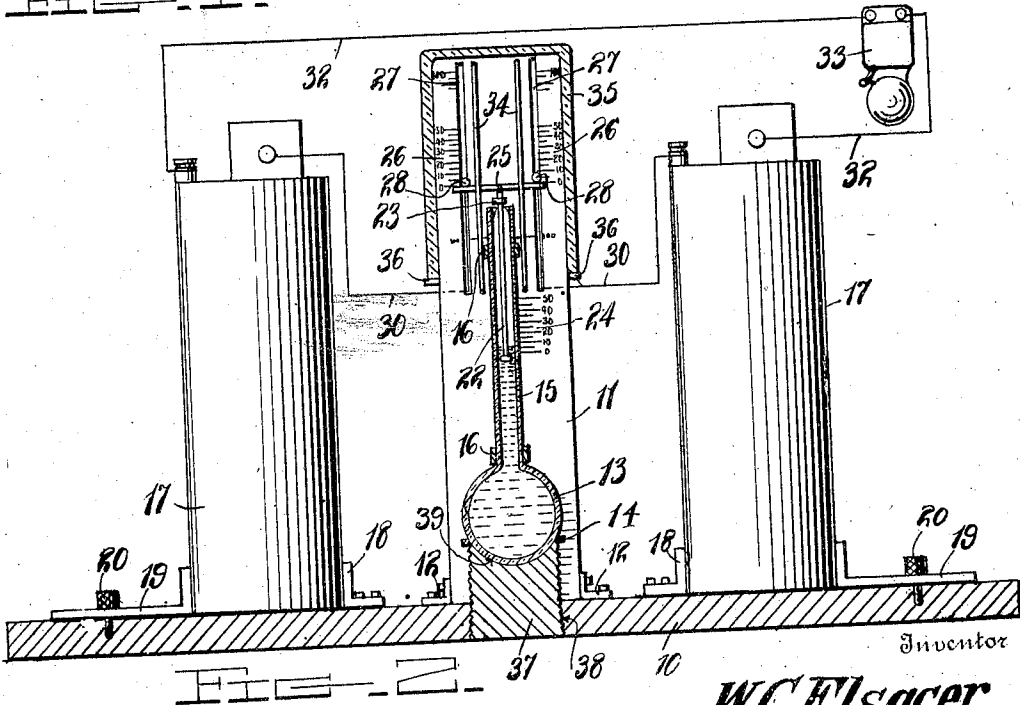
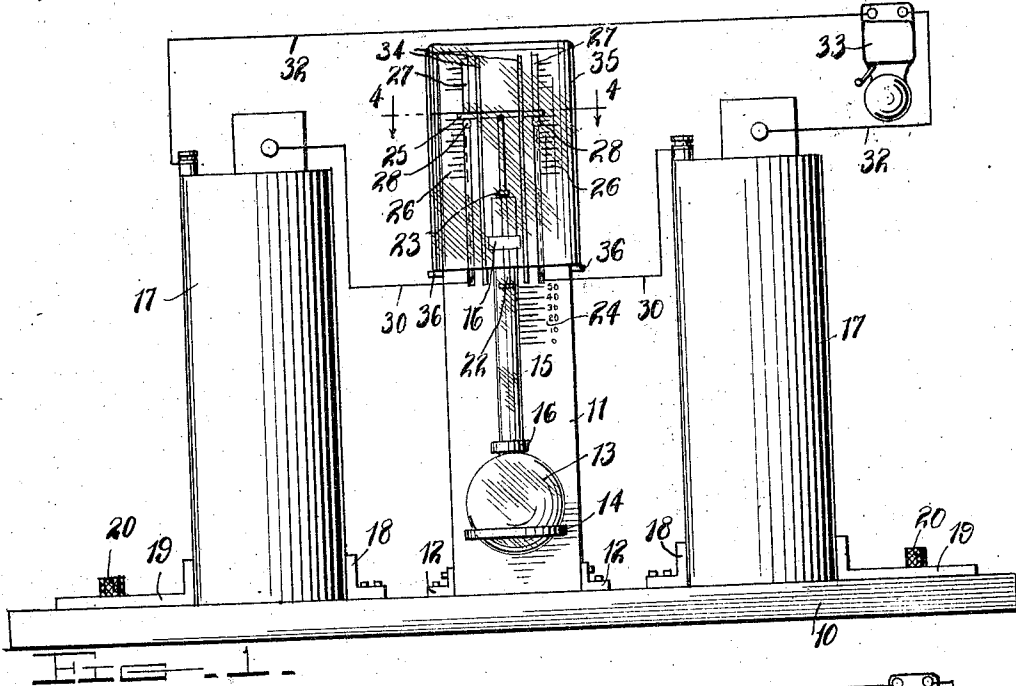


