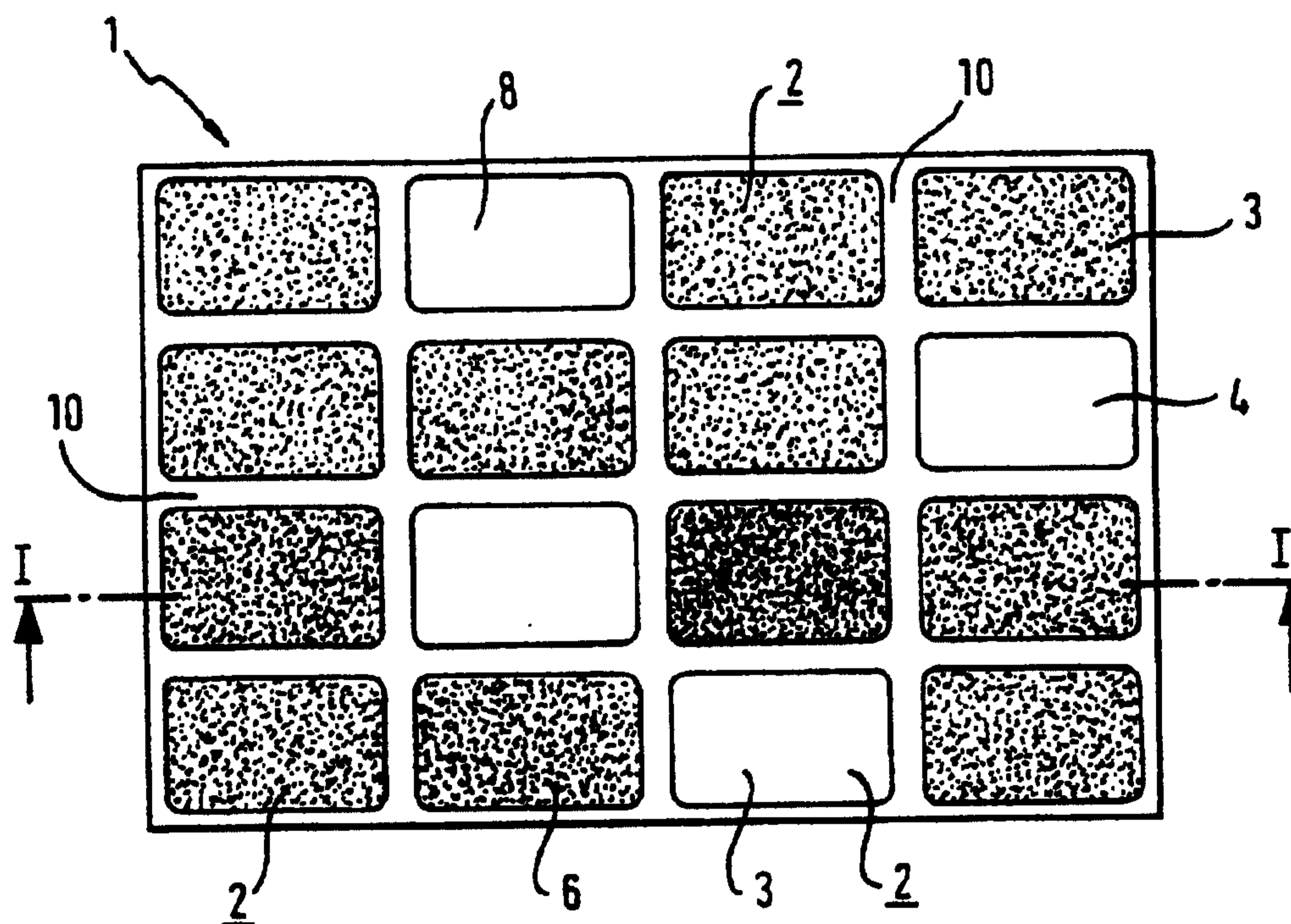


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(54) **BONBON SOLIDE - PROCESSUS ET DISPOSITIF DE PRODUCTION**
(54) **SOLID CANDY AND A PROCESS AND A DEVICE FOR THE PRODUCTION OF THIS TYPE OF CANDY**



(57) The invention pertains to solid, one-piece, bar-shaped or slab-shaped candy (1), especially of chocolate, with a number of sections (2) of essentially the same strength, defined by portioning aids (10), where at least two adjacent sections (2) differ in their composition. In addition, a process and a device for the production of a candy such as this are described. First, various castable mixtures are prepared in several containers. At least one casting device is connected to each container. By actuation of the casting devices, the different mixtures are poured simultaneously into adjacent molds (40), the molds (40) being connected to each other in such a way that the mixture can flow between them. Then the cast mixtures (5) in the molds (40) are hardened to form the one-piece candy (1).



ABSTRACT

The invention pertains to solid, one-piece, bar-shaped or slab-shaped candy (1), especially of chocolate, with a number of sections (2) of essentially the same strength, defined by portioning aids (10), where at least two adjacent sections (2) differ in their composition. In addition, a process and a device for the production of a candy such as this are described. First, various castable mixtures are prepared in several containers. At least one casting device is connected to each container. By actuation of the casting devices, the different mixtures are poured simultaneously into adjacent molds (40), the molds (40) being connected to each other in such a way that the mixture can flow between them. Then the cast mixtures (5) in the molds (40) are hardened to form the one-piece candy (1).

CASE 21433

TRANSLATION:

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SOLID CANDY AND A PROCESS AND A DEVICE FOR THE PRODUCTION
OF THIS TYPE OF CANDYTechnical Area

The invention pertains to solid, one-piece, bar-shaped or slab-shaped candy, especially of chocolate, with a number of sections of essentially equal strength defined by portioning aids and to a process and a device for producing candy of this type.

State of the Art

One-piece, bar-shaped or slab-shaped candy of this type, especially of chocolate, and processes and devices for producing this candy are basically known. "Solid candy", in contrast to, for example, shell constructions, is to be understood in the following as candy which has a homogeneous composition over its entire cross section. This solid candy of the general type in question is known, for example, as chocolate bars or slabs, from which individual volume sections can be removed by making use of the grooves provided in the bar or slab. In this way, it is possible to separate individual, predetermined pieces from the one-piece bar or slab and thus to divide the candy into portions. This conventional type of candy is designed to be homogeneous with respect to taste; that is, the chocolate slab or bar has the same flavor at every point, and every piece separated from the whole is similar in this respect to every adjacent piece.

