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(54) **SEALING GASKET WITH MAGNETIC CLOSURE, PARTICULARLY FOR DOOR WINGS, HATCHES, WINDOWS AND DOORS AND THE LIKE AND METHOD FOR ITS REALISATION**

DICHTUNG MIT MAGNETVERSCHLUSS, INSBESONDERE FÜR TÜRFLÜGEL, LUKEN, FENSTER UND TÜREN UND ÄHNLICHEM UND VERFAHREN FÜR DIE DICHTUNGSHERSTELLUNG

JOINT D'ETANCHEITE A FERMETURE MAGNETIQUE, DESTINE NOTAMMENT A DES BATTANTS DE PORTE, TRAPPES, PORTES, FENETRES ET ANALOGUES, ET PROCEDE DE REALISATION CORRESPONDANT

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Description

Technical Field

[0001] The present invention relates to a sealing gasket with magnetic closure.

[0002] The invention further relates to a new method for the realisation of a sealing gasket with magnetic closure.

[0003] In particular, the subject gasket is destined to realise magnetic closures in uses such as windows and doors, door wings of refrigerating rooms, wings and/or doors for shower compartments, etc., exerting a tighter or less tight seal according to the uses and operative requirements arising on each occasion.

Background Art

[0004] As is well known, sealing gaskets or section bars with magnetic closure are formed by a supporting section bar made of plastic resin which normally comprises an attachment base or portion, for instance presenting a "P"-shaped cross section or with tabs, for engagement to a movable part or to a fixed part of a window, of a door and the like, and a rabbet portion, presenting a striking face set to match against a surface with which the closure is obtained.

[0005] Internally to the rabbet portion of the section bar is associated a magnetised strip-shaped element, for instance made of plasto-ferrite. In some types of gasket, the magnetised strip-shaped element presents on its main face, corresponding to said striking face of the section bar, at least a pair of magnetised longitudinal bands with opposite polarity on each cross section. In other words, the magnetic element presents for example two adjacent longitudinal bands, one with North polarity and the other one with South polarity. In dual gasket closures, both parts set mutually to match in the closed position are provided with their own magnetic section bar, obviously presenting said magnetised longitudinal bands with their polarities suitably positioned to realise the mutual attraction force.

[0006] In practice, on the main face of the magnetised strip-shaped element, for example, there is a longitudinal band of the same polarity flanked over the entire length of the gasket by a longitudinal band of opposite polarity. In the case of sealing gaskets of greater length, for example around 10 mm, for the best exploitation of the magnetic attraction force, 4-pole magnetised elements, i.e. presenting 4 longitudinal bands, can also be used. In this case, each band presents the same polarity along its entire longitudinal development and is positioned adjacently to a band of opposite polarity, so that transversely each band is alternated with a band of opposite polarity.

[0007] For example, it is known from DE 2112425 a magnetic gasket assembly, suitable for use in doors windows and the like. In this known assembly, a flexible magnetic band is enclosed in an elastic sealing body; the elastic sealing body is movable through two operative conditions, in dependence of the proximity of metallic frames with respect to the magnetic band. Alternatively, two magnetic bands, embedded in two respective elastic sealing bodies, can be faced together, so as to determine a "closed gasket" configuration. In this known device, the magnetic bands embedded in the elastic sealing bodies are longitudinally divided into two regions with opposite magnetic polarity.

[0008] The known method for the realisation of the sealing gaskets summarily described above generally comprises the continuous unwinding from a coil of a strip-shaped element already longitudinally magnetised as stated; thereafter, the latter is coated preferably by means of extrusion of a section bar made of plastic resin or the strip-shaped magnetised element is inserted into a plastic resin section bar with an appropriate preformed seat; subsequently, the product thus obtained is cooled in tanks, and cut transversely into the required lengths. Possibly, depending on the applications, the rectilinear gaskets are terminally welded to form ready-made sealing frames (one can think, for instance, of uses for refrigerated rooms, windows and doors, et cetera).

[0009] The sealing gaskers with magnetic closure of the kind described above present some important drawbacks.

[0010] In the first place, directly in the manufacturing phase, it is necessary to guarantee a correct positioning of the magnetic poles on the section bars since any errors may compromise the future suitability for use of the product.

[0011] Moreover, particularly in the case of symmetrically shaped magnetic section bars destined to be coupled frontally with identical magnetic section bars, it is necessary suitably to mark the section bars and the magnetised strip-shaped elements by means of small projections or grooves, in order to identify on which side of the striking face the same polarity is present, to provide correct indications both during the manufacturing process and when mounting the gaskets. It is essential, upon closing two parts of a window or door or the like, for the magnetic poles of each gasket to be positioned in correspondence with magnetic poles of opposing sign belonging to the opposite gasket. These mounting conditions are often not met, which forces the workers assigned to the task to perform laborious operations to remove one of the two magnetic closure gaskets and apply the gasket anew after suitably reversing its position, thereby positioning the magnetic charges correctly.

[0012] Also in the case of asymmetrically shaped section bars, typically destined to form angle closures on surfaces for instance inclined by 45° from the respective attachment bases, some negative aspects are encountered. In this type of section bar, though mounting errors are not possible given its particular shape, it is nonetheless necessary to use two different section bars, each

having, in its interior, magnetic section bars with opposite poles, and thus realised with two distinct manufacturing processes with obvious increases in terms of manufacturing, handling, and storage.

[0013] In addition, with particular reference to the latter type of gasket with asymmetrical cross section structure, it should be noted that in case of a manufacturing error involving an incorrect positioning of the magnetic poles of a gasket, it would not be possible to use that gasket after suitably reversing it since, due to the asymmetry, the reversed gasket would no longer be able correctly to engage the support whereto it is destined.

