incubation in an aqueous solution. If an insoluble adhesive is used, on the other hand, the strip cannot be removed from the device after testing and be stored in a dry state for documentation.

As an alternative solution, DE202012004404U1 discloses the possibility of providing the incubation channel in the base area with opposing locking catches. However, this allows only relatively solid test strips to be fixed. The test strips commonly used commercially do not provide enough resistance to allow plastic locking catches to engage. There is also a risk that the strips will become damaged on engaging, as expressly stated in DE202012004404U1. Removal from the incubation channel after engaging with the locking catches is also difficult, if not impossible.

Lastly, DE202012004404U1 discloses the use of clips for the fixation of test strips near the base. Because of the closure mechanism into which the strips are clipped, there is also a risk of damage in this embodiment. Finally, a clasp covers the test strip at least partially as seen from above. Because of the covering and shadow formation, this makes imaging and subsequent automatic diagnosis more difficult.

Embodiments of the invention seek to provide a system with flexibly connectible incubation channels, in which the incubation channels are connected to one another and can be moved independently of a rack as a unit, wherein the risk that the assembly may fall apart is reduced compared to the systems described in the prior art.

Embodiments of the present invention also seek to provide a system with flexibly connectible incubation channels that is easier to clean and maintain than the systems described in the prior art.

Embodiments of the present invention also seek to provide an improved incubation channel that allows the incubation of test strips, wherein the test strips are fixed to the base in such a manner that they are covered from all sides during incubation in aqueous solution, but can easily be removed after incubation.

At the same time, the incubation channel is intended to allow the preparation of high quality images of the strips after incubation, which can then be manually or automatically read and evaluated for diagnosis.

In embodiments of this invention, fixation of the test strips is to be achieved in such a way that damage to the test strips, which often with expensive, difficult-to-produce analytical reagents, is virtually excluded.

These and other objectives are achieved by means of the subject matter of the present application, and particularly also by means of the subject matter of the attached independent claims, wherein embodiments are derived from the dependent claims.

According to an aspect of the present invention, there is provided an elongated incubation channel with two opposite longitudinal walls, a recess, and a base,

equipped with an elongated test strip having a rear surface and a front surface,

wherein the test strip faces the base of the incubation channel with its rear surface and is coated on its front surface with one or more analytical reagents,

further comprising at least two holding elements for fixation of the test strip, wherein

the at least two holding elements are each formed by a respective projecting element extending out from at least one of the longitudinal walls and furthermore having a notch for receiving the test strip, wherein the notch is of a size such that the test strip fits below it and preferably can perform slight upward and downward movements during a movement of the incubation channel for optimal exposition against the surrounding liquid and the reagents located therein, but wherein the test strip cannot turn around its longitudinal axis.

There is disclosed an elongated incubation channel with two opposite longitudinal walls, a recess, and a base,

that can be equipped with an elongated test strip with a rear surface and a front surface,

wherein the test strip has its rear surface facing the base of the incubation channel and is coated on its front surface with at least one analytical reagent coated,

further having a fastening means, by means of which the incubation channel can be connected to at least one additional incubation channel to form an assembly of incubation channels,

wherein a preferably horizontal outward supporting frame is installed on one of the longitudinal walls.

In a preferred embodiment, the supporting frame does not cover the recess.

In a further preferred embodiment, the longitudinal wall with the outward supporting frame, the supporting frame itself, and the other longitudinal wall are adapted to one another in such a manner that the supporting frame of the incubation channel in the assembly lies on the other longitudinal wall of the additional incubation channel.

In a further preferred embodiment, the supporting frame extends along the longitudinal axis of the incubation channel at least as far as the recess.

In a further preferred embodiment, a frame notch is located on the other longitudinal wall, preferably in the form of the supporting frame lying thereon in the assembly.

In a further preferred embodiment, the end of the supporting frame along the transverse axis is measured in such a way that it connects to the longitudinal wall of the additional incubation tray and forms a vertical extension thereof.

In a further preferred embodiment, the fastening means comprises at least one unit with a protruding element on the one longitudinal side of the incubation channel and a receiving element on the other longitudinal side of the incubation channel.

In a further preferred embodiment, the protruding element of the fastening means is on the same longitudinal side of the incubation channel as the supporting frame.

In a further preferred embodiment, the fastening means allows a connection between the incubation channel and the additional incubation channel that can be connected and disconnected multiple times.

