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(54) **Vibration isolating insert for a pipe clip**

(57) A vibration isolating insert for a pipe clip comprises an elongate strip, said strip having a pipe facing side, which in use faces the outer surface of the pipe, and opposite thereto a pipe clip facing side, which in use faces an inner side of the pipe clip body. The vibration isolating insert comprises gripping formations connected to the strip at lateral side portions thereof and extending towards the pipe clip facing side and in use grip over the respective lateral edges of the pipe clip body. The vibration isolating insert comprises a framework and a vibration isolating lining made of a softer material different from the material of the framework. The framework is a profiled section element formed of a polymeric material. The framework comprises a strip shaped web, that reinforces the elongate strip, and lateral reinforcing members connected to the web on either lateral side of the web and reinforcing the gripping formations. The framework furthermore comprises at least one living hinge defining a pivot axis parallel to the longitudinal axis of the insert and allowing at least one of the gripping formations to swivel around said pivot axis to increase and decrease the distance between the gripping formations during arrangement of the insert on a pipe clip body.

P32828NL00/CHO

Title: Vibration isolating insert for a pipe clip

The invention relates to a vibration isolating insert for a pipe clip, the vibration isolating insert being adapted to be arranged on a substantially annular pipe clip body and ultimately – in use – to be positioned between the outer surface of a pipe and the pipe clip body. The vibration isolating insert comprises an elongate strip, said strip having a pipe facing side, which in use faces the outer surface of the pipe, and opposite thereto a pipe clip facing side, which in use faces an inner side of the pipe clip body. The vibration isolating insert furthermore comprises gripping formations connected to the strip at lateral side portions thereof and extending towards the pipe clip facing side and in use grip over the respective lateral edges of the pipe clip body. The vibration isolating insert comprises a framework and a vibration isolating lining made of a softer material different from the material of the framework.

EP 2 133 617 discloses a vibration isolating insert for a pipe clip. This known insert has a metal reinforcing profile embedded in vibration isolating lining. The metal reinforcing profile is made of sheet metal. In order to make the reinforcing profile bendable such that it can be fitted in the pipe clip body, longitudinally distributed cutouts have to be made from the lateral side towards the centre. This known insert has the disadvantage that it is complex to manufacture. In particular making the metal reinforcing profile is labour-intensive.

The present invention has for an object to provide a reinforced vibration isolating insert which is more efficiently manufactured.

This object is achieved by a vibration isolating insert according to the preamble of claim 1, wherein the framework is a profiled section element formed of a polymeric material, said framework comprising a strip shaped web, that reinforces the elongate strip, and lateral reinforcing members connected to the web on either lateral side of the web and reinforcing the gripping formations, and wherein the framework furthermore comprises at least one living hinge defining a pivot axis parallel to the longitudinal axis of the insert and allowing at least one of the gripping formations to swivel around said pivot axis to increase and decrease the distance between the gripping formations during arrangement of the insert on a pipe clip body.

The vibration isolating insert according to the invention is preferably made by extrusion of a profile, wherein the framework and the lining are co-extruded from two different polymeric materials, and wherein the extruded profile is cut to length to fit in the pipe clip body.

Another option is to make the vibration isolating insert according to the invention by injection moulding, in particular 2K injection moulding.

The vibration isolating insert according to the invention provides through the framework a relatively stiff insert that is able to withstand forces due to shifting of a pipe through the pipe clip during installation. On the other hand, the film hinges provide enough flexibility in the insert such that the insert can be easily arranged in a pipe clip.

In a preferred embodiment the lateral reinforcing members are each pivotably connected to the web by living hinges formed at the lateral sides of the web. This feature allows that the strip with the web can remain undeformed, while the gripping formation with their respective lateral reinforcing members can swivel outwardly so as to create enough space to insert the pipe clip body between the gripping formations.

In a further preferred embodiment the vibration isolating lining is made of a polymeric material that is softer than the polymeric material of which the framework is made.

In a possible embodiment of the invention the vibration isolating lining is made of an elastomeric material.

In a possible embodiment of the invention the framework is made of an elastomeric material. This elastomeric material is harder and stiffer than the material of which the vibration isolating lining is made. Such an elastomeric framework provides enough flexibility to arrange the insert in a substantially annular form in a pipe clip, without the need to provide cut outs in the web of the framework to allow bending, while at the same time the framework provides sufficient structural stiffness and hardness to the insert to resist deformation due to installation of a pipe in the pipe clips in which these inserts are arranged.

Another possible material to make the the framework from is PVC. This PVC provides sufficient hardness and rigidity to resist movement forces of the pipe with respect to the pipe clip due to installation of a pipe in the pipe clip in which the insert is arranged.

In a preferred embodiment of the invention the framework comprises a longitudinal rib formed on the pipe facing side of each lateral reinforcing member. The longitudinal rib, which forms an integral part of the framework provides a lever connected to the gripping formation, which lever can be used to pivot the gripping formation outwards and inwards. During arranging the insert in the pipe clip body the longitudinal ribs can be pinched towards each other such that the gripping formations are pivoted outwardly whereby more space between the gripping formations is created. The gripping formations can then be moved beyond the lateral edges of the pipe clip body after which the gripping formations can move inwardly again to grip around the lateral edges of the pipe clip body.

