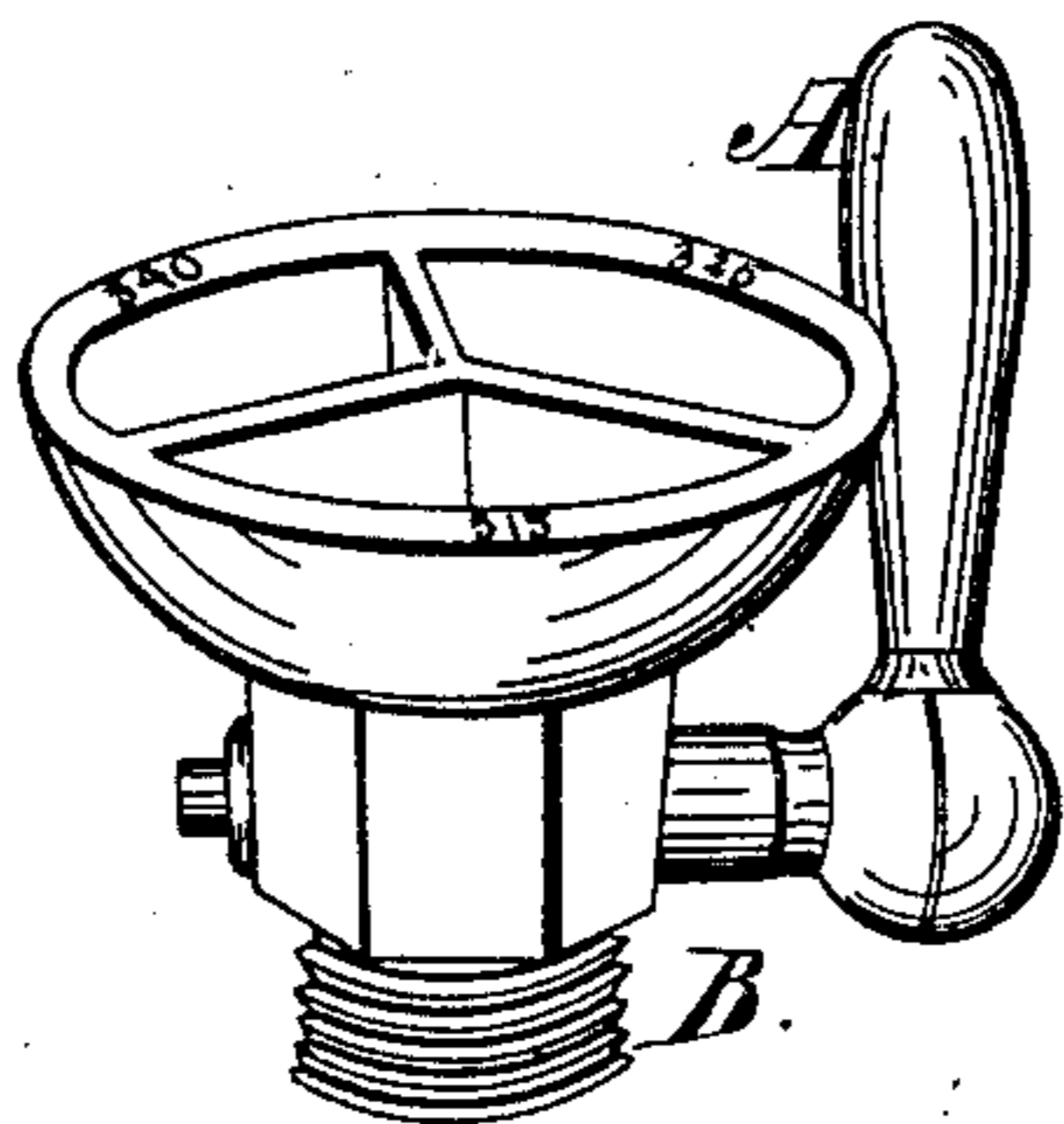


B. W. Franklin,
Check Valve,
N^o 34,203, Patented Jan. 21, 1862.



Witnesses:

Alfred Brown
William Thomas

Inventor:

Bradley W. Franklin,

UNITED STATES PATENT OFFICE.