[0014] In the attempt to overcome the latter drawback, gaskets have been proposed on the market which are provided with a magnetic element having an odd number of magnetised longitudinal bands. Should it be possible to use gaskets with an odd number of magnetised longitudinal bands, for instance with three poles, i. e. provided with three magnetised longitudinal bands on the striking face, each longitudinally of the same polarity and of opposite polarity with respect to those flanking it, it would nonetheless be necessary, in case of closures with dual gaskets, to have two distinct magnetic section bars available. A first section bar presents the two side bands of a given polarity and the central band of opposite polarity whereas, obviously, the second section bar presents the two lateral bands and the central band with polarity opposite to that of the first section bar.

[0015] Hence, the drawbacks in terms of manufacturing, handling, etc. are obvious.

Disclosure of Invention

[0016] In this situation, the technical task at the base of the present invention is to devise a sealing gasket with magnetic closure and a method for its realisation able substantially to overcome the aforementioned drawbacks.

[0017] Within the scope of said technical task, an important aim of the invention is to devise a sealing gasket with magnetic closure force which is of a single type for both parts of a window, door or the like, to be approached in closure irrespective of the cross section shape of the supporting section bar.

[0018] Another important aim of the invention is to devise a sealing gasket with magnetic closure that allows to prevent all errors in its mounting.

[0019] A further aim of the invention is to devise a method for the realisation of a sealing gasket in accordance with the invention which allows to manufacture additional gaskets in the required lengths without any difficulty.

[0020] The stated technical task and the specified aims are substantially attained by a sealing gasket with magnetic closure and by a method for its realisation which are characterised in that they comprise one or more of the technical solutions claimed below.

[0021] The description of some preferred, but not exclusive, embodiments of a sealing gasket with magnetic closure according to the invention is provided below, purely by way of non limiting indicative example; the description is made with reference to the accompanying drawings, provided purely by way of example.

Description of the Drawings

[0022]

- Figure 1 shows a generic cross section of a first embodiment of a sealing gasket for frontal closures whereto the invention can be applied;
- Figure 2 shows a generic cross section of a second embodiment of a gasket for 45° closures whereto the invention can be applied;
- Figure 3 schematically highlights a front view of two strip-shaped elements magnetised with two poles according to the invention and able mutually to couple in any way, characterised by a pair of segments of opposite polarity in each magnetised longitudinal band;
- Figure 4 shows a schematic front view of a strip-shaped element magnetised with 4 poles and with a pair of segments for each magnetised longitudinal band; and
- Figure 5 shows a schematic front view of a strip-shaped element magnetised with two poles and with two pairs of segments for each magnetised longitudinal band.

Description of the Illustrative Embodiments

[0023] With reference to the aforementioned figures, the sealing gasket with magnetic closure according to the invention is indicated in its entirety with the number 1.

[0024] It comprises a supporting section bar 2 made of plastic resin, in turn comprising an attachment base 3 and a rabbet portion 4 presenting a striking face 4a set to come to rest against a surface provided for matching therewith which, in closures with dual gaskets, is constituted by the striking face of another gasket.

[0025] In the rabbet portion 4 of the supporting section bar 2 is inserted a magnetised strip-shaped element 5 presenting on a main face 5a, corresponding to the striking face 4a, at least a pair of magnetised longitudinal bands 6, 7 of opposite polarity in each cross section. It should be noted that the magnetised longitudinal bands involve part, or preferably, all of the longitudinal extension of the element 5. Obviously, depending on the applications, areas of the surface 5a without magnetisation may be provided.

[0026] Originally, each longitudinal magnetised band 6, 7 is subdivided in at least a pair of segments, respectively 6a, 6b and 7a, 7b, preferably of equal length presenting homogeneous magnetic poles in each segment (longitudinally consecutive) and opposite with respect

to those of the other segment of the same longitudinal band. In practice, each segment 6a, 6b or 7a, 7b of each magnetised longitudinal band 6 or 7 is flanked laterally and is adjacent longitudinally to segments of opposite polarity.

[0027] For instance, Figure 3 shows two strip-shaped elements destined to be mutually coupled and presenting each a pair of magnetised longitudinal strips 6,7. The strip 6 superiorly presents, as shown in Figure 3, a segment 6a with South polarity and an inferior segment 6b with North polarity. Conversely, the strip 7 presents superiorly a segment 7a with North polarity and inferiorly a segment with South polarity.

[0028] It is obviously possible to provide, on the contrary, for the segments 6a and 7b to have North polarity and for the segments 7a and 6b to have South polarity.

[0029] Figure 4 shows the main face 5 of a strip-shaped element with two polar pairs, i.e. with four magnetised longitudinal strips 8, 9, 10, 11, each of which is subdivided into a pair of (longitudinally consecutive) segments, preferably of equal length, i.e. 8a and 8b, 9a and 9b, 10a and 10b, 11a and 11b. In this case too one can observe that each segment, for instance with North polarity, is laterally flanked by one or more segments with South polarity and is longitudinally adjacent to a segment, also with South polarity.

[0030] Figure 5 shows the main face of a strip-shaped element with one polar pair, i.e. with two longitudinal strips 6, 7, each of which is subdivided into two pairs of segments of equal length respectively indicated as 6a, 6b, 6c, 6d and 7a, 7b, 7c, 7d. Each segment of each strip complies with the alternation in polarity with the segment flanking it and with the longitudinal adjacent segment or segments.

[0031] The aforementioned examples are provided purely by way of indication, for it is obviously possible to subdivide each magnetised longitudinal strip into a greater number of pairs of segments of the same length, according to a checkerboard distribution of the alternating polarity.

[0032] The strip-shaped elements longitudinally magnetised with the criteria described above can be advantageously coupled to any shape of the supporting section bar.

