Title: METHOD AND DEVICE FOR MANUFACTURING AN ELASTIC ELEMENT AS WELL AS COMPONENT COMPRISING SUCH AN ELASTIC ELEMENT

Abstract: A method for manufacturing an elastic element for e.g. sealing, electromagnetic shielding or vibration absorption, comprising the steps of supplying, by means of a needle-like filling nozzle (11) of a filling means (10), a material which is in a viscous state to at least one cavity (9) formed in a mould unit (8), subsequently treating the material supplied to each cavity (9) in such manner that it assumes a non-viscous, elastic state, and finally separating the material and the mould unit (8) to uncover the material which thus forms said elastic element. The method is characterised in that the viscous material is supplied to each cavity (9) while the cavity (9) is open towards the surroundings, and that the step of treating the material supplied to each cavity (9) is preceded by the step of scraping away, with the aid of a scraping means (12), surplus material which when supplying the viscous material to each cavity (9) is not accommodated therein. The invention also relates to a component (1a), on which an elastic element is arranged by said method, as well as a device for manufacturing an elastic element.
METHOD AND DEVICE FOR MANUFACTURING AN ELASTIC ELEMENT AS WELL AS COMPONENT COMPRISING SUCH AN ELASTIC ELEMENT

Field of the Invention

The present invention relates to a method and a device for manufacturing an elastic element for e.g. sealing, electromagnetic shielding or vibration absorption. The invention also concerns a component for electromagnetic shielding, which comprises such an elastic element made by the above-mentioned method.

Background Art

Elastic elements can be used within a number of different technical fields.

If the elastic element is made of an electrically conductive material, the element can be used as a packing in structures for electromagnetic shielding of electronic components. The packing can be given a continuous form, thus establishing a seal against moisture and dust. The packing may, however, also be given a discontinuous form, for instance in the form of point-shaped segments which are arranged in a spaced-apart relationship. Admittedly such a packing does not establish an environmental seal against dust and moisture but causes electromagnetic shielding. For shielding of frequencies of up to 1900 MHz, which corresponds to the frequencies of today's mobile phones, the distance between the segments can be about 2 mm. The diameter of the segments can be fairly small, for example 0.5 mm.

It goes without saying that the elastic element can be made of an electrically non-conductive material and then be used as e.g. a common packing.

If the elastic element is made in the form of point-shaped segments, it can be used, for example, for vibration or shock absorption or as anti-skid means.

A number of prior art methods are available for manufacturing elastic elements of the above type.
For example, it is known to make such elements by injection moulding. If the element is intended to be a packing for electromagnetic shielding, it is possible to make the packing by injection moulding directly on an insert, whereby the packing is applied to the insert in connection with the manufacture of the packing.

A fundamental drawback of injection moulding is that it is a cyclic process which is slower and less efficient than a continuous flow process. Moreover, the elastic element made by injection moulding should be continuous. It is certainly possible to make the element in the form of a few individual separate segments, but it is not possible to make the element in the form of a plurality of separate, fairly small segments. Finally, sprue arises in injection moulding and has to be removed in a separate process, which takes time and causes undesirable waste of material.

However, an injection moulding method is known from US 4,732,724, where a viscous material is injected into a cavity defined by two mould parts, by means of a nozzle which fits a complementarily designed inlet of the cavity. This makes it possible to minimise the amount of sprue. Nevertheless a cyclic process is involved in this case as well, and like before manufacture of a plurality of small elements in one step cannot be carried out without subsequent working of the moulded object. It should also be noted that for injection moulding, a fairly expensive injection mould unit is required and the cost for making moulds to allow production of differently designed elements is quite high.

Another method for manufacturing elastic elements is dispensing. This method is much used in connection with electromagnetic shielding, an electrically conductive material being pressed through a needle-like nozzle onto a basic part of e.g. metallised plastic or metal. The nozzle is moved along the basic part in such manner that a string is applied thereto. The material can be
made to adhere to the basic part, for instance, by a subsequent vulcanising process.

The drawback of dispensing is above all the poor accuracy and the low degree of freedom in the geometric design of the element since no mould is used to impart a desired design to the element.

