(No Model.)

T. PORTER.

SAFETY VALVE AND ALARM WHISTLE.

No. 415,469. Patented Nov. 19, 1889.

Fig. 1.

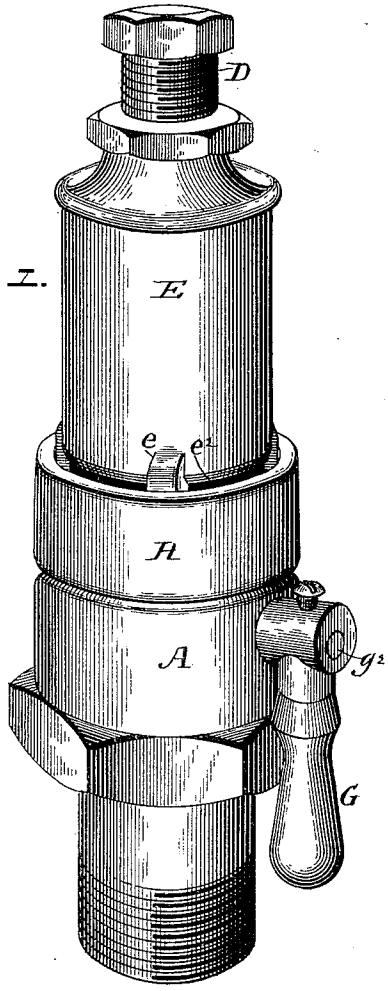


Fig. 2.

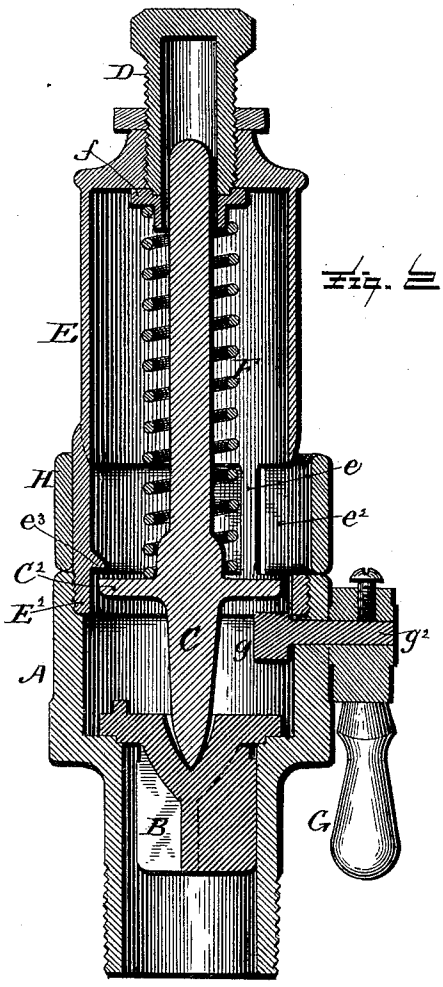
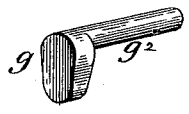


Fig. 3.



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N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

THADDEUS PORTER, OF WATERFORD, NEW YORK, ASSIGNOR OF ONE-HALF TO ALEXANDER H. McDOWELL, OF SAME PLACE.

SAFETY-VALVE AND ALARM-WHISTLE.

SPECIFICATION forming part of Letters Patent No. 415,469, dated November 19, 1889.

Application filed August 5, 1889. Serial No. 319,723. (No model.)

To all whom it may concern:

Be it known that I, THADDEUS PORTER, a citizen of the United States, residing at Waterford, in the county of Saratoga, State of New York, have invented certain new and useful Improvements in Safety-Valve and Alarm-Whistle Combined, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a combined alarm-whistle and safety-valve, in which said valve is retained upon its seat by means of a coiled spring suitably inclosed within the whistle; and the objects of my invention are to provide the spring-inclosing case with ports for the escape of steam, and the upper edge of said ports of acute form to produce a whistling alarm from said steam, and also to provide simple means to limit the motion of the valve and to direct the steam beyond the acute edge of the whistle. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a safety-valve and whistle constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a perspective view of the eccentric-lever to relieve the valve of pressure and permit the steam to operate the whistle.