During tightening the pipe clip around a pipe the pipe presses on the longitudinal ribs and these are shaped such that said pressure forces the ribs outwardly. Through the lever mechanism the gripping formations are then forced inwards and grip more tightly around the lateral edges of the pipe clip body. Thereby a better fixation of the insert in the pipe clip body is achieved which prevents that the insert is forced out of the pipe clip body during installation work, for example when the insert is subjected to axial forces by the pipe.

In a possible embodiment one or more longitudinal intermediate ribs made of the softer lining material are formed on the pipe facing side of the strip between the longitudinal ribs on the lateral reinforcing members. Preferably the intermediate ribs have a height smaller than the ribs on the lateral reinforcing members. When the pipe clip is tightened around the pipe, the longitudinal ribs of the respective lateral reinforcing members pivot due to the pressure, whereby at some point the pipe surface engages the softer intermediate ribs, thus the better isolating part of the composite profile. The softer material will improve the isolating performance and increase the grip on the pipe.

In a further embodiment the pipe clip facing side of the framework is entirely covered with the softer lining material. This ensures that the pipe clip body, which is usually a metal part, is only in contact with the softer lining material. Thereby vibrations that are possibly transferred from the pipe to the harder and more rigid framework of the insert, will not be transferred to the pipe clip body, or vice versa.

The invention also relates to a method for manufacturing a vibration isolating insert according to claim 1, wherein the insert is made by extrusion of a profile, wherein the framework and the lining are co-extruded from two different polymeric materials, and wherein the extruded profile is cut to length to fit in the pipe clip body.

The invention will be further elucidated in the following detailed description with reference to the drawing, in which:

Fig.1 shows a view in perspective of an embodiment of a vibration isolating insert according to the invention;

Fig. 2 shows the vibration isolating insert of Fig. 1 in a curved state in which it will be arranged in a pipe clip body;

Fig. 3 shows a cross sectional view of the vibration isolating insert of Fig. 1;

Fig. 4 shows a cross sectional view of the vibration isolating insert of Fig. 1 in which longitudinal ribs are pinched together;

Fig. 5 shows the fitting of the insert of Fig. 4 on a pipe clip body; and

Fig. 6 shows a cross sectional view of the vibration isolating insert of Fig. 1 in a state in which it is pressed against a pipe surface.

In Fig. 1 is shown a vibration isolating insert 1 for a pipe clip in a straight unloaded state. The vibration isolating insert 1 in this particular embodiment is a composite profiled sectioned element made of two different polymeric materials.

In Fig. 2 the vibration isolating insert 1 is shown in a loaded bent state in which it is arranged in a pipe clip body. The insert 1 comprises an elongate strip 9 which has a pipe facing side 10, which in use faces the outer surface of a pipe, and opposite thereto a pipe clip facing side 11, which in use faces an inner side of a substantially annular pipe clip body.

A profiled sectioned element 1 as is shown in Fig. 1 can be manufactured by co-extrusion. Another option is to form the profiled sectioned element by means of 2K injection moulding.

The vibration isolating insert 1 is a composite body comprising a framework 2 and a vibration isolating lining 3. The framework 2 is flexible but is more rigid and harder than the vibration isolating lining 3. The material of the framework 2 has a lower friction coefficient than the material of the vibration isolating lining 3.

The vibration isolating lining 3 may be formed of a soft elastomeric material such as rubber.

In a preferred embodiment of the vibration isolating insert 1, the framework 2 is formed of an elastomeric material which is harder, and stiffer than the elastomeric material of the vibration isolating lining 3. Such an elastomeric framework provides enough flexibility to arrange the insert 1 in a substantially annular form in a pipe clip, without the need to provide cut outs in the web of the framework to allow bending. At the same time the framework 2 made of the harder elastomer provides sufficient structural stiffness and hardness to the insert to resist deformation due to installation of a pipe in the pipe clips in which these inserts are arranged.

In another embodiment of the vibration isolating insert 1, the framework 2 may be made of a plastic material. In particular a PVC material is envisaged as a suitable plastic material, because it provides sufficient hardness and stiffness to the insert 1 to resist movement forces of the pipe with respect to the pipe clip.

As can be seen best in the cross sectional view of Fig. 3, the framework 2 itself can be considered as a profiled section element formed of a polymeric material. The framework 2 generally has an H-shape that comprises a strip shaped web 21 and two lateral portions 22 that are located on the lateral sides of the web 21 and are connected thereto. The connection between the web 21 and the respective lateral portions 22 is formed by respective hinging portions 23, which are encircled in Fig. 3.

The hinging portions 23 extend longitudinally and include a living hinge 24 between the web 21 and the associated lateral portion 22. The living hinge 24 defines a pivot axis that extends in the longitudinal direction of the vibration isolating insert 1. The living hinge 24 is a thinner section in the framework 2 at the location where the lateral portion 22 adjoins the web 21.

