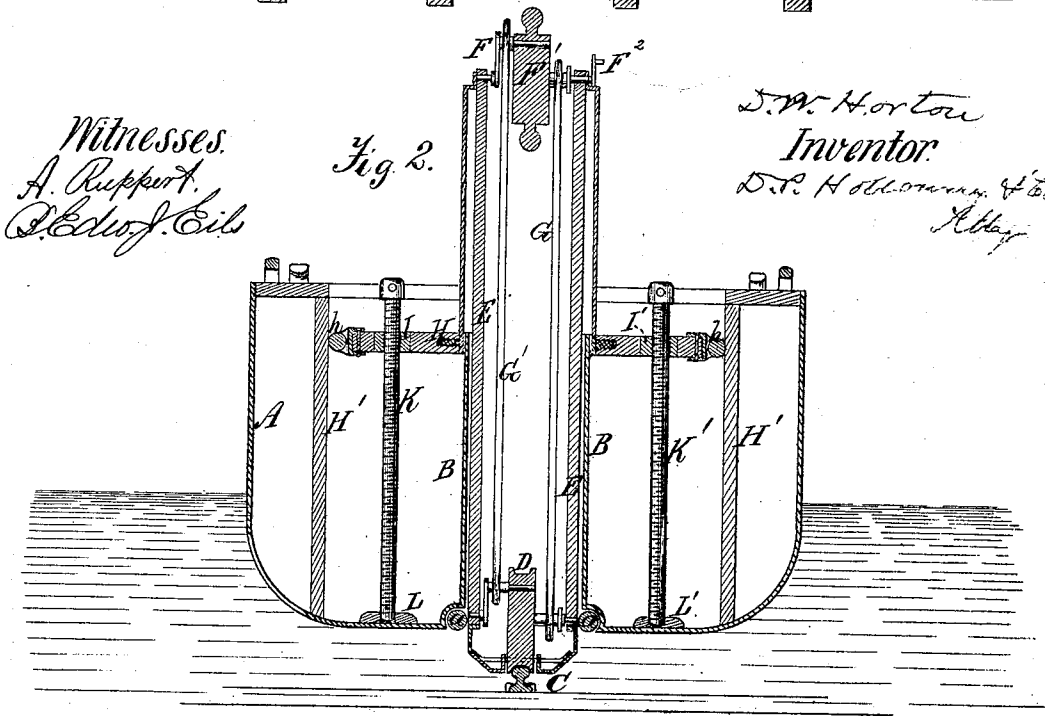
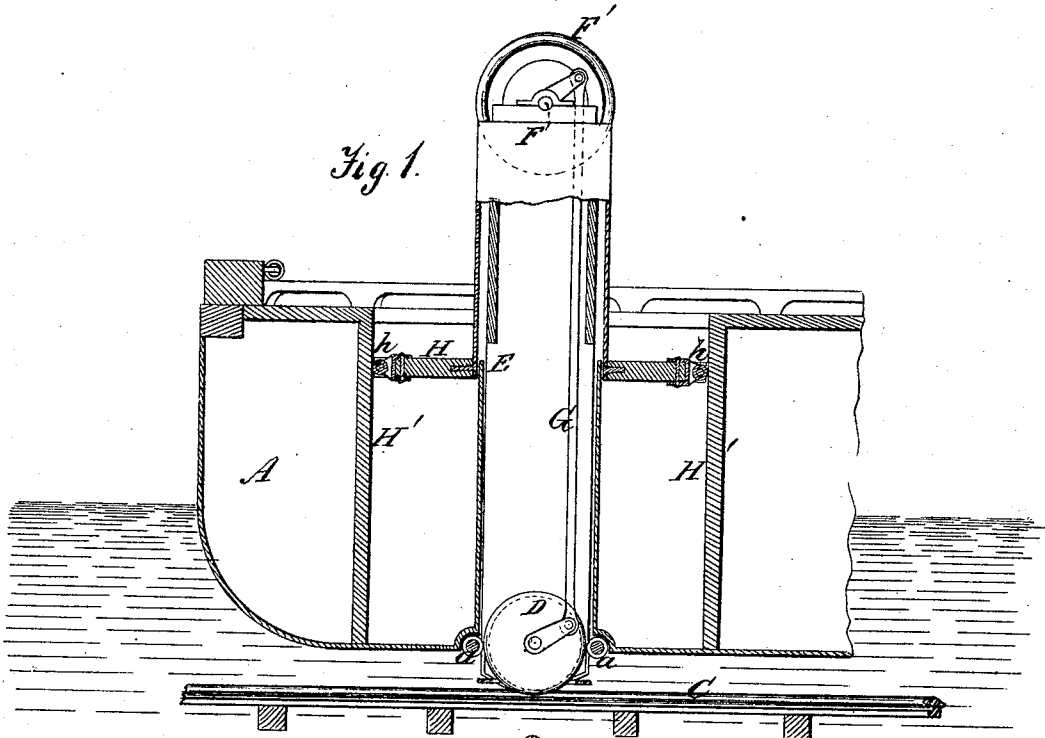


D. W. HORTON.

Improvement in Machinery for Propelling Canal-Boats.