Within the scope of this basic concept, furthermore, it is also possible for several different types of chocolate to be present in the form of layers,

one on top of the other, so that each separable volume section of the candy consists of several components. Thus, although it is possible to combine several types of chocolate with different flavors or colors in a single chocolate bar, nevertheless the pieces which can be separated from the whole will always have the same composition as all the other pieces, with the result that, when the chocolate bar is eaten, it is found that all the pieces taste the same.

A method and a known device are used to produce candy of this type; the process comprises basically four stages. In the first stage, the components of the product to be produced, such as cocoa liquid, sugar, and cocoa butter, are mixed and rolled to obtain a smooth, uniform mixture. The rolled chocolate mixture is then subjected to a heat treatment in a conching step, during which the mixture acquires a pasty consistency. This procedure is used for fine chocolate to obtain better smoothness and a melting, delicate character. In this stage, it is also possible to mix in other components such as flavorings. Then, for further refinement, a third stage is carried out in which the mixture is tempered in a tempering device to initiate crystallization. In the fourth stage, a filling device loads the mixture into slab or bar-shaped molds, for example, after which the candy is cooled in a cooling device, removed from the molds, and packaged.

Description of the Invention

The task of the invention is to develop a solid candy and a process and a device for producing it of the general type described above in such a way that the candy can be easily and effectively divided into individual portions with different flavors, different colors, and/or different shapes.

This task is accomplished in accordance with a first aspect of the inven-

tion by a product with the features of Claim 1.

Accordingly, a solid, one-piece candy, which is produced in particular out of chocolate, has a number of sections, of essentially equal strength, defined by portioning aids, where the at least two adjacent sections differ in their composition. The candy is made up preferably out of several different types of chocolate, which are present, separately from each other, in the pre-defined sections. At least two adjacent sections of the candy differ from each other with respect to the type and/or color of the chocolate.

According to the invention, the candy is designed in the form of bars or plates to make chocolate bars or chocolate slabs. The slab-shaped configuration can comprise rectangular, but also circular, oval, or polygonal shapes.

It is preferable to provide grooves, perforations, recesses, etc., in the candy as portioning aids to facilitate the separation, breaking, or cracking of the individual sections in predetermined portions from the whole piece of candy. Thus it is possible, in an easy and simple manner, to obtain portions of a size suitable for the consumption of the candy. In addition, it is possible to break off a certain section with a composition different from that of an adjacent section of the slab. It is advantageous in this case to design the course of the boundaries in the grooves between the different types of chocolate as straight lines, because an edge suitable for breaking defined in this way can be obtained without the need to introduce an additional mixture of lesser strength as a portioning aid between the individual pieces intended for consumption.

Thanks to the way in which the product according to the invention is designed, it is possible to combine several different types of chocolate into the same product while at the same time always ensuring that the individual

types of chocolate can be consumed and enjoyed separately. Thus, even though a consumer buys only a single product, he or she can choose between several different types in the one product, depending on his or her preferences at the time. It is therefore no longer necessary to keep many individual products on hand, each with a different composition and each packaged separately from the other. Accordingly, the solutions according to the invention are also advantageous from the standpoints of packaging technology and ecology, because unnecessary packaging material is eliminated.

Advantageous embodiments of the product according to the invention are described in the remaining claims.

It is preferred that the sections with different compositions have different flavors. Thus the considerable advantage is obtained that, even though several flavors are combined in one candy, it is nevertheless possible to enjoy one flavor separately from all the others. The various compositions are produced by mixing different components and/or by varying the proportions of the components of the chocolate. Thus, a composition can consist, for example, of a milk chocolate, a cream chocolate, a bittersweet chocolate, or a white chocolate, depending on how the components of the chocolate are varied.

In addition, it has also been found to be advantageous for the sections with different compositions to differ in their external appearance as well. The selection of the amounts and types of the components of the chocolate will have the effect primarily of varying the color and/or shade of the sections. In addition, the different colors of the sections thus obtained can be arranged in, for example, checkerboard-like fashion or divided into horizontal or diagonal strips or arranged in variable sequences in the candy, which means that the range of design possibilities for the external appearance of the

candy is greatly expanded.

To ensure that the chocolate is divided efficiently into portions, it has been found advantageous for the candy to be designed in the form of a slab and that the sections be designed as bars. Thus relatively large pieces with the same composition can be easily separated from the chocolate.

As a way of optimizing the division of the candy into portions, it is preferred that the sections consist of individual pieces, small pieces *instead of large ones*. In contrast to a design in which the candy is divided into bars, a greater range of possibilities is thus obtained with respect to combining different compositions into a single candy.

For varying the shape of the portionable sections, it is advantageous for the pieces to be designed as circles and/or segments of circles. Here the candy can have a circular or oval outline, so that the individual sections which can be separated from the candy are in the form of segments of the circle.

It has also been found to be especially advantageous with respect to the design of the sections for the pieces to be essentially rectangular. As a result, a well-defined breaking edge can be obtained along which the pieces can be separated from each other.

In accordance with another advantageous embodiment of the invention, the sections are built up of several layers. As a result, the additional possibility is obtained of combining different types of chocolate and/or flavors with each other in a single section.

In accordance with a further embodiment of the invention, solids, which are surrounded by the candy, are contained in the sections. Advantageously these solids consist of nuts or nut pieces such as almonds or hazelnuts, dried

fruits or fruit pieces, so-called "Poprocks®", and/or extrudates such as "Crispies" and/or other cereal products such as cereal flakes or ballast materials (products that contain an increased hull component of the cereal grain). Poprocks® is to be understood as an example of a product which reacts when brought into contact with saliva. As a result, the variety of flavor directions available for the individual sections can be further increased.

The solution of the task on which the invention is based occurs in accordance with a second aspect of the invention by means of a process, according to Claim 11, for the production of a solid, one-piece, bar-shaped or slab-shaped candy, especially of chocolate, which has a number of sections of essentially the same strength, defined by portioning aids.

Accordingly, different castable mixtures are prepared first. These castable mixtures differ from each other in their composition, in their flavor, and/or in their color. Thus, various liquid candy substances such as dark chocolate, milk chocolate, white chocolate, and chocolate-containing components and fillings are provided as castable mixtures. The form of the mixture varies depending on its liquid or viscous aggregate state and can conform to the shape of the vessel which encloses it. The viscosity of the mixture gives it a certain strength, which has the effect of improving the castability of the mixture.