[0033] In particular, in Figure 1 the rabbet portion 4 of the supporting section bar presents a substantially rectangular cross section shape so as to position the striking face 4a parallel with respect to the attachment base 4 to realise frontal closures. Given its symmetry this supporting section bar, as in the prior art, is a single one for both gaskets of a dual gasket closure, but, advantageously, cannot give rise to mounting errors because, as can be noted observing any one of the Figures 3, 4, 5, the reversal or mutual interchange of the extremities of a gasket does not change the disposition of the magnetic poles. For instance, with reference to Figure 3, if the gasket is reversed around a median transverse axis, the segment 6a with South polarity would be exchanged with the segment 7b, also with South polarity and, obviously, the segment 7a with North polarity would be replaced by the segment 6b, also with North polarity.

[0034] In Figure 2 the rabbet portion 4 has a substantially right triangle cross section profile, thereby positioning the striking face 4a inclined to about 45 ° with respect to the attachment base 3 to enable forming closures between opposite gaskets along matching surfaces oriented to 45°. Also with this shape of the supporting section bar the employment of the magnetised strip-shaped element in the manners described above is particularly advantageous as it is possible to produce a single type of symmetric gasket and then reverse, upon mounting, one of the two gaskets to be coupled in order to realise the right gasket and the left gasket with a simple reversal of position, naturally keeping unchanged the position of the magnetic charges. Hence, the manufacture and storage of two distinct gaskets are avoided with obvious benefits in terms of costs.

[0035] The invention realises a new method which also constitutes an integral part of the present patent.

[0036] The method provides for continuously unwinding from a coil a strip-shaped element made of material that is capable of being magnetised, but is not yet magnetised (or is only partially magnetised), for instance plasto-ferrite, and for inserting said strip-shaped element in a supporting section bar made of plastic resin, for instance directly during the extrusion of the section bar itself. The method further provides for identifying each portion of the supporting section bar, fitted internally with the strip-shaped element able to be magnetised, destined to form a gasket, i.e. having the required longitudinal development, and for subdividing said portion into at least a pair of areas of equal length (or similar length). The areas thus identified are subjected to magnetisation on a main face corresponding to the striking face of the supporting section bar along at least a pair of longitudinal faces, each subdivided into segments corresponding to the same areas of equal length (or similar length).

[0037] The magnetisation is performed so that each segment 6a, 6b, 7a, 7b, etc. presents its own homogeneous polarity, opposite to that of the segment laterally flanking it and of the longitudinally adjacent segment.

[0038] Obviously all gaskets that are to be mutually coupled are subdivided into the same number of pairs of segments of equal length and each segment presents magnetic charges of the same polarity as the segment of the other gasket having corresponding position.

[0039] Lastly, each gasket realised is cut. This operation, if desired, can be performed also before the magnetisation process.

[0040] The invention presents important advantages.

[0041] The possibility of applying the gaskets with symmetrical cross sections in accordance with the invention without having to follow any mounting rule aimed at correctly positioning the magnetic charges makes mounting faster and simpler, preventing all pos-

sibilities of installing gaskets which, instead of magnetically attracting each other, are mutually repelled.

[0042] It should be noted that even in gaskets with asymmetrical cross section, wherein normally no positioning errors are possible because the very shape of the gasket forces a proper mounting, the use of magnetised strip-shaped elements in accordance with the invention allows to limit the gaskets to be manufactured and stored to one type only.

[0043] It is stressed that the condition of positioning indifference of the magnetised strip-shaped element and therefore also of the gasket makes it unnecessary to place on the surface of the gasket particular markings relating to the position of the magnetic charges (in the examples shown such marking are present though wholly unneeded with reference to the identification of the distribution of the magnetic charges).

[0044] Lastly, it should be noted that the method according to the invention is particularly advantageous for the realisation of gaskets of the type described above because, if the prior art method were used, i.e. in particular if a strip-shaped element were to be magnetised beforehand, prior to being wound into the coil, it would be necessary not only to have *a priori* knowledge of the lengths of the gaskets to be manufactured, but also to synchronise with a great deal of precision and with obvious difficulty the cutting of the section bar with its advance, in order to obtain gaskets whose segments are magnetised correctly.

Claims

1. Sealing gasket with magnetic closure particularly for door wings, doors, windows and the like comprising:

a supporting section bar (2) comprising an attachment base and a rabbet portion (4) presenting a striking face (4a) set to come to rest against a surface with which it is to realise the closure, and

a magnetised element (5) inserted in said rabbet portion (4) of the supporting section bar (2) and presenting on a main face (5a) corresponding to said striking face (4a), at least for a prefixed portion of the longitudinal extension of the element (5) itself, at least a pair of magnetised longitudinal bands (6, 7) with opposite polarity in correspondence with each cross section, **characterised in that** each of said magnetised longitudinal bands (6, 7) comprises at least a pair of segments (6a and 6b, 7a and 7b) substantially of equal or similar lengths,

said pair of segments presenting magnetic charges of homogeneous polarity in each segment and of opposite polarity with respect to that of the other segment,

each said segment of each longitudinal band being laterally flanked and being longitudinally adjacent to segment of opposite polarity.

2. Gasket according to claim 1, **characterised in that** said rabbet portion (4) presents, in its cross section, a substantially right triangle profile so as to position said striking face (4a) inclined by about 45° with respect to said attachment base (3).

3. Gasket according to claim 1, **characterised in that** said rabbet portion (4) presents in its cross section a substantially rectangle profile so as to position said striking face (4a) parallel with respect to said attachment base (3).

4. Gasket according to any of the previous claims, **characterised in that** the main face of the element (5) comprises a plurality of magnetised longitudinal bands, positioned parallel to each other and in an even number.

5. Gasket according to any of the previous claims, **characterised in that** each of said longitudinal bands (6, 7; 8, 9, 10, 11; 6, 7) comprises a plurality of segments (6a, 6b, 7a, 7b; 8a, 8b, 9a, 9b, 10a, 10b, 11a, 11; 6a, 6b, 6c, 6d, 7a, 7b, 7c, 7d) positioned mutually adjacent and in an even number.