The vibration isolating insert 1 has gripping formations 4 which are configured and arranged to grip around the lateral edges 51 of the pipe clip body 5. The pipe clip body 5 is usually an annular strip-like body formed out of sheet metal. As is well known in the art of pipe clips, the pipe clip body 5 may comprise a single body which maybe arranged around a pipe and closed tightened with a screw. However, as is also known in the art, the pipe clip body 5 may just as well comprise two semi-circular pipe clip halves which can be tigthened with respect to each other and around a pipe with one or more screws.

The gripping formations 4, include each a lateral reinforcement member 25 which form part of the lateral portions 22 of the framework 2. In the embodiment shown these lateral reinforcement members 25 are formed as an angled member.

The inner side of the lateral reinforcement members 25 is lined with a vibration isolating material. Also the side of the web 21 and of the hinge portion 23 that in use faces the pipe clip body is lined with a vibration isolating material. Thus one integral vibration isolating lining 31 is formed covering the surfaces of web 21, hinges 24 and lateral reinforcement members 25 facing the pipe clip body. Thus the transfer of vibrations from the pipe clip body 5 to the framework 2 of the vibration isolating insert 1 and vice versa can be reduced considerably or even entirely prevented.

On the pipe facing side 10 of each lateral reinforcing member 25 a longitudinal rib 26 is formed. This longitudinal rib 26 may be formed with transverse cutouts 27 as is shown in Figs 1 and 2. These cutouts 27 allow that the vibration isolating insert 1 can be bent (cf. Fig. 2) to conform to the (circular or semi-circular) shape of the pipe clip body 5.

Between the two longitudinal ribs 26 there are a number of longitudinal ribs 32 made of the softer lining material. In the example of Figs 1 - 3 there are two of such ribs 32 but this can be a different number. In the specific embodiment shown also these intermediate ribs 32 have transverse cutouts 33 to facilitate bending of the strip 1, but as the material of the intermediate ribs 32 is softer and less rigid than the material of the outer ribs 26, the provision of cutouts 33 in the softer ribs 32 is less imminent.

In a unloaded state of the vibration isolating insert 1 the longitudinal ribs 26 on the reinforcing member 25 are higher than the intermediate ribs 32 as can be best seen in Fig. 3.

The longitudinal ribs 26 have a function during the arrangement of the vibration isolating insert 1 in a pipe clip body: The longitudinal rib 26 acts as a lever arm which can be pushed inwards which is depicted in Fig. 4 by force arrow 40. In practice a fitter may for example pinch the ribs 26 together. By the inwardly directed force on the ribs 26 the gripping formations 25 pivot around the hinge 24, while the web 21 remains substantially flat and straight. Thereby the gripping formations 4 swivel outwards as can be seen in Fig. 4. The gripping formations 4 can swivel outwards far enough such that the distance S1 between the extremities of the gripping formations exceeds the width S2 of the pipe clip body 5 (S1>S2) whereby the pipe clip body 5 fits between the flanges 41 of the gripping formations 4 and the pipe clip body 5 can be arranged against the lining 31 on the web 21. When the force 40 is removed the insert 1 will return to its unloaded state (cf. Fig. 3) in which S1<S2. The insert 1 will return to the unloaded state by the resiliency of the material of the framework 2

and of the vibration isolating lining 3, and the gripping formations 4 will grip around the lateral edges 51 of the pipe clip body 5.

In the state in which the strip 1 is arranged in the pipe clip body 5 and the pipe clip is installed around a pipe and is subsequently tightened, the pipe surface puts a pressure on the outer ribs 26, because these ribs 26 stand out above the intermediate ribs 32. The pipe surface is depicted schematically in Fig. 6 and indicated by reference numeral 6. The pressure force is indicated by arrows with reference numerals 42. The point of application of the pressure force 42 is located more on the inner side of the rib 26, whereby the rib 26 is forced outwardly as is shown in Fig. 6. Because the rib 26 works as a lever, the lateral reinforcement member 25 pivots around the hinge 24 whereby the gripping formations 4 are forced inwardly. As a result the legs 43 of the gripping formations 4 will be pressed towards and against the lateral edges of the pipe clip body 5 as is illustrated by the arrows indicated by reference numeral 44. Furthermore the flanges 41 are pressed toward and against an outer side of the annular pipe clip body 5 as is illustrated by the arrows indicated by reference numeral 45. The holding force of the vibration isolating insert 1 on the pipe clip body 5 will increase.

If the ribs 26 swivel sufficiently outwardly, the pipe surface 6 will eventually come into engagement with the intermediate ribs 32 of the vibration isolating insert 1. Because the intermediate ribs 32 are made of a softer and better isolating material, the pipe is held more tightly by the pipe clip and the vibration isolating effect of the vibration isolating insert 1 is enhanced.