In the next step of the process, casting devices for casting the various mixtures simultaneously into adjacent molds are actuated, the molds being connected so that the mixture can flow from one mold to the other. To ensure that the mixtures are fed and metered accurately into the molds, it is preferable to use funnel-shaped casting, spray-, or injection-molding devices such as nozzles. It is advantageous for a separate device of this type to be

assigned to each section or each piece of candy to be produced. Thus it is guaranteed that a different mixture with a different taste and/or color can be supplied to the individual sections of the candy by the correspond casting device. In addition, as a result of the simultaneous casting of the different mixtures, it is ensured that the mixtures arrive in the molds simultaneously and spread out uniformly in them. Thus, if all the mixtures flow at the same rate, a sharp separation line can be achieved between adjacent molds and thus between adjacent cast sections. This is especially advantageous, because it is thus possible to prevent effectively the different mixtures from mixing with each other during the casting process.

Because the adjacent molds are connected to each other so that the mixtures can flow from one mold to the other, the individual sections can bond themselves to each other at their flow edges in the molds during the casting process to form a (sharp) boundary line. Ridges, elevations, screens, etc., are provided between the adjacent molds to produce portioning aids such as grooves or perforations between the sections of the candy during casting. Thus it is guaranteed that, first, a (sharp) separation line is produced between the individual sections of the one-piece candy and, second that, as a result of the portioning aids, the sections can be separated from each other exactly at this separation line.

After casting, the cast mixtures are hardened to form the one-piece candy. This can be done advantageously by cooling the cast mixtures to a temperature below their respective melting points.

Advantageous embodiments of the process according to the invention are described in the additional claims.

It is preferred that the preparation of the castable mixtures be carried

out in the known manner by a process which comprises the mixing, conching, and tempering of at least a cocoa mixture, sugar, and cocoa butter. By means of conching, a process in which the chocolate composition consisting of cocoa liquor, sugar, and coca butter is subjected to a temperature treatment and mechanical processing, it is possible to obtain a chocolate with improved structure and a full and delicate flavor. During tempering, stable crystals (β -crystals) are produced, which achieve a rapid crystallization, which crystallize rapidly and affect the storage life and structure of the chocolate.

To improve the external appearance, the gloss, the fracture behavior, and the melting behavior of the chocolate even more, it is has been found advantageous, during the preparation of the castable mixtures, to subject these mixtures to ultrasonic vibrations, usually in a continuous manner (as in conventional tempering systems). As a result of this treatment step, furthermore, it is also possible to obtain a chocolate mixture which shrinks in an optimum manner during hardening and cooling, so that the mixture can be removed from the mold more easily after casting.

It is also advantageous to treat the cooled, untempered mixtures in the casting molds to ultrasonic waves. In this case the ultrasonic waves are applied during the cooling process.

In this regard, it has turned out to be favorable for the ultrasonic waves to have a frequency in the range of 20-100 kHz and for them to be applied to the mixtures before they have been loaded or cast into the molds.

It is also advantageous to expose the castable mixtures to pulses of ultrasonic waves before the molds are filled. It is easier in this way to meter the ultrasonic waves, and undesirable heating of the normally precooled

mixtures beyond their respective melting points can be effectively avoided. If ultrasonic waves are applied to cast, untempered product, the heat thus produced must be dissipated by a cooling process.

In this regard, is it also possible to obtain certain advantages by adjusting the duration of the pulses in accordance with the composition of the mixture in question to a value in the range of 0.1-10 seconds. By means of the pulse duration, it is possible to control in optimum fashion the amount of energy supplied to the chocolate, so that the flow properties of the individual mixtures can be influenced and adjusted. It is advantageous, for example, for the flow rates of the various types of chocolate to be the same, because in this way, the different mixtures will reach the boundaries between adjacent molds simultaneously, and thus the desired straight course of the separation line between the adjacent types of chocolate in the molds can be obtained.

According to a preferred embodiment of the process according to the invention, certain advantages can be obtained if the process step of actuating the casting devices comprises the control of certain casting parameters. In this case, the casting parameters which are controlled are the pressure and the temperature of the castable mixtures as they emerge from the casting devices. This can be done, for example, by appropriate tempering of the casting devices. But the precrystallization of the mixtures by means of ultrasonic vibrations, as already mentioned, is also a suitable way of controlling the casting parameters.

It is advantageous for the casting parameters of the casting devices for the various mixtures to be set to values which are appropriate for the individual mixtures. The casting parameters will thus differ as a function of the flow behavior and flow properties of the different viscous mixtures and will

be set in such a way that the flow rate of all the different mixtures will be the same. In this way, all molds will be filled with the same amount; simultaneously, the desired sharp-edged, straight separation line between adjacent sections will be able to form, because, when the molds are filled simultaneously with mixtures which are all flowing at the same rate, the mixtures will contact each other simultaneously at the separation lines.

Thus special advantages are obtained when the casting parameters are controlled in such a way that the castable mixtures have the same flow rate in the molds.

The step in which the cast mixtures harden occurs advantageously in a cooling device. The molds filled with chocolate are preferably conducted through a cooling channel so that the chocolate slabs or bars can solidify and harden under carefully selected cooling conditions.

It has been found to be especially favorable for the hardening of the cast mixtures in the molds to be carried out by cooling the mixtures in three stages, namely, at an air temperature of 12°C for at least 5 minutes, at an air temperature of 5°C for at least 4-6 minutes, and at an air temperature of 18°C for at least 3-4 minutes. The indicated temperatures should be kept steady to $\pm 1^\circ\text{C}$. The hold times of the cast mixtures during the cooling process depend on the recipe. The cooling temperature in the last cooling stage depends on the ambient temperature and the relative atmospheric humidity and is suitably chosen to avoid condensation on the surface of the product. Conducting the cooling process in this manner guarantees that the hardened mixtures will be easy to remove from the molds.

In a preferred embodiment, furthermore, the process according to the invention comprises the placing of solids into at least one of the molds

before the casting devices are actuated. As a result, it is possible to introduce, for example, nuts, fruits, extrudates, or Poprocks® into the candy to be produced.

In accordance with a third aspect of the invention, the task on which the invention is based is also accomplished by a device according to Claim 24. According to this claim, an appropriate device is provided to implement the process according to the invention for producing the product according to the invention as well as to realize the preferred embodiments of the invention.

According to the invention, the device has several containers for different castable mixtures. As a result, it is ensured that the different mixtures will not mix with each other during preparation and that it will thus be possible to supply them separately to a number of different casting devices. The different mixtures can thus be effectively prevented from becoming homogenized with each other to form a uniform mixture. In addition, at least one of the casting devices is connected to each container by means of a suitable feed device such as, for example, a feed line, a pipe, or a funnel. In addition, several adjacent molds are provided, which are connected to each other in such a way as to allow the mixture to flow between them. As a result, as described above, a bond can be produced between adjacent castings, so that a one-piece candy is obtained.