6. Gasket according to any of the previous claims, **characterised in that** said supporting section bar (2) is made of plastic material and said element (5) is made of piastic material wherein, particles of material able to be magnetised are distributed.

7. Gasket according to claim 6, **characterised in that** said element (5) is made of plasto-ferrite.

8. Gasket according to any of the previous claims, **characterised in that** said element (5) is strip-shaped and presents constantly shaped cross section along the longitudinal development of the element (5) itself.

9. Gasket according to any of the previous claims, **characterised in that** the element (5) has its main face (5a) magnetised substantially over its entire longitudinal development.

10. Method for the realisation of a sealing gasket with magnetic closure particularly for door wings, doors, windows and the like, said method being **characterised in that** it comprises the following phases:

making a strip-shaped element made of material capable of being magnetised advance continuously,

inserting said element into a supporting section

bar made of plastic resin, identifying each portion of said supporting section bar, internally fitted with said strip-shaped element, destined to form a gasket, presenting the required longitudinal development, subdividing at least into a pair of areas of equal length each portion of said supporting section bar,
subjecting to magnetisation said areas of equal length so as to form, on a main face (5a) of said strip-shaped element corresponding to a striking face of the supporting section bar, at least a pair of magnetised longitudinal bands (6, 7) subdivided each into segments (6a, 6b, 7a, 7b) corresponding to said areas of equal length and presenting homogeneous magnetic charges in each segment and of opposite polarity with respect to the laterally flanking segment and to the longitudinally adjacent segment.

11. Method according to claim 10, cheracterised in that said sealing gasket is of the type described in one or more of the previous claims from 1 to 9.

12. Method according to claim 10, **characterised in that** before or after said magnetisation phase there is a phase wherein said portion of the supporting section bar destined to form a gasket is cut transversely.

13. Method according to claim 10, **characterised in that** said strip-shaped element is continuously unwound from a suitably pre-packaged coil.

14. Magnetised element, in particular for sealing gaskets of the type described in one or more of the claims from 1 to 9, comprising:

- a main face (5a) adapted to correspond to a striking face (4a) of a sealing gasket's main section bar (2); and
- at least a pair of magnetised longitudinal bands (6, 7) located on said main face (5a), said magnetised longitudinal bands (6, 7) being of opposite polarity in correspondence with each cross section of the element (5) and being placed at least in a pre-set portion of the longitudinal extension of the element (5) itself,

characterised in that each of said magnetised longitudinal bands (6, 7) comprises at least a pair of segments (6a) and (6b), (7a) and (7b) substantially of equal or similar length, said pair of segments presenting magnetic charges of homogeneous polarity in each segment and opposite polarity with respect to that of the other segment, each said segment of each longitudinal band being laterally flanked and being longitudinally adjacent to segments of opposite polarity.

15. Element according to claim 14, **characterised in that** the main face of the magnetised element comprises a plurality of magnetised longitudinal bands positioned parallel to each other and in an even number.

16. Element according to claim 14 or claim 15, **characterised in that** each of said longitudinal bands (6, 7; 8, 9, 10, 11; 6, 7) comprises a plurality of segments (6a, 6b, 7a, 7b; 8a, 8b, 9a, 9b, 10a, 10b, 11a, 11; 6a, 6b, 6c, 6d, 7a, 7b, 7c, 7d) positioned mutually adjacent, and in an even number.

17. Element according to any of the claims 14 through 16, **characterised in that** said the magnetised element is made of plastic material wherein particles of material able to be magnetised are distributed.

18. Element according to claims 14 through 16, **characterised in that** it is made of plasto-ferrite.

19. Element according to any of the claims 14 through 18, **characterised in that** it presents strip-shaped structure and constantly shaped cross section along the longitudinal development of the element itself.

20. Element according to any of the claims 14 through 19, **characterised in that** it has its main face (5a) magnetised substantially over its entire longitudinal development.

Patentansprüche

1. Dichtung mit Magnetverschluss, insbesondere für Türflügel, Luken, Fenster und Türen und ähnlichem,
umfassend:

- ein erstes Tragprofil (2), umfassend eine Anschlussbasis und einen Anschlagabschnitt (4), der eine Anschlagfläche (4a) aufweist, die bereitgestellt ist, gegen eine Oberfläche anzustoßen, mit welcher der Verschluss hergestellt wird, und
- ein magnetisiertes Glied (5), das im Anschlagabschnitt (4) des Tragprofils (2) eingebracht ist und eine Hauptfläche (5a) aufweist, die der Anschlagfläche (4a) für mindestens einen vorgegebenen Abschnitt der Längsausdehnung des Gliedes (5) selbst entspricht, mindestens ein Paar von magnetisierten Längsbändern (6, 7) entgegengesetzter Polarität im Bereich eines jeden Querschnittes, **dadurch gekennzeichnet, dass** jedes der magnetisierten Längsbänder (6, 7) mindestens ein Paar von Abschnitten (6a und 6b, 7a und 7b) mit im wesentlichen glei-

cher oder ähnlicher Länge umfasst,

wobei das Paar von Abschnitten magnetische Ladungen einheitlicher Polarität in jedem Abstand und entgegengesetzter Polarität gegenüber jener des anderen Abschnittes aufweist,
wobei jeder Abschnitt eines jeden Längsbandes seitlich an den Abschnitten entgegengesetzter Polarität angereiht ist und in Längsrichtung anliegt.

2. Dichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der Anschlagabschnitt (4) im Querschnitt eine im Profil im wesentlichen eine Form eines rechtwinkligen Dreieckes derart aufweist, dass die Anschlagfläche (4a) um ca. 45° gegenüber der Anschlussbasis (3) geneigt angeordnet wird.

3. Dichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der Anschlagabschnitt (4) im Querschnitt ein im wesentlichen rechteckiges Profil derart aufweist, dass die Anschlagfläche (4a) gegenüber der Anschlussbasis (3) parallel angeordnet wird.

