

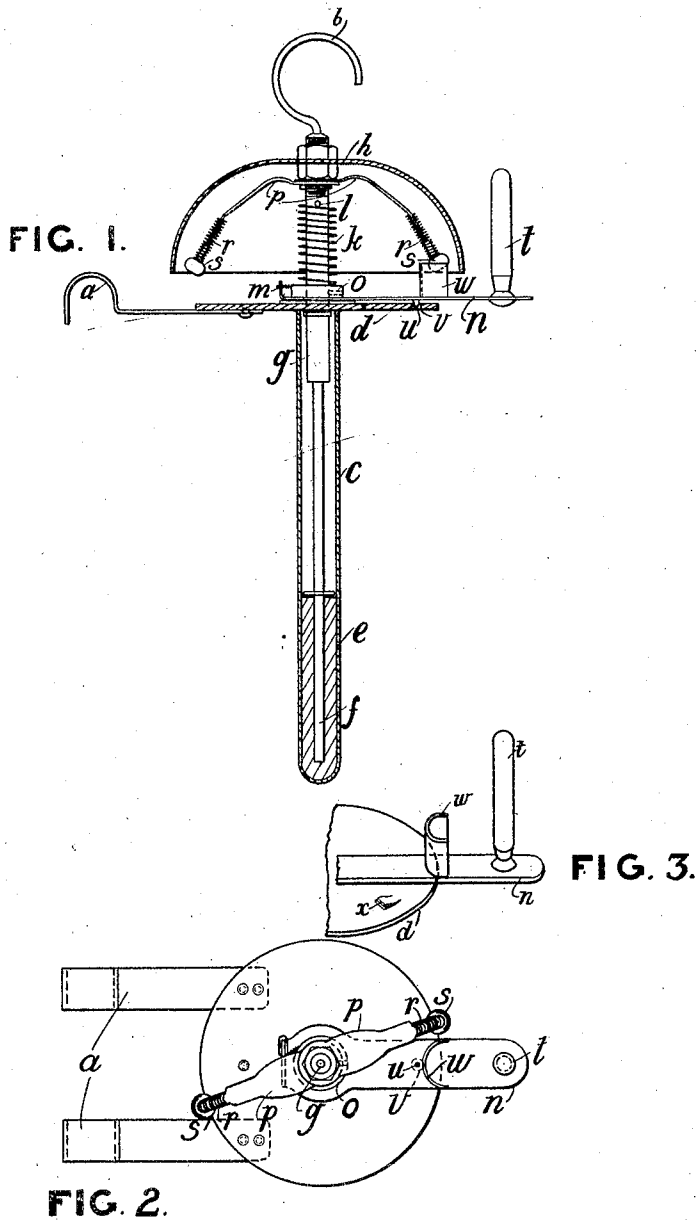
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TEMPERATURE ALARM APPARATUS

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UNITED STATES PATENT OFFICE.

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TEMPERATURE ALARM APPARATUS.

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To all whom it may concern:

Be it known that I, CLIFTON WEST, subject of the King of Great Britain, and resident of London, England, have invented certain new and useful Improvements in Temperature Alarm Apparatus, of which the following is a specification.

This invention relates to improvements in temperature alarm apparatus such as is commonly used for giving warning of the desired temperature of milk for example when the same is being heated so as to prevent what is commonly known as "boiling over," and the invention relates to that type of appliance comprising a rotatable spindle to which is attached a ratchet wheel that liberates tappet mechanism when the desired temperature of the milk is attained, due to the heat being sufficient to melt the fusible substance contained within a tube that contains and holds the aforesaid spindle stationary until that temperature is reached.

My improvements relate to this class of apparatus and are designed to secure a superior alarm to that heretofore obtainable and to simplify the construction of such apparatus so that the same may be produced at a reduced cost.

