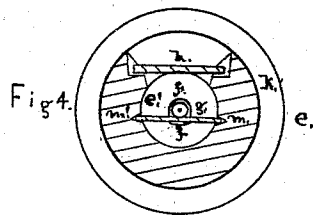
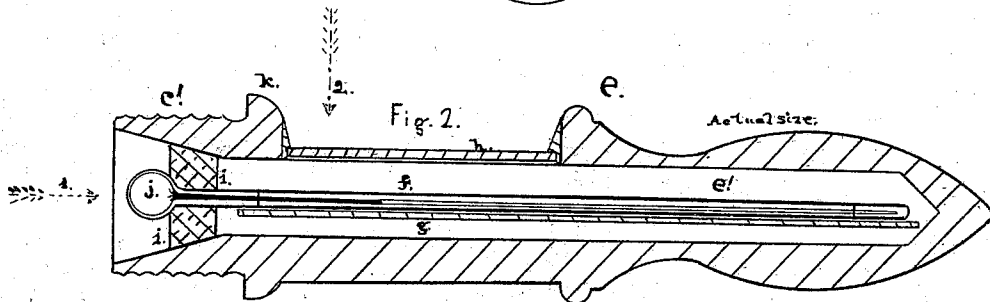
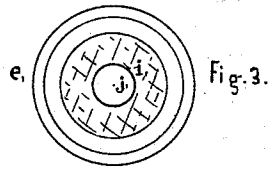
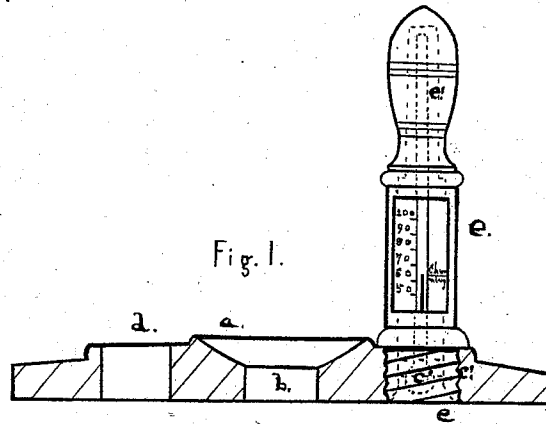


J. H. SMILEY.
Churns.

No. 147,988.

Patented Feb. 24, 1874.



Samuel J. Parker.
A. M. Lucas. } witnesses.

James H. Smiley.
Inventor.

UNITED STATES PATENT OFFICE.

JAMES H. SMILEY, OF CAROLINE, NEW YORK.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **147,988**, dated February 24, 1874; application filed February 5, 1874.

To all whom it may concern:

Be it known that I, JAMES H. SMILEY, of Caroline, Tompkins county, New York, have invented certain Improvements Designed to Facilitate the use of Thermometers in Churning, of which the following is a specification:

My invention relates mainly to the case of the thermometer, and to the place of its use. First, I make my case of wood with a hole in it, sufficiently large, when grooved in its sides, to admit the edge of the metallic register-plate, and I turn the outside, as figured and described, so as to be ornamental. Second, I cut out a portion of the side of the case thus made, and insert tightly a glass, that the degrees near the best churning-points may be read. Third, as all the parts of a churn are scalded with boiling water, it is necessary that the stem of the thermometer be long enough to reach above that degree of heat; and, as this renders it liable to be broken, I make the bore of my case longer than the mere churning-degrees require, and thus conceal the long stem in the top of my case. Fourth, as it is undesirable to have the contents of the churn rust the register-plate and foul the thermometer, I cut off that portion of the bore above the bulb by a partition of plaster-of-paris or similar material. Fifth, I make an aperture in the cover of churn, and and cut a screw-thread in the sides of it, and also a screw-thread on the lower end of my case, and thus screw my case in the cover of a churn.

Figure 1 is a view of my thermometer-case in a cover cut by a section. Fig. 2 is a longitudinal section of my case, showing its construction. Fig. 3 is a view looking into the bottom of the case, as shown by arrow 1, Fig. 2; and Fig. 4 is a transverse section at the line indicated by arrow 2, Fig. 2.

In Fig. 1, *a* is a churn-cover, with three holes in it—the hole *b* for the dasher, the hole *c* has one of my cased thermometers in it, and *d* is a plain hole, made for the the purpose of admitting a thermometer in any suitable case. The case *e* is seen by dotted lines to have the

stem of the thermometer high up beyond the aperture-plate *h*. In Fig. 2, the case is cut by a longitudinal section, with *f* the thermometer in the bore of the case, with register-plate *g* behind it, and the glass plate *h* before the requisite degrees of heat; and *i* is the plaster-of-paris partition, shutting the entrance to the bore of the case, just above the bulb *j*, and the turning of the case, screw, and other parts is also seen. In Fig. 3, *i* and *j* show the partition from below and bulb. In Fig. 4 the outer circular line *k* is the ring, just above the screw *c'*, Fig. 2, and the cross-lines are at the section indicated by arrow 2, Fig. 2. In the sides of the bore at *m* and *m'* are two grooves for holding the register-plate, thus holding it in its case in the elongated bore, and out of danger of breakage, and at a suitable distance behind the glass plate *h*, and in combination with the plaster-of-paris, making a thermometer in a shut cavity, yet susceptible to the changes of temperature of the churn, by the exposed bulb brought to the action of the air and other contents of the churn.

Having described my invention, the further advantages and uses of it are apparent to those skilled in the arts to which it appertains.

I claim—

1. The case *e*, constructed substantially of the shape described, with an internal bore or tubular portion, *e'*, extending above the aperture-plate *h*, thus defending the long stem necessary to avoid breakage by scalding water, as set forth.

2. The partition *i* just above or near the bulb *j*, in combination with the case *e*, substantially as set forth.

3. The wood case *e*, made as described, when it has a thermometer in the grooves *m* and *m'* of the bore, the partition *i*, the glass plate *h* in its side, and screw *c* at its lower part, as set forth.

JAMES H. SMILEY.

Witnesses:

SAMUEL J. PARKER,
A. M. LUCAS.