W. C. ELSACER.
TEMPERATURE ALARM.
APPLICATION FILED AUG. 29, 1911.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 1.

1,042,539.



Inventor

W.C. Elsacer.

Witnesses

W.C. Fildering
Jno. E. Kurch.

By *[Signature]*

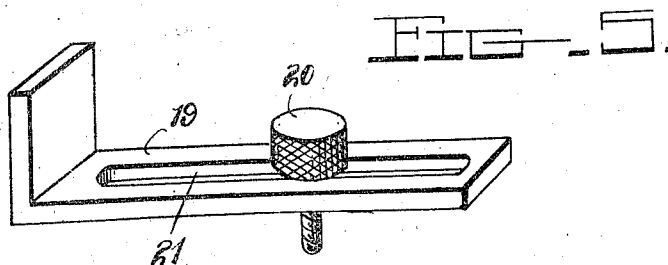
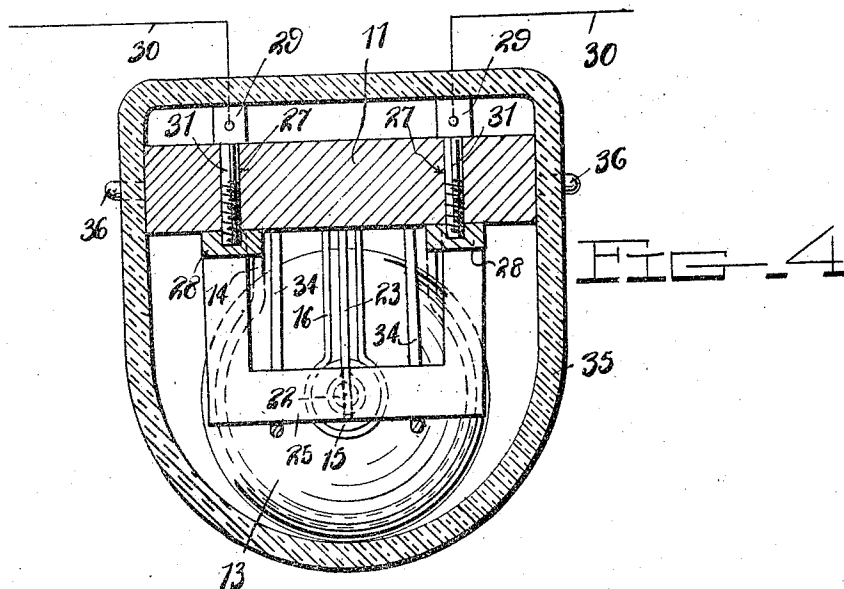
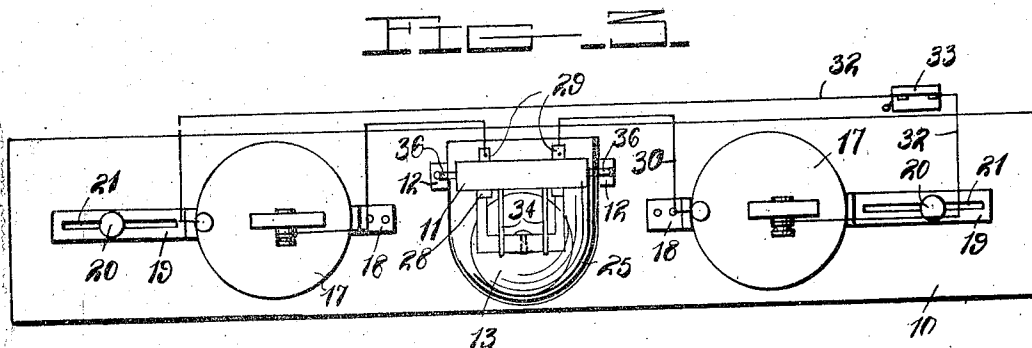
Attorneys

W. C. ELSACER.
TEMPERATURE ALARM.
APPLICATION FILED AUG. 29, 1911.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 2.