In said drawings, A represents the valve-support of the device, constituting also the saucer of the whistle. Said support has its lower end screw-threaded for attachment to a steam-boiler in any suitable manner, and within the valve-support the valve B is placed. The latter is retained on its seat by the spindle C, the lower end of which rests in a depression in the top of said valve, and the upper end is guided by the interior surface of a hollow screw D, adjustably secured in the upper end of the whistle E. Said whistle is connected with its saucer by means of a ring E^2, screw-threaded on its periphery to engage with the screw-threaded inner surface of said saucer; and the lower edge of the whistle is connected to said ring by means of uprights *e*, formed integral with said whistle and ring, and between said uprights there are a series of ports e^2 for the escape of steam.

To direct the steam that may lift the valve B and escape, the spindle C is provided with a horizontal disk C^2 thereon, of a slightly-smaller diameter than the interior of the ring E, opposite which it is located, so as to leave an annular passage between them.

To retain the valve B upon its seat, a spring F is coiled around the spindle C and has one end resting upon the disk C^2, while the opposite end has an annular cap *f*, that bears against the lower end of the hollow screw D, and as said screw is evidently adjustable in its seat the length or tension of the spring can be regulated in accordance with the desired amount of steam to be carried in the boiler before the safety-valve is lifted and the alarm-whistle is sounded. The whistle E in this construction is used as a case for the spring. As it is often desirable to blow the whistle as an alarm or notice to persons even when the pressure in the boiler is lower than the point at which the safety-valve is set or to try if the valve is sticking, there is placed in the saucer of the whistle under the disk C^2 of the spindle a small eccentric-lever *g*, mounted upon a shaft g^2, that passes through the wall of said saucer and has secured to its outer end a hand-lever G, so that the engineer by tilting said lever will cause the point of the eccentric to lift the disk C^2 and its spindle and permit the valve B to leave its seat with the least amount of pressure of steam in the boiler; but to prevent the valve or its spindle from being lifted too high and interfering with the blowing of the whistle one of the uprights *e* at the bottom of said whistle is provided with an inwardly-projecting lug e^3, which limits the ascent of the spindle and its disk.

To modify the sound of the whistle, or to prevent it from making any noise without interfering with the escape of steam or the valve of the device as a safety-valve, a loose ring H is placed around the ports of the whistle and made to rest upon the edge of the saucer A thereof. The upper edge of the ring is higher than the lower edge of the whistle, and when the ring is in that position steam will escape without causing the device to operate as a whistle.

Having now fully described my invention, I claim—

1. The combination of a safety-valve, its retaining-spindle having a disk C^2 and an annular passage around it for the passage of steam, and a spring through which said spindle passes, with a steam-whistle bell, the latter constituting a case for the spring, substantially as described.

2. The combination of a safety-valve, its retaining-spindle having a disk thereon, a steam-whistle bell having a ring and a series of standards for its support, with an inwardly-projecting lug upon one of the standards and projecting above said disk, substantially as and for the purpose described.

3. The combination of a safety-valve, its retaining-spindle, and spring around said spindle, and a steam-whistle bell constituting the spring-case and having a ring and a series of standards for its support, with a disk upon the valve-spindle forming with said ring an annular passage to direct the steam, substantially as described.

4. The combination of a safety-valve, its retaining-spindle having a disk and spring, a whistle-bell constituting the casing of said spring, an eccentric-lever within the saucer of the whistle under the disk of the spindle, and a handle upon said lever, substantially as described.

5. The combination of a safety-valve, its retaining-spindle and a spring, and a whistle-bell with a removable ring resting upon the edge of the saucer of the whistle, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THADDEUS PORTER.

Witnesses:

ALEXANDER H. MCDOWELL,

CHAS. R. BUTTON.