E. HOENOW.

STEAM SIREN.

APPLICATION FILED JAN. 22, 1906.

916,707. Patented Mar. 30, 1909.

Fig. 1.

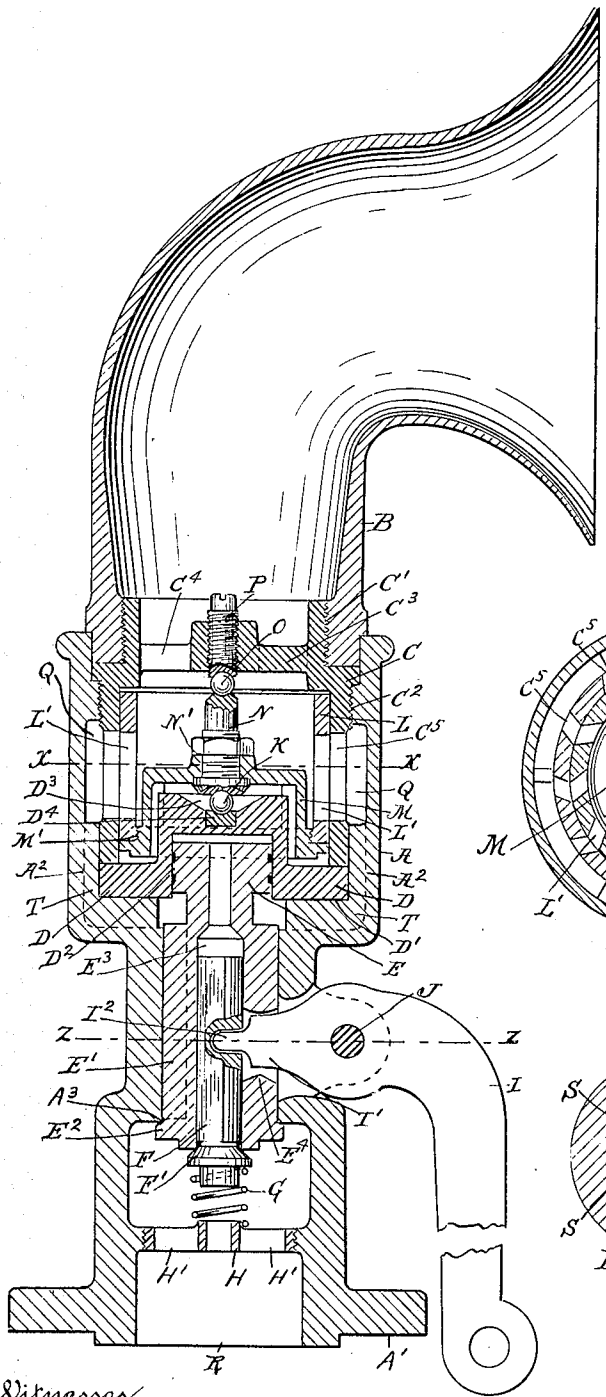


Fig. 2.

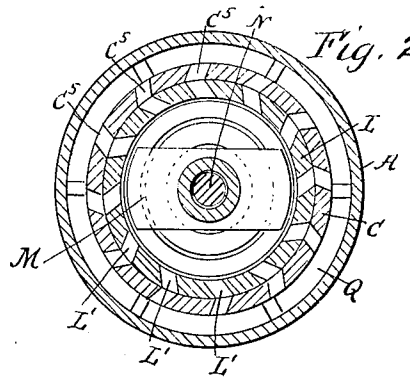
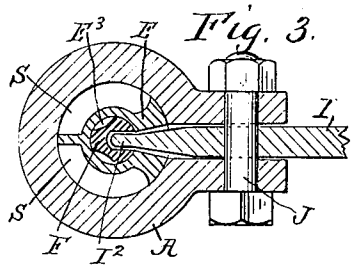


Fig. 3.



Witnesses
Wm. Badge.
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UNITED STATES PATENT OFFICE.

EMIL HOENOW, OF GLENDALE, NEW YORK.

STEAM-SIREN.

No. 916,707. Specification of Letters Patent. Patented March 30, 1909.

Application filed January 22, 1906. Serial No. 297,139.

To all whom it may concern:

Be it known that I, EMIL HOENOW, citizen of the United States, and resident of Glendale, borough of Queens, in the county of Queens and State of New York, have invented certain new and useful Improvements in Steam-Sirens, of which the following is a specification.

My invention relates to steam sirens, and the object is to provide a whistle of this class which will be more perfect in operation and more durable, and to simplify the construction of the valve so that the same may be easily opened under a high pressure of steam.

Referring to the drawings which form part of this specification, Figure 1, is a vertical sectional view of my improved siren. Fig. 2, is a cross sectional view of the same on line x—x of Fig. 1, and Fig. 3, a cross section through the valve and casing on line Z—Z of Fig. 1.

A indicates a tube which is provided with a flange A′ at its lower end by which it may be attached to a steam conduit.

B, indicates the bell or horn of the whistle which is screwed on to the circular casing C, by a screw thread at C′. The casing C, is secured to the tube A, by a screw joint at C^2, and thereby serves to hold the disk D, firmly in place across the steam passage by clamping it between the lower end of the casing C and the ribs T of the casing A, as shown, forming a joint at D′ below which a conduit for steam is formed as indicated by the dotted line A^2.

Formed in the bottom of the disk D is a cylindrical recess D^2, in which a piston E is fitted, which is made integral with the valve stem E′, and on the lower end of said valve stem is located the main valve E^2 which seats on the tube A at A^3. The valve stem E′ is provided with a central passage E^3 which extends throughout its length, and located in the lower part thereof is a valve stem F having a valve F′ which is adapted to close the lower end of the passage E^3. The valve F′ is held in position by a spring G which embraces its lower end as shown, and in turn rests upon a bridge piece H provided with openings H′ for the flow of steam therethrough.

