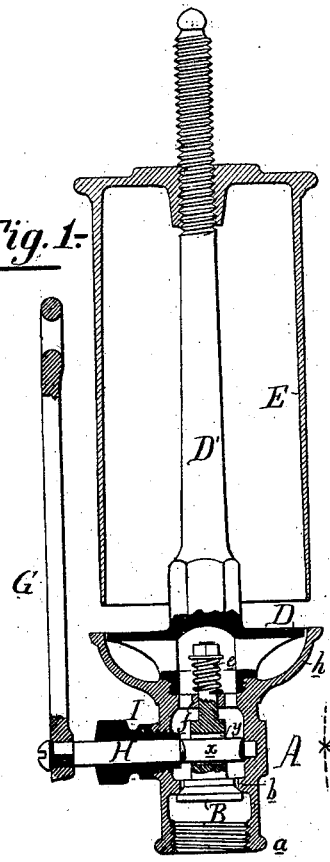
W. S. Cooper,

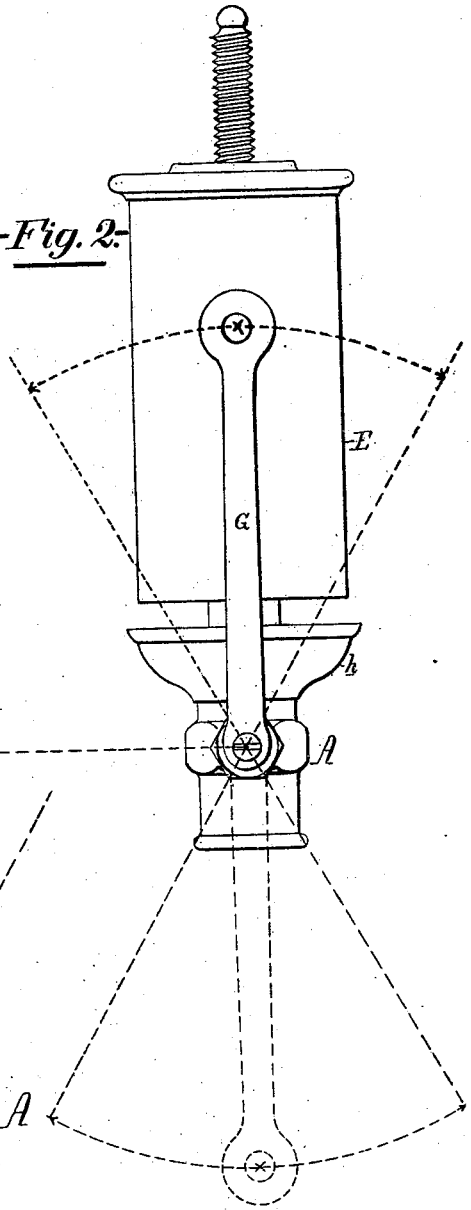
Steam Whistle.

No. 109388. Patented Nov. 22. 1870.

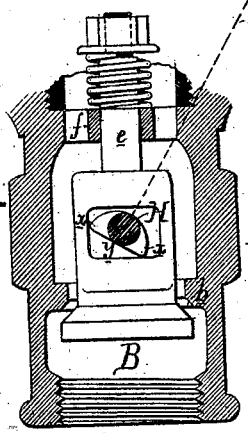
-Fig. 1.-



-Fig. 2.-



-Fig. 3.-



Witnesses { Jno. B. Harding
Thos. McElwain

W. S. Cooper
by his Attys
Howson and Sons

United States Patent Office.

WILLIAM S. COOPER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO COOPER, JONES & CADBURY, OF SAME PLACE.

Letters Patent No. 109,388, dated November 22, 1870.

IMPROVEMENT IN STEAM-WHISTLES.

The Schedule referred to in these Letters Patent and making part of the same.

I, WILLIAM S. COOPER, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an improved Steam-Whistle, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of a device, fully described hereafter, for operating the valve of a steam-whistle, the device being such as to permit the more ready adjustment of a whistle than when the latter is provided with the usual appliances for operating the valve.

Description of the Accompanying Drawing.

Figure 1 is a vertical section of a steam-whistle with my improvement;

Figure 2, an exterior view of the same; and

Figure 3, a vertical section, drawn to an enlarged scale, of part of the whistle.

General Description.

A is a tubular valve-chest, in the lower end of which is cut a screw-thread, for attachment to a pipe on a steam-boiler, and within this chest is formed a seat, *d*, for a conical valve, B, arranged to be opened downward, the valve having a stem, *e*, adapted to a perforated guide, *f*, in the chest, and this stem being surrounded with a spiral spring, which tends to close the valve to its seat by forcing it upward.

The chest is surmounted with a cup, *h*, within which is secured a disk, D, the steam, as usual, escaping through the narrow annular slit between the outer edge of this disk and the cup, and impinging against the lower edge of the inverted metal cup E, attached to stem D′ projecting from the disk D.

The above-named parts are too similar to those of ordinary steam-whistles to render a more minute description of them necessary.

In my improvement I employ an arm, G, having at its upper or outer end an eye for receiving the operating-cord or wire.

At the opposite end of the arm is a square opening, adapted to the square end of a spindle, H, which passes through a stuffing-box, I, into the valve-chest A.

The spindle is provided with two projections, *x x*, situated within an elongated opening, *y*, formed in the valve-spindle *e*, as best observed in the enlarged view, fig. 3, so that whether the arm G be moved to the right or to the left, one or other of the projections *x x* will be the means of depressing the valve; and hence the adjustment of the whistle will be a matter of less difficulty than when the arm has to be pulled in one direction only so as to depress the valve.

It will be observed that when the arm G is in a vertical position, the position of the projections *x x* is such that the valve will be raised to its seat by the spring, which also tends to retain the arm in a vertical position, owing to the flat bottom of the opening *y* in the valve-spindle being nearly in contact and parallel with the flat under side of the two projections *x x*.

The square end of the spindle adapted to the square hole in the arm permits the latter to be readily adjusted to the pendulous position shown by dotted lines in fig. 2, should circumstances require such adjustment.

Claim.

The combination in a steam-whistle of the spindle H and its projections *x*, with the elongated opening of the spindle *e*.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

WM. S. COOPER.

Witnesses:

WM. A. STEEL,

F. B. RICHARDS.