In a further preferred embodiment, a fastening means is configured at each end of the incubation channel, preferably with a protruding element on the one longitudinal side and a receiving element adapted thereto on the other longitudinal side.

There is disclosed an elongated incubation channel with two opposite longitudinal walls, a recess, and a base,

that can be equipped with an elongated test strip having a rear surface and a front surface,

wherein the test strip faces the base of the incubation channel with its rear surface and is coated on its front surface with one or more analytical reagents,

further comprising at least two holding elements for fixation of the test strip, preferably near the base,

characterized in that

the at least two holding elements are configured in the form of projecting elements extending out from the longitudinal wall and having notches, preferably near the base, i.e. preferably on the side and opening downward, and are preferably suitable for fixation of the holding elements near the base, for receiving the test strip.

In a preferred embodiment, the notch ends along the longitudinal axis of the incubation channel before the longitudinal wall.

In a preferred embodiment, the notch extends along the longitudinal axis of the incubation channel up to the longitudinal wall.

In a preferred embodiment, the at least two holding elements are arranged in pairs.

In a preferred embodiment, the incubation channel has at least four, preferably at least six, and even more preferably at least eight holding elements arranged in pairs.

In a preferred embodiment, the two holding elements of a pair on the two longitudinal sides are arranged diagonally offset with respect to each other along the longitudinal axis of the incubation channel.

In a preferred embodiment, the two holding elements of a pair are arranged on the two longitudinal sides at the same height along the longitudinal axis of the incubation channel.

In a preferred embodiment, the projecting element is vertically bevelled.

In a preferred embodiment, the projecting element is vertically rounded off.

In a preferred embodiment, the projecting element is configured in the form of a shaft.

In a preferred embodiment, the longitudinal axis of the projecting element runs perpendicular to the level determined by the base of the incubation channel.

Claims

1. An elongated incubation channel with two opposite longitudinal walls, a recess, and a base,

equipped with an elongated test strip having a rear surface and a front surface,

wherein the test strip faces the base of the incubation channel with its rear surface and is coated on its front surface with one or more analytical reagents,

further comprising at least two holding elements for fixation of the test strip, wherein

the at least two holding elements are each formed by a respective projecting element extending out from at least one of the longitudinal walls and furthermore having a notch for receiving the test strip, wherein the notch is of a size such that the test strip fits below it and preferably can perform slight upward and downward movements during a movement of the incubation channel for optimal exposition against the surrounding liquid and the reagents located therein, but wherein the test strip cannot turn around its longitudinal axis.

2. The incubation channel according to claim 1, wherein the notch ends along the transverse axis of the incubation channel before the longitudinal wall.

3. The incubation channel according to claim 1, wherein the notch extends along the transverse axis of the incubation channel up to the longitudinal wall.

4. The incubation channel according to any of claims 1 to 3, wherein the at least two holding elements are arranged in pairs.

5. The incubation channel according to claim 4, wherein the incubation channel has at least four, preferably at least six, and even more preferably at least eight holding elements arranged in pairs.

6. The incubation channel according to any of claims 4 to 5, wherein the two holding elements of a pair are arranged on the two longitudinal sides and are furthermore diagonally offset with respect to each other.

7. The incubation channel according to any of claims 4 to 6, wherein the two holding elements of a pair are arranged on the two longitudinal sides at a same height along the longitudinal axis of the incubation channel.

8. The incubation channel according to any of claims 1 to 7, wherein the projecting element is vertically bevelled.

9. The incubation channel according to any of claims 1 to 7, wherein the projecting element is vertically rounded off.

10. The incubation channel according to any of claims 1 to 7, wherein the projecting element is configured in the form of a shaft.

11. The incubation channel according to any of claims 1 to 10, wherein the longitudinal axis of the projecting element runs perpendicular to the level determined by the base of the incubation channel.

12. The incubation channel according to any of claims 1 to 11, wherein the longitudinal axis of the projecting element runs perpendicular to the longitudinal axis of the incubation channel.

13. The incubation channel according to any of claims 1 to 10, wherein the projecting element runs parallel to the longitudinal axis of the incubation channel.

14. The incubation channel according to any of claims 1 to 13, wherein the two holding elements are positioned in a frame placed in the recess, wherein the frame preferably rests on at least two feet of the holding element on the base of the incubation channel.

15. The incubation channel according to any of claims 1 to 14, wherein the test strip comprises an appendage protruding from the recess for extraction.