

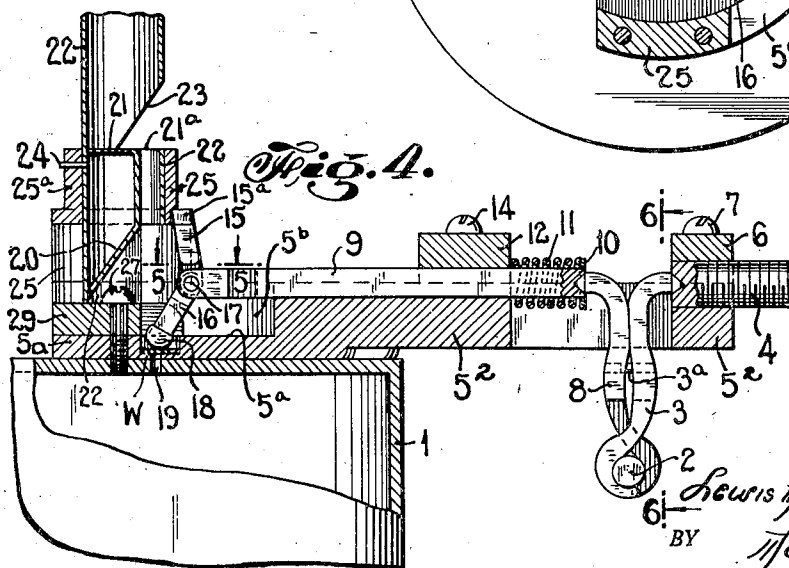
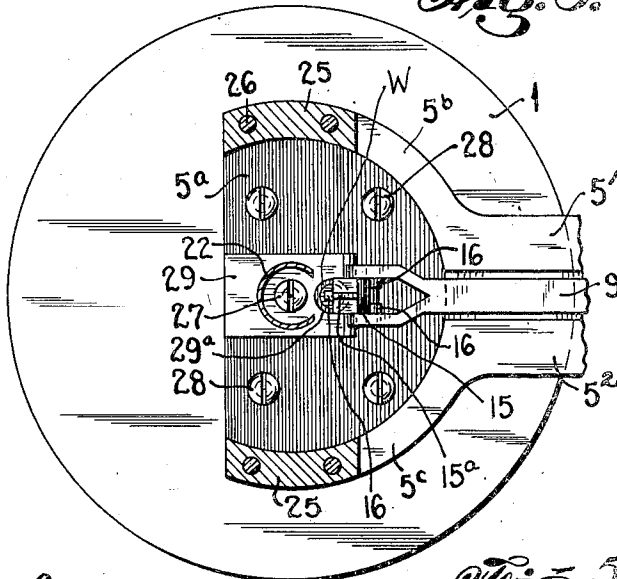
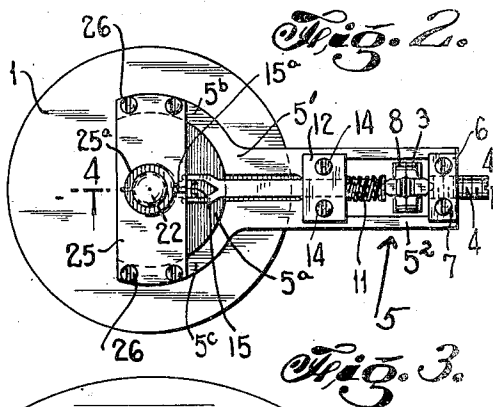
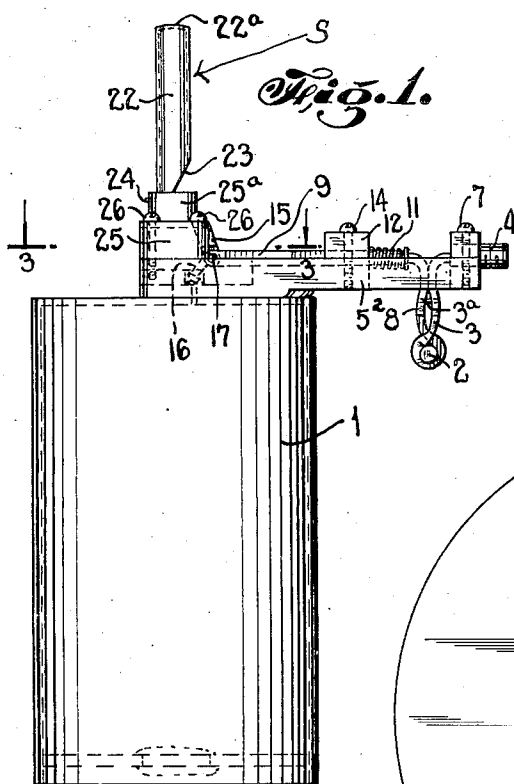
March 17, 1936.

L. M. FRANKLIN

2,034,179

FIRE ALARM

Filed Feb. 18, 1935



INVENTOR.
Lewis M. Franklin
BY Joseph Blum
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,034,179

FIRE ALARM

Lewis M. Franklin, New York, N. Y.

