W. L. LARSON.

RAIN ALARM.

APPLICATION FILED AUG. 10, 1916.

1,253,986.

Patented Jan. 15, 1918

Fig. 1.

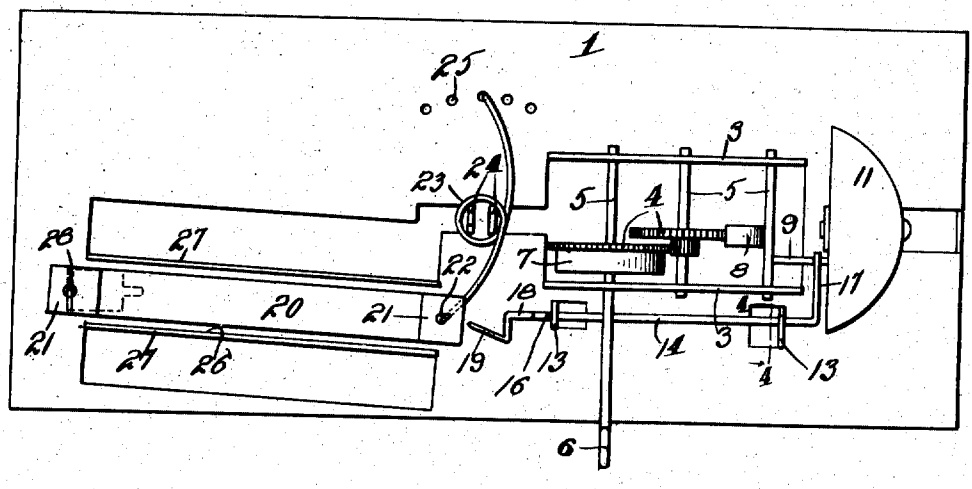


Fig. 2.

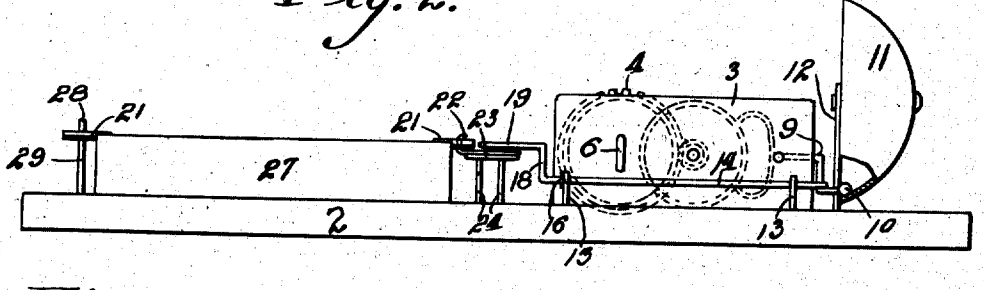


Fig. 4.

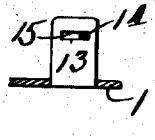
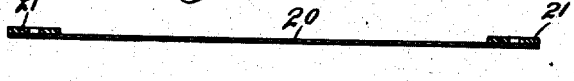


Fig. 3.



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RAIN-ALARM.

1,253,986. Specification of Letters Patent. Patented Jan. 15, 1918.

Application filed August 10, 1916. Serial No. 114,219.

To all whom it may concern:

Be it known that I, WILHELM L. LARSON, a citizen of the United States, residing at East Grand Forks, in the county of Polk and State of Minnesota, have invented certain new and useful Improvements in Rain-Alarms, of which the following is a specification.

This invention relates to certain new and useful improvements in rain alarms.

The primary object of this invention resides in the provision of a rain alarm which may be of extremely simple construction and operation and composed of the minimum number of parts.

Another object of the invention resides in the provision of a rain alarm in which will be included a holding strip formed of paper or the like, whereby the operative parts may be readily released as the holding strip is weakened by the first drops of rain falling upon the same.

A further object of the invention resides in the provision of an alarm of this character in which the locking mechanism, holding strip and releasing string will be arranged in a novel manner upon a special form of support.

With these general objects in view and others that will appear as the nature of the invention is better understood, the same consists in the novel combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings forming a part of this application, and in which like-designating characters refer to corresponding parts throughout the several views:—

Figure 1 is a top plan view of the complete device set for operation.

Fig. 2 is a side elevation of the same with a portion of the bell broken away for the sake of clearness.

Fig. 3 is a longitudinal section of the holding strip, and

Fig. 4 is a detail section on the plane of line 4—4 of Fig. 1, looking in the direction indicated by the arrows.

Referring more in detail to the drawings, 1 designates the supporting plate or base which has its opposite longitudinal edges 2 bent downwardly. The supporting plate or base has a pair of supporting ears 3 bent upwardly from the same to form supports for a train of gears 4, the shafts 5 provided for said gears 4 being rotatably mounted in said ears 3. One of the shafts 5 is provided with an extension 6 forming a winding stem for the spring 7 carried by said shaft 5. An escapement member 8 is also mounted upon one of the shafts 5 and engaged with one of the gears 4, the last-mentioned shaft 5 also having a suitably bent arm 9 projecting therefrom in a direction opposite to the escapement member 8, said arm 9 having a hammer 10 mounted thereon for engagement with the bell 11. The bell 11 is suitably mounted upon an ear 12 extended upwardly from said supporting plate or base 1 preferably adjacent one end of the latter.