CONCLUSIES

1. Trillingsisolerend inzetstuk (1) voor een pijpbeugel, waarbij het trillingsisolerende inzetstuk (1) is ingericht om op een in hoofdzaak ringvormig pijpbeugellichaam (5) te worden aangebracht en uiteindelijk - in gebruik - tussen het buitenoppervlak van een pijp (6) en het pijpbeugellichaam (5) te worden geplaatst,

waarbij het trillingsisolerende inzetstuk (1) een langwerpige strook omvat, welke strook een naar de pijp gekeerde zijde (10) heeft, die in gebruik naar het buitenoppervlak van de pijp (6) is gekeerd, en daartegenover een naar de pijpbeugel gekeerde zijde (11), die in gebruik naar een binnenzijde van het pijpbeugellichaam (5) is gekeerd,

waarbij het trillingsisolerende inzetstuk (1) voorts grijpformaties (4) omvat, die verbonden zijn met de strook aan zijkantgedeeltes daarvan en zich uitstrekken naar de naar de pijpbeugel gekeerde zijde (11) en in gebruik over de respectieve zijranden van het pijpbeugellichaam (5) grijpen,

waarbij het trillingsisolerende inzetstuk (1) een frame (2) omvat, alsmede een trillingsisolerende bekleding (3) uit een zachter materiaal dat verschilt van het materiaal van het frame (2),

met het kenmerk, dat het frame (2) een uit een polymeermateriaal gevormd profielelement is, welk frame (2) een strookvormig lijf (21) omvat, dat de langwerpige strook versterkt, alsmede laterale versterkingselementen (25) die aan beide zijkanten van het lijf (21) met het lijf (21) verbonden zijn en die de grijpformaties (4) versterken, en

dat het frame (2) verder ten minste één filmscharnier (24) omvat, dat een scharnieras evenwijdig aan de lengteas van het inzetstuk (1) definieert en die het mogelijk maakt dat ten minste één van de grijpformaties (4) rond de scharnieras kan zwenken om de afstand (S1) tussen de grijpformaties (4) tijdens het plaatsen van het element op een pijpbeugellichaam (5) te vergroten en te verkleinen.

2. Trillingsisolerend inzetstuk volgens conclusie 1, waarbij de laterale versterkingselementen (25) elk scharnierbaar zijn verbonden met het lijf (21) door middel van filmscharnieren (24) die gevormd zijn aan de zijkanten van het lijf (21).

3. Trillingsisolerend inzetstuk volgens conclusie 1 of 2, waarbij de trillingsisolerende bekleding (3) is vervaardigd uit een polymeermateriaal dat zachter is dan het polymeermateriaal waarvan het frame (2) is gemaakt.

4. Trillingsisolerend inzetstuk volgens een van de conclusies 1-3, waarbij het frame (2) is vervaardigd uit een elastomeer.

5. Trillingsisolerend inzetstuk volgens een van de conclusies 1-4, waarbij het frame (2) is verbvaardigd uit een PVC.

6. Trillingsisolerend inzetstuk volgens een van de conclusies 1-5, waarbij de trillingsisolerende bekleding (3) is vervaardigd uit een elastomeer.

7. Trillingsisolerend inzetstuk volgens een van de voorgaande conclusies, waarbij het frame (2) een langwerpige ribbe (26) omvat die gevormd is op de naar de pijp gekeerde zijde (10) van elk lateraal versterkingselement (25).

8. Trillingsisolerend inzetstuk volgens conclusie 7, waarbij één of meer longitudinale tussenribben (32), die gemaakt zijn van het zachtere bekledingsmateriaal, op de naar de pijp gekeerde zijde (10) van de strook (1) tussen de langsribben (26) op de laterale versterkingselementen (25) gevormd zijn.

9. Trillingsisolerend inzetstuk volgens conclusie 8, waarbij de tussenribben (32) een hoogte hebben die kleiner is dan de ribben (26) op de laterale versterkingselementen (25).

10. Trillingsisolerend inzetstuk volgens een van de voorgaande conclusies, waarbij de naar de pijpbeugel gekeerde zijde (11) van het frame (2) volledig bedekt is met het zachtere bekledingsmateriaal.

11. Werkwijze ter vervaardiging van een trillingisolerend inzetstuk volgens conclusie 1, waarbij het inzetstuk (1) is vervaardigd door extrusie van een profiel, waarbij het frame (2) en de bekleding (3) gelijktijdig worden geëxtrudeerd uit twee verschillende polymeermaterialen, en waarbij het geëxtrudeerde profiel op lengte wordt gesneden om in het pijpbeugellichaam (5) te passen.

