

Feb. 5, 1924.

1,482,966

L. E. W. BEVAN

BACTERIOLOGICAL TEST APPARATUS

Filed June 24, 1922

FIG. 1.

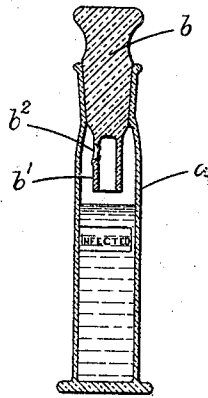


FIG. 2.

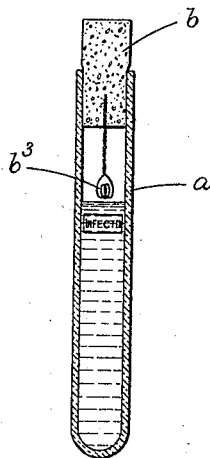
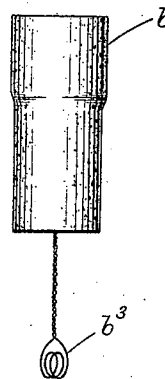


FIG. 3.



INVENTOR

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UNITED STATES PATENT OFFICE.

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BACTERIOLOGICAL TEST APPARATUS.

Application filed June 24, 1922. Serial No. 570,749.

To all whom it may concern:

Be it known that I, LLEWELLYN EDGAR WILLIAMS BEVAN, a subject of the King of Great Britain and Ireland, residing at the
 5 Veterinary Research Station, Salisbury, Southern Rhodesia, South Africa, have invented new and useful Improvements in Bacteriological Test Apparatus, of which the following is a specification.

10 This invention relates to means for use in testing the blood of man or of the lower animals, with a view to determining the presence or otherwise of pathogenic bacteria. According to the practice commonly prevail-
 15 ing, samples of blood, drawn from suspected animals, are sent to certain centres, where they are subjected to the "Widal reaction" test or other tests; but in many instances the samples, in the course of transit to the
 20 testing station, undergo putrefaction, and arrive in a condition unsuitable for testing; in addition to which, where farms or other places of origin are widely scattered, much time is lost between the despatch of samples
 25 and the receipt of reports thereon. My invention is designed to avoid these objections by providing means whereby a farmer (for example) is himself enabled to apply to his cattle or sheep tests for the purpose of ascer-
 30 taining whether they are affected by particular pathogenic bacteria, and thereupon to adopt proper remedies.

In Fig. 1 of the accompanying drawings is represented, in vertical section, a device
 35 adapted for carrying my invention into effect; Fig. 2 illustrating a modified method of construction, whilst Fig. 3 shows another view of a detail pertaining to Fig. 2.

In Fig. 1, *a* is a glass vessel furnished with
 40 a ground-in glass stopper *b*. The lower extremity of the stopper *b* is formed with a tubular extension *b*¹, open at the bottom and having in its side a small air-vent-hole *b*². The vessel *a* is charged with a diluted emul-
 45 sion specially prepared with the specific bacteria for which the test is required to be made. Blood is collected from the suspected animal, and the open extremity of the tubular extension applied thereto. By capillary
 50 attraction, blood rises in the tube, the air therein escaping by way of the vent-hole *b*². The stopper *b* is then replaced in the vessel *a*

and the contents well shaken. If there be present in the blood the particular agglutinins for which the diluted emulsions is ap-
 55 propriate, the specific bacteria agglutinate or cluster together, and finally sink to the bottom of the vessel; leaving the super-natant fluid transparent, so that the word "Infected" or other marking upon the inner side of
 60 the label, attached to the opposite side of the vessel, becomes legible. If, however, the blood tested be free from the particular agglutinins sought for by the test, the fluid remains cloudy, and the word "Infected," or
 65 other marking upon the label, remains obscured.

According to the modification illustrated in Fig. 2, the ground-in stopper *b*, with its
 70 tubular end *b*¹, is dispensed with, and a cork closure substituted. In this cork is mounted a wire composed of non-oxidizable metal, or other suitable filamentous material, which
 75 extends downwards and terminates in a coiled loop whereof the coils are sufficiently small or close together to exert capillary attraction and to gather sufficient blood for
 80 carrying out the test operation hereinbefore described with reference to Fig. 1. Fig. 3 shows the manner in which I prefer to form the looped end of the blood-collector, but
 85 this form is not essential.

Apparatus of the character described is particularly adapted for use in tests for de-
 85 tecting the presence of agglutinins caused by pathogenic bacteria in the blood of cattle, sheep and other farm animals, in conse-
 90 quence of the great advantage of being able to apply such tests on the spot, and forthwith to ascertain the results; but it is equally
 95 applicable for use in tests for tuberculosis, typhoid, Malta fever, and other maladies attributed to the presence of malignant bacteria in the blood either of man or of the lower animals.

I claim:—

A device for use in bacteriological tests, comprising a vessel for the reception of a di-
 100 luted emulsion containing bacteria in suspension, a closure for sealing the vessel, and a capillary filament carried by and depending from the closure, said closure also seal-
 ing said filament from the atmosphere.

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