No. 129,228.

Patented July 16, 1872.



UNITED STATES PATENT OFFICE.

D. WRIGHT HORTON, OF PETERSBURG, INDIANA.

IMPROVEMENT IN MACHINERY FOR PROPELLING CANAL-BOATS.

Specification forming part of Letters Patent No. 129,228, dated July 16, 1872.

Specification describing certain Improvements in Machinery for Propelling Canal-Boats, invented by D. WRIGHT HORTON, of Petersburg, in the county of Pike and State of Indiana.

This invention relates to that class of canal-boats which are propelled by one or more driving-wheels along a rail or rails laid upon the bottom of the canal; and my improvement consists, first, in arranging the frame which carries the driving-wheel in a well or open-ended vertical tube, extending up from the bottom of the boat in such a manner that the boat and such frame may move vertically independently of each other; and combining with such independent frame a platform for the support of the machinery employed to work the driving-wheel, to obtain by the weight of such machinery the required amount of traction for the driving-wheel, as well as to relieve the boat of the weight of such machinery; secondly, in the combination of the platform sustaining the engine, &c., and vertical screw-spindles by which the platform is upheld when the boat passes through locks, and at other times when it or its driving-wheel is off the rail.

Figure 1 is a vertical longitudinal section. Fig. 2 is a vertical transverse section.

The same letters of reference are used in both figures in the designation of identical parts.

The boat A is constructed at the bow or stern, as may be preferred, with a vertical tube, B, extending up from the bottom, and open at both ends. It is made of sufficient height to prevent the water entering through its lower end from running over at the top when the boat is loaded to its maximum capacity. C is a rail laid down upon the bottom of the canal, upon which the driving-wheel D runs, the latter being constructed with a flange on each side, as shown, to keep it always on the rail; or, where a wheel without flanges is used, its supporting frame E should be provided with suitable guards on each side of the rail to prevent the wheel from running off. The frame E, in which the journals of the axle of the driving-wheel have their bearings, rises such a distance above the end of the tube B that its top will project a slight distance above said tube when the boat is quite unloaded. In

this projecting end the crank-shaft F has its bearings carrying a suitable fly-wheel, F¹. The wrists of the cranks, which stand at right angles to each other, are connected to the wrists of similarly-disposed cranks on the axle of the driving-wheel D by connecting-rods G G'. The crank-shaft F projects at one end through its bearing to receive another crank, F², the wrist of which is connected to the pitman of a steam-engine or other power employed for driving the wheel D. The tube B is square in horizontal section, and frame E has a corresponding form, and anti-friction rollers *a* are used on which the frame moves as the boat rises and falls. The platform H is suspended from the top of the frame E by any suitable devices, giving to it the required rigidity and steadiness, the required space being left between the suspension devices and the frame for the passage of the tube B. The platform receives and supports all the machinery necessary for driving the wheel D, or at least so much of it as it may be found is indispensable for the purpose of weighing down the driving-wheel to obtain the desired degree of traction. In the edges of the platform anti-friction rollers *h* are inserted, bearing against perpendicular posts or surfaces H', upon each side of the platform. I and I' are nuts fastened to the platform, and adapted to receive screw-spindles K and K', respectively, which screw-spindles may be screwed so far through the nuts as to touch the bottom of the steps L L' secured vertically under them upon the bottom of the hull of the boat. When this is done the platform and all its appendages will be supported on the screw-spindles, permitting the boat to float like an ordinary boat. The screw-spindles are thus brought down to their seats in the steps when the boat is to be raised or lowered in locks, and at other times when its driving-wheel is off the track—as for instance, when it enters from the canal into a river.

Boats constructed as hereinbefore described may be steered in the ordinary manner, or they may be guided by the rail exclusively. In the latter case a guide-wheel is suspended from the end of the boat opposite to that where the driving-wheel is mounted to run along the rail, it being arranged in such a manner that the vertical action of the boat will not lift it off the rail.

Where canals are of even depth throughout the sections between the locks, it is obvious that the driving-wheel may run upon the bottom of the canal and a track be dispensed with.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The frame E, which carries the driving-wheel, and moves vertically in a well, B, of the boat, independently of the latter, in combination with the platform H suspended from its top, substantially as and for the purpose specified.

2. The combination of the rigidly-connected frame E and platform H, with the nuts I I', screw-spindles K K', and steps L L', fixed in the bottom of the boat, operating substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

D. WRIGHT HORTON.

Witnesses:

HECTOR KING,
WM. KEPLEY.