4. Dichtung nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die Hauptfläche des Gliedes (5) eine Vielzahl von magnetisierten Längsbändern umfasst, die untereinander parallel und mit gerader Zahl angeordnet sind.

5. Dichtung nach einem beliebigen der vorstwehenden Ansprüche, **dadurch gekennzeichnet, dass** jedes der Längsbänder (6, 7; 8, 9, 10,11; 6, 7) eine Vielzahl von Abschnitten (6a, 6b, 7a, 7b; 8a, 8b, 9a, 9b, 10a, 10b, 11a, 11b; 6a, 6b, 6c, 6d, 7a, 7b, 7c, 7d) umfasst, die aneinander liegen und gerader Zahl sind.

6. Dichtung nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** das Tragprofil (2) in Kunststoff und das Glied (5) in Kunststoff ausgeführt sind, indem Teilchen mit magnetisierbarem Material verteilt sind.

7. Dichtung nach Anspruch 6, **dadurch gekennzeichnet, dass** das Glied (5) in Plasto-Ferrit ausgeführt ist.

8. Dichtung nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** das Glied (5) leistenförmig ist und einen Profilquerschnitt aufweist, der längs der Längsabwicklung des Gliedes selbst (5) konstant ist.

9. Dichtung nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** das Glied (5) die Hauptfläche (5a) im wesentlichen längs ihrer gesamten Längsabwicklung magnetisiert hat.

10. Verfahren zur Ausführung einer Dichtung mit Magnetverschluss, insbesondere für Türflügel, Luken, Fenster und Türen und ähnlichen, wobei das Verfahren gekennzeichnet ist, dass es folgende Schritte umfasst:

kontinuierliches Vorrücken eines leistenförmigen Gliedes aus magnetisierbarem Material,
Einbringen dieses Gliedes in ein Tragprofil aus Kunstharz, wobei jeder Abschnitt des innen mit dem leistenförmigen Glied versehenen Tragprofils identifiziert wird, der dazu bestimmt ist, eine die vorgesehene Längsabwicklung aufweisende Dichtung zu bilden,
Unterteilen in mindestens ein Paar von Bereichen gleicher Länge eines jeden Abschnittes des Tragprofils,
Magnetisieren der Bereiche gleicher Länge, derart, dass auf einer Hauptfläche (5a) des leistenförmigen, einer Anschlagfläche des Tragprofils entsprechenden Gliedes mindestens ein Paar von magnetisierten Längsbändern (6, 7) gebildet wird, die jeweils in Abschnitten (6a, 6b, 7a, 7b) unterteilt sind, die den Bereichen gleicher Länge entsprechen und einheitliche, magnetische Ladungen in jedem Abschnitt und entgegengesetzter Polarität gegenüber dem seitlich angereihten Abschnitt und dem in Längsrichtung anliegenden Abschnitt aufweisen.

11. Verfahren nach Anspruch 10, **dadurch gekennzeichnet, dass** die Dichtung nach der Art ist, so wie in einem oder mehreren der vorstehenden Ansprüche von 1 bis 9 beschrieben.

12. Verfahren nach Anspruch 10, **dadurch gekennzeichnet, dass** vor oder nach dem Schritt der Magnetisierung ein Schritt des Querschneidens des zur Bildung der Dichtung bestimmten Abschnittes des Tragprofils vorgesehen ist.

13. Verfahren nach Anspruch 10, **dadurch gekennzeichnet, dass** das leistenförmige Glied kontinuierlich von einer zweckmäßig vorgefertigten Spule abgewickelt wird.

14. Magnetisiertes Glied, insbesondere für .Dichtungen in der in einer oder mehreren Ansprüchen von 1 bis 9 beschriebenen Art, umfassend:

- eine Hauptfläche (5a), die einer Anschlagfläche (4a) des Hauptprofils (2) einer Dichtung entspricht; und
- mindestens ein Paar von magnetisierten Längsbändern (6, 7), die auf der Hauptfläche

(5a) angeordnet sind, wobei die magnetisierten Längsbänder (6, 7) im Bereich eines jeden Querschnittes des Gliedes (5) entgegengesetzter Polarität sind und mindestens in einem vorgegebenen Abschnitt der Längsabwicklung des Gliedes (5) selbst angeordnet sind,

dadurch gekennzeichnet, dass jedes der magnetisierten Längsbänder (6, 7) mindestens ein Paar von Abschnitten (6a) und (6b), (7a), und (7b) im wesentlichen gleicher oder ähnlicher Länge umfasst, wobei das Paar von Abschnitten magnetische Ladungen einheitlicher Polarität in jedem Abschnitt und entgegengesetzter Polarität gegenüber jener des anderen Abschnittes aufweist, wobei jeder Abschnitt eines jeden Längsbandes seitlich angereiht ist und in Längsrichtung an den Abschnitten entgegengesetzter Polarität anliegt.

15. Glied nach Anspruch 14, **dadurch gekennzeichnet, dass** die Hauptfläche des magnetisierten Gliedes eine Vielzahl von magnetisierten Längsbändern umfasst, die zueinander parallel und gerader Zahl sind.

16. Glied nach Anspruch 14 oder Anspruch 15, **dadurch gekennzeichnet, dass** jedes der Längsbänder (6, 7; 8, 9, 10,11; 6, 7) eine Vielzahl von Abschnitten (6a, 6b; 7a, 7b; 8a, 8b, 9a, 9b, 10a, 10b, 11a, 11b; 6a, 6b, 6c, 6d, 7a, 7b, 7c, 7d) umfasst, die aneinander liegen und gerader Zahl sind.

17. Glied nach einem beliebigen der Ansprüche von 14 bis 16, **dadurch gekennzeichnet, dass** das magnetisierte Glied in Kunststoff ausgeführt ist, in dem Teilchen aus magnetisierbarem Material verteilt sind.

