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 may be reduced compared to the systems described in the prior art.

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

The present invention therefore 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 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.

In a first embodiment, there is provided an elongated incubation channel with two opposite longitudinal walls, a recess, and a base,

> 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 is configured to be connected to at least one additional incubation channel to form an assembly of incubation channels,

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

at least two holding elements for fixation of the test strip, wherein the incubation channel and the holding elements are produced as one piece with the holding elements protruding directly from the longitudinal walls of the incubation channel,

and wherein 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 an additional incubation channel.

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

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.

In a further preferred embodiment, the recess does not extend over the entire length of the incubation channel, but extensions are located at the two longitudinal ends of the incubation channel, each of which houses one unit of the fastening means.

In a further preferred embodiment, each extension has a head that is connected via a connecting element with the recess,

> wherein the connecting element is configured vertically at the level of the supporting frame, giving rise to a hollow that is arranged below it perpendicular to the longitudinal axis 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 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 is configured to be connected to at least one additional incubation channel to form an assembly of incubation channels,

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

at least two holding elements for fixation of the test strip, wherein the incubation channel and the holding elements are produced as one piece with the holding elements protruding directly from the longitudinal walls of the incubation channel,

and wherein 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 an additional incubation channel.

2. The incubation channel according to claim 1, wherein the supporting frame does not cover the recess.

3. The incubation channel according to any of claims 1 to 2, wherein the supporting frame extends along the longitudinal axis of the incubation channel at least as far as the recess.

4. The incubation channel according to claim 3, wherein a frame notch is located on the other longitudinal wall in the form of the supporting frame lying thereon in the assembly.

5. The incubation channel according to any of claims 1 to 4, wherein 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.

6. The incubation channel according to any of claims 1 to 5, wherein, 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.

7. The incubation channel according to claim 6, wherein the protruding element of the fastening means is on the same longitudinal side of the incubation channel as the supporting frame.

8. The incubation channel according to any of claims 1 to 7, wherein the fastening means allows a connection between the incubation channel and the additional incubation channel that is capable of being connected and disconnected multiple times.

9. The incubation channel according to any of claims 1 to 8, wherein a fastening means is configured at each end of the incubation channel with a protruding element on the one longitudinal side and a receiving element adapted thereto on the other longitudinal side.

10. The incubation channel according to any of claims 1 to 9, wherein the recess does not extend over the entire length of the incubation channel, but extensions are located at the two longitudinal ends of the incubation channel, each of which houses one unit of the fastening means.

11. The incubation channel according to claim 10, wherein each extension has a head that is connected via a connecting element with the recess,

wherein the connecting element is configured vertically at the level of the supporting frame, giving rise to a hollow that is arranged below it perpendicular to the longitudinal axis of the incubation channel.

12. The incubation channel according to any of claims 6 to 11, wherein the fastening means comprises a protruding element on the one longitudinal side and a receiving element adapted thereto on the other longitudinal side, wherein

the protruding element and the longitudinal wall with the supporting frame are configured on the one longitudinal side of the incubation channel and

the receiving element and the other longitudinal wall are configured on the other longitudinal side of the incubation channel

and they are adapted to one another such that the position of at least two identical incubation channels in the assembly is fixed both by engagement of the protruding elements with the receiving element by the supporting frame lying on the frame notch of the other longitudinal wall.

13. The incubation channel according to any of claims 9 to 12, wherein the fastening means comprises a protruding element on the one longitudinal side and a receiving element adapted thereto on the other longitudinal side, wherein

the receiving element of the fastening means is open upwards and in the direction of the outer side of the longitudinal frame and

is configured in such a way that the protruding element is inserted from above into the receiving element until the former rests against the base of the latter.

14. The incubation channel according to any of claims 9 to 13, wherein the fastening means comprises a protruding element on the one longitudinal side and a receiving element adapted thereto on the other longitudinal side,

and wherein the protruding element and the receiving element are adapted to each other in such a manner that on connection, the former engages with the latter with an audible click.