A further method for making elastic elements is so-called screen-printing. In this case a so-called printing screen is applied to a base unit. Recesses corresponding to the shape of the elastic element are formed in the printing screen. Then a viscous material is applied to the surface of the printing screen, whereupon the material is wiped away with a squeegee to fill the cavities with the material. After that the printing screen is removed. The base unit and the material are then finally supplied to a station at which the material is vulcanised, hardened or dried. The method is used above all to make packings, such as for motors.

Screen-printing is disadvantageous by allowing only manufacture of broad and thin elements. The ratio of width to height is 4:1, which is not convenient for packings for electromagnetic shielding which normally requires a ratio of 1:1. If the ratio of width to height is unfavourable, the recesses cannot be filled, and besides capillary forces make it impossible to fill recesses of certain designs. The fact that the printing screen is removed before e.g. hardening makes a complex design of the element impossible since such a design would result in the contact surface between the printing screen and the material being quite large, which causes difficulties in the removal of the printing screen.

**Summary of the Invention**

A first object of the present invention is to provide a method, which allows manufacture of elastic elements of a relatively complex design and having a desired ratio of width to height. Moreover, the method should allow manufacture of elements in the form of separate seg-
ments having small dimensions. Finally the method should allow manufacture of elements in a continuous flow process. The method preferably allows manufacture of such an element on a base component.

A second object of the invention is to provide a component having an elastic element, which is arranged on the component by means of the above-mentioned method.

A third object of the invention is to provide a device which allows manufacture of elastic elements of a relatively complex design and having a desired ratio of width to height. The device should also allow flow-oriented manufacture of the elements.

According to the invention, the first object is achieved by a method for manufacturing an elastic element having the features defined in claim 1. Preferred embodiments of the method are stated in claims 2-12.

According to the invention, the second object is achieved by a component having the features defined in claim 13. Preferred embodiments of the component are stated in claims 14-21.

According to the invention, the third object is achieved by a device for manufacturing an elastic element having the features defined in claim 22. Preferred embodiments of the device are stated in claims 23-25.

According to the invention, a method is thus provided for manufacturing an elastic element for e.g. sealing, electromagnetic shielding or vibration absorption, comprising the steps of supplying, by means of a needle-like filling nozzle of a filling means, a material which is in a viscous state to at least one cavity formed in a mould unit, subsequently treating the material supplied to each cavity in such manner that it assumes a non-viscous, elastic state, and finally separating the material and the mould unit to uncover the material which thus forms said elastic element, said method being characterised by the steps of supplying the viscous material to each cavity while the cavity is open towards the sur-
roundings, and preceding the step of treating the material supplied to each cavity by the step of scraping away, with the aid of a scraping means, surplus material which when supplying the viscous material to each cavity is not accommodated therein.

Consequently a method is provided, which allows manufacture of an elastic element of a relatively complex design and having a desired ratio of width to height. By each cavity formed in the mould unit being filled by means of a filling nozzle, satisfactory filling of each cavity is ensured. Thus the elastic element can be given the desired ratio of width to height. Moreover, the fact that the material is treated to assume its non-viscous, elastic state while still positioned in the cavities of the mould unit, means that the element can be given a fairly complex design. When the mould unit and the manufactured elastic element are later separated, the elastic element has such a stable structure that there is no risk of its being damaged during the separation. The inventive method also allows manufacture of elastic elements in a continuous process. As soon as one step is terminated and another begun, the former step can be repeated for manufacturing the next elastic element. Since the method can be used in a continuous flow process, rational and time-efficient manufacture of elastic elements is thus allowed. The use of a needle-like filling nozzle for injecting the viscous material into each cavity open towards the surroundings permits manufacture of elements comprising very small separate segments. The step of scraping away surplus material finally ensures that each cavity is filled in a satisfactory manner, thereby ensuring manufacture of uniform elements.

According to a preferred embodiment of the inventive method, a plurality of cavities are formed in the mould unit and the filling means is adapted to supply the viscous material to each of the cavities, whereby the elastic element thus comprises a plurality of sepa-
rate elastic segments. For filling the cavities, the filling nozzle of the filling means can be adapted to sequentially fill each of the cavities. The filling means may also comprise a plurality of needle-like filling nozzles, which are inserted simultaneously into a cavity each to supply the viscous material to the cavities.

