# W. A. LEGGO.

## Canal-Boats.

No. 138,664. Patented May 6, 1873.

FIG. 1.

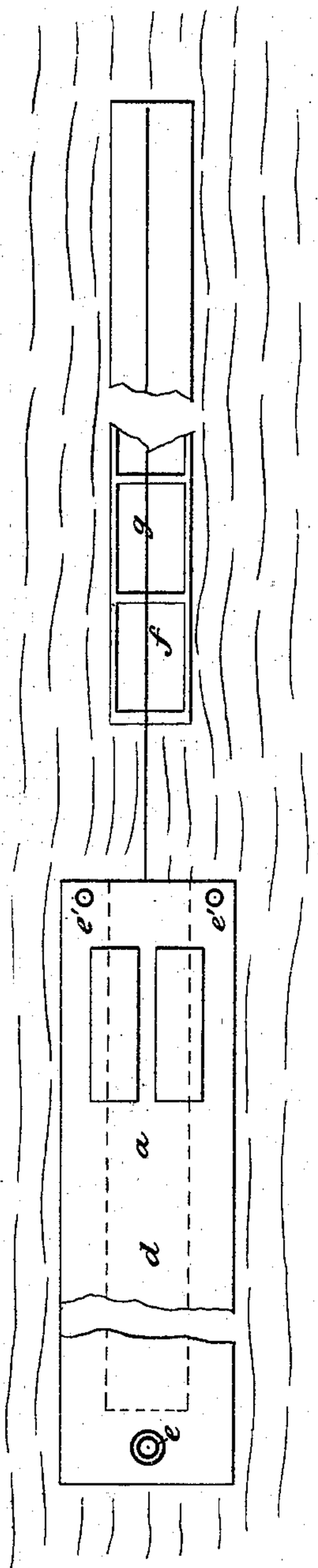



FIG. 2.

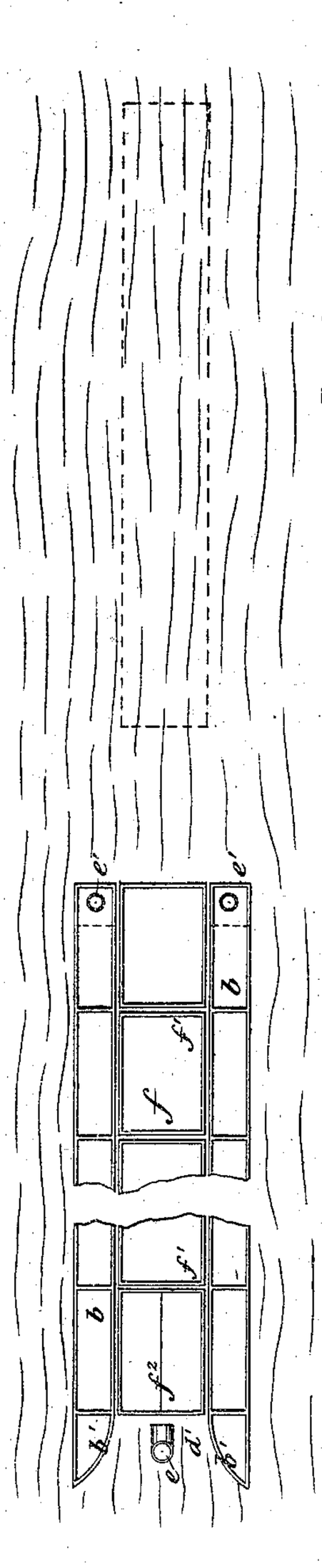



FIG. 4.

