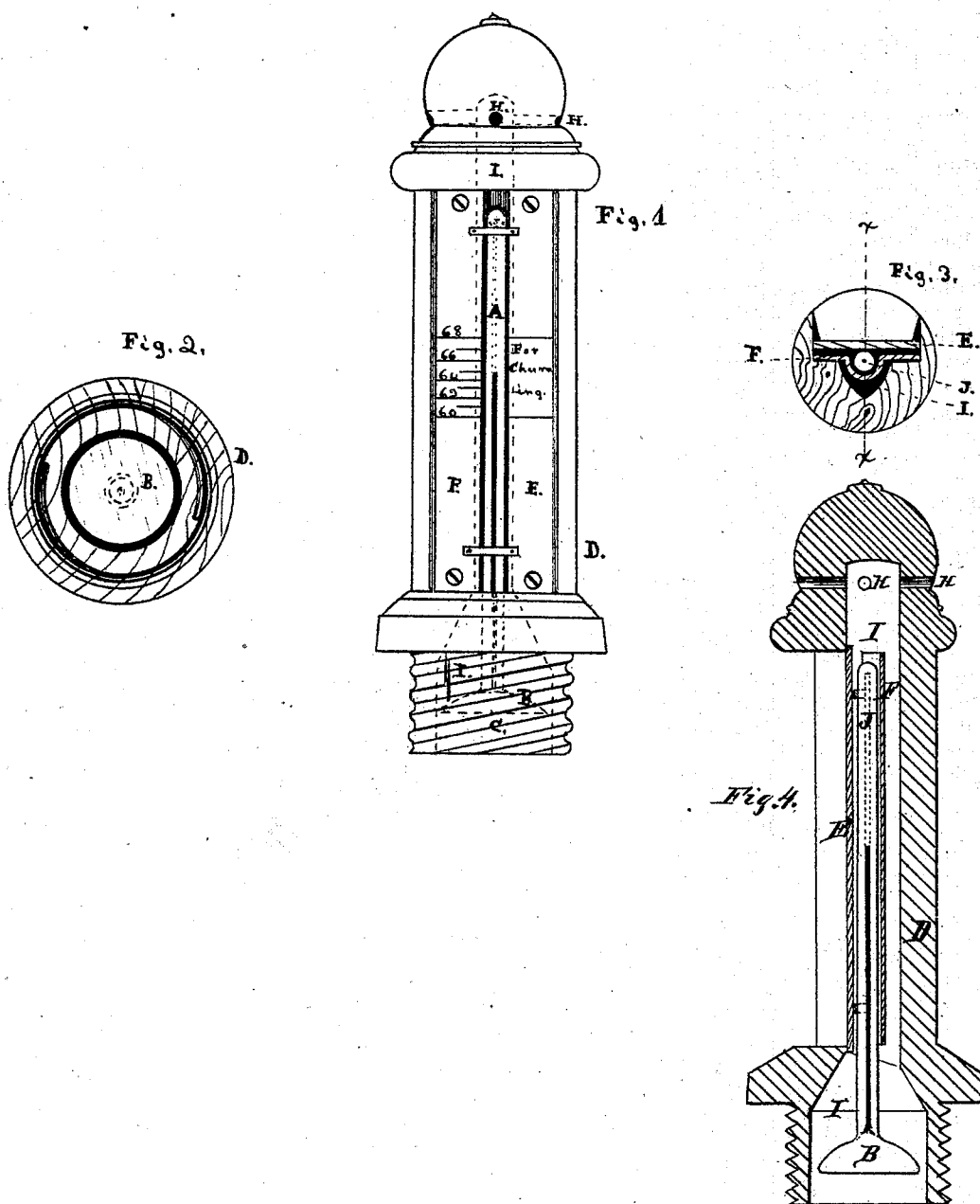


James H. Smiley's

Churn Thermometer.

No. 120,464.

Patented Oct. 31, 1871.



Witnesses.

Samuel F. Parkers  
J. Tarbell  
 "

Inventor.

James Harvey Smiley.

# UNITED STATES PATENT OFFICE.

JAMES HARVEY SMILEY, OF CAROLINE, NEW YORK.

## IMPROVEMENT IN CHURN-THERMOMETERS.

Specification forming part of Letters Patent No. 120,464, dated October 31, 1871.

*To all whom it may concern:*

Be it known that I, JAMES HARVEY SMILEY, of Caroline, Tompkins county, New York, have invented an Improved Dairy-Thermometer, whereof the following is a specification:

My object is to make a very sensitive thermometer for use in churning; and my invention consists mainly in the arrangement and construction of an air-chamber back of the tube and about the bulb of the thermometer in the handle of the churn-cover, for the purpose of facilitating the making of butter thereby, as will be apparent as I describe it.

Figure 1 is an ornamental cover-handle, made to screw in a hole in the cover, and contains the thermometer. The air circulates, as I shall describe further on, and the degree of the thermometer can be read at pleasure. Fig. 2 is an end view of the handle, showing the flat bulb in its cavity in its lower end; and Fig. 3 is a section of the cover-handle. Fig. 4 is a longitudinal section of the handle, showing the construction of the various parts.

In Fig. 1, A is the thermometer, with a bulb, B, flattened, as shown by the dotted lines C, the cavity in the lower end of the handle D; and E is a glass plate over the register-plate F, which plate curves backward behind the stem of the thermometer. Back of this is an air-chamber, I, which air-passage extends above the thermometer and opens by one or more holes, H, with the air outside of the churn. In Fig. 2, B is the ther-

mometer-bulb, flattened in the cavity of the lower end of the handle D. The air-space is seen about the bulb. In Fig. 3 the mode of arranging the parts is more clearly seen. The central circle J is the thermometer-stem; and F is the register-plate, curved behind the stem, cutting off the air and dampness from the thermometer, the stem at its top and bottom being packed in rubber or putty; and E is the glass plate that covers the register-plate and thermometer; and I is the air-chamber behind the plate F. The outer circle is that of the exterior of the handle of cover or dasher. Fig. 4 shows the handle, thermometer, and air-chamber in section, designated by the same letters.

The advantages and uses of my invention are apparent to those skilled in the art to which it appertains.

I claim—

1. The air-chamber I, constructed about the bulb B, extending upward and back of the register-plate F to the upper part of the handle D, where it opens to the atmosphere by the holes H, substantially in the manner set forth.

2. In combination with and constructed within the handle of a churn-cover, the thermometer J B, the register-plate F, the air-chamber I, and the glass face-plate E, substantially as set forth.

JAMES HARVEY SMILEY.

Witnesses:

SAMUEL J. PARKER,  
B. TARBELL.

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