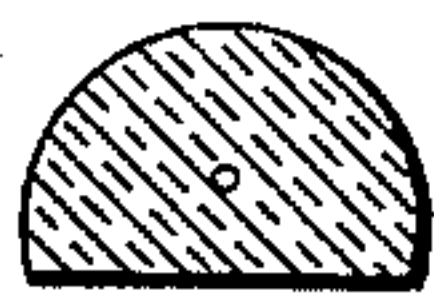
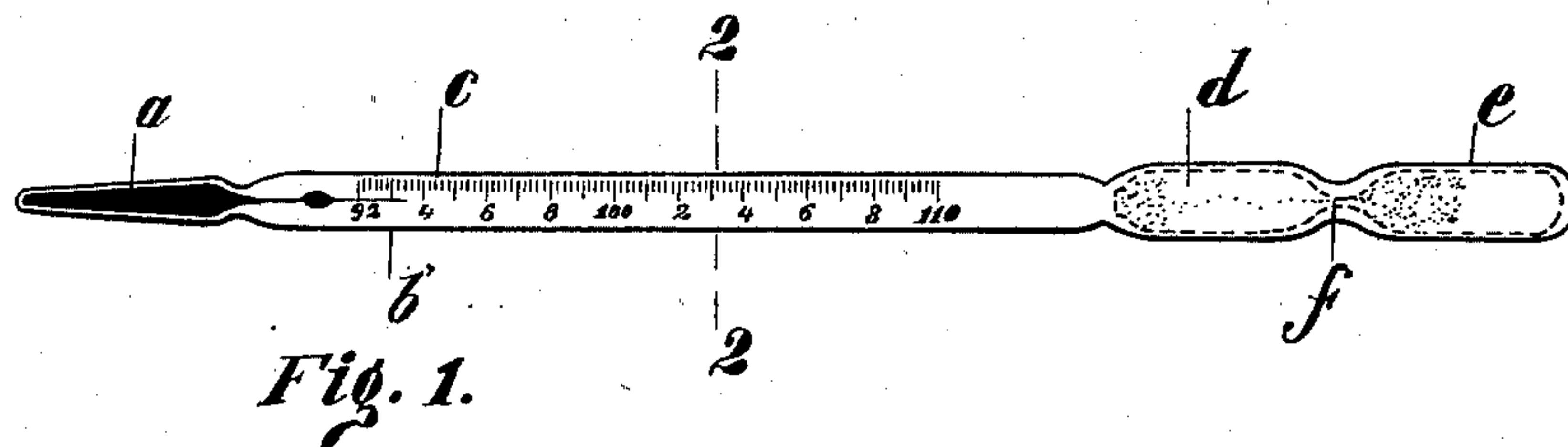


No. 719,781.

PATENTED FEB. 3, 1903.

C. J. FRITSCH.
CLINICAL THERMOMETER.
APPLICATION FILED APR. 2, 1902.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES J. FRITSCH, OF BROOKLYN, NEW YORK.

CLINICAL THERMOMETER.

SPECIFICATION forming part of Letters Patent No. 719,781, dated February 3, 1903.

Application filed April 2, 1902. Serial No. 101,019. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. FRITSCH, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Clinical Thermometers, of which the following is a specification.

My invention relates to clinical thermometers; and its novelty consists in the means employed to measure the duration of its use in the examination of a patient and in the construction and adaptation of the parts, as will be fully hereinafter explained and pointed out.

As is well known, clinical thermometers are employed by physicians and others in the examination of patients in order to ascertain the temperature of the patients as one of the symptoms in the determination of a diagnosis. For this purpose the instrument, which consists of a glass tube provided at one end with a mercury-bulb and with a microscopic bore and suitable graduations and means for magnifying the latter, is inserted in the mouth of the patient or other cavity of the body and is permitted to remain there until the mercury-bulb has been long enough in contact with the patient to assume the temperature of that portion of the body in proximity thereto, so that the temperature of the patient can be read by an examination of the column of mercury in the bore by means of the graduations alongside thereof. The thermometer must be left in contact with the person of the patient an appreciable length of time in order that there may be no mistake in ascertaining the temperature. This time varies with different patients from one and one-half to four minutes. Commonly, of course, the doctor or attendant uses a watch to ascertain whether or not the contact has been of sufficient duration. In the ward of a hospital, however, where a large number of patients are periodically and simultaneously examined as to their temperatures, the nurse or attendant making the examination is obliged to make a memorandum of the time of the primary contact of each patient with the thermometer and then to closely watch to see whether or not a sufficient time has elapsed in order that the test may be accurate.

The purpose of my invention is to obviate this disadvantage by providing each clinical thermometer with a means attached thereto and forming, in effect, part thereof whereby the time desired can be promptly and accurately measured without consulting a time-piece. To this end I provide the clinical thermometer with an hour-glass, although as the time to be measured is so short I prefer to call it a "time-glass," consisting of two chambers connected together by the usual narrow passage, whereby sand may run from one chamber to the other, the duration of its passage from one to the other constituting the unit of time desired.

In the drawings, Figure 1 is an elevation of a preferred form of my improved device. Fig. 2 is a transverse section thereof on the plane of the line 2 2 in Fig. 1.

In the drawings, in which the same reference-letters refer to the same parts in all of the figures, *a* is the bulb, and *b* is the tube, of a clinical thermometer. The tube is made of glass, is provided with proper graduations, and is made in magnifying form, so that the graduations may be increased in size to the eye of the observer. At its end opposite the bulb the tube is prolonged or drawn out, and within this extended portion are formed two cavities *d* and *e*, which do not communicate with the outer air and which have between them a small and narrower passage *f*. These cavities are filled with fine sand, and together they form an hour-glass or time-glass, the time required for the sand to run from one to the other being identical with the average time required for the proper contact of the thermometer with the person of a patient.

What I claim as new is—

A clinical thermometer comprising a mercury-bulb and a graduated tube, the latter being extended and provided with two cavities containing fluent matter and communicating with each other by a passage of small diameter, substantially as described.

Witness my hand this 31st day of March, 1902, in the presence of two subscribing witnesses.

CHARLES J. FRITSCH.

Witnesses:

CHARLES A. KALISH,
ANNA T. HARRIS.