The material can in its viscous state be in a heated, molten state, the material being treated by cooling to make it assume its non-viscous, elastic state.

Alternatively, the material can in its viscous state be in a non-heated state, the material being treated by heating to make it assume its non-viscous, elastic state. The material can be such as to harden in said heating. Alternatively, the material can be such that it is vulcanised in said heating.

Preferably, each cavity is formed in the mould unit as a through duct, the step of supplying the viscous material to each cavity being preceded by the step of arranging the mould unit on a base component which thus forms a bottom of each cavity.

Preferably, the base component and/or the material are arranged in such manner that the material adheres to the base component when the material is treated to assume its non-viscous, elastic state.

The base component can be formed of the edges of a casing for electromagnetic shielding.

The base component can also be formed of a side of a frame for electromagnetic shielding.

Moreover, according to the present invention a component for electromagnetic shielding is provided, on which an elastic element is arranged by means of the method described above, the component forming said base component.

According to a preferred embodiment, the component forms a casing for electromagnetic shielding with a body which internally defines a space, which defines an opening which is adapted to be arranged towards a base, the
elastic element being arranged on edges of the body, which surround the opening and are adapted to be arranged against the base. The elastic element is preferably made of an electrically conductive material. The elastic element may comprise a plurality of point-shaped segments, which are uniformly distributed along the edges of the body. Each point-shaped segment and the edges of the body can be interconnected by mechanical engagement.

According to one more preferred embodiment, the component forms a frame for electromagnetic shielding, which is adapted to be arranged between two structures, the elastic element being arranged at least along one side of the frame. The elastic element is preferably made of an electrically conductive material. The elastic element may comprise a plurality of point-shaped segments, which are uniformly distributed along at least one side of the frame. Each point-shaped segment and the frame can be interconnected by mechanical engagement.

Finally, according to the invention a device is provided for manufacturing elastic elements for e.g. sealing, electromagnetic shielding or vibration absorption, said device being characterised by an assembly station, which is adapted to arrange a mould unit with cavities formed therein on a base component which forms a bottom of each cavity, an injection station which is adapted to supply, by means of needle-like filling nozzles of a filling means, a material in viscous state to the cavities, said filling nozzles being insertable into a cavity each while these are open towards the surroundings, a scraping station, which is adapted to scrape away, with the aid of a scraping means, surplus material which during injection of the viscous material into the cavities is not accommodated therein, a treating station, which is adapted to treat the viscous material supplied to the cavities so that it assumes a non-viscous, elastic state, and a separating station which is adapted to separate the mould unit and the base unit for
uncovering the thus non-viscous, elastic material, which consequently forms the elastic element.

Preferably, a treating station is arranged between the assembly station and the injection station, said treating station being adapted to treat the viscous material and/or the base component in such manner that the material adheres to the base component during the treatment of the material at the treating station. The treating station can be adapted to apply a binder, such as a primer, to the base component, said binder making the viscous material adhere to the base component in the treatment of the material at the treating station.

The device is preferably arranged for flow-oriented production, each station being adapted to receive a second set of mould unit/base component after delivering the first set of mould unit/base component.

The invention will now be described for the purpose of exemplification with reference to the accompanying drawings.

20 Brief Description of the Drawings

Figs 1 a-g are schematic perspective views of a process according to the inventive method for manufacturing an elastic element and applying the same to a casing for electromagnetic shielding.

Fig. 2 is a cross-sectional view of an alternative embodiment of the step shown in Fig. 1c of filling cavities in a mould unit with a viscous material.

Fig. 3 is a schematic side view of an elastic element in the form of point-shaped segments which have a preferred geometric design.

Fig. 4 is a schematic cross-sectional view of an alternative connection between a point-shaped segment and a base component.

Fig. 5 is a perspective view of a frame for electromagnetic shielding with an elastic element in the form of point-shaped segments.
Figs 6 a-b are schematic perspective views of alternative fields of application for an elastic element formed as point-shaped segments.