1,042,539.



Witnesses

W. C. Fielding
J. M. E. Burch

Inventor

W. C. Elsacer.

By *Charles H. Burch*

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM C. ELSACER, OF GRAND RAPIDS, MICHIGAN.

TEMPERATURE-ALARM.

1,042,539.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed August 29, 1911. Serial No. 648,574.

To all whom it may concern:

Be it known that I, WILLIAM C. ELSACER, a citizen of the United States, residing at Grand Rapids, in the county of Kent, State of Michigan, have invented certain new and useful Improvements in Temperature-Alarms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to temperature alarms and the object of the invention is to provide an alarm in which the expansion of an expansible element such as mercury will operate to automatically sound an alarm when the device is affected by a predetermined temperature.

Another object of the invention is to provide an improved and simple form of temperature device in which a circuit will be closed by the expansion or contraction of a body of mercury located within a tube, so as to sound an alarm in case the temperature drops to a point which would be liable to injure or destroy fruits or berries or in case the temperature rises to a point to sound an alarm in case of fire or for the purpose of indicating hot boxes upon machinery.

With these and other objects in view the invention consists of certain other combinations and arrangements of parts, as will be hereinafter more fully described and claimed, it being a still further object of the invention to provide a device which will not be likely to get out of working order.

In the drawings:—Figure 1 is a front elevation of my improved alarm device adapted to operate a signal upon a reduction in temperature, the wiring being arranged in diagram. Fig. 2 is a longitudinal sectional view but showing the device arranged for use in operating an alarm due to a rise in temperature and especially for use in connection with journal boxes. Fig. 3 is a top plan view of the invention. Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1. Fig. 5 is a detail view of one of the cell supporting members.

Referring to the drawings in detail, there is shown a base 10 in Fig. 1 adapted to support a vertical upright 11 forming the back of the instrument, said upright being supported in brackets 12 secured to the base and adapted to retain a mercurial bulb 13 thereon through the medium of supporting rings

14 engaged therearound, while the tube or neck portion 15 of the bulb into which a body of mercury is placed is also retained in position by the rings 16 which serve to support the bulb spaced from the upright and permit the access of air to the full area of the tube and bulb. Batteries or cells 17 are also mounted upon the base 10, being retained thereon at opposite sides of the upright by means of stationary bracket members 18 and slidable bracket members 19 of angular form, the members 19 being adapted to be clamped in position by a thumb screw 20 engaged through a slot 21 in the bracket member 19 in each instance thereby serving to rigidly hold the cells in position.

A movable rod or plunger 22 preferably constructed of wood or aluminum loosely fits within the upper end of the neck 15 which is slightly reduced in size at its upper end to serve as a guide to insure proper vertical movement of the rod but not to friction its movement and said rod is further retained in a vertical position by guide eyes 23 which are secured to the upright 11 and which slidably receive the said rod. The upright 11 is graduated as shown at 24 to accord with the lower end of the rod and the point at which it floats upon the top of the fluid within the neck or tube 15 so as to permit proper adjustment of the device to operate at a predetermined temperature. In order to accomplish this purpose, a contact bar 25 is pivoted in a horizontal position to the upper end of the plunger, and projects toward opposite sides thereof while adjacent to the end portion of the contact bar 25 the upright 11 is graduated as shown at 26 to regulate the temperature at which the device will operate with respect to the indications upon the graduations at 24 by the height of the fluid within the tube 15.

