

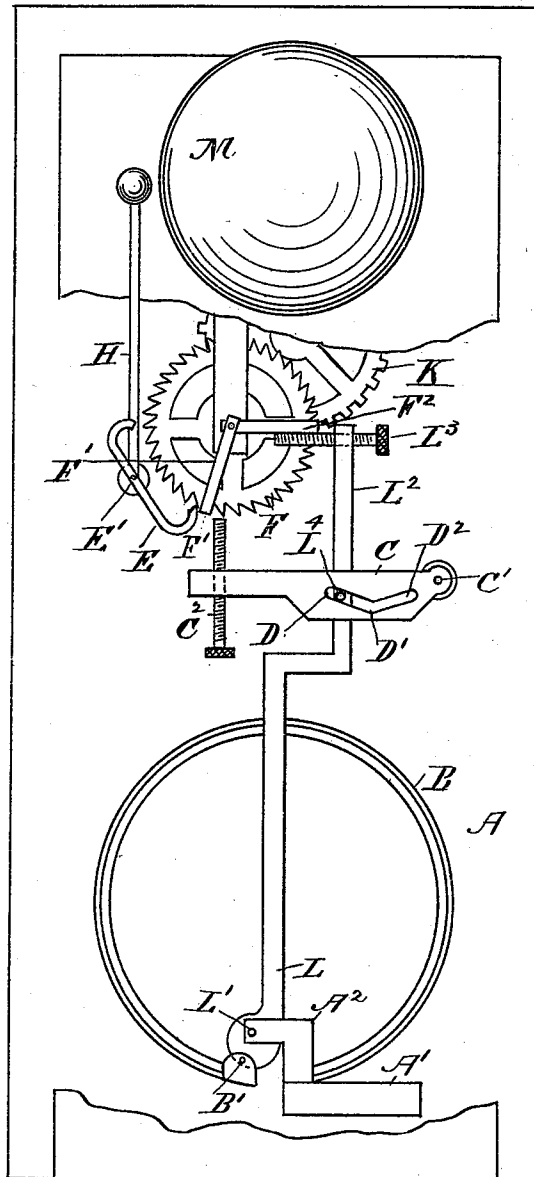
(No Model.)

2 Sheets—Sheet 1.

P. KRUMSCHEID.
THERMO MECHANICAL ALARM.

No. 496,519.

Patented May 2, 1893.



WITNESSES

Frank H. Parker.

Matthew M. Blunt.

FIG. 1.

INVENTOR

Philip Krumscheid

UNITED STATES PATENT OFFICE.

PHILIP KRUMSCHEID, OF BOSTON, MASSACHUSETTS.

THERMO-MECHANICAL ALARM.

SPECIFICATION forming part of Letters Patent No. 496,519, dated May 2, 1893.

Application filed May 20, 1892. Serial No. 433,756. (No model.)

To all whom it may concern:

Be it known that I, PHILIP KRUMSCHEID, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Thermo-Mechanical Alarms, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to an instrument for giving by purely mechanical means an alarm when the local temperature has exceeded certain limits, the object being to give a warning alarm, that is, a few blows on a bell, when the local temperature has slightly exceeded the desired maximum, and to give a continuous alarm when the temperature is becoming dangerously high. This object I attain by the mechanism shown in the accompanying drawings, in which—

Figure 1 shows most of the parts of my device in front elevation. Fig. 2 being a view similar to that shown in Fig. 1, except that the stop devices occupy different positions. Fig. 3 is a side elevation, showing the same parts as shown in Figs. 1 and 2.

In the drawings, let A represent the frame work or base to which I attach the several parts of my invention.

B, is a curved thermostat, consisting of two pieces of metal of different expansibility fastened together. One end of this curved thermostat is made fast to a block A', attached to the base A, the other end is connected by a pivot B' to a lever L, said lever L being pivoted at L' to a fixed bracket A². By this arrangement, it will be seen that a change of temperature in causing the curved thermostat to expand or contract will change the position of the pivot B', and cause the lever L to swing back and forth. At the upper end, L² of the lever L, I have a stop-pin L³, the use of which will be explained hereinafter.

C, is a horizontal swinging lever, pivoted at C' to a fixed part of the frame. This lever also has a stop-pin, as indicated by C².

D, D', D² is a cam slot made in the lever C, as shown. In this slot a pin L⁴, projecting from the lever L, works.

K, represents in a general way a clock movement operated by a spring or weight, as may be desired, and adapted to give motion to an

escapement wheel F, which, when in motion acts through the palette E, pivoted at E', and gives a vibratory motion to the hammer H, causing it to sound an alarm on the bell M. The arms F², F', are fixed to the shaft of the escape wheel F, and revolve with it, acting as stops when they come in contact with their respective stop pins L³ or C². The arm F' rotates in a plane outside of the plane that the arm F² rotates in, so that the arm F², though stopped by the pin L³ will pass the pin C² without stopping, as it will pass behind it, the pin C² only acting as a stop for the arm F', which rotates in its plane.

The operation of my device is as follows: Taking the position of the parts as shown in Fig. 1, if the temperature rises, then the thermostat B, acting upon the lever L, will throw it outward, that is, to the right until it occupies the position shown in Fig. 2, in which case it will be seen that the stop pin L³ will withdraw from under the stop arm F², the escapement wheel F will revolve and sound an alarm. This alarm will continue until the arm F' has made nearly a whole rotation, that is, until it comes in contact with the stop pin C². Now a continued rise of temperature will throw the lever L still farther to the right; this will cause the pin L⁴ to move in the cam slot D' D², so as to throw the lever C down, thus withdrawing the stop pin C² from the path of motion of the stop arm F', and thus the alarm will be continued indefinitely or until it is stopped by the person in charge.

I do not wish to confine myself to any particular form of thermostat, as there are a number that might be used in connection with my device.

I claim—

1. The combination of a thermostat,—the moving end of which is attached to the short arm of a lever, said lever being pivoted at L' to a fixed part of the device, the long arm of the said lever having a stop-pin L³ at its upper end, the stop-pin being adapted to engage an arm attached to one of the wheels of an alarm train,—and said lever and stop-pin as described: with an arm attached to one wheel of an alarm train, whereby said train is held or released, all substantially as and for the purpose set forth.

2. The combination of a thermostat,—
adapted to operate a lever, said lever having
near its upper end a pin L¹ adapted to oper-
ate in a slot made in a second lever in such a
5 manner as to cause the second lever to swing,
said swinging lever having at its outer end a
stop pin C², adapted to engage with an arm
F' attached to one wheel of an alarm train
whereby said train is held or released—and

levers and stop-pin as described: with an arm ro
F' attached to one wheel of an alarm train
whereby said train is held or released, all sub-
stantially as and for the purpose set forth.

PHILIP KRUMSCHEID.

Witnesses:

FRANK G. PARKER,
MATTHEW M. BLUNT.