Description of Embodiments

Figs 1 a-g illustrate an embodiment of the method according to the invention for manufacturing an elastic element.

In Figs 1 a-g, use is made of the inventive method for applying the elastic element to a base component 1 in the form of a casing 1a for electromagnetic shielding. The elastic element forms a packing which is arranged on a flange 2 or edges which surround an opening 3 of the casing 1a. The casing 1a can be made of e.g. metallised plastic, casting or sheet metal. The casing 1a internally defines a space 4, which is best seen in Fig. 2, and in use the casing 1a is adapted to be arranged over an electronic component or a group of electronic components, the packing being arranged against the base, on which the components are arranged. The base can be e.g. a printed circuit board.

The packing can be made of an electrically conductive material and is designed in the form of point-shaped segments 5. Although the packing is not continuously designed, it nevertheless accomplishes the necessary electromagnetic shielding, and if the casing 1a is adapted to be used in a mobile phone, for which the frequencies that are to be shielded can normally be up to 1900 MHz, the distance between the segments 5 can be 2 mm and the diameter of each segment 5 can be 0.5 mm.

However, it will be appreciated that the inventive method also allows manufacture of continuous elastic elements, which can be used, for example, as packings for a casing 1a of the type mentioned above. Such continuous packings can be arranged directly on the casing 1a or some other suitable base component 1 immediately in connection with the manufacture of the packing or be mounted on the base component 1 in question in a subsequent mounting
operation. Apart from the fact that such a packing, when made of or coated with an electrically conductive material, allows electromagnetic shielding, the packing establishes also an environmental seal against moisture and dust.

It will also be appreciated that the base component need not be a casing 1a for electromagnetic shielding. For example, the base component 1 can be a frame 1b for electromagnetic shielding, as shown in Fig. 5, said frame 1b being arranged, for example, between a printed circuit board and a rear of a mobile phone (not shown).

Now the steps included in the method will be described in detail. The description will be directed at the manufacture of an elastic element arranged on a casing 1a, but it will be appreciated that this is done only for exemplification.

Fig. 1a illustrates an initial station, at which the casing 1a is arranged in a lower mould part 7.

Fig. 1b illustrates an assembly station, at which an upper mould part 8 in the form of a mould unit is arranged on the casing 1a. Through cavities 9 are formed in the mould unit 8, which is evident from Fig. 2. The cavities 9 are arranged in such manner as to be located above the flange 2 surrounding the opening 3 of the casing 1a.

The flange 2 forms a bottom of each cavity 9.

Fig. 1c shows an injection station, at which a filling means 10 is used to supply a viscous material to the cavities 9. The filling means 10 comprises a needle-like nozzle 11, which by turns is introduced into each of the cavities 9 for filling the same.

The filling means 10 can, of course, comprise a plurality of such needle-like filling nozzles 11, the number of filling nozzles 11 preferably conforming with the number of cavities 9, thus making it possible to fill all cavities 9 in one step. Fig. 2 shows a filling means 10 which comprises two filling nozzles 11 which are adapted
to simultaneously supply a viscous material to a cavity 9 each.

If the mould unit comprises only one cavity, which is formed to provide a continuous elastic element, it is of course possible to use a filling means with a plurality of filling nozzles which cooperate to fill the cavity in question.

After the injection station, a scraping station is arranged, as shown in Fig. 1d, at which surplus material is scraped away by a scraping means 12. Apart from removing surplus material, said scraping station also ensures that each cavity is sufficiently filled by the material during the actual scraping step being pressed down into the cavity in question, thereby ensuring that the cavity will be completely filled. This ensures manufacture of uniform elastic elements.

Fig. 1e illustrates a treating station 13 to which the package consisting of the lower mould part 7, the casing 1a and the upper mould part 8 is then supplied and which is adapted to treat the viscous material supplied to the cavities 9, in such manner that it assumes a non-viscous, elastic state. The station 13 can be, for example, a furnace in which the material is vulcanised, hardened or dried. The material can also be such as to be, in its viscous state, in a heated, molten state, in which case the station 13 is adapted to cool the material to make it assume its non-viscous, elastic state.