Application February 18, 1935, Serial No. 6,948

5 Claims. (Cl. 116—106)

My invention relates to a new and improved fire alarm.

One of the objects of my invention is to provide an improved fire alarm of the whistle type.

Another object of my invention is to provide a compact and simple device whereby a loud and prolonged sound can be secured by means controlled by a fusible member.

Another object of my invention is to provide a device of this type, whereby the melting of the fusible member will cause a compressed gas or the like to operate the whistle alarm.

Another object of my invention is to provide a simple, compact and efficient unit of this type which occupies little space, and which can be installed conveniently on ships, in houses, etc.

Other objects of my invention will be set forth in the following description and drawing which illustrate a preferred embodiment thereof, it being understood that the above statements of the objects of my invention is intended to generally explain the same without limiting it in any manner.

Fig. 1 is a side elevation of the improved device.

Fig. 2 is a top plan view of Fig. 1.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view on the line 4—4 of Fig. 2.

Fig. 5 is a sectional view on the line 5—5 of Fig. 4.

Fig. 6 is a sectional view on the line 6—6 of Fig. 4.

Referring particularly to Fig. 4, this shows a casing 1 which is made of any suitable metal or other material and which may have a removable top if desired. However, I prefer to make the top of the casing 1 integral with the body thereof. Said casing 1 can contain any suitable compressed gas, such as air, or carbon dioxide, or nitrogen, or any non-inflammable or fire-extinguishing gas.

A member 5, made of any suitable metal or other material, has outer spaced arms 5¹ and 5², which have rear laterally curved extensions 5b and 5c, integral with a flat web 5a. Said web 5a is connected to the top of casing 1, by means of screws 28. The two parallel arms 5¹ and 5² of the member 5 are integral with a suitable cross member, at the outer or free ends of said arms 5¹ and 5².

A whistle-supporting member 25, of inverted U-shape, is mounted upon the extensions 5b and 5c, by means of screws 26.

A metal member 29 is located between the ver-

tical legs of the member 25. Said member 29 is connected to the web 5a of the member 5, by means of a screw 27.

A whistle S, made of any suitable metal or other material comprises a member 22, having a cylindrical shape or other suitable shape, and having an upper closed end 22a. The member 22 is held within a flange 25a of the member 25, by means of a pin 24 or by any other suitable means. The member 22 is provided with a bottom rigid vane 20 which makes an angle of about 30° with the vertical axis of the member 22. Said member 22 is likewise provided with a rigid and horizontally disposed vane 21, which may be integral with vane 20 so as to define a closed space having a cross-section which is partially angular. The width of vane 21 is less than the diameter of tube 22, so as to provide an outlet 21a. This outlet may be rectangular in shape.

The member 22 is provided with an opening having a rim 23, the plane of said rim 23 being inclined to the axis of the member 22.

As shown in Figs. 3 and 4, the member 29 is provided at its right-hand end with a cut-out or recess 29a which is vertically aligned with a recess which is formed in web 5a.

A washer W made of rubber or other suitable packing material, is located in said recess of the web 5a, and said washer W closes the opening 19 of the top of the casing 1, and said washer W also closes a similar superposed opening which is provided in the web 5a. This washer W is equivalent to a valve device.

The bottom of the member 22 rests upon the member 29. A plunger 9 is slidably mounted in a bearing which is provided by a part of the member 5, and by an upper member 12 which is connected to the arms of the member 5 by means of screws 14. Said plunger 9 has a head 10 and a compression spring 11 tends to force the plunger 9 outwardly and to the right of the inoperative position which is shown in Fig. 4.

An externally threaded screw 4 is mounted in a threaded bearing which is provided by the outer lateral end of the member 5, and by a supplemental top member 6 which is connected to the member 5 by means of screws 7. The outer end of the screw 4 is provided with a suitable notch so that it can be turned and adjusted.

Arms 3 and 8, made of any suitable metal or other material, are normally held in the position shown in Fig. 4, by means of a pin 2, which is made of any suitable fusible material.

As shown in Fig. 6, the bottom end of the arm 3 is fork-shaped. The bottom end of the member

8 is of reduced width and it can pass between the bottom ends of the arm 3. The arm 3 is also provided with a horizontal pin 3a, which can enter a suitable bore which is provided in the arm 8. The upper end of the arm 3 fits removably within a recess which is provided in the inner end of the screw 4. Said arms 3 and 8 are detachable from the apparatus.

As shown in Fig. 2, the arms 3 and 8 are located between the spaced arms 5¹ and 5² of the member 5. At the inner end of plunger 9, arms 15 and 16 are turnably connected to said plunger by means of a pivot member 17. For this purpose, and as shown in Fig. 5, the inner end of the plunger 9 is yoke-shaped.

The arm 16 is yoke-shaped, and the lower end of the arm 15 is located between the spaced parts of the arm 16.

When the plunger is in the inoperative position shown in Fig. 4, the ball-shaped head 18 of the arm 16 presses the washer W downwardly, so that it prevents the escape of gas from the casing 1.

