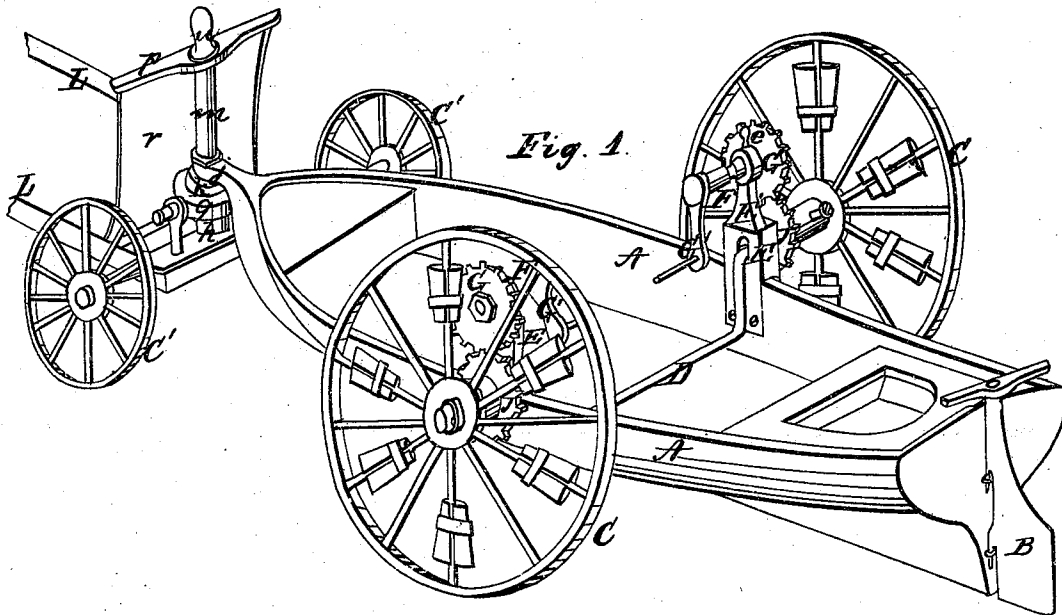
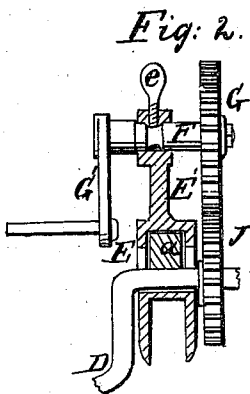
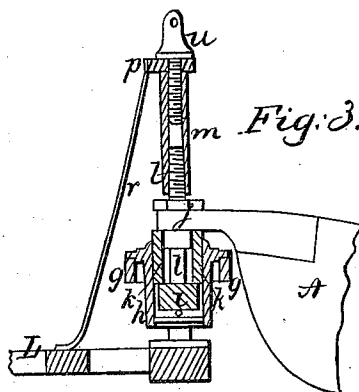


P. Davis.
Life Boat.

N^o 26,657. Patented Jan. 3, 1860.



Witnesses
M. M. Livingston
C. M. Hughes

Inventor
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UNITED STATES PATENT OFFICE.

PERRY DAVIS, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN THE CONSTRUCTION OF BOATS.

Specification forming part of Letters Patent No. 26,657, dated January 3, 1860.

To all whom it may concern:

Be it known that I, PERRY DAVIS, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Boats; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a boat mounted upon wheels with all the parts attached. Fig. 2 is a vertical transverse section taken through one of the axle-boxes, showing also the manner of connecting and disconnecting the gearing. Fig. 3 is a vertical section showing the mode of attaching the bow of the boat to the front axle and the introduction of the rubber spring for giving elasticity to the boat.

Similar letters of reference indicate corresponding parts in the three figures.

My invention and improvement in boats consist in combining an india-rubber spring in a novel manner with suitable gear-wheels for operating the wheels, which become propellers when the boat is in the water. The gearing is so arranged as to be disengaged when the boat is on land and the wheels are used as carriage-wheels.

It further consists in attaching the bow of the boat to the axle-tree of the front wheels by a universal joint, which is constructed in such a manner as to admit of the introduction of an india-rubber spring for giving elasticity to the bow of the boat and preventing it from being in any way injured in driving over rough roads, the whole being arranged as hereinafter described.