BRADLEY W. FRANKLIN, OF NEW YORK, N. Y.

IMPROVED FUSIBLE GAGE FOR TEMPERATURES.

Specification forming part of Letters Patent No. 34,203, dated January 21, 1862.

To all whom it may concern:

Be it known that I, BRADLEY W. FRANKLIN, of the city, county, and State of New York, assignor to the American Hard Rubber Company, of the town of Flushing, county of Queens, and State of New York, have invented a new and improved mode of determining the temperature of steam in boilers, heaters, and hot-air chambers, which I call a "fusible gage;" and I hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the figures and letters of reference marked thereon.

Similar letters of reference indicate like parts in the drawing.

The nature and object of my improved fusible gage consist in providing a cup, case, or other vessel with a suitable compartment or compartments containing an alloy or alloys of metals whose fusing-point, having been determined, shall, when attached to a boiler, heater, or hot-air chamber, indicate the desired temperature, as shall be more fully hereinafter described.

Operation: The figure represents a cup or case with a plug bottom and the thread B cut upon it, by means of which I attach it to a boiler, heater, or hot-air chamber. This cup or case is divided into two or more compartments, and they are severally marked 315, 325, and 340, as can be seen by reference to the drawing. Into each of these compartments I introduce an alloy of metals whose fusing-point corresponds in degree with the number as marked on the margin of the compartment. When the alloy in the compartment marked 315 has by the application of heat become granular, the temperature indicated is 295°. As it changes from the granular to the semi-fluid condition, it indicates 310°, and when it has become fluid the temperature is 315°. The alloy in the compartment marked 325 begins to be granular at 320°, loses its granular condition and becomes semi-fluid at 330°, and when fluid the temperature is 340°. The alloy marked 340 is slightly granular at 340° and fluid at 360°.

It will be observed that in order to arrive at anything like an accurate estimate of the successive changes which take place in the temperature of the boiler or heater to which my fusible gage is attached the successive changes

from the granular to the semi-fluid and fluid conditions which take place in the alloys must be carefully observed, and these conditions vary sufficiently to indicate the desired temperature in many branches of the mechanic arts. This improved fusible gage is particularly valuable as a substitute for the thermometers now used to determine the temperature of steam and other heaters employed in the vulcanization of india-rubber goods, and more particularly for the heaters employed for vulcanizing dental preparations, where the great liability to breakage of the thermometers now employed is not only very annoying, but is attended with great expense to the operator.

In the use of my improved gage by observing the different cups and the successive changes of the alloy first to the granular condition, then to the semi-fluid, and lastly to the fluid condition, and by comparing the alloys of the different cups the temperature is readily known. Where a great range of temperature is required, the number of cups may be increased or the character of the alloys changed so as to give a greater difference between the fusible points in the different cups. For some purposes a single cup, with its alloy, is necessarily observed.

I am aware that the temperature has been determined by the color or shade of gold and other metals, and that fusible alloys have been used in steam-boilers, fire-works, and for other purposes; but I believe that a cup or vessel containing a fusible alloy is a new and useful instrument for determining the temperature, and especially useful in vulcanizing india-rubber. Therefore I do not broadly claim the use of metals or alloys for determining the temperature, but confine my claim to the improvement described.

What I claim is—

The above-described fusible gage, the fusible alloys being used in the peculiar manner specified, thus indicating the temperature by the condition of the alloy, whether the same be granular, semi-fluid, or fluid, substantially as set forth.

BRADLEY W. FRANKLIN.

Witnesses:

JAMES W. BUSHNELL,
CARMI C. FRANKLIN.