18. Glied nach Anspruch von 14 bis 16, **dadurch gekennzeichnet, dass** es im Plasto-Ferrit ausgeführt ist.

19. Glied nach einem beliebigen der Ansprüche von 14 bis 18, **dadurch gekennzeichnet, dass** es eine leistenförmige Struktur und einen Querschnitt konstanten Profils längs der Längsabwicklung des Gliedes selbst aufweist.

20. Glied nach einem beliebigen der Ansprüche von 14 bis 19, **dadurch gekennzeichnet, dass** es die Hauptfläche (5a) im wesentlichen auf ihrer gesamten Längsabwicklung magnetisiert aufweist.

Revendications

1. Joint d'étanchéité à fermeture magnétique, destiné notamment à des battants de porte, trappes, portes, fenêtres et analogues, comprenant:

- un profilé support (2) ayant une base de liaison et une portion de butée (4) présentant une face battante (4a) destinée à prendre appui contre une surface avec laquelle il faut réaliser la fermeture, et
- un élément magnétisé (5) inséré dans ladite portion de butée (4) du profilé support (2) et présentant sur une face principale (5a) correspondant à ladite face battante (4a), au moins sur une portion prédéterminée de l'extension longitudinale de l'élément (5) lui-même, au moins une paire de bandes longitudinales magnétisées (6, 7) de polarité opposée en correspondance avec chaque coupe transversale, **caractérisé en ce que** chacune desdites bandes longitudinales magnétisées (6, 7) comporte au moins une paire de segments (6a et 6b, 7a et 7b) essentiellement de longueurs égales ou semblables, ladite paire de segments présentant des charges magnétiques de polarité homogène dans chaque segment et de polarité opposée par rapport à celle de l'autre segment,

chaque segment susdit de chaque bande longitudinale étant disposé latéralement côte à côte et étant longitudinalement attenant au segment de polarité opposée.

2. Joint d'étanchéité selon la revendication 1, **caractérisé en ce que** ladite portion de butée (4) présente, en coupe transversale, un profil essentiellement en triangle rectangle de manière à positionner ladite face battante (4a) inclinée d'environ 45° par rapport à ladite base de liaison (3).

3. Joint d'étanchéité selon la revendication 1, **caractérisé en ce que** ladite portion dé butée (4) présente en coupe transversale un profil essentiellement en forme de rectangle de manière à positionner ladite face battante (4a) parallèle par rapport à ladite base de liaison (3).

4. Joint d'étanchéité selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la face principale de l'élément (5) comporte une pluralité de bandes longitudinales magnétisées, positionnées parallèles les unes aux autres et de nombre pair.

5. Joint d'étanchéité selon l'une quelconque des revendications précédentes, **caractérisé en ce que** chacune desdites bandes longitudinales (6, 7; 8, 9, 10, 11; 6, 7) comporte une pluralité de segments (6a, 6b; 7a, 7b; 8a, 8b, 9a, 9b, 10a, 10b, 11a, 11b; 6a, 6b, 6c, 6d, 7a, 7b, 7c, 7d) disposés attenants les uns aux autres et de nombre pair.

6. Joint d'étanchéité selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ledit profilé support (2) est réalisé en matière plastique et ledit élément (5) est réalisé en matière plastique dans laquelle sont distribuées des particules de matière susceptible de magnétisation.

7. Joint d'étanchéité selon la revendication 6, **caractérisé en ce que** ledit élément (5) est réalisé en plastoferrite.

8. Joint d'étanchéité selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ledit élément (5) est en forme de ruban et présente une forme constante en coupe transversale le long de l'extension longitudinale de l'élément (5) lui-même.

9. Joint d'étanchéité selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'élément (59 a sa face principale (5a) magnétisée essentiellement sur toute son extension longitudinale.

10. Procédé de réalisation d'un joint d'étanchéité à fermeture magnétique destiné notamment à des battants de porte, trappes, portes, fenêtres et analogues, ledit procédé étant **caractérisé en ce qu'**il comporte les étapes de:

    - causer l'avance continuelle d'un élément en matière magnétisable en forme de ruban;
    - insérer ledit élément dans un profilé support réalisé en matière plastique en identifiant chaque portion dudit profilé support, muni à son intérieur dudit élément en forme de ruban, destinée à former un joint, présentant l'extension longitudinale demandée,
    - diviser au moins dans une paire de zones de la même longueur chaque portion dudit profilé support,
    - soumettre à magnétisation lesdites zones de la même longueur de manière à former, sur une face principale (5a) dudit élément en forme de ruban correspondant à une face battante du profilé support, au moins une paire de bandes longitudinales magnétisées (6, 7) chacune divisée en segments (6a, 6b, 7a, 7b) correspondant auxdites zones de la même longueur et présentant des charges magnétiques homogènes dans chaque segment et de polarité opposée par rapport au segment disposé latéralement côte à côte et au segment longitudinalement attenant.

11. Procédé selon la revendication 10, **caractérisé en ce que** ledit joint d'étanchéité est du type décrit dans une ou plusieurs des revendications précédentes 1 à 9.

12. Procédé selon la revendication 10, **caractérisé en ce qu'**avant ou après ladite étape de magnétisation il y a une étape dans laquelle ladite portion du profilé support destinée à former un joint est coupée en sens transversal.

13. Procédé selon la revendication 10, **caractérisé en ce que** ledit élément en forme de ruban est déroulé en continu d'une bobine convenablement pré-emballée.