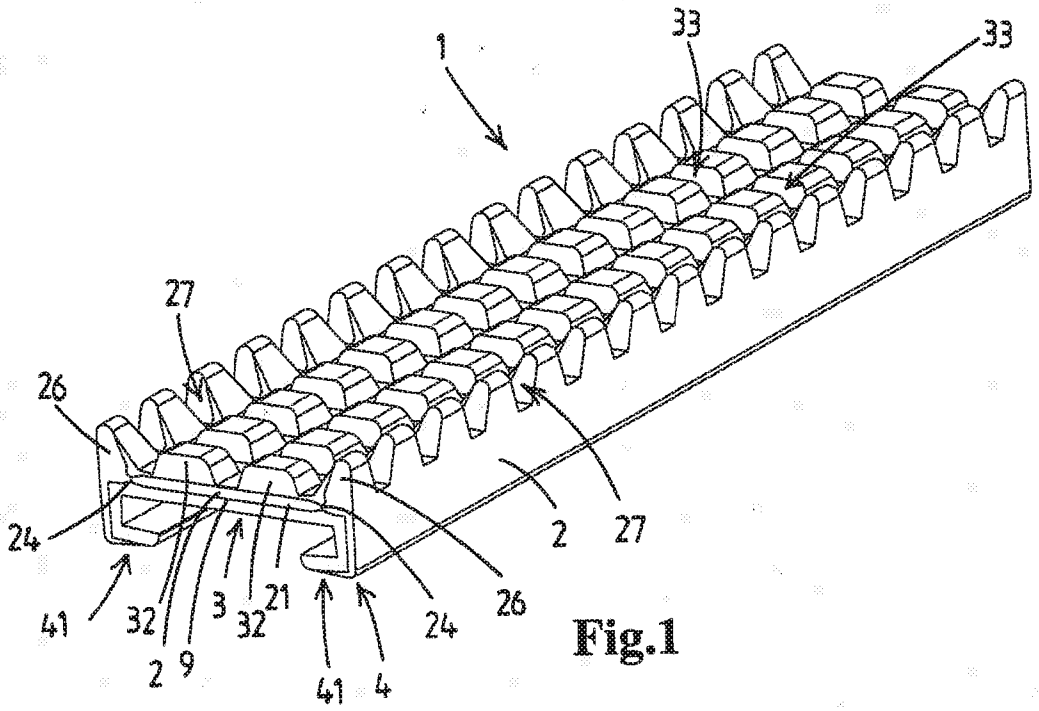
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Fig.1

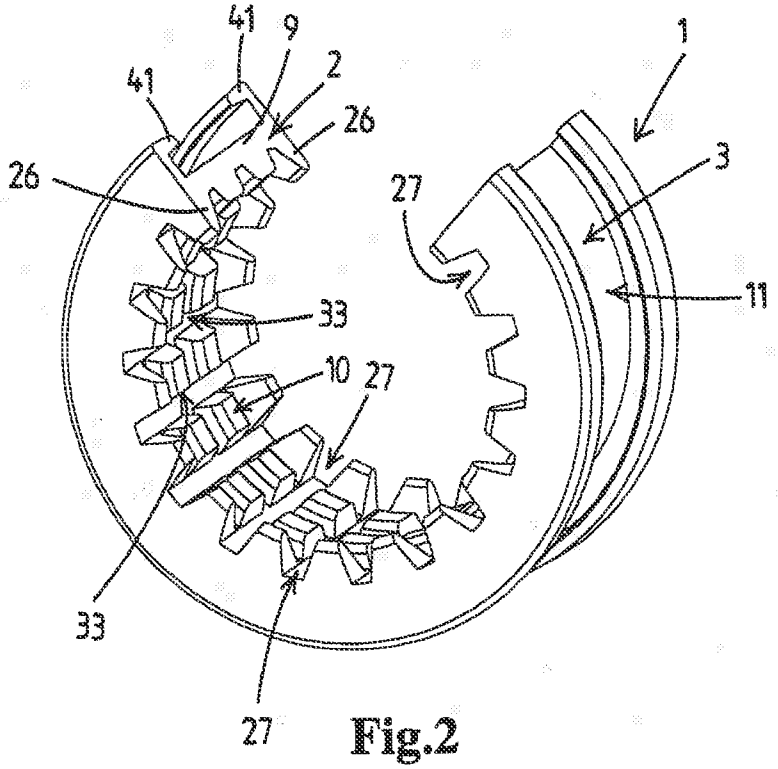
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Fig.2

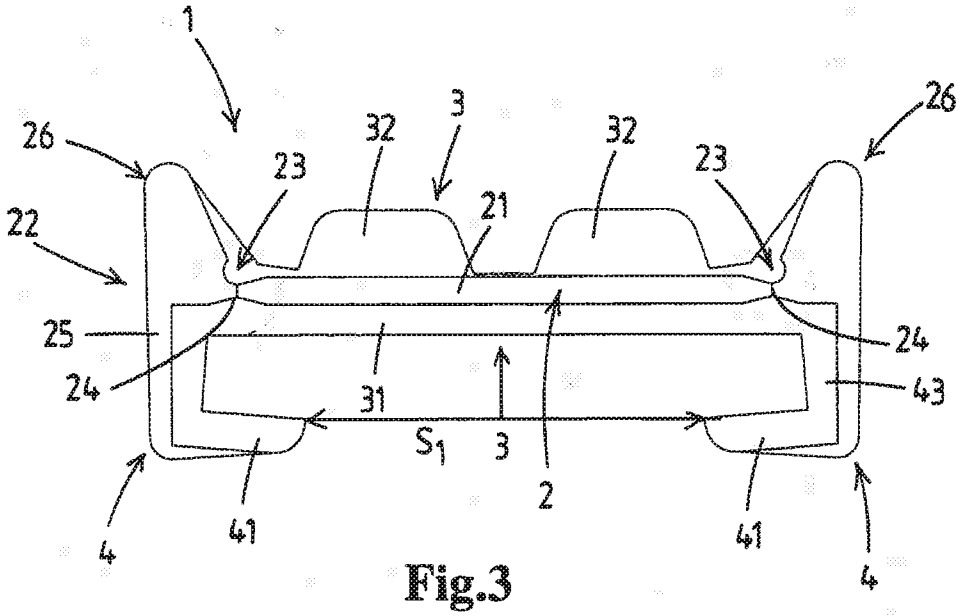
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Fig.3