The lever I is fulcrumed on and held in place by the bolt J as shown, and one end passes through an opening in the casing and engages with both the main valve stem E′ and the auxiliary valve stem F, and is adapted to operate the same as will more fully appear hereinafter.

On the upper end of the disk D is a depression D^3 in the bottom of which is located some Babbitt or similar bearing metal D^4 and supported by the same is an anti-friction bearing ball of metal K, which serves as the lower bearing of the open ended cylinder L, which is screwed to and supported on the spider-like hanger M, at M′. The hanger M is provided with an opening at its center which is threaded to engage with the pivot post N, which is secured in its place by a lock nut N′. The lower end of the pivot post N is provided with a depression which fits over one side of the ball K, which ball acts as a pivot on which the hanger M and the cylinder L rotate within the casing C. The upper end of the pivot post N is provided with a depression in which the ball O, fits and is held by the lower end of the screw P, which is held in the spider casting C^3 of the casing C, as shown. The spider C^3 forms openings C^4 to allow the steam to pass to the steam bell.

It will be noticed that the pivot post N and the screw P and the balls K and O and the wearing parts of the bearings may be easily removed and replaced by new parts at a very small expense, and that the other operating parts may be readily removed for inspection or repairs, which is a valuable feature of the construction.

The casing C is provided with openings C^5 formed at an angle to the radii of said casing. The openings L′ which are located in the cylinder L are also set at an angle to the radii of the cylinder and at an angle opposite to the angle of the openings in the casing C, and this formation is such that the steam in flowing through from the annular chamber Q to the openings C^4, will cause the cylinder L to rotate very rapidly, thereby alternately opening and closing the passages formed by the openings C^5 and L′ and setting up sound waves.

In operating the device, the steam is admitted at R, and by operating the lever I, the auxiliary valve F′ is forced away from its seat in the stem E′ and the steam flows through the passage E^3 above the piston E, which is almost as great in area as the area of the main valve E^2, and thereby relieves the pressure from the main valve E^2 almost entirely, so that a further movement of the

lever I, will cause the main valve to be opened by reason of the contact of the part I′ with the valve stem at E^4, while the auxiliary valve F′ is held open by the extreme end of the lever I^2.

The steam flows through the main valve and the passages S—S formed by the casing and valve stem, to the passages indicated by dotted lines A^2 and formed by the ribs T, T, in the casing A and the disk D and casing C, as will be clearly understood, to the annular chamber Q, through the openings C^5 and L′ and C^4 to the horn and thence to the atmosphere. The steam in flowing through the said openings is free to flow under the hanger M, so that the same is balanced, and the pressure on the pivot ball bearing is thereby relieved. By releasing the lever I, the auxiliary valve will immediately close and trap a small amount of steam above the piston E, so that the main valve will close very easily which prevents the said valve from wearing out or hammering.

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

1. A steam siren comprising, a tube having a valve controlled passage and an annular chamber, the inner wall whereof is circular and provided with openings set at an angle to the radii of said inner wall; a hollow open ended cylinder to fit within said chambered end having openings in the side wall corresponding to said openings in the inner wall of said chamber and inclined at an angle opposed to the angle of the openings in said inner wall; pivotal mountings for said cylinder consisting in a pivot post the ends whereof are cupped, anti-friction balls located in the cupped ends of said post, a spider-like hanger engaging said cylinder and threaded on said post, suitable locking device for locking said hanger on said post when adjusted, a spider casting provided with a threaded perforation, a screw in threaded engagement with said perforation in said spider casting and having a cupped end to seat the upper of said balls; and suitable means for opening and closing the valve controlled passage.

2. A steam siren comprising, a tube having a valve controlled passage and an enlarged internally ribbed end; a disk to rest across said passage to form laterally extended passages in conjunction with the ribs in said tube; a circular casing fitted within said tube over said disk to form an annular chamber and having in the side openings set at an angle to the radii of the casing to form passages from said chambers; suitable means for stationarily securing said circular casing to said tube; an open ended cylinder to fit within said tube having in the side openings to correspond with said openings in the inner wall of said chamber said openings being inclined at an angle opposed to the angle of the openings in said chamber; pivotal mountings for said cylinder consisting in a centrally located pivot post, a hanger engaging said cylinder to support the same and mounted on said post by screw threaded engagement therewith, suitable locking devices for locking said hanger in position on said post; and suitable means for opening and closing the valve controlled passage.

3. A steam siren comprising, a tube having a valve controlled passage and an enlarged internally ribbed end; a disk to rest across said passage to form laterally extended passages in conjunction with the ribs in said tube; a circular casing fitted within said passage over said disk to form an annular chamber and having in the side openings set at an angle to the radii of the casing to form passages from said chamber; suitable means for stationarily securing said circular casing to said tube; an open ended cylinder to fit within said tube having in the side openings to correspond with openings in the inner wall of said annular chamber said openings being inclined at an angle opposed to the angle of the openings in said chamber; pivotal mountings for said cylinder consisting in a pivot post the ends whereof are cupped, anti-friction balls located in the cupped ends of said post, a spider-like hanger engaging said cylinder and threaded on said post, suitable locking devices for locking said hanger on said post when adjusted, a spider casting provided with a threaded perforation, a screw in threaded engagement with said perforation and having a cupped end to receive the upper of said balls; and suitable means for opening and closing the valve controlled passage.

Signed at New York city in the county of Kings and State of New York this 21st day of December A. D. 1905.

EMIL HOENOW.

Witnesses:

FRANK M. ASHLEY,

OTTO ARNOLD, Jr.