measurement failure caused by a pressing error of the sensor part cannot be prevented.

CITATION LIST

PATENT LITERATURE

[0009] Patent Literature 1: Japanese Patent Application Laid-Open Publication No. 2003-169787

Patent Literature 2: Japanese Patent Application Laid-Open Publication No. 2001-046344

SUMMARY OF THE INVENTION

TECHNICAL PROBLEM

[0010] Hence, an object of the present invention is to provide a skin condition measurement device which is operable to accurately and stably measure skin conditions of skin (derma) of a human such as a moisture content and resilience with good reproducibility, the skin having various conditions such as a surface shape and resiliency.

SOLUTION TO PROBLEM

[0011] The present inventors have devoted themselves to studies as to, in a skin condition measurement device for measuring skin (derma) conditions of a human, a method for stabilizing a contact angle and a pressing force between a probe or electrodes and derma and a configuration thereof. As a result, the present inventors found that by configuring a probe part in such a way as to divide the probe part into a sensor part including electrodes or the like and a measurement auxiliary unit for controlling a pressing angle of a leading end part of the sensor part and by providing a spring or the like with each of the sensor part and the measurement auxiliary unit so as to separately bias the sensor part and the measurement auxiliary unit and performing pressing so as to make resilience (reaction force) of skin constant, the above-mentioned problem can be solved, thereby reaching the completion of the present invention.

[0012] In other words, according to the present invention, provided is a skin condition measurement device which includes: a case; a base part being fixed inside the case; a slider part being slidably supported by the case and the base; a sensor part being slidably supported by the slider part; a first biasing means which engages the base and the sensor part and biases the sensor part in such a way as to separate a leading end part of the sensor part from the slider part; a cover part which has a guide surface to be pressed against skin of a subject and an opening part moving the

leading end part of the sensor part in and out, the openings part being located in the guide surface, the cover part being attachably and detachably connected to the slider part; and a second biasing means which engages the base and the slider part and biases the slider part in such a way as to separate the guide surface from the case, and the skin condition measurement device is configured such that along with being pressed of the guide surface by the skin of the subject, initially, only the guide surface moves toward the base of the case and subsequently, the guide surface and the leading end part of the sensor part move toward the base of the case.

[0013] Note that in the description of the present application, there may be a case where since the above-described slider part and cover part connected to the slider part integrally move, these are collectively referred to as a “measurement auxiliary unit”. In addition, as long as a measurement target is derma, the skin condition measurement device of the present invention can measure derma conditions, such as a moisture content and resilience, even of derma of an animal.

[0014] In the present invention, along with being pressed of the guide surface of the cover part by the skin of the subject, before the leading end part of the sensor part contacts the skin of the subject, the guide surface having a wider contact area than that of the leading end part contacts the skin of the subject. Therefore, in the present invention, since initially, the cover part is guided such that a pressing angle with respect to a skin surface of the subject is a right angle, and subsequently, when the leading end part of the sensor part contacts the skin of the subject, the leading end part of the sensor part is also guided by the cover part such that a pressing angle with respect to the skin surface of the subject is a right angle, it is made possible to measure the skin conditions of the subject in an appropriately contacting manner.

[0015] It is preferable that the skin condition measurement device of the present invention is configured such that along with being pressed of the guide surface of the cover part by the skin of the subject, after the guide surface and the leading end part of the sensor part have moved toward the case, further, only the leading end part of the sensor part moves toward the case.

[0016] In addition, it is preferable that the skin condition measurement device of the present invention is configured such that along with being pressed of the guide surface by the skin of the subject, after movement in which the guide surface and the leading end part of the sensor part move toward the case, a pressing force per unit area which is exerted on the leading end part of the sensor part is same as or larger than a pressing force per unit area which is exerted on the guide surface.

[0017] According to the present invention, since after the movement of the guide