

ALARM.

1,042,244.

Patented Oct. 22, 1912.

Fig. 1. A detailed technical drawing of a mechanical apparatus, likely a weighing scale or a measuring device. It features a vertical frame with a horizontal beam (10) and a vertical rod (6). A curved scale (22) is on the left, and a curved arm (18) is at the top. A large circular weight (12) is attached to the beam. The apparatus is mounted on a base (1) and has various numbered components (1-36) indicating its parts.

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To all whom it may concern:

Be it known that I, ARE LELAND MACKLIN, a citizen of the United States, residing at Bryant, in county of Jay and State of Indiana, have invented certain new and useful Improvements in Alarms, of which the following is a specification.

My invention relates to an improvement in alarms, and more particularly to that class of alarms used for indicating the drop in temperature whereby steps can be taken to prevent the destruction of fruits or crops by frost.

The object is to provide sensitive plates which will be affected by the temperature for causing a hand or indicator arm to be actuated, which arm when brought to a certain point will make contact with an electrical circuit for giving an alarm.

The invention consists in certain novel features of construction and combinations of parts which will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal vertical sectional view of the receptacle in which the apparatus is mounted; Fig. 2 is a detail view, partly in section, of the post and sleeve carrying the electrical contacts; and Fig. 3 is a detail sectional view of the mercury cup on one end of the pivoted arm.

A represents the receptacle, which can be mounted or placed where it is desired to have an alarm given upon the drop of the temperature to a certain degree. A partition 1 is formed in the receptacle, and a tube 2 is connected to the partition, to which is connected a zinc plate 3. A steel bar 4 is connected to the ends of the zinc plate 3, and connected to the underside of the steel bar 4 and at the end thereof, is a zinc plate 5. An opening 6 is formed through the partition, through which a rod 7 extends, the rod passing through the uppermost zinc plate 3, and through the steel bar 4, and is connected to the zinc plate 5. A standard 8 is mounted upon the partition 1 upon the upper side thereof, upon which the trunnion 9, connected to the bar 10, is mounted, the bar 10 being balanced by the trunnion upon the upright 8. The rod 7 passes loosely through the arm 10, and has a nut 11 thereon which bears against the upper side of the bar. A weight 12 is connected to one end of the arm 10, which tends to throw the other end or terminal of the arm upward.

The arm is kept from moving upward by the nut 11 and the zinc plate 5. Upon the contraction of the zinc plates 3 and 5, the rod 7 will rise, causing the arm 10 to move upward.

A post 13, provided with screw threads, is mounted upon the upper side of the partition 1 and is provided with a screw threaded nut 14 which carries a sleeve 15. Binding posts 16 are connected to the sleeve, and are suitably insulated by insulation 17. Wires 18 are connected to the binding posts, and contacts 19, 19 are connected to the binding posts, the wires leading to any suitable alarm, not shown. A mercury cup 20 is pivotally mounted on the arm 10, and is provided with mercury 21 therein, so that upon the movement upward of the arm 10, the contacts 19 will be caused to enter the mercury cup 20 when the arm has moved to the height or elevation at which the contacts are located upon the rod 13. When the contacts enter the mercury cup 20 they will come in contact with the mercury 21, creating a circuit so that an alarm will be given. The object in providing the mercury cup with mercury is to always insure contact, thereby overcoming any objections in case one contact should be longer than the other.

A degree scale 22 is mounted within the receptacle, and a pointer 23 on the sleeve 15 can be placed opposite the desired degree, so that the sleeve can be moved along the post until the pointer is opposite the degree which is the lowest that the temperature can fall before steps should be taken to protect the crops. Openings 24 are formed in the lower portion of the receptacle A, which are screened by means of screens 25, and protected by plates 26 against the ingress of anything which would interfere with the operation of the zinc plates.

It will be seen that this invention can be adapted for use in numerous instances, as for example, in fruit orchards, it is often necessary in the spring of the year to build fires to prevent the frost from affecting the buds, and therefore by the provision of an apparatus of this character which will give an alarm when the temperature has fallen to a certain indicated degree, steps can be taken to build the fires or pursue any other course which is deemed advisable to prevent the destruction of the buds by frost.

Having fully described my invention, what

I claim as new and desire to secure by Letters Patent, is:—

1. In an alarm, the combination with a receptacle, of a post, a sleeve adjustably
5 mounted upon the post, a plurality of electrical contacts carried by the sleeve and insulated therefrom, zinc plates mounted in the receptacle, a rod connected thereto, an arm pivotally mounted in the receptacle
10 having engagement with the rod whereby upon the contraction of the zinc plates the rod will be actuated, to a position to connect the electrical contacts for forming a circuit.

2. In an alarm, the combination with a
15 receptacle having a partition, of zinc plates connected together and supported by the partition, a rod connected to one of the plates, and passing through the partition, an arm pivotally mounted upon the partition,
20 said rod having engagement with the arm, a post, and a plurality of electrical contacts mounted upon the post and insulated therefrom, a mercury cup upon the arm into which the electrical contacts dip upon the
25 contraction of the zinc plates, which permits the arm to move toward the electrical contacts to such an extent that the electrical circuit is completed.

3. In an alarm, the combination with a receptacle having a partition, of a thermostat mounted beneath the partition, a post
30 mounted on the partition, a plurality of electrical contacts connected to the post, an arm mounted on the partition in position to be actuated by the thermostat, and a contact
35 connected to the arm in position to connect the electrical contacts and form a circuit as the thermostat is actuated in one direction.

4. In an alarm, the combination with a receptacle, of a post, a sleeve adjustably
40 mounted on the post, a plurality of electrical contacts carried by the sleeve and insulated therefrom, a thermostat mounted in the receptacle, an arm mounted in position to be controlled by the thermostat, and a
45 mercury-cup carried by the arm into which the contacts dip when the thermostat is actuated in one direction, and thus form an electrical circuit.

In testimony whereof I affix my signature, 50
in the presence of two witnesses.

ARE LELAND MACKLIN.

Witnesses:

ISRAEL M. MACKLIN,
ALLIE J. MACKLIN.