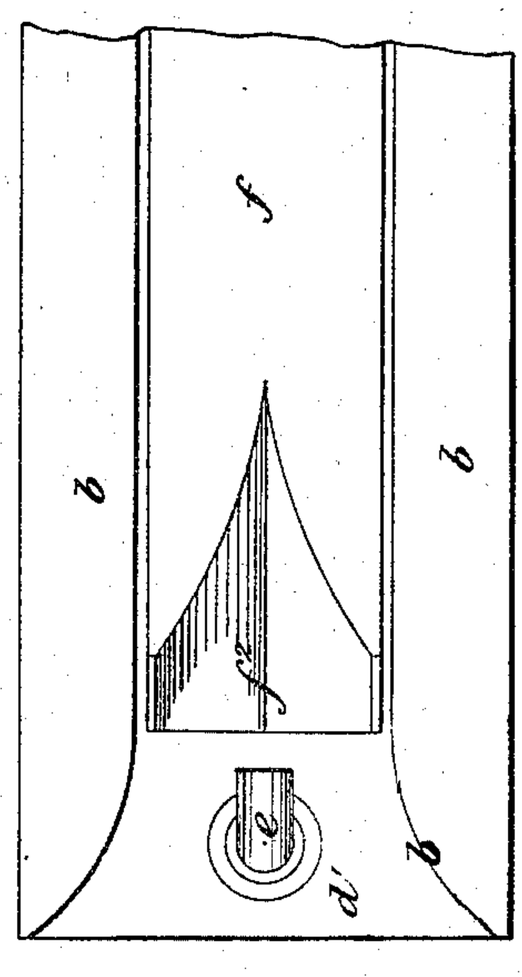
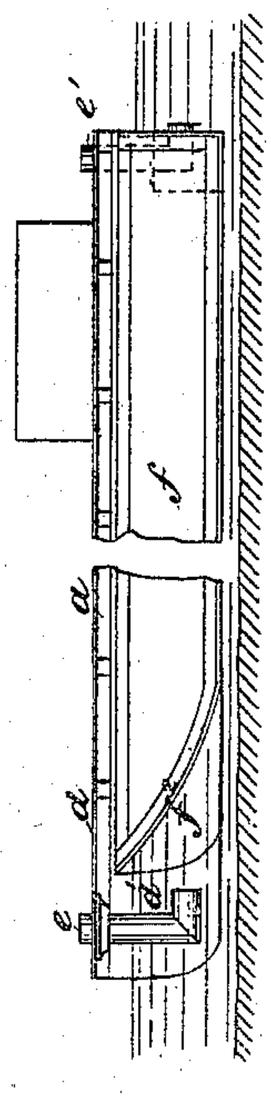



FIG 3.




Witnesses

Arthur R. Kellond

Frank Reynolds

Inventor

W. A. Leggo

# UNITED STATES PATENT OFFICE.

WILLIAM AUGUSTUS LEGGO, OF MONTREAL, CANADA.

## IMPROVEMENT IN CANAL-BOATS.

Specification forming part of Letters Patent No. **138,664**, dated May 6, 1873; application filed September 18, 1871.

*To all whom it may concern:*

Be it known that I, WILLIAM AUGUSTUS LEGGO, of the city of Montreal, in the district of Montreal, in the Province of Quebec, Canada, gentleman, have invented new and useful Improvements on Canal Navigation; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, where—

Figure 1 represents a plan of boat as it would appear while towing on any reach. Fig. 2 represents a plan of boat with deck removed, as it would appear while "locking," or on a sharp curve. Fig. 3 represents a vertical longitudinal section of boat in lock. Fig. 4 represents a plan of bow of boat, looking up.

It has long been the wish of all those who are in any way concerned in the moving of produce to the sea-board to find some method of propelling canal-boats which shall do away with the tedious and antiquated method of towing by horses, thus avoiding the long delays so frequent under the present system; and for this purpose many methods of applying steam-power to barges have been tried, but as yet none have been discovered which do not in some way destroy by their "wash" the banks of the canal, and either cause considerable difficulty in locking the boats towed by them, or fail to carry the amount of cargo required to pay expenses. To obviate all these disadvantages and produce a boat that shall satisfy the discordant requirements of both canal commissioners and forwarders is the object of my invention, shown clearly in the accompanying drawing.