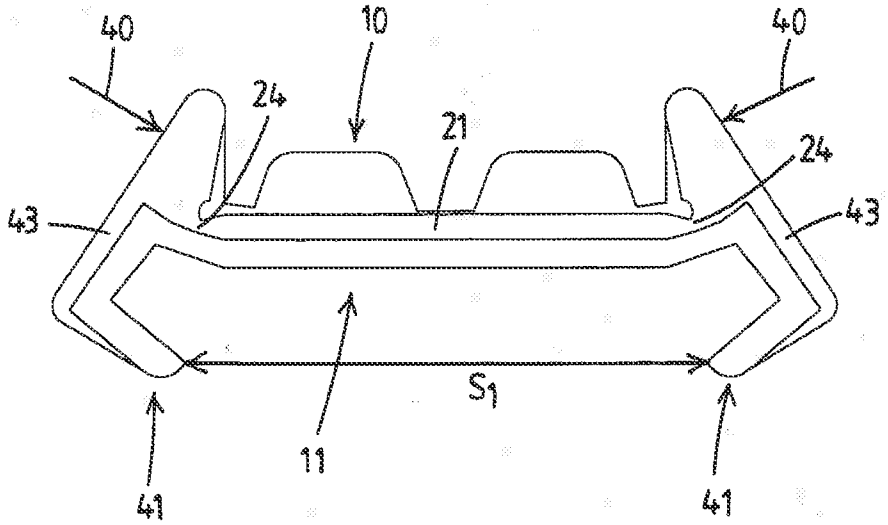
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Fig.4

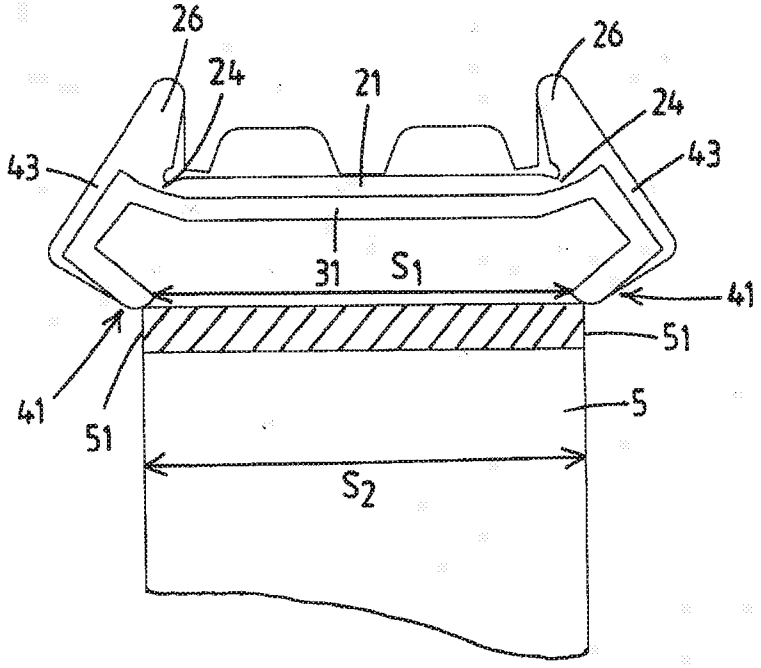
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Fig.5

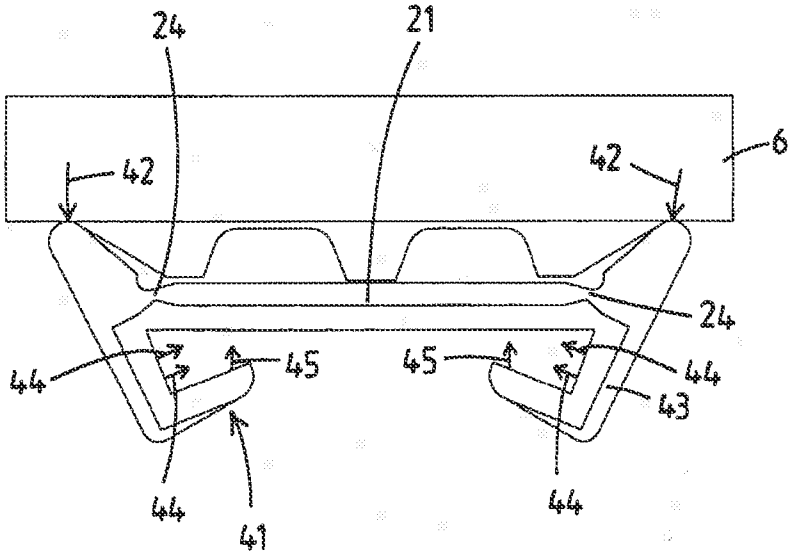
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Fig.6