Advantageous embodiments of the device according to the invention for producing one-piece, bar-shaped or slab-shaped candy are described in the remaining subclaims.

Thus, in accordance with a preferred embodiment, the containers include at least one device for controlling the container temperature. As mentioned above, it is possible in this way to adjust the flowability and flow proper-

ties of the viscous mixture in question in the container.

In this context, it is preferred that a device for treating the mixtures with ultrasonic vibrations also be provided. As discussed within the scope of the process according to the invention, energy in the form of ultrasonic vibrations is supplied to the mixtures to affect their temperature, viscosity, and external appearance.

To control the casting parameters, providing the casting devices with appropriate control devices offers certain advantages. The control devices preferably control the pressure and temperature of the castable mixtures as they emerge from the casting devices. As a result, the consistency of the chocolate can be adjusted in such a way that the flow edge of one mixture joins to the flow edge of the adjacent mixture but does not mix with it.

In correspondence with the process according to the invention, a casting device is preferably provided for each mold. As a result, it is possible to achieve an especially high production output.

Providing at least one casting device for each different mixture also offers advantages. When the type of chocolate is changed, it is therefore no longer necessary to clean the casting device in question. This represents an especially low-cost design variant of the device according to the invention.

For the hardening of the mixture, it is preferred that a cooling device be provided. As mentioned above, this cooling device is preferably a cooling channel, through which the molds are filled with cast mixture.

It has been found that it is advantageous for the cooling device to be designed in such a way that the mixtures are cooled in three stages, namely, at an air temperature of 12°C for at least 5 minutes, at an air temperature of

5°C for at least 4-6 minutes, and at an air temperature of 18°C for at least 3-4 minutes. In this way it is guaranteed that the mixtures can be easily removed from the molds and packaged in a sufficiently hardened state. The hold times of the cast mixtures in the cooling process depend on the recipe. The cooling temperature in the last stage of the cooling process depends on the ambient temperature and the relative humidity and is suitably selected to avoid condensation on the surface of the product.

Short Description of the Drawings

The invention is explained in greater detail below on the basis of actual embodiments, illustrated by way of example in the drawings:

- Figure 1 shows a top view of a piece of candy according to the invention as produced in accordance with a first embodiment;
- Figure 2 shows a top view of a second embodiment of the candy according to the invention;
- Figure 3 shows a schematic diagram, in cross section, of the candy according to the invention along line I-I of Figure 1 and along line II-II of Figure 2;
- Figure 4 shows a top view of a third embodiment of the candy according to the invention;
- Figure 5 shows a schematic diagram of a device for producing the candy according to the invention; and
- Figure 6 shows a schematic diagram of a detail of Figure 5 of a device for producing candy according to the invention.

Description of Embodiments of the Invention

The candy 1 shown in Figure 1 is designed as a single piece with a rectangular outline and is divided into several individual sections 2 for a total of 16. Sections 2 are essentially rectangular and arranged in rows next to and above each other in checkerboard fashion. As indicated in Figure 1 by the different colors, at least two adjacent sections 2 differ from each other in their composition. In the present case, slab-shaped candy 1 has sections 2 with white chocolate 4, milk or dark chocolate 6, and white chocolate with a caramel flavor 8, so that a chocolate slab with local differences in flavor is obtained. Sections 2 form individual pieces 3 of the chocolate slab and are connected to each other by grooves 10, which extend in straight lines parallel to each other in both the lengthwise and crosswise directions of the chocolate slab.

In grooves 10, the thickness of the chocolate slab (not shown) is reduced, so that individual pieces 3 of the slab with their different flavors and colors can be easily separated from the whole.

In the embodiment of candy 1 according to the invention shown in Figure 2, sections 2 of the chocolate slab defined by grooves 10 have different outlines. As can be seen from Figure 2, the slab consists of a total of three parallel strips of chocolate, each strip extending over the entire width of the slab. Two edge strips 12 constitute bars 5 of dark chocolate 6, whereas center strip 14 consists of white chocolate 4. In addition, center strip 14 is built up out of four individual rectangular pieces 3, which have grooves 10 along their outer edges. In this embodiment of the invention, it is possible to separate chocolate pieces 3 and bars 5, which are of different sizes, flavors, and shapes, into portions by breaking them off at grooves 10.

Figure 3 shows the structure of the candy according to the invention in the form of a schematic, cross-sectional diagram along line I-I of Figure 1 and along line II-II of Figure 2. On one surface 16 of the chocolate slab, depressions are provided to serve as grooves 10. The grooves reduce the thickness A of candy 1. From surface 16, vertical separating planes 20 extend in the grooves 10 to bottom surface 18 of candy 1. At these separating planes 20, sections 2 with their different compositions are in contact with each other in such a way that a straight, sharp boundary is formed between them. Sections 2 adhere to each other at separating plane 20, so that candy 1 constitutes a single piece overall.

The embodiment of the candy according to the invention shown in a top view in Figure 4 has an essentially circular outline. Here, round candy 1 consists of several chocolate-containing sections 2, which are designed in the form of segments 22 of a circle and in the form of a circle 24. Segments 22 and circle 24 contain different types of chocolate. In addition, in analogy to the first and second exemplary embodiments of the invention, grooves 10 are provided, by which sections 2 are connected to each other and which make it possible for the sections to be separated from each other.

Figure 5 shows a part of a system 26 for producing one-piece, bar-shaped or slab-shaped candy, especially of chocolate, according to the invention. In this system, the components for the production of bar-shaped or slab-shaped chocolate candy 1 are combined in a mixer (not shown) in the conventional manner and sent to a preparation device (not shown). The prepared chocolate is then sent to a conching machine 28. The resulting liquid chocolate is then transferred to a tank 30 and then sent to a precooling device 32, in which the chocolate is cooled to a temperature below its melting point. From the pre-

cooling device, the supercooled chocolate flows by way of a tempering and/or ultrasonic device 34, in which it is treated with ultrasound, to tanks 50, only one of which is shown in the drawing for the sake of clarity. In tanks 50, the various types of chocolate are stored temporarily, separately from each other. Any excess is sent back through a reheating device 38 to tank 30. From containers 50, the chocolate mixtures are transferred to casting devices 36, as will be explained in more detail below. Then the chocolate is poured by casting devices 36 into molds 40. Filled molds 40 pass through a cooling channel 42, in which the chocolate mixtures are hardened. Then the molds containing the cooled chocolate are transferred to an unmolding unit 44. The finished chocolate slabs or bars are packaged in a packaging unit 46, stacked on pallets, and stored in a warehouse 48.