Similar letters of reference on the drawing indicate like parts.

My invention mainly consists in a compound or "telescopic" boat, composed of two parts or separate vessels: The first or propelling part *a* is constructed as shown clearly in Figs. 1 and 2; the two compartments for freight, *b b*, (subdivided, if thought convenient, by partitions *c c*,) securely connected by the bearers and deck *d*, on which may be situated the cabin for the crew, and the engine and boiler, gasometer, or whatever machine may furnish the necessary power for the propulsion of the vessel. The motor, whether it be a single wheel, a combination of wheels, or a screw-propeller, is situated in the bow of the vessel *a*, in the middle space *d'*, between the compartments *b b*. In the drawing, however, one or more of my gas-motors (for which I have already applied for Letters Patent in the United States) are shown as the motive power of the boat, as at *e*, the ones, *e'*, in the stern being only supplementary to the main propeller *e* placed in space *d'*. The bows of the side compartments are constructed as shown in Figs. 2 and 4, so as to offer as little obstruction as possible to the water in passing through, the water absolutely displaced being driven, by the shape of the bows *b'* and action of the machinery, into the space *d'* between the compartments *b*. *f* is the complement of the telescopic boat, being in the shape of any ordinary barge, either open from end to end, divided into compartments, as shown in Fig. 1, or composed of a number of compartments, $f^1$, securely fastened together, as in Fig. 2. Its bow $f^2$ is shaped preferably as shown in Figs. 3 and 4, so that the water, not only that through which the boat passes, but also that which is driven backward by the action of the motive force, may meet with as little resistance as possible. *g* is the tow-line, which may either be attached to a ring-bolt in the bow of the boat *f*, or fastened near the stern, as shown in Fig. 1. The dotted lines in Fig. 1 show the position of the boat *f* (which may, if desired, be divided longitudinally into two parts) while locking, and in Fig. 2 its situation while towing astern.

Having thus described the nature of my invention, I will proceed to point out the *modus operandi:* Both the parts *a* and *f* loaded in such a manner that to the deck of the part *a* is about fifteen inches higher from the water than to the top of the part *f*, and both drawing the same amount, the telescopic canal-boat is ready to start. If on a level reach, the part *a* starts, veering out rope to any convenient length, till the part *f* is towing astern, as shown in Fig. 1. A high rate of speed may be obtained without in any way injuring the banks, the curved shape of the bows offering no resistance to the water, and even, by guiding it into the space *d'*, allowing the motor (of whatever kind it may be) to act upon it with more

force; the whole of the wash arising being retained between the sides *b b*, and the peculiar shape of the bow of the boat *f* enabling it to ride over the water running directly aft.

Upon approaching a lock the telescopic boat is operated as follows: By a winch, capstan, or any ordinary method, the tow-rope attached to the part *f* is hauled in until *f* is brought into the position shown in Fig. 2, thus going through the lock as one vessel, wearing the appearance of an ordinary scow or canal-boat. Upon leaving the lock the part *a* may move ahead, again letting out rope until it has come to a convenient distance for towage, and go on as before. The same operation may be gone through when the boat is passing a sharp curve, or in any other situation in which it is inconvenient for one boat to be towing astern of the other.

It will thus be seen that by my invention a canal-boat has been produced that may be driven at speed, not injuring the banks by wash, carrying a large cargo, and capable of being easily locked through.

With the foregoing description of my invention, to which I have given the name of "Leggo's Telescopic Canal-Boat," what I claim as my invention, and wish secured by Letters Patent, is as follows:

The main vessel having the side compartments *b*, bows *b'*, deck *d*, central space *d'*, extending the entire length of the boat, and motor *e*, in combination with the supplementary vessel *f*, all constructed and arranged as described, for the purpose set forth.

Montreal, 1st day of September, A. D. 1871.

W. A. LEGGO.

Witnesses:

ARTHUR R. KELLOND,

FRAS. HY. REYNOLDS.