ABSTRACT

A vibration isolating insert for a pipe clip comprises an elongate strip, said strip having a pipe facing side, which in use faces the outer surface of the pipe, and opposite thereto a pipe clip facing side, which in use faces an inner side of the pipe clip body. The vibration isolating insert comprises gripping formations connected to the strip at lateral side portions thereof and extending towards the pipe clip facing side and in use grip over the respective lateral edges of the pipe clip body. The vibration isolating insert comprises a framework and a vibration isolating lining made of a softer material different from the material of the framework. The framework is a profiled section element formed of a polymeric material. The framework comprises a strip shaped web, that reinforces the elongate strip, and lateral reinforcing members connected to the web on either lateral side of the web and reinforcing the gripping formations. The framework furthermore comprises at least one living hinge defining a pivot axis parallel to the longitudinal axis of the insert and allowing at least one of the gripping formations to swivel around said pivot axis to increase and decrease the distance between the gripping formations during arrangement of the insert on a pipe clip body.

SAMENWERKINGSVERDRAG (PCT)

RAPPORT BETREFFENDE NIEUWHEIDSONDERZOEK VAN INTERNATIONAAL TYPE

IDENTIFICATIE VAN DE NATIONALE AANVRAGE	KENMERK VAN DE AANVRAGER OF VAN DE GEMACHTIGDE
	P32828NL00/CHO
Nederlands aanvraag nr. 2017895	Indieningsdatum 30-11-2016
	Ingeroepen voorrangsdatum
Aanvrager (Naam) J. van Walraven Holding B.V.	
Datum van het verzoek voor een onderzoek van internationaal type 21-01-2017	Door de Instantie voor Internationaal Onderzoek aan het verzoek voor een onderzoek van internationaal type toegekend nr. SN68232

I. CLASSIFICATIE VAN HET ONDERWERP (bij toepassing van verschillende classificaties, alle classificatiesymbolen opgeven)

Volgens de internationale classificatie (IPC)

F16L55/033;B29C47/00;B29C47/04;F16L3/123;F16L55/035

II. ONDERZOCHTE GEBIEDEN VAN DE TECHNIEK

Onderzochte minimumdocumentatie

Classificatiesysteem	Classificatiesymbolen
IPC	F16L;B29C

Onderzochte andere documentatie dan de minimum documentatie, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

III.	☐ GEEN ONDERZOEK MOGELIJK VOOR BEPAALDE CONCLUSIES	(opmerkingen op aanvullingsblad)
IV.	☐ GEBREK AAN EENHEID VAN UITVINDING	(opmerkingen op aanvullingsblad)

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Nummer van het verzoek om een onderzoek naar de stand van de techniek
NL 2017895

A. CLASSIFICATIE VAN HET ONDERWERP
INV. F16L55/033 B29C47/00 B29C47/04 F16L3/123 F16L55/035
ADD.

Volgens de Internationale Classificatie van octrooien (IPC) of zowel volgens de nationale classificatie als volgens de IPC.

B. ONDERZOCHTE GEBIEDEN VAN DE TECHNIEK

Onderzochte minimum documentatie (classificatie gevolgd door classificatiesymbolen)
F16L B29C

Onderzochte andere documentatie dan de minimum documentatie, voor dergelijke documenten, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

Tijdens het onderzoek geraadpleegde elektronische gegevensbestanden (naam van de gegevensbestanden en, waar uitvoerbaar, gebruikte trefwoorden)
EPO-Internal, WPI Data

C. VAN BELANG GEACHTE DOCUMENTEN

Categorie *	Geciteerde documenten, eventueel met aanduiding van speciaal van belang zijnde passages	Van belang voor conclusie nr.
A	EP 2 133 617 A1 (WALRAVEN HOLDING BV J VAN [NL]) 16 december 2009 (2009-12-16) * alineas [0032] - [0063]; figuren 1,6-8 *	1-11
A	WO 2016/056895 A2 (WALRAVEN HOLDING BV J VAN [NL]) 14 april 2016 (2016-04-14) * bladzijde 8, regels 14-21; figuur 7 *	1-11
A	DE 10 2007 052559 A1 (FISCHERWERKE GMBH & CO KG [DE]) 7 mei 2009 (2009-05-07) * alinea [0019]; figuur 3 *	1-11
A	DE 23 11 057 A1 (MUELLER FRANZ; MUELLER HELMUT) 12 september 1974 (1974-09-12) * bladzijden 5-11; figuren 2,5,6 *	1-11

☐ Verdere documenten worden vermeld in het vervolg van vak C.