14. Elément magnétisé, notamment pour joints d'étanchéité du type décrit dans une ou plusieurs des revendications 1 à 9, comprenant:

    - une face principale (5a) apte à correspondre à une face battante (4a) du profilé principal (2) d'un joint d'étanchéité; et
    - au moins une paire de bandes longitudinales magnétisées (6, 7) situées sur ladite face principale (5a), lesdites bandes longitudinales magnétisées (6, 7) étant de polarité opposée en correspondance avec chaque coupe de l'élément (5) et étant placées au moins dans une portion préétablie de l'extension longitudinale de l'élément (5) lui-même,

    caractérisé en ce que chacune desdites bandes longitudinales magnétisées (6, 7) comporte au moins une paire de segments (6a) et (6b), (7a) et (7b) essentiellement de longueurs égales ou similaires, ladite paire de segments présentant des charges magnétiques de polarité homogène dans chaque segment et polarité opposée par rapport à celle de l'autre segment, chaque segment susdit de chaque bande longitudinale étant disposé latéralement côte à côte et étant longitudinalement attenant à des segments de polarité opposées.

15. Elément selon la revendication 14, **caractérisé en ce que** la face principale de l'élément magnétisé comporte une pluralité de bandes longitudinales magnétisées positionnées parallèles les unes aux autres et de nombre pair.

16. Elément selon la revendication 14 ou la revendication 15, **caractérisé en ce que** chacune desdites bandes longitudinales (6, 7; 8, 9, 10, 11; 6, 7) comporte une pluralité de segments (6a, 6b; 7a, 7b; 8a, 8b, 9a, 9b, 10a, 10b, 11a, 11b; 6a, 6b, 6c, 6d, 7a, 7b, 7c, 7d) positionnés réciproquement attenants et de nombre pair.

17. Elément selon l'une quelconque des revendications 14 à 16, **caractérisé en ce que** ledit élément magnétisé est réalisé en matière plastique dans la-

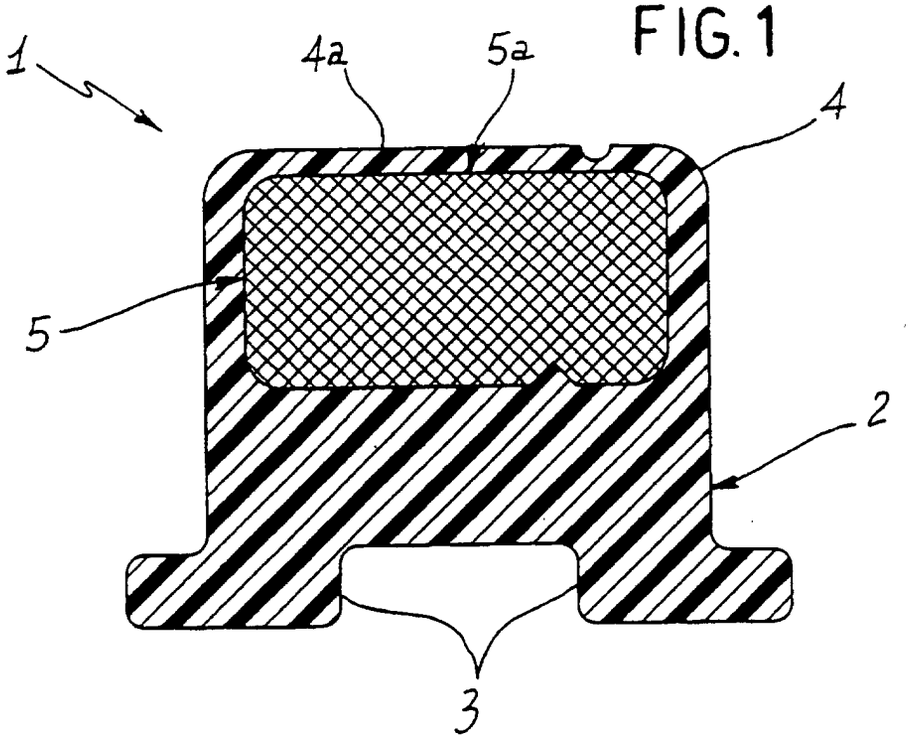
quelle sont distribuées des particules de matière susceptible de magnétisation.

18. Elément selon les revendications 14 à 16, **caractérisé en ce qu'**il est réalisé en plastoferrite.

19. Elément selon l'une quelconque des revendications 14 à 18, **caractérisé en ce qu'**il présente une structure en forme de ruban et une forme constante en coupe transversale le long de l'extension longitudinale de l'élément lui-même.

20. Elément selon l'une quelconque des revendications 14 à 19, **caractérisé en ce qu'**il à sa face principale (5a) magnétisée essentiellement sur toute son extension longitudinale.