Vertical slots 27 are provided in the uprights 11 upon opposite sides of the plunger 22 and movable contact plugs 28 are mounted therein, said plugs comprising a terminal head 29 which are connected by the conductor wires 30 to opposite poles of the cells 17 and are provided with threaded shank portions 31 to which the plugs 28 in the form of binding nuts are secured and adapted to engage the outer face of the upright to hold the plugs at any predetermined position and contact by the cross bar 25 thereby close the circuit through the conductor wires 30 and the conductor wires 32

leading from the opposite pole of the cells to an alarm bell or device 33. Guide rods 34 are also mounted upon the upright upon opposite sides of the plunger 22 inwardly of the slots 27 and similarly disposed in vertical positions spaced apart in parallel relation so as to retain the plunger and its contact bar from lateral movement or rotation while a cap 35, preferably of glass or other transparent material is fitted over the upper end of the upright to protect the operating parts and be supported upon lugs 36 projecting from the sides of the upright, the cap extending down sufficiently far to prevent the entrance of rain or the like therebeneath to interfere with the operation of the mechanism.

When the device is in use for notifying and operating a signal at a decrease in temperature, the cross bar 25 is positioned above the contact plugs or lugs 28 and when it is desired to use the device to indicate a rise or increase in temperature, the cross bar is positioned below said plugs and similarly regulated.

In order to permit the use of the device in connection with journal boxes or the like to indicate a hot box, a screw threaded plug 37 may be employed and threaded into an aperture 38 in the base 10 to support the bulb or reservoir 13 upon its upper concaved end 39 without removing the supporting ring 14. This plug is constructed of metal so as to rest upon the boxing and to convey the heat thereof to the expansible fluid and operate the signal in the same manner as if the fluid were expanded by heat in case of fire.

The device is simple in construction, efficient in operation and economical to manufacture. It will also be seen that by reason of the pivotal connection of the cross bar 25 with the upper end of the plunger 22, positive closing of the circuit is accomplished even though the plugs or contact members 28 may not be in horizontal alignment, which action would not take place if the cross bar were rigid.

I claim:—

1. In a temperature alarm, a vertical upright, a vessel supported by said upright and adapted to contain an expansible fluid, a movable contact member operated thereby, said upright being provided with a pair of vertical slots spaced apart in parallel relation, contact plugs adjustable vertically in said slots, an electrical circuit, an alarm device in the circuit, said plugs forming terminals of said electric circuit, said contact

member being adapted to engage with said adjustable contact plugs to close the circuit therethrough and guide rods carried by the upright and beneath which said movable contact member operates.

2. In an alarm device, a base, an upright mounted thereon, means for holding said upright upon the base, said base having a threaded opening beneath the upright, batteries mounted upon the base, a reservoir having an upwardly extending neck portion of reduced diameter, said reservoir and neck portion being adapted to contain a fluid for contraction and expansion, a series of rings retaining said reservoir and neck portion in position, a plunger movable in the upper portion of the neck and carrying a contact member in the form of a cross arm, graduations arranged adjacent the lower end of the plunger and adjacent each end of the cross arm, guiding means for the plunger, contact members capable of adjustment toward and away from the cross arm, an electrical circuit including an alarm device and a source of electrical energy adapted to be closed through the movable cross arm and adjustable members and a heat conducting plug threaded in the opening in the base in contact with the reservoir.

3. In an alarm device, a base, an upright mounted thereon, means for holding said upright upon the base, batteries mounted upon the base, a reservoir having an upwardly extending neck portion of reduced diameter, said reservoir and neck portion being adapted to contain a fluid for contraction and expansion, a series of rings retaining said reservoir and neck portion in position, a plunger movable in the upper portion of the neck and carrying a contact member in the form of a cross arm, graduations arranged adjacent the lower end of the plunger and adjacent each end of the cross arm, means to prevent lateral movement of the plunger and cross arm, contact members capable of adjustment above and below the cross arm and an electrical circuit including an alarm device and a source of electrical energy adapted to be closed through the movable cross arm and adjustable members.

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

WILLIAM C. ELSACER.

Witnesses:

ROBERT W. GIBSON,
C. W. PLANT.