Embodiments of the invention provide a manual toothbrush, which has a permanent marking that is visible to the user but does not interfere with the user during normal handling of the toothbrush. In addition, the production of the toothbrush should not be affected by the type of marking.

According to a first aspect of the invention, there is provided a manual toothbrush having an elongated handle part, by which a geometric longitudinal axis of the handle part is defined, wherein the handle part has a recess and a handle part end side transverse to the longitudinal axis of the handle part, and a marking body is anchored in the handle part end side in a materially bonded manner that is undetachable by hand. A special type of manually undetachable anchoring is a materially bonded anchoring.

The advantage of this solution is that the toothbrush has a three-dimensional marking or identification, but that this does not disturb the user in any way when holding the toothbrush in his hand. The marking body is anchored and therefore cannot be removed without destroying the product.

Another advantage is that the marking body is attached "in" and not "on" the end of the handle. The marking body is not in the form of a cap that grips the end of the handle from behind and from the outside.

The marking body is materially bonded, i.e. no liquid can penetrate into the recess in the handle. This means that no bacteria can penetrate either, and the handle can be kept hygienically clean without any problems during use. The material bond according to the invention can be achieved in different ways. For example, the marking body can fit snugly into the recess in the sense of a "press fit". It can also be fixed with an adhesive, for example. It is also possible to melt it on if the material of the marking body and the handle part are compatible..

Depending on the design of the marking body, it is possible to clearly assign the toothbrush. Because the user normally sees the brush as a whole when buying it, he can see the marking body if necessary and be sure that it is an original product.

According to a second aspect of the invention, there is provided a sealed sales packaging with a manual toothbrush, wherein the manual toothbrush includes an elongated handle part, by which a geometric handle part longitudinal axis is defined. The handle part has a recess and a handle part end side, which is

transverse to the handle part longitudinal axis, in which a marking body is anchored in a manually undetachable manner.

A sealed sales package is defined as one in which the manual toothbrush (when it is in the sealed sales package) cannot be removed or the marking body manipulated without this being made apparent by damage to the packaging. The manual toothbrush is naturally placed in the sealed sales package before the manual toothbrush reaches the sales channels..

The sealed sales packaging preferably closes the toothbrush off from the environment in a hygienic manner. This is, for example, a completely closed, airtight plastic packaging. This can take the form of a blister pack or a self-supporting plastic packaging. A welded combination of plastic tray and cardboard cover is also possible.

Alternatively, the sealed sales packaging can have openings so that certain parts of the toothbrush are visible, allowing the customer to see the bristles, handle shape, color, etc. before buying the toothbrush.

According to a particular type of design, the base of the handle and the marking body are visible despite the sealed packaging. In this sense, the sealed packaging can be transparent at the base of the handle. Or an opening can be made in a non-transparent packaging through which the marking body is visible.

In a special embodiment, the marking body is an insert body that fits precisely into the recess when viewed in cross section perpendicular to the longitudinal axis of the handle. An insert body is characterized by the fact that it has a generally cylindrical surface and can therefore be (mechanically) inserted into a precisely shaped channel and held there. One advantage of this embodiment is that the marking body can be inserted into the end of the handle part very easily from a production point of view.

According to the mathematical definition, a generally cylindrical surface is created by shifting a plane curve c0, which is located in a plane E, along a straight line that is not located in the plane E by a fixed distance a0, and by connecting each two corresponding points of the original curve c0 and the shifted curve c1 by a line. The totality of these parallel lines forms the associated general cylindrical (surface) area-

Preferably, the recess in the handle has a cross-section that tapers successively from the back (end of the handle) to the front (brush head). The cross-section is, for example, tapered linearly. This is advantageous from a production point of view (easy to produce).

According to a third aspect of the invention, there is provided a method for producing the manual toothbrush according to the first aspect including the following two steps:

1. The handle is produced with a recess using a (first) injection molding tool.
2. In a separate step, the prepared marking body is mechanically inserted into the recess.

The marking body is produced separately from the handle. Other materials can be used, which are produced using a different method. The two parts are joined together in a materially bonded manner.

The following detailed description and the totality of the patent claims reveal further advantageous embodiments and combinations of features of the invention.

A brief description of the drawings

The drawings used to illustrate the example show:

Fig. 1 a schematic representation of a manual toothbrush before the insertion of the marking body;

Fig. 2a,b a schematic representation of the section A-A through the rear end of the handle before and after the insertion of the marking body;

Fig. 3 a schematic representation of a further embodiment with a cross-section-like marking body;

Fig. 4 a schematic representation of a longitudinal section through a manual toothbrush with a protruding marking body;

Fig. 5 a schematic cross-section through a marking body with a profile (structure) on the outer end face;

Fig. 6 a schematic cross-section through a mushroom-shaped marking body.