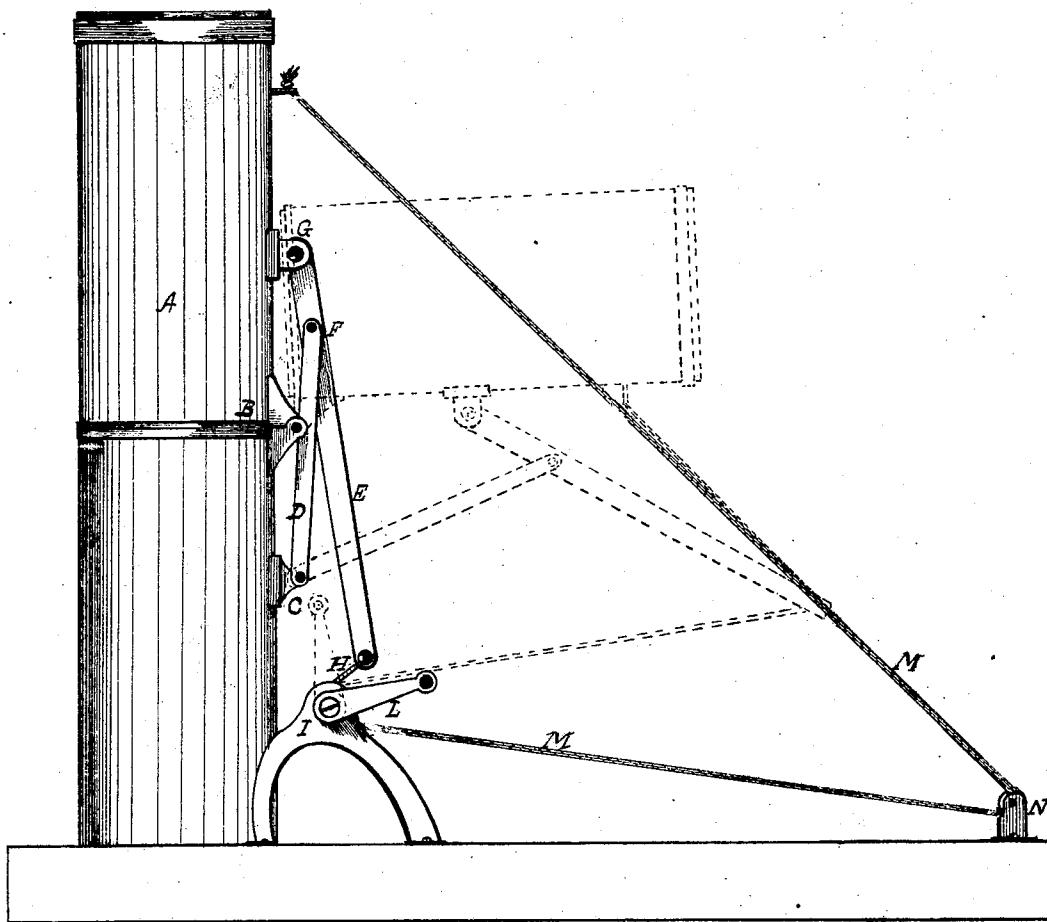


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Improvement in Devices for Lowering and Raising  
Steam Boat Chimneys.

No. 123,896.

Patented Feb. 20, 1872.



Witnesses

James S. Kay.

Harry C. Titler.

Inventor.

Charles Hawthorn,

Robert Hawthorn,

by their Attorneys

Barwell Christy & Co.

# UNITED STATES PATENT OFFICE.

CHARLES HAWTHORN AND ROBERT HAWTHORN, OF ALLEGHENY, PENN.

## IMPROVEMENT IN DEVICES FOR LOWERING AND RAISING STEAMBOAT CHIMNEYS.

Specification forming part of Letters Patent No. 123,896, dated February 20, 1872.

### SPECIFICATION.

*To all whom it may concern:*

Be it known that we, CHARLES HAWTHORN and ROBERT HAWTHORN, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Devices for Raising and Lowering the Smoke-Stacks of Steamboats; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming part of this specification, which is a view of our improvement.

Our invention consists in the construction of devices for raising and lowering the smoke-stacks of steamboats when passing under bridges, by means of which this operation, heretofore a tedious and difficult one, can be performed with ease and celerity.

To enable others skilled in the art to make and use our invention, we will describe its construction and mode of operation.

The stack A is composed of two parts, hinged at any convenient point, as at B, the hinge or connection being at the rear side. At a short distance below the joint of the stack is a projection, C, to which is hinged the swinging arm D, the outer end of which is loosely riveted to the lever E, at F. The upper end of the lever E is in like manner attached to the lug G on the upper part of the stack A, and lower end is fastened to a rope, H, which extends forward and is secured to the windlass I. The windlass is operated by a crank, L. Attached to the windlass and running around it in the opposite direction is a guy-rope, M, which passes back to the after part of the deck of the boat, around the pulley-block N, and from thence up to or near to the top of the stack A, where it is fastened. As the ropes H and M run around the windlass in opposite directions,

whenever it is operated one will unwind while the other is winding up.

The operation of lowering the stack is as follows: The windlass I is turned so as to wind up the rope M and pay out the rope H. This draws back the stack A to the position shown by dotted lines, and presses down the short arm of the lever E, the fulcrum of which, being shifted by the swinging of the arm D, assumes the position shown by dotted lines, thereby raising the long arm of the lever and taking up the slack of the rope H.

When it is desired to raise the stack, the windlass is turned the other way, causing the rope H to be wound up, thereby drawing the long arm of the lever E forward and downward. This causes the short arm to rise and push up the stack A.

Instead of the windlass I, a small capstan, or other suitable winding apparatus may be used. The ropes H M may be fastened together at their inner ends, instead of being fastened to the windlass, so as to form one line throughout.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The lever E and arm D, with a windlass and rope device I H, when combined with a jointed smoke-stack A, substantially in the manner set forth.

2. The devices of the previous claim, in combination with the rope M, connected and co-operating therewith, substantially as set forth.

In witness whereof, we, the said CHARLES HAWTHORN and ROBERT HAWTHORN, have hereunto set our hands.

CHARLES HAWTHORN.  
ROBERT HAWTHORN.

Witnesses:

W. N. PAXTON,  
THOS. B. KERR.