The injection-molding of candy 1 is shown in Figure 6 in the form of a schematic diagram of a detail within the overall system. The device shown in this drawing for producing the one-piece, bar-shaped or slab-shaped chocolate candy according to the invention has several containers 50, in which castable mixtures 52 of different types of chocolate are held. Thus, a different type of chocolate is provided in each container 50. Each of containers 50 is connected by a feed line 54 to a casting device 36, which in the present case is designed as a nozzle. The number of casting devices 36 therefore corresponds to the number of different types of chocolate in containers 50. A number of molds 40, furthermore, are arranged in a row in the flow direction. These molds are connected to each other by ridges 56. One mold 40 is assigned to each casting device 36. At least one device (not shown) for controlling the temperature of the container is provided on each container. Similarly, casting devices 36 have control devices (not shown), by means of which the pres-

sure and temperature of castable mixtures 52 as they emerge from the casting devices 16 are controlled.

Castable mixtures 52, in the present case different types of chocolate, are treated with ultrasound in tempering device 34 shown in Figure 5 and then loaded into containers 50 shown in Figure 6. Each container 50 contains a different type of chocolate or candy. Then castable mixtures 52 are sent indirectly via feed lines 54 separately from each other to casting devices 36. It is also possible, however, for castable mixtures 52 to flow directly from containers 50 to casting devices 36. From the nozzles of casting devices 36, castable mixtures 52 are injected as jets 58 simultaneously into molds 40. In this way, molds 40 can be filled uniformly with the various types of chocolate coming from the nozzles, so that a piece of chocolate is formed in each mold 40. Because all of the mixtures flow at the same rate, their edges come into contact with each other at ridges 56 of molds 40, where they join together to form a one-piece chocolate slab but do not mix with each other. Thus, a different piece of chocolate 3 is formed in each mold 40, which ultimately forms a part of the overall chocolate slab.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. Solid, one-piece, bar-shaped or slab-shaped candy, especially of chocolate, with a number of sections (2) of essentially the same strength, defined by portioning aids (10), where at least two adjacent sections (2) differ in their composition.
2. Candy according to Claim 1, characterized in that the sections (2) which differ in their composition have different flavors.
3. Candy according to Claim 1 or Claim 2, characterized in that the sections (2) which differ in their composition have different external appearances.
4. Candy according to at least one of the preceding claims, characterized in that it is slab-shaped and in that the sections (2) consist of bars (5).
5. Candy according to at least one of Claims 1-3, characterized in that the sections (2) consist of pieces (3).
6. Candy according to Claim 5, characterized in that the pieces (3) consist of circles (24) and/or segments (22) of a circle.
7. Candy according to Claim 5, characterized in that the pieces (3) are essentially rectangular.
8. Candy according to at least one of the preceding claims, characterized in that the sections (2) consist of several layers.
9. Candy according to at least one of the preceding claims, characterized in that the sections (2) contain solid materials.
10. Candy according to Claim 9, characterized in that the solid materials consist of:
 - baked products;

- nuts or nut pieces;
- almonds or almond pieces;
- fruits or fruit pieces;
- extrudates;
- cereals;
- Poprocks; and/or
- effervescent products.

11. Process for the production of solid, one-piece, bar-shaped or slab-shaped candy, especially of chocolate, with a number of sections (2) of essentially the same strength, defined by portioning aids (10), where the process comprises the following steps:

- the preparation of various castable mixtures (52);
- the actuation of casting devices (36) for the simultaneous casting of the different mixtures (52) into adjacent molds (40), which are connected to each other in such a way that the mixture can flow between them; and
- the hardening of the cast mixtures (52) to form a solid, one-piece candy (1).

12. Process according to Claim 11, characterized in that the preparation of the castable mixtures (52) comprises the mixing, conching, and tempering of at least cocoa, sugar, and cocoa butter.

13. Process according to Claim 11 or Claim 12, characterized in that the preparation of the castable mixtures (52) comprises a treatment of the individual mixtures with ultrasonic vibrations.

14. Process according to Claim 13, characterized in that the ultrasonic vibrations have a frequency in the range of 20-100 kHz.

15. Process according to Claim 13 or Claim 14, characterized in that the

castable mixtures (52) are treated with ultrasonic vibrations in pulses.

16. Process according to Claim 15, characterized in that the duration of the pulses is in the range of 0.1-10 s.

17. Process according to at least one of Claims 11-16, characterized in that the step of the process comprising the actuation of the casting devices (36) comprises a control of certain casting parameters.

18. Process according to Claim 17, characterized in that the pressure and temperature of the castable mixtures (52) are the casting parameters which are controlled.

19. Process according to Claim 17 or Claim 18, characterized in that the casting parameters of the casting devices (36) for the various mixtures (52) are adjusted to values which are appropriate to the individual mixtures (52).

20. Process according to at least one of Claims 17-19, characterized in that the casting parameters are controlled in such a way that all the castable mixtures (52) are flowing at the same rate as they flow into the molds (40).

21. Process according to at least one of Claims 11-20, characterized in that the step of the hardening of the cast mixtures takes place in a cooling device (42).

22. Process according to at least one of Claims 11-21, characterized in that the hardening of the cast mixtures in the molds comprises the cooling of the mixtures over the course of the following stages:

- at an air temperature of 12°C for at least 5 minutes;
- at an air temperature of 5°C for at least 4-6 minutes; and
- at an air temperature of 18°C for at least 3-4 minutes.

23. Process according to at least one of Claims 11-22, characterized in that it also comprises the placement of solids into at least one of the molds

(40) before the step of the actuation of the casting devices (36).

24. Device for producing solid, one-piece, bar-shaped or slab-shaped candy (1), especially of chocolate, with a number of sections (2) of essentially the same strength, defined by portioning aids (10), where the device comprises:

- several containers (50) for different castable mixtures (52);
- a number of casting devices (36), where at least one casting device (36) is connected to each container (50); and
- a number of adjacent molds (40), which are connected to each other in such a way that the mixture can flow between them.

25. Device according to Claim 24, characterized in that the containers (50) comprise at least one device for controlling the container temperature.

26. Device according to Claim 24 or Claim 25, characterized in that a device for treating the mixtures with ultrasonic vibrations is provided.

27. Device according to at least one of Claims 24-26, characterized in that the casting devices (36) are provided with control devices.