FIG. 1



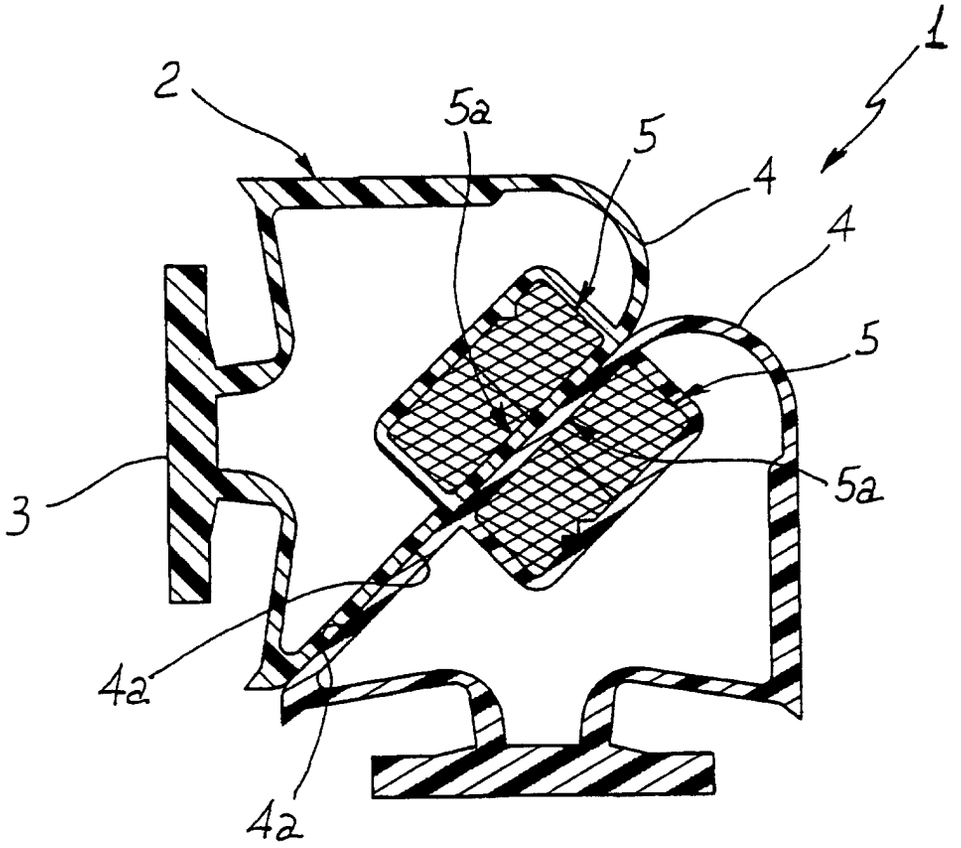


FIG. 2

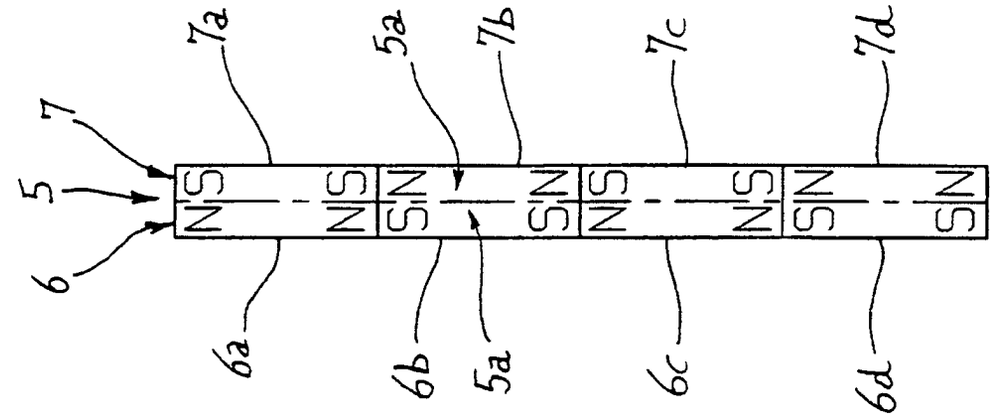


FIG. 5

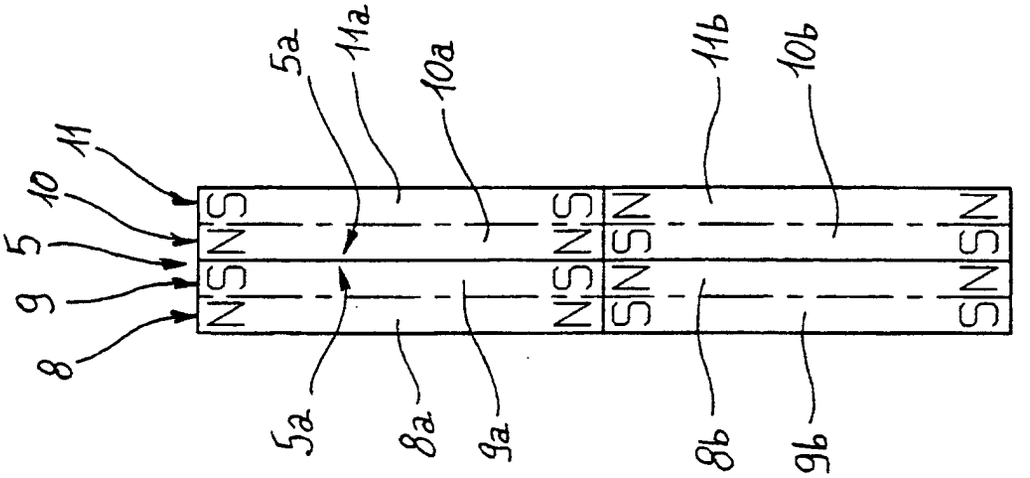


FIG. 4

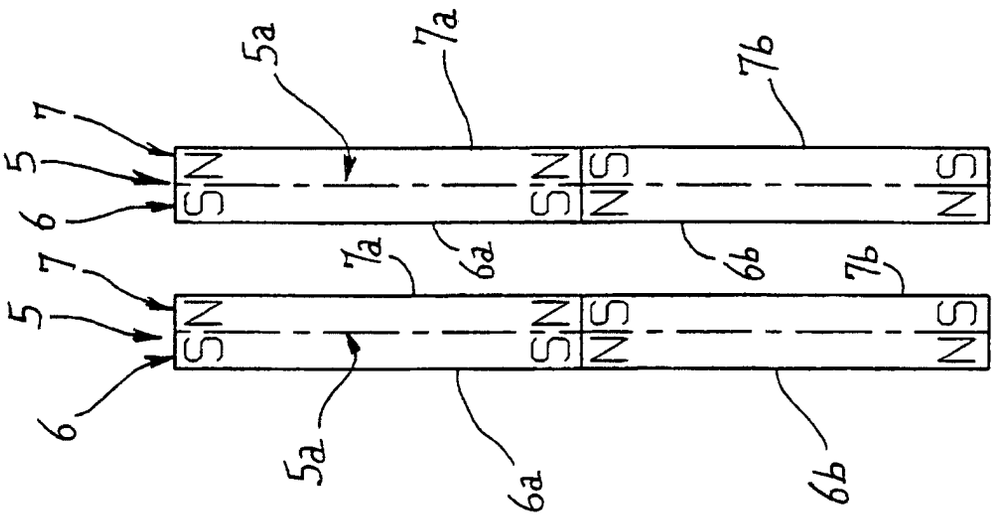


FIG. 3