Fig. 1f shows a separating station, at which the upper mould part 8 is removed, whereby the segments 5 of the elastic element are uncovered.

Finally, Fig. 1g illustrates a final station, at which the casing 1a and the elastic point-shaped segments 5 arranged thereon are removed from the lower mould part 7.

The inventive method is extremely suitable for manufacture of elastic elements in a continuous flow process. As soon as the activity at one of the stations shown in
Figs 1a-g is terminated, this station is prepared to repeat the same activity. A device for manufacturing elastic elements according to the inventive method suitably comprises such stations as each perform one of the described steps. These stations are advantageously designed in such manner that they are moved along a path while carrying out the step in question. When the step in question is terminated, the station is returned to the starting position and repeats the step for manufacturing one more elastic element. This means that the entire process can be carried out as a continuous flow and be independent of the time required for carrying out each step, i.e. the process does not come to a halt when carrying out the different steps.

Owing to the filling of the cavities 9 being performed by means of one or more needle-like nozzles 11 which are inserted into each of the cavities, satisfactory filling of the same is ensured. It is thus possible to impart to the cavities 11 - and thus also to the elastic element - a relatively complex design, and moreover the height of the elastic element in relation to its width will not be a critical factor. The only limitation is that the cavities 9 must be designed so that the mould unit 8 can be removed after the treatment of the initially viscous material at the treating station 13.

Fig. 2, to which reference is now made, shows as mentioned above the step of supplying the viscous material to the cavities 9 with the aid of a filling means 10 which comprises a plurality of needle-like filling nozzles 11. The components included are in the figure slightly separated to improve clarity. Heating or cooling means 14 are arranged in the upper 8 as well as in the lower 7 mould part, depending on whether the material is to be heated or cooled. The heating means can be, for example, heating elements and the cooling means can be, for example, cooling ducts. The heating or cooling means 14 increase the efficiency of the process. Moreover a die
15 is illustrated, which is arranged between the lower mould part 7 and the casing 1a. The die 15 reduces wear on the lower mould part 7 and thus increases the life thereof.

Fig. 3, to which reference is now made, illustrates a preferred geometric design of the elastic element when being in the form of point-shaped segments 5. Each segment 5 has the shape of a truncated cone, whose wide end faces the base component 1, such as a casing 1a as described above. This shape of the segments 5 allows easy removal of the mould unit 8 while at the same time establishing an ideal packing for electromagnetic shielding. Thanks to the relatively great distance between the segments 5, an advantageously small amount of compressing force is required when, for example, a casing 1a with such segments 5 is arranged over electronic components on, for example, a printed circuit board. Owing to the distance between the segments 5, each segment 5 can be compressed without engaging a neighbouring segment 5.

In order to arrange the elastic element on a base component 1, such as a casing 1a, such a material of the elastic element can be chosen as to adhere to the base component 1 in connection with the treatment of the material. It is ensured that the material does not adhere to the upper mould part 8, which in practice is achieved by manufacturing the upper mould part 8 of a material suitable for this purpose. Alternatively, the boundary surfaces of the cavities 8 can be coated with an agent which prevents adhesion during said treatment. It is also possible to coat, for example, the flange 2 of the casing 1a with a binder, such as a primer, to make the material adhere to the casing 1a.

Fig. 4, to which reference is now made, shows an alternative method of fixing a segment 5 of the elastic element to a base component 1. More specifically, the segment 5 is connected with the base component 1 by mechanical engagement. The base component 1 has an opening
16 through which a portion 17 of the viscous material enters while supplying the viscous material to a cavity 9. By arranging the lower mould part 7 in a suitable fashion, the viscous material can be made to spread along the underside of the base component 1, and after the treatment of the viscous material to make it assume its non-viscous, elastic state, a reliable mechanical connection between the segment 5 and the base component 1 is obtained. This obviates the need for a primer or some other binder to make the segments 5 of the element adhere to the base component 1.

It will be appreciated that the elastic element according to the present invention need not necessarily be used as a packing for electromagnetic shielding.