28. Device according to Claim 27, characterized in that the pressure and temperature of the castable mixtures (52) are controlled by the control devices.

29. Device according to at least one of Claims 24-28, characterized in that at least one casting device (36) is provided for each mold (40).

30. Device according to at least one of Claims 24-29, characterized in that a casting device (36) is provided for each individual mixture (52).

31. Device according to at least one of Claims 24-30, characterized in that, in addition, a cooling device (42) is provided to harden the mixtures.

32. Device according to Claim 31, characterized in that the cooling

device (42) is a cooling channel.

33. Device according to Claim 31 or Claim 32, characterized in that the cooling device (42) comprises devices for controlling the cooling temperatures and hold times of the mixtures at each of the respective cooling temperatures.

Fig. 1

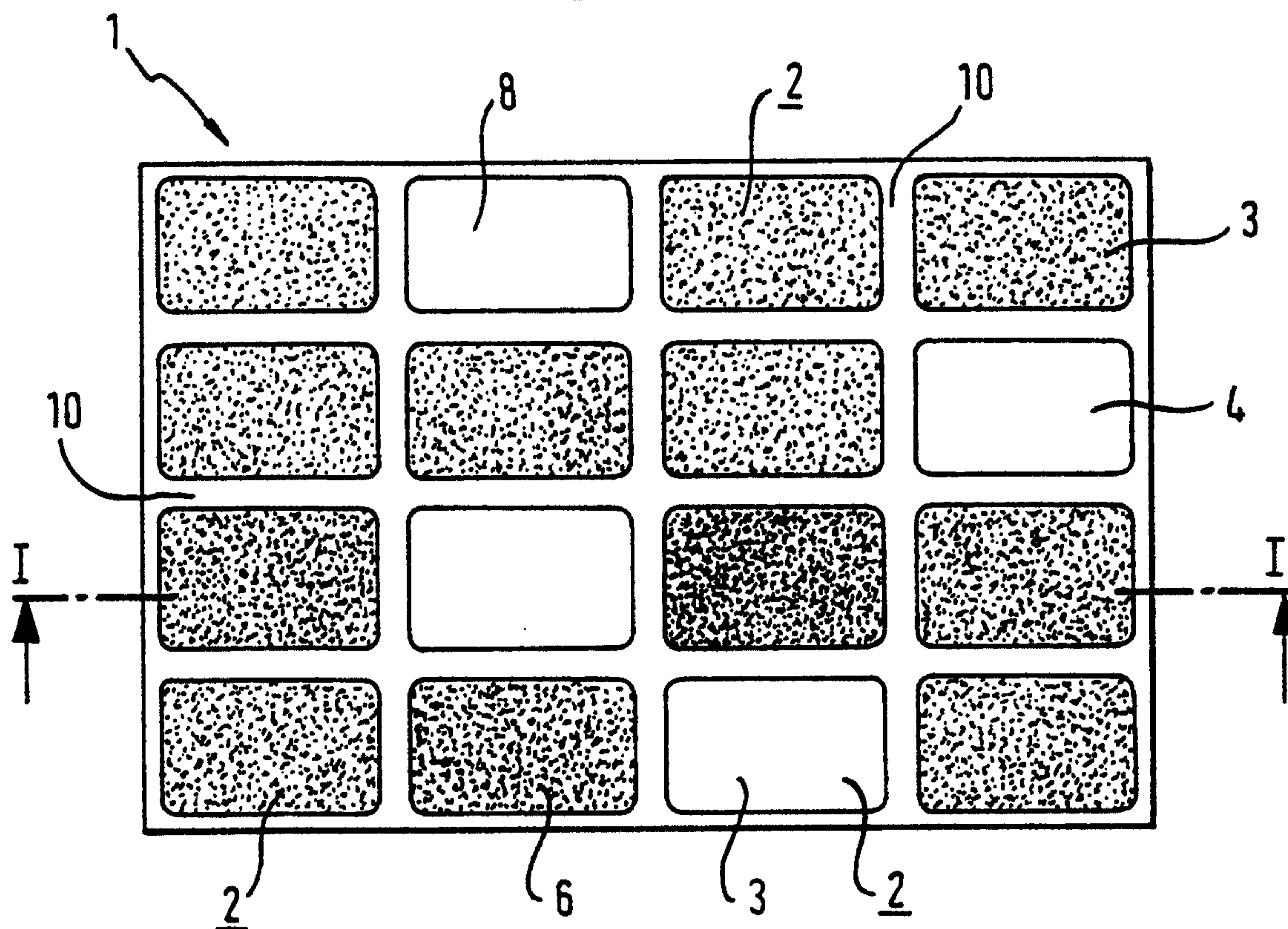


Fig. 2

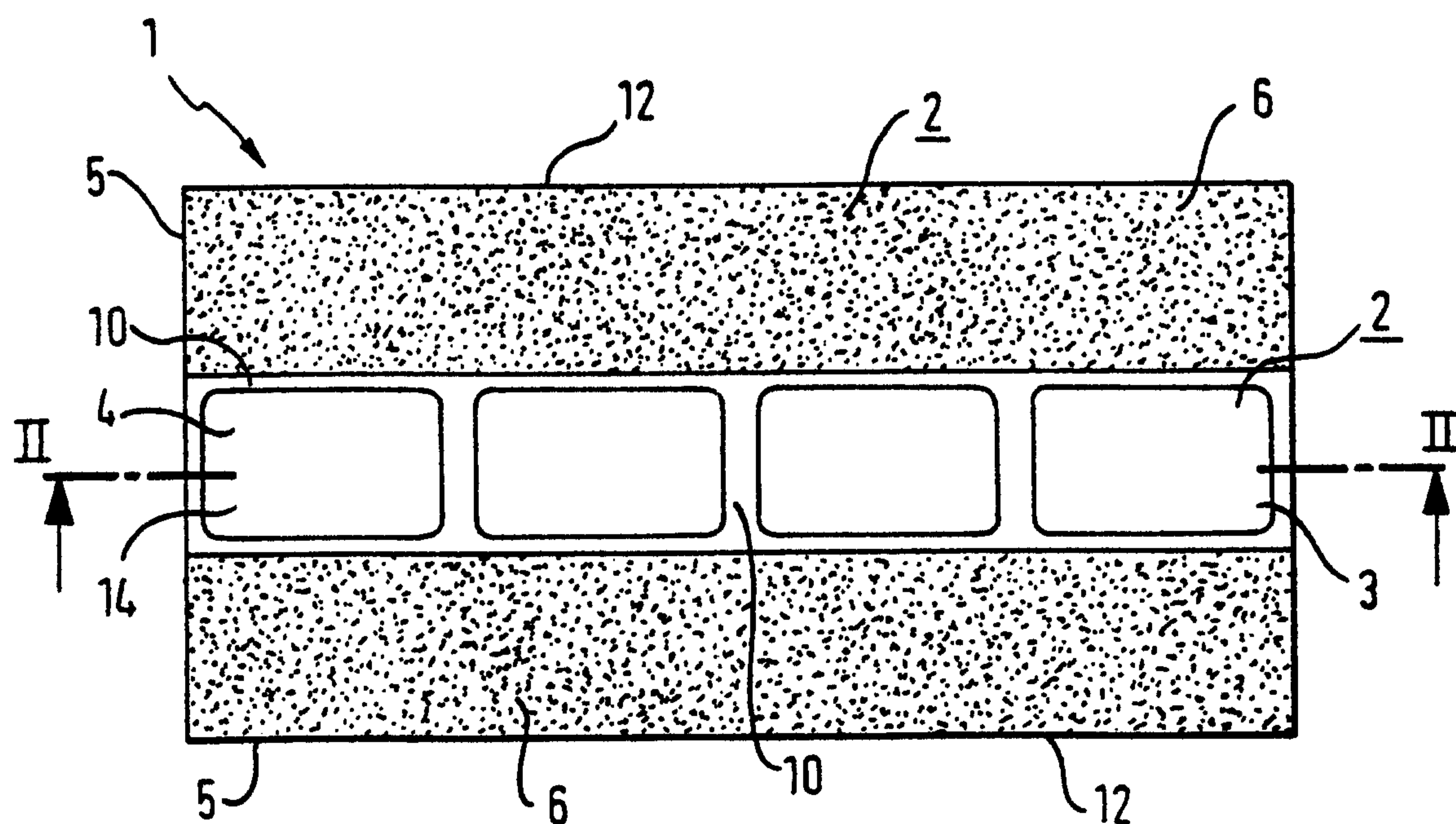


Fig. 3

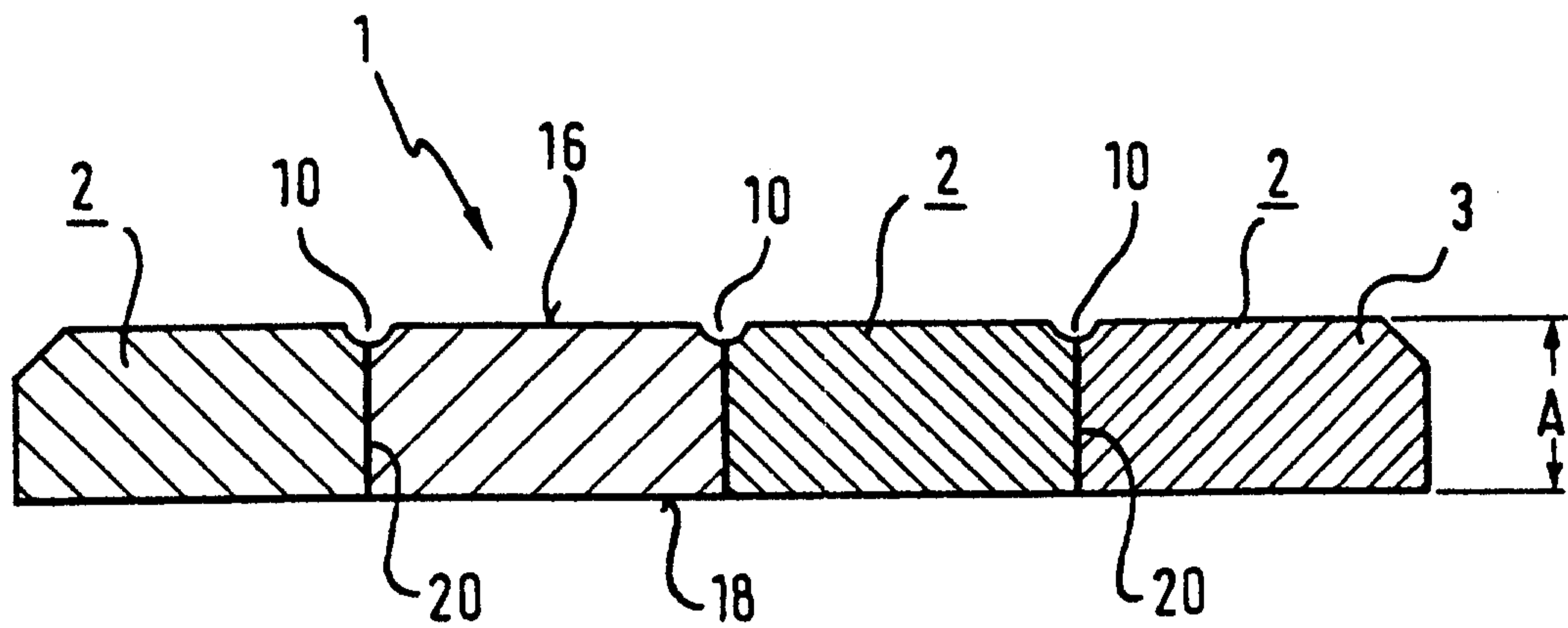


Fig. 4

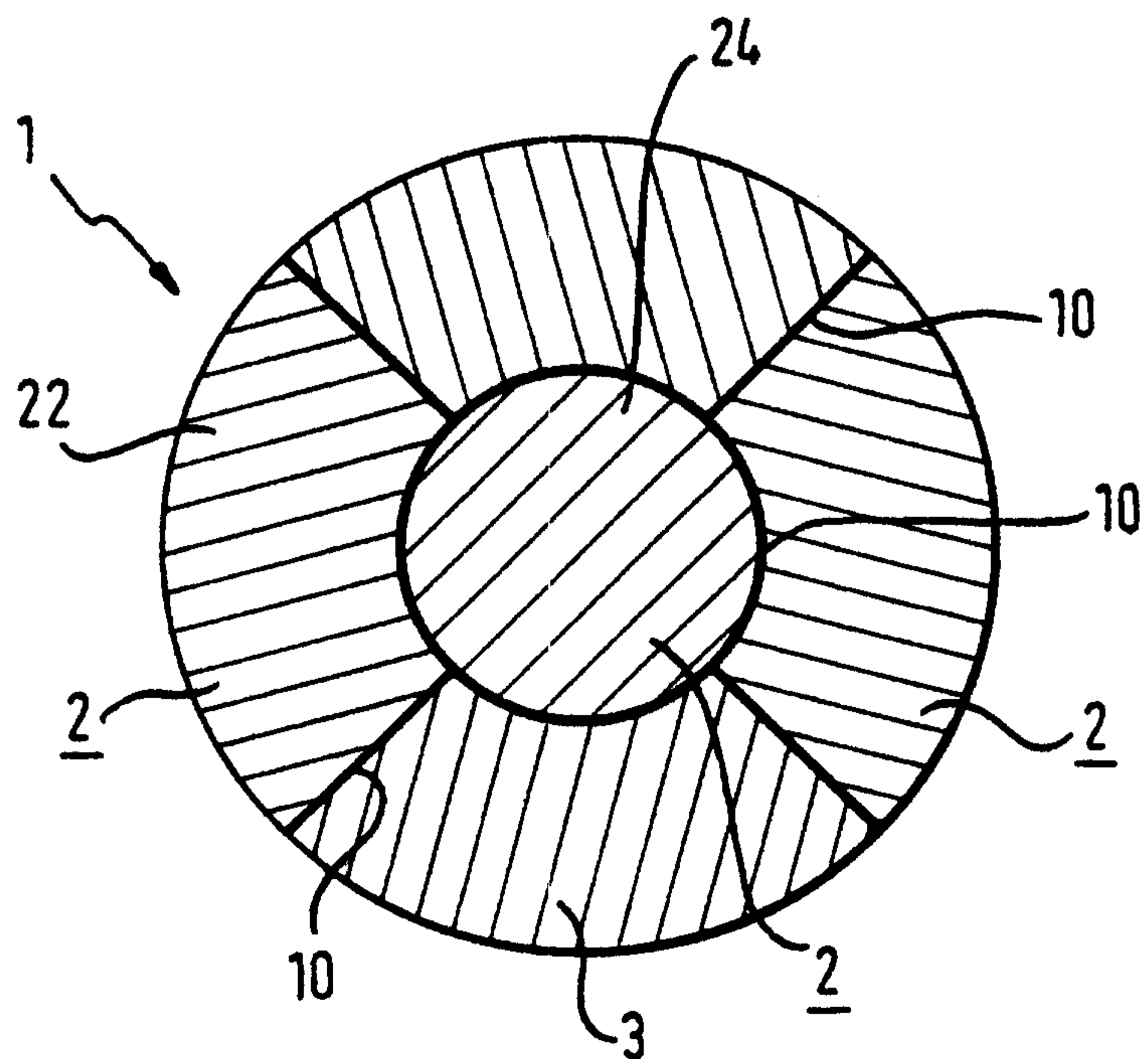


Fig. 5

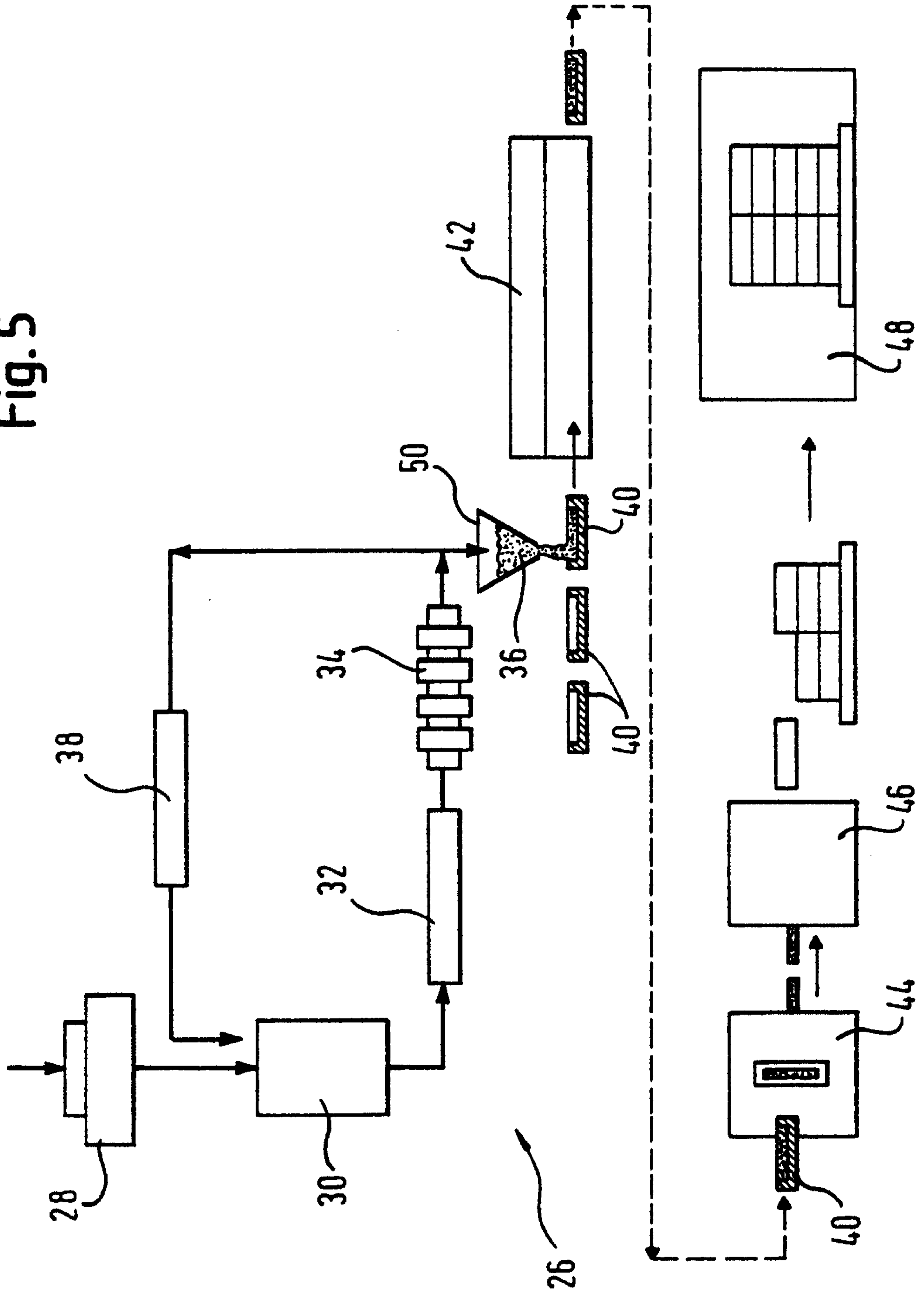


Fig. 6