To enable others skilled in the art to fully understand my invention, I will proceed to describe its construction and operation.

A represents a boat, which may be of any reasonable length and of any figure, either flat-bottomed or with a keel, as in the figure shown in the drawings, with a rudder B attached to the stern of the boat and operated in the usual manner. This boat is mounted upon wheels C C and C' C'. The former have an axle D passing across the boat and through its gunwales, which is bent down and secured to the floor of the boat, so as to be out of the way. This axle D passes through two hollow metal boxes E E, which are secured to the gunwales and furnished with compressed in-

dia-rubber springs *a a*, placed above and in contact with the upper surface of the axle, as in Fig. 2, their ends thus pressing against the tops of the boxes and down upon the axle, which passes through vertical slots in said boxes, so as to permit a free play. From the tops of these boxes proceed up vertical standards E' E', which may be either cast with or secured to the boxes by bolts. Through the ends of these standards pass transversely short shafts F F, carrying on their outer ends spur-wheels G G and on their inner ends cranks G' G'. The shafts F F are capable of being moved back or forth in their bearings and are set in either position by set-screws *e e*, the ends of which, when the shafts are in gear with spur-wheels J J, fit into annular grooves in the shafts, as clearly shown by Fig. 2, so as to keep them from having a lateral motion. The spur-wheels J J are fixed to the hubs of the wheels C C, and communicate motion to said wheels, when in the water, from spur-wheels G G, which are operated by the cranks G' G'. When the boat is on land and the wheels C C serving as carriage-wheels, the spur-wheels G G are disengaged from and moved to one side of the spur-wheels J J, which permits the india-rubber springs *a a* to come into play, and the boat has a free and easy motion in its transportation over land. Upon the spokes of the wheels C C are placed floats or paddles, which can be given any desired inclination. These wheels thus serve when in the water as propellers for the boat and when on land as carriage-wheels. The bow of the boat rests upon a universal joint, which is attached to the front axle-tree and to the bow-point in such a manner as to permit the axle-tree to have a universal motion, and at the same time to prevent injurious concussion to the bow of the boat. The universal joint consists of a metal ring *g*, having its pivot-bearings in two standards projecting up from the axle-tree with a metal cylindrical box *h*, with its trunnions resting upon the ring *g*. Within this box *h* is introduced a block of india-rubber *i*, resting upon the bottom of said box, and upon this is a tube *k*, of india-rubber, tightly compressed in the box. *j* is a shoulder, which is secured to the bow of the boat and rests upon the india-rubber spring *k*. *l* is a stud that passes down into the tube and presses upon the block *i*. The upper portion

of this stud or pin *l* projects above the shoulder *j* and receives a tube *m*, which, in connection with a screw-bolt *n*, serves to hold the yoke *p* upon the top of the tube, to which yoke an apron or dash-board *r* is attached, which is very necessary to prevent mud and sand from being thrown into the boat. The apron *r* is attached to the thills *L*, and its peculiar attachment keeps all the parts securely in place and allows the front wheels a free motion in guiding the boat, and effectually prevents strain upon the bow of the boat when used on land.

Before launching the boat the front wheels, apron, and all the parts attached to the axle-tree are disengaged from the boat. The spur-wheels *G G* are then made to engage with the spur-wheels *J J*, and set in this position by screws *e e*. The floats are then properly adjusted and converted into paddle-wheels, which are operated by the cranks *G' G'*.

The object of disengaging the spur-wheels when the boat is used on land is to prevent

the cranks from turning, but more especially to obtain the elasticity of the india-rubber spring, which is not required when the boat is in the water.

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

1. The combination, with the boat *A'*, of spur-wheels *G G*, fixed to the hubs of wheels *C C*, wheels *J J*, adjustable shafts *F F*, cranks *G' G'*, and india-rubber springs, substantially in the manner and for the purposes herein stated.

2. The universal joint or gimbal for attaching the bow of the boat to the front axle-tree when the same is constructed so as to combine with it an india-rubber spring, substantially in the manner and for the purposes herein set forth.

PERRY DAVIS.

Witnesses:

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