A pair of supporting ears 13, extended upwardly from the supporting plate or base 1, outwardly of one of the supporting ears 3, serve to support the locking bar 14 engaged through the same. One supporting ear 13 is provided with a transverse slot 15 to permit horizontal swinging movement of the locking bar 14. The locking bar 14 is preferably square in cross section to prevent rotary movement of the same and longitudinal movement of the locking bar is prevented by a suitable pin 16 extended transversely through the same, forwardly of the ears 13. The rear end of the locking bar 14 is bent at an angle as shown at 17 and normally engaged with a bent portion of the arm 9 to prevent rotation of the shafts 5 and gears 4 under influence of the gears 7. The forward end 18 of the locking bar 14 is bent upwardly, then extended forwardly and turned at a right angle. The end is then bent at an acute angle as shown at 19 opposite one end of the releasing strip 20. The ends 21 of the releasing strip 20 are suitably reinforced as clearly shown in Fig. 3 and the bent end 22 of the spring 23 is engaged through the inner end 21, opposite the end 19 of the locking bar 14. The central or coiled portion of the spring 23 is engaged around a pair of supporting ears 24 and bent upwardly from the supporting plate or base 1, while the opposite end of the spring 23 is

suitably bent and engaged through one of the openings 25 formed in the plate or base 1. The strip 20 is extended longitudinally in the channel 26 formed by bending upwardly a pair of ears 27 from the plate or base 1 and the forward end of said strip 20 is mounted upon the reduced upper extremity 28 of a supporting ear 29 also bent upwardly from the plate or base 1 at the forward end of the channel 26.

It will be understood that all of the ears carried by the supporting plate or base 1 are bent upwardly from the same after making the proper incisions in the plate or base 1. The ears 24 are preferably positioned between the openings formed by cutting out and bending upwardly the ears 3 and one of the ears 27, thereby locating the ears 24 at the center of the supporting plate or base 1. The ears 27 are also preferably positioned at an angle to the longitudinal center of the supporting plate or base 1 to bring the inner end 21 of the strip 20 opposite the end 19 of the locking bar 14.

From the foregoing, it will be apparent that as the drops of rain fall upon the strip 20, and the strip becomes saturated, the strength of the same will be reduced sufficiently to permit the spring 23 to sever the same, the bent end 22 of said spring 23 engaging the bent end 19 of the locking bar 14 and swinging the same horizontally within the supporting ears 13 to withdraw the end 17 from engagement with the arm 9. The spring 7 will then cause rotation of the shafts 5 and gears 4 causing operation of the escapement member 8, the hammer 10 playing upon the bell 11 to sound the alarm.

It will be readily seen that this device is especially adapted for use in notifying a party as soon as the rain begins to fall in order that the windows may be closed and the device may be placed upon the sill just outside of one of the windows.

While the form of the invention herein shown and described is what is believed to be the preferred embodiment thereof, it is nevertheless to be understood that minor changes may be made without departing from the spirit and scope of the invention as claimed.

What I claim as new is:—

1. In a signal of the character described a base plate, a channel formed thereon, a strip arranged in the channel adapted to be broken, a spring mounted on the base and engaged with one end of the strip and normally held against movement thereby, an audible signal also mounted on the base plate, a motor for operating the signal, a locking bar operatively engaged with the motor to normally retain the same against rotation, the spring engaging the locking bar to release the motor to operate the signal upon breaking of the strip.

2. An alarm of the class described comprising a base, supporting members extended upwardly from said base, a bell mounted upon one of said supporting members, a train of gears, a means for operating said gears, a locking member normally engaged with the bell sounding means, ears extending from the base, certain of said ears forming a channel, a destructible member extended in said channel, supporting means for one end of said member, and a releasing spring engaged around the remaining ears and having one end adjustably secured in said base, the opposite end of said spring being engaged with the remaining end of said destructible member and adapted for engagement with said locking member when released to withdraw said locking member from said bell sounding means.

3. A rain alarm, including a flat base, a bell mounted thereon, a sounder normally engaged with said bell, means to operate said sounder, said means including a train of gears and a spring to actuate the same, a pair of brackets extending from the base and arranged in proximity to the train of gears, one of said brackets being provided with an elongated slot, a locking lever supported in said brackets and movable in said slot, said lever having one end thereof arranged to normally engage said sounder to hold the same inoperative, and means adapted at times to move said lever to a releasing position.

4. A rain alarm, including a base, a bell mounted thereon, a sounder normally engaged with said bell, means to actuate said sounder, a lever normally holding said sounder inoperative, means for moving said lever to a releasing position, said means including a destructible strip having one end thereof fastened to the base, ears struck up from said base, a spring coiled about said ears and having one end thereof secured to the base, the opposite end of the spring being bent to provide a hook adapted to be passed through the free end of the strip, the hooked end of the spring adapted, upon breaking of the strip, to engage the lever to move the same out of contact with the sounder.

5. A rain alarm including a base having a bell mounted thereon, supports extending up from said base, a train of gears mounted between said supports, a sounder normally engaged with said bell and adapted to be actuated by said gears, a pair of brackets arranged to one side of said support, a lever supported in said brackets, said lever being laterally movable and having an end thereof bent at right angles to normally engage the sounder whereby to hold the same inoperative, a pair of guides arranged in proximity to the opposite end of the lever, a destructible strip positioned between said

guides and having one of its ends fastened to the base, a pair of ears extending upwardly from the base, a spring coiled about said ears and having one end thereof secured to the base, the opposite end of the spring being bent to provide a hook adapted to be fastened to the free end of the strip.

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

WILHELM L. LARSON.

Witnesses:
M. J. NELSON,
LELA MOLBECK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."