C. W. BALDWIN & W. BURDON.

Hydraulic Elevator.

No. 197,311. Patented Nov. 20, 1877.

Fig 1.

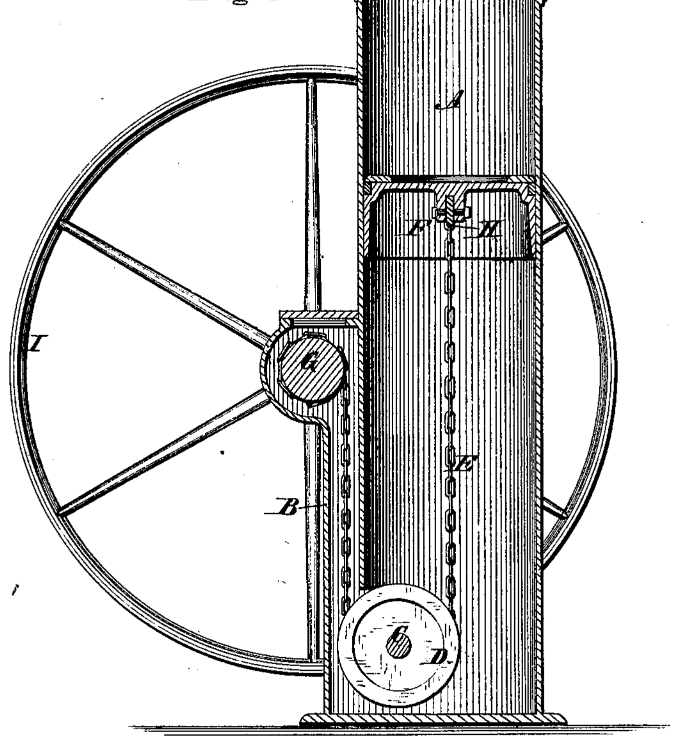


Fig 2.

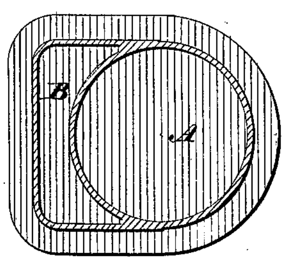
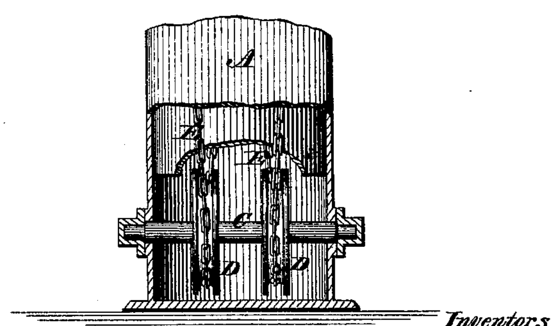


Fig 3.



Witnesses

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Their Attys.

2 Sheets—Sheet 2.

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Fig. 3.

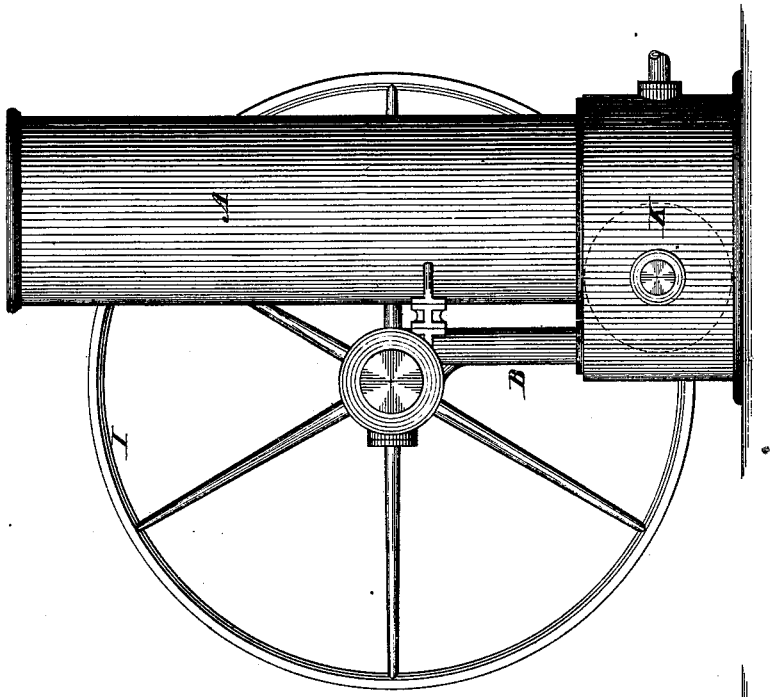
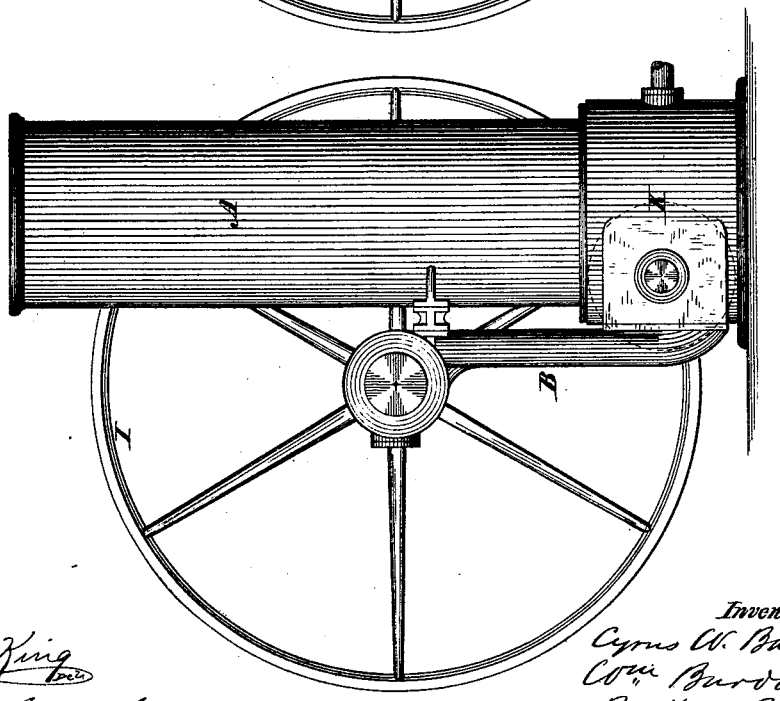


