

*H. Camp.
Towing.*

N^o 19,340.

Patented Feb. 16, 1858.

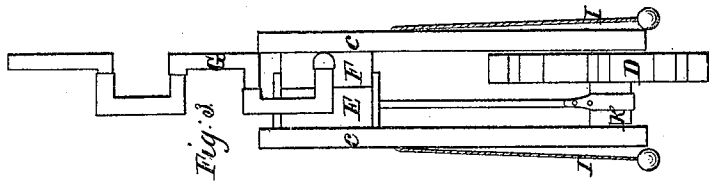


Fig. 3.

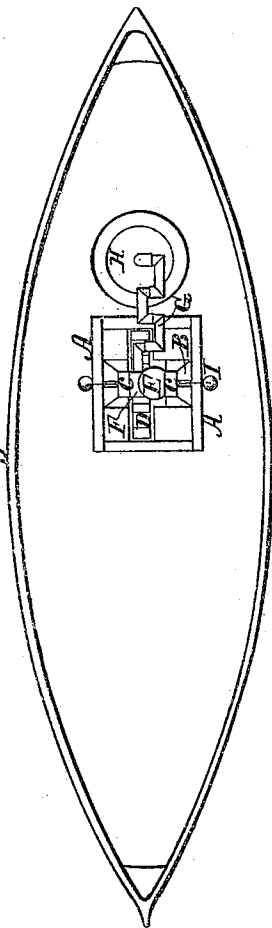


Fig. 1.

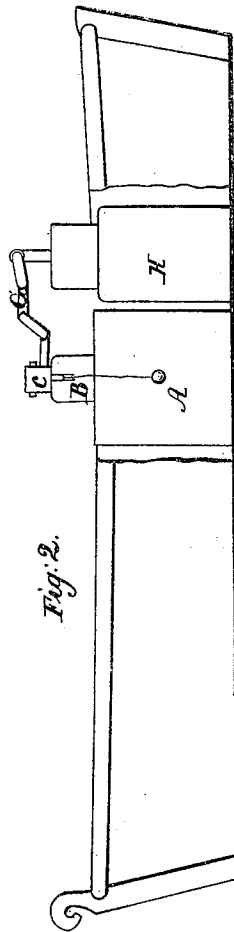


Fig. 2.

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UNITED STATES PATENT OFFICE.

HERMAN CAMP, OF DUNKIRK, NEW YORK.

PROPELLING CANAL-BOATS.

Specification of Letters Patent No. 19,346, dated February 16, 1858.

To all whom it may concern:

Be it known that I, HERMAN CAMP, of Dunkirk, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in the Mode of Propelling Canal-Boats; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon.

The nature of my invention relates to propelling canal boats by a wheel running on the bottom of the canal. The 1st feature thereof being the arrangement and location of such wheel and its supporting frame, at or near the middle of the boat, the said frame (and with it the wheel) having a vertical movement sufficient to allow the wheel to roll on the bottom notwithstanding the inequalities thereof or the varying depth of water, and which may also be raised within the boat when meeting obstructions or passing locks. 2d in the arrangement and support of the engine, on the frame which supports the wheel, so that the engine will rise and fall therewith,—the boiler being stationary. 3d in the construction and combination of a flexible steam pipe with the said engine and stationary boiler, so that the vertical movements of the engine will not affect the admission of steam therein.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, the annexed drawings making a part of this specification.

Figure I, is a plan showing the location and arrangement of the engine—supporting frame and wheel—flexible steam pipe and boiler, in the boat. Fig. II, is a side elevation of the same. Fig. III, is an elevation of the supporting frame—wheel,—engine, and steam pipe in their relative position with each other.

A, bulk head. This is located near the center of the boat, and should be about 6 by 8 feet. An opening is made in the bottom of the boat of sufficient dimensions to admit of the vertical movement of the wheel and wheel frame and the bulk head surrounds this opening and is carried up as high as the deck, and prevents the water from rushing into the boat. It should be made sufficiently strong, (by frame work and planking) to firmly support the wheel and engine frame. B, guide posts. These are placed within

the bulk head, and firmly connected therewith, and guide and support the wheel and engine frame in its vertical movements. C, C, wheel and engine frame. This frame consists mainly of two upright timbers, which support the engine and wheel. A crank shaft is supported in these timbers by appropriate bearings near the bottom thereof. The wheel is also connected to this shaft. The engine is firmly attached to these timbers, (or frame) near the top thereof. This frame (including the engine and wheel,) is placed between the guide posts and within the bulk head. The timbers or frame may be about 10 feet in length or sufficient to allow the wheel to roll on the bottom and conform to the ordinary irregularities thereof. D, wheel. This may be made about 6 or 8 feet in diameter, 8 or 12 inch face, with lugs thereon to give it adhesion to the ground. It may be made of cast iron, or wood, with iron band and lugs. In water too deep for the wheel to touch the bottom it will act as a paddle wheel. E, engine. Any ordinary engine of 6 horse power will answer the purpose. It is firmly fixed to the frame C, C, and rises and falls therewith. F, steam chest. G, flexible steam pipe. The engine having a vertical movement with the frame C C, and its distance from the boiler therefore constantly varying, it becomes necessary to construct and use a flexible steam pipe which will allow of this variation and still keep a perfect steam connection between the engine and boiler. This pipe is made in sections, with elbows; fitting steam tight into each other and forming joints. A pipe made in this manner will allow of all the variations in distance between the engine and boiler, or it may be made in any other suitable and convenient form to answer the purpose required. H, upright steam boiler. I, I, chain and weights. The chains are connected to frame timber C, C, and pass over pulleys in the guide posts B for the purpose of a balance (in part) to the frame and assist it to rise more freely when required. J, connecting rod, between steam piston and crank shaft. K, crank and wheel shaft. This arrangement gives the engine a direct action upon the propelling wheel. Mechanism will be connected with the wheel and engine frame, so that the engineer or steersman can raise the same whenever required.

The advantages, gained by my invention,

are, 1st the location of the wheel near the center of the boat balances (comparatively) the boat thereon, and thereby gives the rudder perfect command, so that the boat can
5 be easily steered, although its propelling wheel rolls upon the bottom, and allows of raising the wheel within the boat when meeting obstructions or passing locks. 2d
10 whatever motion is given to the water by the movement of the wheel is directly under the boat, and has the effect to give buoyancy to it while the motion of the water is not sufficient to wash the banks. 3d the engine
15 being supported on the wheel frame the capacity of the boat for freight is proportionally increased. 4th the mode herein described is deemed to be less expensive, less objectionable and more effective than any
20 other plan of propelling canal boats heretofore adopted.

I do not confine myself to the precise construction proportions or arrangement herein

set forth, but include all modifications thereof, as shall be best adapted to secure the desired object by means substantially the same. 25

I claim—

1. The arrangement and location of the propelling wheel D, and its supporting frame C, C, at or near the center of the boat for the purposes and substantially as herein
30 set forth.

2. I claim supporting the engine upon the vertically moving frame C, C, for the purposes substantially as herein described.

3. I claim the combination of the flexible
35 steam pipe G, with the stationary boiler H, and the vertically moving engine, E, for the purposes and substantially as herein set forth.

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Witnesses:

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