The upper end of the arm 15 is provided with a lug 15a of reduced width, which enters a notch which is provided in the adjacent part of the member 25.

The operation of the device is as follows:—

When the fusible member 2 is melted, the pressure of the plunger 9 against the arm 8 causes said arm 8 to rock until pin 3a releases arm 8, so that both arms 3 and 8 can fall out of the apparatus. This action is a quick or snap action and it is produced by the spring 11. The plunger 9 is then moved to the right of the inoperative position shown in Fig. 4, so that the lug 15a is pulled out of contact with the member 25. This movement of the plunger 9 likewise moves the head 18 of the arm 16 away from the washer W, so that the washer W is free to rise under the pressure of the compressed gas. The compressed gas then moves upwardly and some of it passes out of the member 22, through the narrow slit-like opening 21a.

One of the advantages of the improved apparatus is that it can secure a shrill and prolonged whistling sound, with the use of a relatively small casing.

For convenience it is assumed that the apparatus is held in the vertical position shown in Fig. 4, although the device could be held in any position.

When the compressed gas moves upwardly through the opening 19, and through the corresponding opening in the web 5a, some of the compressed gas enters the upwardly tapered space which is defined by the vane or diaphragm 20, and the adjacent part of the inner wall of the member 22. The slit-like opening 21a has a width which is much less than the length thereof, so that the current of gas which is blown through this slit-like opening produces the desired whistling sound.

As the current of gas passes through the opening 21a, some of said gas enters the upper part of the member 22, which is closed at its top. This produces a vibrating air column within the upper part of the member 22, which is located above the vane or partition 21.

The result is to produce a shrill and prolonged whistle alarm.

I have shown a preferred embodiment of my invention, but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:

1. A whistle fire alarm comprising a casing, said casing having a wall which is provided with an outlet opening, a washer for closing said opening, a whistle associated with said casing and adapted to be operated by gas which issues out of said opening, control means for holding said washer in sealing position, said control means including a fusible element and a spring for operating said control means upon the melting of said fusible element, so that the control means then release said washer.

2. A whistle fire alarm comprising a casing, said casing having a wall which is provided with an outlet opening, a whistle associated with said casing and adapted to be operated by gas which issues out of said opening, a washer for sealing said opening, a slidable plunger, bearing means for slidably holding said plunger, said bearing means being connected to said casing, a pair of arms pivoted to said plunger, one of said arms being adapted to hold the washer in sealing position, an abutment member connected to said casing, the free end of the other arm abutting said abutment member when the first-mentioned arm holds the washer in sealing position, a spring for moving said plunger so that the second arm is released from the abutment member and the first mentioned arm is moved away from said washer, and release means effective at a predetermined temperature for releasing said plunger.

3. A whistle fire alarm comprising a casing, said casing having a wall which is provided with an outlet opening, a whistle connected to said casing and adapted to be operated by the gas which issues from said opening, control means for controlling said opening, a spring for actuating said control means so as to expose said opening, and latch means for said control means, said latch means comprising a pair of contacting arms which are turnable relative to each other, and a fusible element which holds said arms against said relative turning, the relative turning of said arms permitting the movement of the control means.

4. A whistle fire alarm comprising a casing, said casing having a wall which is provided with an outlet opening, a whistle associated with said casing and adapted to be operated by gas which issues from said opening, bearing means connected to said casing, a plunger slidably mounted in said bearing means, said plunger having a first arm and a second arm pivotally connected thereto, a washer for closing said opening, the first arm holding said washer in sealing position in a predetermined position of said plunger, an abutment member connected to said casing, the outer end of the second arm abutting said abutment member in said predetermined position of the plunger, a spring for moving said plunger away from said predetermined position so as to cause the release of the washer, a second and adjustable abutment member, a pair of latch arms located between the plunger and said second abutment member, a fusible element connected to said latch arms and holding them against relative movement, the melting of said fusible element permitting the relative movement of said latch arms so as to permit the spring to move the plunger away from said predetermined position.

5. A whistle fire alarm comprising a casing, said casing having a wall which is provided with an outlet opening, a whistle associated with said casing and adapted to be operated by gas which issues from said opening, bearing means connected to said casing, a plunger slidably mounted

in said bearing means, said plunger having a first arm and a second arm pivotally connected thereto, a washer for closing said opening, the first arm holding said washer in sealing position in a
5 predetermined position of said plunger, an abutment member connected to said casing, the outer end of the second arm abutting said abutment member in said predetermined position of the plunger, a spring for moving said plunger away
10 from said predetermined position so as to cause the release of the washer, a second and adjustable

abutment member, a pair of latch arms located between the plunger and said second abutment member, a fusible element connected to said latch arms and holding them against relative movement, the melting of said fusible element permitting the relative movement of said latch arms so
5 as to permit the spring to move the plunger away from said predetermined position, one of said latch arms having a pin which enters a bore in the other latch arm.

LEWIS M. FRANKLIN.

10