Fig. 4.



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UNITED STATES PATENT OFFICE.

CYRUS W. BALDWIN AND WILLIAM BURDON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN HYDRAULIC ELEVATORS.

Specification forming part of Letters Patent No. **197,311**, dated November 20, 1877; application filed September 13, 1877.

To all whom it may concern:

Be it known that we, CYRUS W. BALDWIN and WILLIAM BURDON, both of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Hydraulic Elevator; and we do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, Sheet 1, is a vertical section of the elevator. Fig. 2, Sheet 1, is a transverse section of the same. Fig. 3, Sheet 1, is a rear elevation of part of the cylinder broken away to show the guide-pulleys of the hoisting-chain. Figs. 4 and 5, Sheet 2, are modifications in the form of the apparatus.

Similar letters of reference in the accompanying drawings denote the same parts.

Our invention relates to that class of hydraulic hoisting-machines principally used for handling goods and merchandise; and consists, primarily, in the combination of two upright cylinders or tubes, one of which contains the traveling piston, and the other the winding drum or shaft by which the power of the piston is communicated to the hoisting-drum through the medium of one or more chains or ropes connecting the piston and winding-drum, as we will now proceed to describe.

In the accompanying drawings, referring to Sheet 1, A is an upright water cylinder or tube, having the necessary induction and eduction water-pipes common to elevators of this class. B is a second upright cylinder or tube, connected to the first in any suitable manner to form a communication with its lower end. At the lower end of the cylinder A, near its junction with the second cylinder B, we place a transverse shaft, C, having its bearings water-tight in the walls of the cylinder A. This shaft is provided with two sheaves or pulleys, D, for the passage of the chains E E, which pass from the water-piston F in the cylinder A to a shaft or winding-drum, G, at the upper end of the second cylinder B, as shown in Figs. 1 and 2.

The arrangement and diameter of the guide-sheaves are such that the chains shall be guided centrally of the piston and cylinder A, and centrally of the cylinder B, so far as it is practicable. The two chains are joined to an equalizer, H, placed in the under side of the piston, although this is not absolutely necessary, as any well-known means for securing an equal draft upon the chains to prevent the piston from binding may be employed.

The operation of the apparatus will be readily understood.

Water being admitted beneath the piston, causes the latter to ascend and unwind the chains from the drum G, thereby rotating the hoisting-drum I to raise the carriage, such drum being mounted on the shaft of the drum outside the cylinder, and carrying the ordinary hoisting chains or ropes for the carriage.

The carriage is lowered by cutting off the supply and opening the eduction valve or stop, the weight of the carriage causing its descent and the consequent raising of the piston.

By the provision of the cylinders, one for the piston and one for the chain-winding drum, the piston has a longer stroke than it could have if the winding-drum were placed in the cylinder A.

Fig. 4, Sheet 2, shows a modification in the construction of the cylinders. In this case the main cylinder is mounted upon a separate base, K, and the second cylinder B is bolted to one side or end of the base. In Fig. 5 the same base is shown, but the second cylinder B is bolted to its top beside the cylinder A.

In both these modifications, however, the guide-pulleys are arranged in the base instead of in the body of the cylinder, thereby leaving the whole length of the latter clear for the stroke of the piston.

We claim as our invention—

1. A hydraulic elevator, consisting of two cylinders placed side by side, one of which carries the water-piston, and the other the winding-drum or shaft, said drum and piston being connected by one or more chains or

ropes passing over intermediate guide-pulleys or sheaves, substantially as described, for the purpose specified.

2. In a hydraulic elevator, an upright cylinder or pipe carrying a piston, and an upright cylinder or pipe carrying a revolving drum, which is connected to the piston by a flexible connection, both cylinders being mounted upon the same base, within which is located pulleys or sheaves for guiding the chains from the drum to the piston, substantially as described.

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WM. BURDON.

Witnesses:
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H. N. TENNEY.