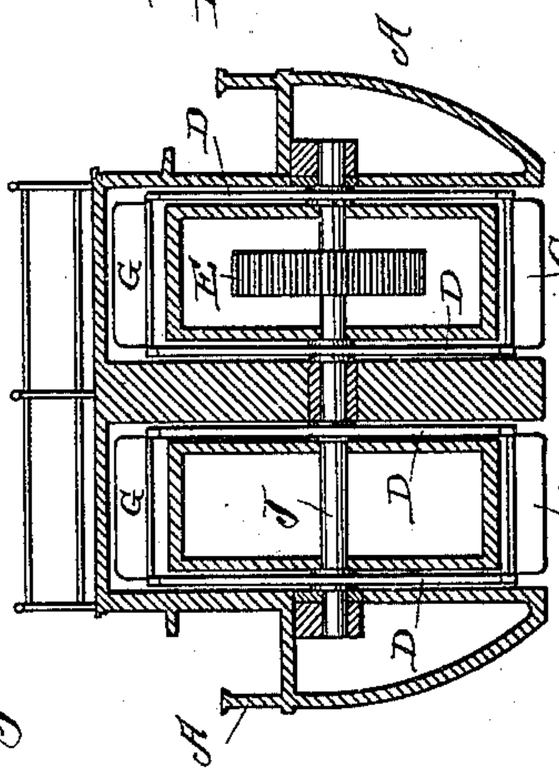


Fig. 4.

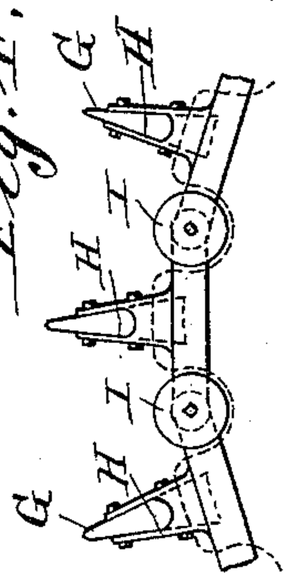


Fig. 5.

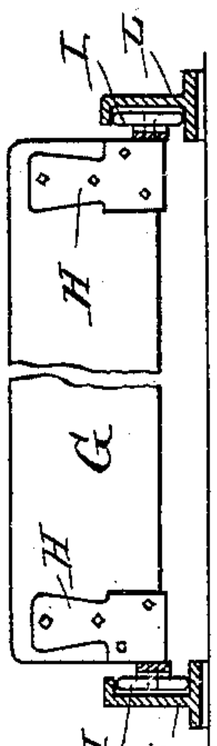
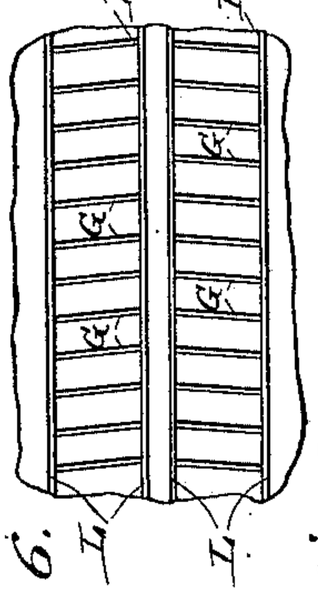


Fig. 6.



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UNITED STATES PATENT OFFICE.

BENJAMIN BROWN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO RACHEL R. GALLAGHER BROWN AND ARCHIBALD J. ROBERTSON, OF SAME PLACE.

MEANS FOR PROPELLING VESSELS, &c.

SPECIFICATION forming part of Letters Patent No. 635,035, dated October 17, 1899.

Application filed July 7, 1899. Serial No. 723,007. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN BROWN, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Means for Propelling Vessels, as set forth in the following specification.

My invention relates to the propulsion of vessels, and is especially adaptable to canal-boats.

My object is to provide a simple propelling mechanism for vessels whereby said vessels may be propelled rapidly and steered easily with a reduction in the usual expenditure of motive power, and when said vessel is passing through a canal the advance of said vessel when supplied with my device will not severely wash the walls of said canal.

My invention consists of certain improved devices combined in a novel manner, which will be more fully described hereinafter and particularly recited in the appended claim.

In the accompanying drawings, Figure 1 is a side elevation of a vessel with the wall removed, showing in dotted lines my propelling mechanism. Fig. 2 is a cross-sectional view on line 2 2 in Fig. 1. Fig. 3 is a cross-sectional view on line 3 3 in Fig. 1. Fig. 4 is a side elevation of a section of an endless-chain propelling device. Fig. 5 is a cross-sectional view showing the track or way in which said endless-chain propelling device travels with a section of said endless chain mounted thereon. Fig. 6 is a plan view of a section of said propelling device, showing the propelling-blades set at an angle inclining backward from the keel of said vessel, one of which is located on each side of the keel of the vessel and travels in the ways provided therefor, as shown in Figs. 1, 2, 3, and 5 of the drawings. There are four of these tracks encircling the vessel and forming the endless ways in which the wheels that are journaled at the pivot where the links of the endless chain are pivoted together travels. As these endless-chain propelling devices travel under the vessel and between decks, it is evident that some water would be lifted by them and carried up between decks. I therefore provide drain-spouts at suitable distances along the sides of the vessel to carry it overboard, as shown in Fig. 2.

A is to represent the body of a vessel, B a steam-boiler, and C an engine.

D is a wheel supplied with receptacles to receive the wheels which occur at the pivoted points of the endless chain, to which chain the propelling-blades are attached.

E is a gear-wheel fastened to the shaft of wheel D, which shaft is journaled on suitable supports.

F is a gear-pinion which meshes with gear-wheel E and is driven by engine C.

G is the driving-blades.

H is to represent the jaws in which the driving-blades G are held.

I indicates the wheels, which carry the endless chain on the track or way L.

J is the shaft of wheel D.

K is a drain-spout to carry the water from between deck and overboard.

L is the way in which wheels I run.

The shaft J may be made of two parts and supplied with separate gear-wheels E and driven by separate engines. Therefore the propelling mechanism could be operated singly and at different speeds, thereby facilitating the handling of the vessel, and should the helm be disabled the vessel may be steered accurately and kept under control.

When the parts which constitute my device are assembled, they operate as follows, namely: When engine C is put in motion, it drives wheel D, which in turn drives the endless-chain propelling devices, one of which is placed on each side of the keel of the vessel, and the driving-blades of said endless chain being set at an angle and inclining backward from the keel of the vessel it is obvious that with said blades set at such angle and traveling under the vessel and from stem to stern thereof the tendency would be to draw the water to the center of and under the vessel, which when traveling in a canal would have a tendency to relieve the walls of the canal from the water-pressure which would be forced against them by the vessel's advance when in transit.

I am aware that it has been sought to pro-

pel vessels by endless-chain propulsion for use in rivers and canals, the specific construction of all of which I hereby disclaim.

Having thus described my invention, what I claim is—

In means for propelling vessels, a vessel provided with two oblong longitudinally-disposed ways one on each side of the keel, a propelling device in each of said ways, said propelling devices consisting of sections or plates pivoted together so as to form an endless chain, propelling-blades rigidly fastened to the centers of said sections or plates and set at an angle inclining rearwardly from the keel of the vessel, wheels journaled on each of the pivoted points of said sections or plates and adapted to travel on tracks in said ways, a driving-wheel journaled on an axle and carrying said propelling device, suitable gearing connecting the same with a source of power, and water-exits from said ways above the deck of the vessel, substantially as described.

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