Figs 6 a-b illustrate alternative fields of application for elastic elements which are manufactured according to the inventive method.

In Fig. 6a, the elastic element is used as a vibration or shock absorbing element which is arranged under a device 18 causing vibrations and/or shocks. Such a vibration or shock absorbing element is preferably manufactured in the form of separate segments 5 which are then arranged at the desired location.

Fig 6b shows how the inventive method can be used for manufacturing anti-skid means. The elastic element is then made in the form of segments 5 which are arranged on a base component 1 in the form of a plate 1c which can then be placed on a floor, the segments 5 contributing to reduce the skidding risk. It goes without saying that it is also possible to manufacture said segments 5 separately and then arrange them on a floor, for instance, by gluing.

According to the present invention, a method is thus provided, which allows extremely simple manufacture of elastic elements. To this end, the method comprises the steps of supplying a viscous material to one or more cavities by means of at least one needle-like nozzle. The
use of a filling nozzle allows filling of extremely small cavities. Then surplus material is scraped away, which in turn ensures satisfactory filling of the cavities and thus allows manufacture of uniform elements. The material is then treated in such manner that it assumes a non-viscous, elastic state while the material is located in said cavities. This allows in particular manufacture of an elastic element consisting of a plurality of fairly small segments. These segments can, in manufacture, be applied directly to the base component for which they are intended. For example, it is possible to manufacture and apply in one step a plurality of point-shaped segments to a casing for electromagnetic shielding, said segments forming an elastic and electrically conductive packing.

The inventive method is also extremely versatile. By exchanging the mould unit, in which the cavities are formed, manufacture of differently designed elements is allowed.

It will thus be appreciated that several modifications and variations can be provided within the scope of the invention. The extent of the invention is therefore only defined by the appended claims.
CLAIMS

1. A method for manufacturing an elastic element for e.g. sealing, electromagnetic shielding or vibration absorption, comprising the steps of
supplying, by means of a needle-like filling nozzle (11) of a filling means (10), a material which is in a viscous state to at least one cavity (9) formed in a mould unit (8),
subsequently treating the material supplied to each cavity (9) in such manner that it assumes a non-viscous, elastic state, and
finally separating the material and the mould unit (8) to uncover the material which thus forms said elastic element,
characterised by the steps of
supplying the viscous material to each cavity (9) while the cavity (9) is open towards the surroundings,
and
preceding the step of treating the material supplied to each cavity (9) by the step of scraping away, with the aid of a scraping means (12), surplus material which when supplying the viscous material to each cavity (9) is not accommodated therein.

2. A method as claimed in claim 1, wherein a plurality of cavities (9) are formed in the mould unit (8) and the filling means (10) is adapted to supply the viscous material to each of the cavities (9), whereby the elastic element thus comprises a plurality of separate elastic segments (5).

3. A method as claimed in claim 2, wherein the needle-like nozzle (11) of the filling means (10) is sequentially inserted into each of the cavities (9) for supplying the viscous material to the same.

4. A method as claimed in claim 2, wherein the filling means (10) comprises a plurality of needle-like
filling nozzles (11), the filling nozzles (11) being inserted into a cavity (9) each for supplying the viscous material to the cavities (9).

5. A method as claimed in any one of the preceding claims, wherein the material in its viscous state is in a heated, molten state, the material being treated by cooling to make it assume its non-viscous, elastic state.

6. A method as claimed in any one of claims 1-4, wherein the material in its viscous state is in a non-heated state, the material being treated by heating to make it assume its non-viscous, elastic state.

7. A method as claimed in claim 6, wherein the material is such as to harden in said heating.

8. A method as claimed in claim 6, wherein the material is such as to be vulcanised in said heating.

9. A method as claimed in any one of the preceding claims, wherein each cavity (9) is formed in the mould unit (8) as a through duct, the step of supplying the viscous material to each cavity (9) being preceded by the step of arranging the mould unit (8) on a base component (1, 1a, 1b) which thus forms a bottom of each cavity (9).

10. A method as claimed in claim 9, wherein the base component (1, 1a, 1b) and/or the material are arranged so that the material adheres to the base component (1, 1a, 1b) when the material is treated to assume its non-viscous, elastic state.

