P. HINKLE.

Device for Operating Throttle-Valves.

No. 167,099. Patented Aug. 24, 1875.

Fig. 1.

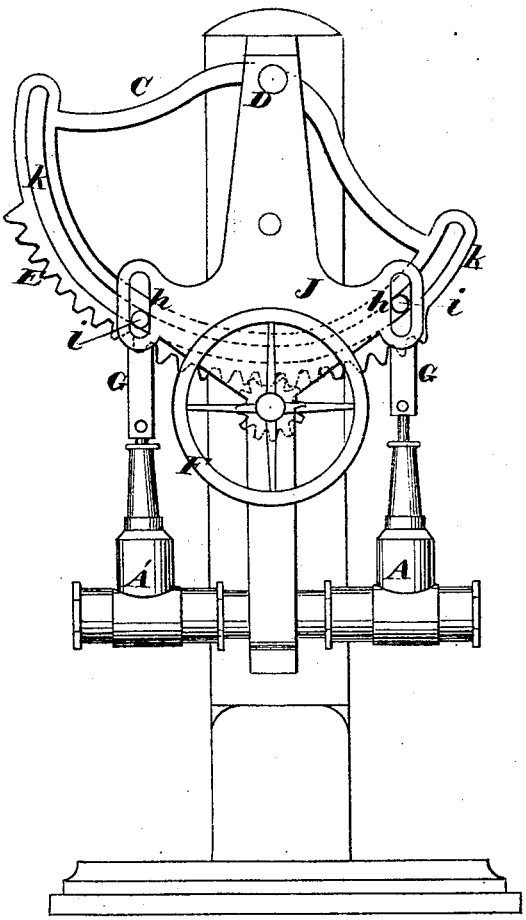


Fig. 2.

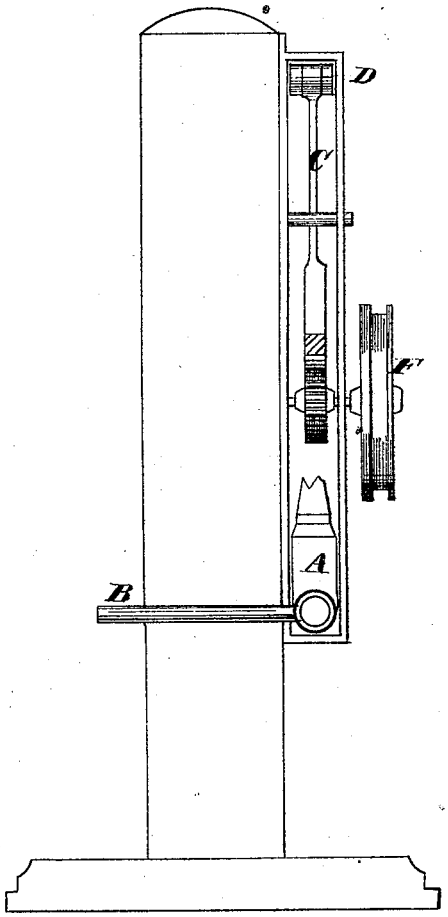
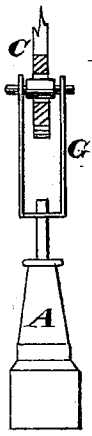


Fig. 3.



Witnesses

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PHILIP HINKLE, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN DEVICES FOR OPERATING THROTTLE-VALVES.

Specification forming part of Letters Patent No. **167,099**, dated August 24, 1875; application filed June 22, 1875.

To all whom it may concern:

Be it known that I, PHILIP HINKLE, of San Francisco city and county, State of California, have invented an Improvement in Operating Elevator and other Valves; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to a novel device which may be employed to operate elevator and other valves where it is necessary to open one and close another valve at the same time. It consists of a slotted segment formed on different centers, and the stems of the valves are moved by this slot. The outer edge of the segment is provided with teeth, and a pinion mounted upon the axle of an operating rope pulley serves to turn this segment in either direction, as the case may require.

Referring to the accompanying drawing for a more complete explanation of my invention, Figure 1 is a front elevation of my device. Fig. 2 is an edge view. Fig. 3 shows the manner of connecting the valve-stem with the segment.

A A′ are two chambers, within which suitable valves work. I have shown my invention as adapted to a hydraulic elevator, and I find the valve known as the "coffin" valve to be very efficient. The chamber A receives water from a supply-pipe, and when its valve is opened the water passes into the elevator-cylinder through a pipe, B. When it is necessary to discharge the water from the cylinder the valve at A′ is opened and the valve at A is closed, these operations being simultaneous. In order to operate these valves I employ a slotted segment, C. The middle part of this segment forms a curve, of which the center of construction is also the center of motion D. The two ends of the segment are arcs of circles which are considerably smaller, for a purpose hereafter described. A rack, E, is formed upon the outer edge of the segment, and this meshes into a pinion upon the shaft of the rope-wheel F. The rope from this wheel passes up through the elevator-cage in the usual manner, and by turning this wheel in one direction the segment will be moved to one side, while, by turning it in the opposite direction, it will be moved to the opposite side.

The method of operating these valves by this segment is as follows: Yokes G extend upward from the upper ends of the valve-stem, and have cross-bars *i* in their upper ends provided with friction-rollers. The outer ends of these cross-bars extend through vertical slots *h* in guide-plates *j*, so as to insure a vertical movement of the valve-stem and prevent any derangement of the packing. The middle section of the cross-bars are also provided with friction-rollers, and the lower part of the segment passes through the yokes G, so that the friction-rollers will lie within the slot in the segment.

The operation will then be as follows: When the segment stands with its middle part below the axis of motion D, the pins *i* of the two valves will lie in the slot of the segment just at the ends of the curve which is formed from that center, and both valves will be closed and the cage stationary; but when the wheel F is turned so as to move the segment in one direction, the curve *k*, being a smaller arc of a circle, will raise the valve upon that side like a cam as it passes beneath the pin *i*. The opposite valve will remain stationary because the arc which is passing its pin is formed on the circle of motion. In the same manner, when the segment is turned back again to a central point, both valves will be closed and the cage stopped, and when the segment is turned still farther, the opposite valve will be opened and the water allowed to pass out to the proper receptacle or to a wasteway. A pin or stop, L, serves as a stop against which the sides of the segment strike, and are prevented from moving too far.

It will be readily seen that a straight bar having its upper side beveled in opposite directions might be made to work the valves in the same manner, but it would not be as convenient.

By this construction I am enabled to open my valves with a direct motion and control the supply of water with accuracy.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The segment C, formed in a continuous

curve of two or more different centers, in combination with the valves of an elevator, so that the valves shall be alternately opened and closed by moving the segment from side to side about its center of motion, substantially as and for the purpose described.

2. The stationary guide-plate *j* with its slots *h*, in combination with the yokes G and pins *i* of the valve-stems and the slotted segment C, the whole constructed to operate substantially as and for the purpose herein described.

3. In combination with the slotted segment C, constructed as shown, and provided with the toothed rack E, the operating pinion and rope-wheel F and the safety-stop L, substantially as herein described.

PHILIP HINKLE.

Witnesses:
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