In order that the nature of the aforesaid improvements may be readily understood the same will be now more particularly described with reference to the accompanying drawing in which is illustrated an example of construction of the improved temperature alarm apparatus according to my invention, similar reference characters relating to like parts in all the figures thereof.

In the said drawing Figure 1 is a sectional elevation of the apparatus, Figure 2 a plan view of the apparatus with the dome of the bell removed.

The apparatus shewn in the drawing which is provided as is usual in this kind of device with lips *a* for engagement with the rim of a saucepan or the like and a hook *b* for suspending the device when the same is not in use comprises a tube *c*, preferably of copper, closed at its lower end and secured at its upper end to a disc *d*. The bottom of the tube *c* is filled with the fusible substance *e* aforesaid which melts when a predetermined temperature is attained and normally holds in a fixed position the central rod *f*, the lower end of which is embedded in the fusible substance *e* whilst its upper end *g* of

larger diameter passes upwardly through the disc *d* and supports the bell dome *h* to which it is rigidly attached. Encircling the said upper end *g* of the rod *f* is the helical spring *k* the upper end of which is attached at *l* to the rod *g* whilst its lower end is anchored to the pin *m* of the operating lever *n* which is loosely mounted on the rod *g* so as to be freely rotated thereon below the collar *o* fixed thereto, and over the upper face of the disc *d*. To the top of the rod *g* and within the dome *h* are attached a plurality of radiating arms *p*, two being shown in the drawing, which carry the strikers for the bell and are for this purpose formed of spring metal carrying at their ends the springs *r* to which the hammers *s* are attached.

It will be obvious from the construction described that the rotation of the operating lever *n* by means of its handle *t* will wind up the helical spring *k* and the lever *n* is maintained in this wound up or set position of the spring *k* shewn in Figure 1 by any suitable means such as for example the pin *u* depending from the lever *n* and engaging in an orifice *v* in the disc *d*.

An alternative method of retaining the spring *k* in the set position is shewn in Figure 3 wherein the disc *d* is shewn provided with a "struck-up" portion *x* which while obviously permitting rotation of the operating lever *n* to wind up the spring *k* resists any movement of the lever in the opposite direction.

The lever *n* carries a curved bracket *w* for a purpose hereinafter explained.

The operation of the improved alarm apparatus described above will be obvious but may be briefly indicated.

Assuming the parts to be in the position shewn in Figure 1 the device is hung on the rim of the saucepan by means of the hooks *a* with the tube *c* depending into the milk. On the desired temperature being attained due to the heat being sufficient to melt the fusible substance *e* the rod *f* is released and under the impulse of the spring *k* rotates rapidly thereby causing rapid rotation of the arms *p* whereby the hammers *s* come into engagement with the bracket *w* and are consequently swung smartly against the bell *h* on their release from this obstruction thus giving a most effective alarm.

It may be observed that with the arrangement above described all pawls and ratchet

gear are dispensed with and the construction of the appliance is therefore very much simplified and consequently the cost of production reduced.

5 What I claim is:—

1. Temperature alarm apparatus comprising a tube with a closed end a rotatable rod within said tube and its lower end fixed therein by a fusible substance, a spring encircling the upper end of said tube, one
10 end of said spring being attached to said rod, an operating lever to which the other end of said spring is anchored, a bell rigidly attached to said rod and a plurality of
15 radiating arms also attached to said rod and having hammers flexibly attached to their ends.

2. Temperature alarm apparatus comprising a tube with a closed end, a rotatable rod within said tube and its lower end fixed
20 therein by a fusible substance a spring encircling the upper end of said tube, one end of said spring being attached to said rod, an operating lever to which the other end of said spring is anchored, a bell rigidly at-
25 tached to said rod, a plurality of radiating arms also attached to said rod and having hammers flexibly attached to their ends and a bracket carried by said operating lever and forming an obstruction in the path of
30 said radiating arms.

In testimony whereof I affix my signature.

CLIFTON WEST.