

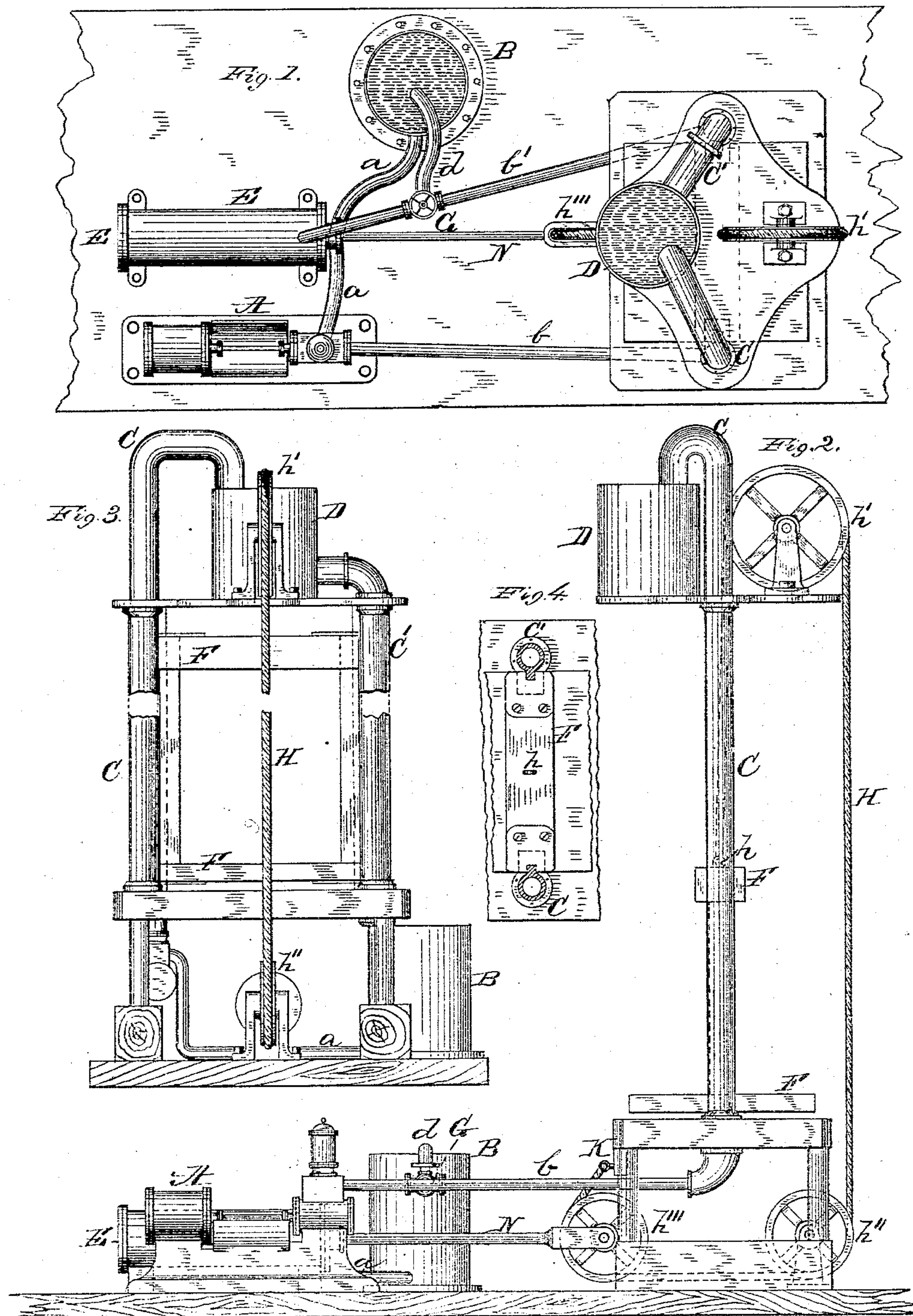
(No Model.)

A. STIRLING.

HYDRAULIC ELEVATOR FOR BUILDINGS.

No. 315,970.

Patented Apr. 14, 1885.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## HYDRAULIC ELEVATOR FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 315,970, dated April 14, 1885.

Application filed March 29, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ALLAN STIRLING, of the city, county, and State of New York, have made an invention of an Improvement in Hydraulic Elevators for Buildings, of which the following is a specification.

My invention consists in a certain combination of the upright posts and ways or guides for the carriage of a hydraulic elevator with the water-pipes which convey the water furnishing the motive power for raising and lowering the carriage. This combination is fully set forth in the claim at the end of this specification.

Heretofore water-elevators have been made with mechanism for raising and lowering the carriage substantially as herein described, but the posts and ways or guides and water-pipes have been separate and distinct parts, the bulk of which has rendered it difficult to adapt such elevators in places where the space is contracted without very materially reducing the capacity of the carriage. I have overcome the difficulty by combining each of the carriage-posts and ways or guides with a water-pipe, through one of which the water rises to the top of the elevator and through the other of which the water falls to supply the motive power to the power-cylinder. I thus save the space required for containing the same when separate and many in number, and at the same time make a much more practical and slightly structure.

In the drawings, Figure 1 shows a top or bird's-eye view of a water-elevator with the pump, water power cylinder, valve, and pipes leading to the upper and lower reservoirs. Fig. 2 shows a vertical side view of the same. Fig. 3 shows a vertical back view of the same. Fig. 4 shows a cross-section of the combined posts and ways and pipes and the top of the carriage.

A is the steam-pump for drawing water through pipe *a* from reservoir B, and for forcing it up through pipe *b* and the combined pipe-guideway C to the upper reservoir, D.

E is the water-power cylinder for receiving water on its piston from the upper reservoir, D, through the guideway-pipe C' and pipe *b'*, to raise the carriage when the three-way valve

G is open in line with said pipe, and for forcing the waste water into reservoir B through pipe *d* when the valve G is turned so as to connect the cylinder with said reservoir and to close the connection to the reservoir D.

F is the carriage arranged to slide on the pipe-guideways C C'.

H is the rope attached at *h* to the top of the carriage, and which, after passing over pulleys *h'* *h''* *h'''*, is fastened to the fixed staple K. The pulley *h'''* is pivoted and revolves on a bearing in the end of the piston-rod N while the piston of the power-cylinder moves back and forth to raise and lower the carriage.

The pipe-guideways C and C' are both posts and ways and guides and pipes. They are preferably made substantially as shown in cross-section, Fig. 4; but they may be made in parts and the ways or guides may be attached to the pipes in any well-known manner, so that when in use they are firmly united.

The water rising through the pipe-guideway C discharges into reservoir D; thence flows from the bottom of D to pipe-guideway C'; thence to the power-cylinder E, and is afterward discharged from it into the reservoir B, to be pumped again into reservoir D through pipe-guideway C.

It is not necessary to more particularly describe the operation of this hydraulic elevator, as there is no important difference in the operation of the present apparatus from the well-known forms now in use.

Having now described my improvements, what I claim as my invention is—

In a hydraulic elevator comprising a lifting-pump, a lower water-tank, a cylinder containing an operating-piston connected with the cable supporting the car, and an elevated water-tank, the combination, with the pipes connecting said upper and lower tanks and the upper tank and the cylinder containing the operating-piston, of ways attached to or formed upon said pipes on which the elevator-car moves, substantially as described.

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