☒ Leden van dezelfde octrooifamilie zijn vermeld in een bijlage

* Speciale categorieën van aangehaalde documenten

"A" niet tot de categorie X of Y behorende literatuur die de stand van de techniek beschrijft

"D" in de octrooiaanvrage vermeld

"E" eerdere octrooi(aanvrage), gepubliceerd op of na de indieningsdatum, waarin dezelfde uitvinding wordt beschreven

"L" om andere redenen vermelde literatuur

"O" niet-schriftelijke stand van de techniek

"P" tussen de voorrangsdatum en de indieningsdatum gepubliceerde literatuur

"T" na de indieningsdatum of de voorrangsdatum gepubliceerde literatuur die niet bezwarend is voor de octrooiaanvrage, maar wordt vermeld ter verheldering van de theorie of het principe dat ten grondslag ligt aan de uitvinding

"X" de conclusie wordt als niet nieuw of niet inventief beschouwd ten opzichte van deze literatuur

"Y" de conclusie wordt als niet inventief beschouwd ten opzichte van de combinatie van deze literatuur met andere geciteerde literatuur van dezelfde categorie, waarbij de combinatie voor de vakman voor de hand liggend wordt geacht

"&" lid van dezelfde octrooifamilie of overeenkomstige octrooipublicatie

Datum waarop het onderzoek naar de stand van de techniek van internationaal type werd voltooid	Verzenddatum van het rapport van het onderzoek naar de stand van de techniek van internationaal type
19 juli 2017	

Naam en adres van de instantie	De bevoegde ambtenaar
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Fromentel, Henri

Formulier PCT/ISA/201 (tweede blad) (Januari 2004)

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Informatie over leden van dezelfde octrooifamilie

Nummer van het verzoek om een onderzoek naar de stand van de techniek: NL 2017895

In het rapport genoemd octrooigeschrift	Datum van publicatie	Overeenkomend(e) geschrift(en)	Datum van publicatie
EP 2133617 A1	16-12-2009	AT 458164 T	15-03-2010
		CA 2651531 A1	03-01-2008
		DK 2032887 T3	07-06-2010
		EA 200970060 A1	30-06-2009
		EP 2032887 A2	11-03-2009
		EP 2133617 A1	16-12-2009
		ES 2337950 T3	30-04-2010
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		BE 811289 A1	17-06-1974
		CH 565973 A5	29-08-1975
		DE 2311057 A1	12-09-1974
		FR 2220738 A1	04-10-1974
		NL 7402413 A	10-09-1974

WRITTEN OPINION

File No.	Filing date *(day/month/year)*	Priority date *(day/month/year)*	Application No.
SN68232	30.11.2016		NL2017895

International Patent Classification (IPC)
INV. F16L55/033 B29C47/00 B29C47/04 F16L3/123 F16L55/035

Applicant
J. van Walraven Holding B.V.

This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the application
- ☐ Box No. VIII Certain observations on the application

	Examiner
	Fromentel, Henri

Application number

WRITTEN OPINION

NL2017895

Box No. I Basis of this opinion

1. This opinion has been established on the basis of the latest set of claims filed before the start of the search.
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material:

   ☐ on paper

   ☐ in electronic form

   c. time of filing/furnishing:

   ☐ contained in the application as filed.

   ☐ filed together with the application in electronic form.

   ☐ furnished subsequently for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty	Yes:	Claims	1-11
	No:	Claims	
Inventive step	Yes:	Claims	1-11
	No:	Claims	
Industrial applicability	Yes:	Claims	1-11
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:

D1 EP 2 133 617 A1 (WALRAVEN HOLDING BV J VAN [NL]) 16 december 2009 (2009-12-16)

D1 is regarded as being the prior art closest to the subject-matter of claim 1 , and discloses a vibration isolating insert (80, FIG 8) suitable for a pipe clip (1, fig 1), the vibration isolating insert being adapted to be arrangeable on a substantially annular pipe clip body (3) and ultimately, in use, suitable to be positioned between the outer surface of a pipe and the pipe clip body (3). The vibration isolating insert comprises an elongate strip (80a), said strip having a pipe facing side, which in use faces the outer surface of the pipe, and opposite thereto a pipe clip facing side, which in use faces an inner side of the pipe clip body (3). The vibration isolating insert furthermore comprises gripping formations (82) connected to the strip (80a) at lateral side portions (81) thereof and extending towards the pipe clip facing side and in use grip over the respective lateral edges of the pipe clip body (3). The vibration isolating insert comprises a framework (82, fig 10) and a vibration isolating lining (81) made of a softer material different from the material of the framework (see [0046,0047]).

The subject-matter of claim 1 therefore differs from this known insert in that the framework is a profiled section element formed of a polymeric material, said framework comprising a strip shaped web, that reinforces the elongate strip, and lateral reinforcing members connected to the web on either lateral side of the web and reinforcing the gripping formations, and wherein the framework furthermore comprises at least one living hinge defining a pivot axis parallel to the longitudinal axis of the insert and allowing at least one of the gripping formations to swivel around said pivot axis to increase and decrease the distance between the gripping formations during arrangement of the insert on a pipe clip body, and is therefore new.

The problem to be solved by the present invention may be regarded as to simplify the manufacturing process of the insert while improving the assembly process of the insert on the clip body

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step for the following reasons: None of the searched or cited prior art document discloses or suggest the use of living hinge between the gripping formation and the strip, together with the use of a framework

made polymeric material. Even if living hinge are well known components in the fields of pipe coupling clip, no motivation has been found to use it between the gripping formation and the framework of the insert.

Claims 2-10 respectively method claim 11 are dependent on claim 1 and as such also meet the requirements of novelty and inventive step.