[0017] The object is achieved by a device in which the touch points have a touch region, which, in the activated state, protrudes beyond the plane formed by the touch surface of the support sheet, and a flexible boundary region between the support sheet and the touch region, the boundary region having a lower thickness and/or rigidity than the support sheet and the touch region. Moreover, the touch region has an actuating portion, protruding beyond the underside of the support sheet that lies opposite from the touch surface of the support sheet.

[0018] It was also an object of the invention to provide a support sheet for the punctiform representation of graphical information in such a way that it can be read by touch.

[0019] The object is achieved by a support sheet of the generic type in which

[0020] the touch points have a touch region, which, in the activated state, protrudes beyond the plane formed by the touch surface of the support sheet, and a flexible boundary region between the support sheet and the touch region, the boundary region having a lower thickness and/or rigidity than the support sheet and/or touch region,

[0021] the touch regions are able to spring back on or below the plane which is formed by the touch surface of the support sheet, by means of the associated boundary regions, in order to bring the touch points into a deactivated state, and

[0022] the touch regions have an actuating portion, protruding beyond the underside of the support sheet that lies opposite from the touch surface of the support sheet.

[0023] The actuating portion may be realized as a pin which protrudes beyond the underside of the support sheet and is formed integrally with the touch point. In this way, activation of the touch points can take place in a very energy-saving manner by simple actuators.

[0024] Consequently, according to the invention, a support layer in sheet form is provided, in which the systematically arranged touch points for representing Braille script are formed integrally into the support sheet in such a way that the touch points assume a raised activated state and a lowered deactivated state, or a state in which they terminate with the touch surface of the support sheet, it being possible for the touch points to be brought from one state into the other state in a resilient manner by means of the thinner or more flexible boundary regions.

[0025] This has the advantage that no additional mechanical wearing parts are required and the device with the support sheet can be constructed in a relatively lightweight and small form. The fact that the touch points are formed integrally with the support sheet has the effect that the support sheet can be easily cleaned and is protected against soiling. The individual Braille dots are hermetically sealed, so that no dirt can get in. Moreover, only a low level of mechanical complexity and a low energy demand are required, so that the device can be used in battery operation.

[0026] The thickening according to the invention in the central region of the touch point in the form of a touch region which is held in the support sheet by a thinner resilient bead (flexible boundary region) has the effect that only short pulses and little work is required to bring the touch points from a deactivated state into an activated state. This has the advantage that the energy demand is lower in comparison with conventional Braille reading devices and smaller actuators can be used. The device according to the invention is therefore suitable for mobile applications.

[0027] The actuating portion protruding below the underside of the support sheet, for example in the form of a pin, allows the actuators to be given a simple form, for example resiliently mounted rollers.

[0028] The device has actuators to activate selected touch points, in that they are pressed out from the support sheet in such a way that they protrude beyond the plane formed by the touch surface of the support sheet. Furthermore, an erasing element is provided, in order to bring all the touch points into a deactivated state by springing back of the corresponding touch regions on or below the plane which is formed by the touch surface of the support sheet. Alternatively, the erasing element may also be formed to bring all the touch points into the activated state. The Braille characters are represented with the aid of the actuators, in that selected activated touch points are deactivated by the corresponding touch regions springing back on or below the plane which is formed by the touch surface of the support sheet.

[0029] The touch points preferably have an unsymmetrical force distribution in such a way that it is more difficult for the touch points to be pressed from the activated state into the deactivated state than vice versa. In the activated state, the touch points are consequently more difficult to press in, whereas they can easily be pressed out from the deactivated state into the activated state. This unsymmetrical force distribution can be achieved for example by shaping. For this purpose, the spring rigidity may be adapted, in that for example a membrane spring is realized in the bead by a highly arched shape of the touch points. The edges of the touch points, i.e. the outer boundaries of the boundary region, should be shaped in such a way that they are folded in the deactivated state and are parabolically arched in the activated state. In this way, the activated state is given priority.

[0030] For each Braille character, the touch points are, for example, arranged in two lines with four points in each case, in order to represent a Braille character comprising a maximum of eight dots. The spacing between the points is in this case approximately 2.4 mm.

[0031] The support sheet is preferably formed with a plastic and preferably consists of polyurethane. The support sheet may have a flexible, fiber-reinforced layer. The support sheet preferably has wedge-shaped tapers between the touch regions, in order to achieve improved flexibility and consequently facilitated bending over and deflection by hinge-like behavior of the tapers. The touch points can consequently be automatically activated or deactivated by passing over a roller. Teeth for transporting the band can engage in the wedge-shaped tapers.

[0032] It is particularly advantageous if the support sheet is a continuous band which can be clamped in a circulating manner between two deflecting rollers that are spaced apart from one another. In this way, the graphical information can be continuously represented as running script. It is advan-