11. A method as claimed in claim 9 or 10, wherein said base component (1, 1a) is formed of the edges (2) of casing (1a) for electromagnetic shielding.

12. A method as claimed in claim 9 or 10, wherein said base component (1, 1b) is formed of a side of a frame (1b) for electromagnetic shielding.

13. A component (la, 1b) for electromagnetic shielding, on which component (la, 1b) an elastic element is arranged by means of the method as claimed in any one of claims 9-12, the component (la, 1b) forming said base component (1, 1a, 1b).
14. A component (1a) as claimed in claim 13, wherein the component (1a) forms a casing (1a) for electromagnetic shielding with a body, which internally defines a space (4) and which defines an opening (3) which is adapted to be arranged towards a base, the elastic element being arranged on edges (2) of the body, which surround the opening (3) and are adapted to be arranged against the base.

15. A component (1a) as claimed in claim 14, wherein the elastic element is made of an electrically conductive material.

16. A component (1a) as claimed in claim 15, wherein the elastic element comprises a plurality of point-shaped segments (5), which are uniformly distributed along the edges (2) of the body.

17. A component as claimed in claim 16, wherein each point-shaped segment (5) and the edges of the body are interconnected by mechanical engagement.

18. A component (1b) as claimed in claim 13, wherein the component (1b) forms a frame (1b) for electromagnetic shielding, said frame (1b) being adapted to be arranged between two structures, the elastic element being arranged on at least one side of the frame (1b).

19. A component (1b) as claimed in claim 18, wherein the elastic element is made of an electrically conductive material.

20. A component (1b) as claimed in claim 19, wherein the elastic element comprises a plurality of point-shaped segments (5), which are uniformly distributed along at least one side of the frame (1b).

21. A component (1b) as claimed in claim 20, wherein each point-shaped segment (5) and the frame (1b) are interconnected by mechanical engagement.

22. A device for manufacturing an elastic element for e.g. sealing, electromagnetic shielding or vibration absorption,
characterised by
an assembly station, which is adapted to arrange
a mould unit (8) with cavities (9) formed therein on a
base component (1, 1a, 1b) which forms a bottom of each
cavity (9),
an injection station which is adapted to supply,
by means of needle-like filling nozzles (11) of a fil-
ling means (10), a material in viscous state to the
cavities (9), said filling nozzles (11) being insertable
into a cavity (9) each while it is open towards the sur-
roundings,
a scraping station, which is adapted to scrape away,
with the aid of a scraping means (12), surplus material
which during injection of the viscous material into the
cavities (9) is not accommodated therein,
a treating station (13), which is adapted to treat
the viscous material supplied to the cavities (9) so that
it assumes a non-viscous, elastic state, and
a separating station, which is adapted to separate
the mould unit (8) and the base unit (1, 1a, 1b) for un-
covering the thus non-viscous, elastic material, which
consequently forms the elastic element.

23. A device as claimed in claim 22, wherein a
treating station is arranged between the assembly station
and the injection station, said treating station being
adapted to treat the viscous material and/or the base
component (1, 1a, 1b) in such manner that the material
adheres to the base component (1, 1a, 1b) during the
treatment of the material at the treating station (13).

24. A device as claimed in claim 23, wherein the
treating station is adapted to apply a binder, such as
a primer, to the base component (1, 1a, 1b), the binder
making the viscous material adhere to the base component
(1, 1a, 1b) during the treatment of the material at the
treating station (13).
25. A device as claimed in any one of claims 22-24, which is arranged for flow-oriented production, each station being adapted to receive a second set of mould unit (8)/base component (1, 1a, 1b) after delivering the first set of mould unit (8)/base component (1, 1a, 1b).
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B29C 35/00, B29C 65/00
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B29C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>US 4732724 A (FRANZ STERNER), 22 March 1988 (22.03.88), column 1, line 7 - line 17, figure 8, claims 1,2, abstract</td>
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Further documents are listed in the continuation of Box C. See patent family annex.

Date of the actual completion of the international search: 20 Sept 2000

Date of mailing of the international search report: 6-09-2000

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