



(11) **EP 2 080 562 A1**

(12) **EUROPEAN PATENT APPLICATION**  
published in accordance with Art. 153(4) EPC

(43) Date of publication:  
**22.07.2009 Bulletin 2009/30**

(51) Int Cl.:  
**B05B 15/04 (2006.01) B60J 10/08 (2006.01)**

(21) Application number: **06807929.2**

(86) International application number:  
**PCT/ES2006/000484**

(22) Date of filing: **22.08.2006**

(87) International publication number:  
**WO 2008/023081 (28.02.2008 Gazette 2008/09)**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI  
SK TR**  
Designated Extension States:  
**AL BA HR MK RS**

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(54) **TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES AND PRODUCTION METHOD THEREOF**

(57) The invention relates to a sealing strip used in the spray-painting of two adjacent surfaces separated by a tooled joint. The invention is formed by an elastomer body (1) that is used to fill the joint. The upper end of said body is wider than the joint and is in contact with the inner face of the door (3) in order to define a painting boundary along the inner rim of the edge of the door (7), thereby

enabling the outer rim (6) and the edge of the door to be painted. The aforementioned elastomer sealing body (1) includes a lateral adhesive sheet (2) which projects out from the surface in order to define a painting boundary along the outer rim (5) of the frame (4) to which the sheet is affixed by means of an adhesive in order to secure the assembly. The invention also relates to a method for producing said sealing strip.

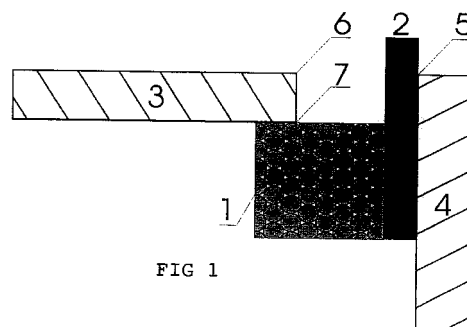


FIG 1

## Description

### Invention title

**[0001]** Tooled joint sealing strip including a lateral sheet for defining a boundary for the painting of edges and production method thereof.

### Technical field

**[0002]** The proposed invention is appropriated to the industrial accesories for painting and preparing surfaces of every type of industrial devices, vehicles, furniture or buildings industry.

### Background to the previous technical situation

**[0003]** In the industry of spray-painting, treatment or reparation of surfaces as automobiles bodyworks, boats, vehicles, industrial devices, furniture or buildings, it is necessary to use butt strap strips to avoid paint or another treatment material from penetrate into the joint, but in the state of the art or butt strap strips cause that faults in painting in the rims of the adjacent surfaces that forms the joint appear or else they prevent the edge of the door from being painted or treated.

**[0004]** Sometimes every type of doors joints are covered by bands or adhesive strips that prevent the painting from penetrating into the joint, but this requires an special treatment of the surface covered by the adhesive band after removing it to allow the uniform finish of the painting or the treatment to be completed and finished until the rim, which entails an additional cost of manpower and a defective finish.

**[0005]** The patente WO02057024, PCT ES02/00022 (CORTAVITARTE) solves the problem with a wedge or tooled joint of flexible semirigid rubber in a polyhedral form that inserts by pressure from the outer part of the joint with the closed door and it is of a high cost because of the nature of the rubber material that is used, so it is appropriated to be used or in high-quality and high-cost treatments, or else in that cases when the joint is formed by two parallel planes very thick and long that demand the external introduction of the joint by pressure but not through a plane perpendicular to a frame like a door, since in this last case the new patent allows to solve the joint sealing and the definition of a boundary for the painting not in the outer rim but in the inner one of the door edge making it possible the painting of the edge. In effect, the polyhedral rubber wedge inserted by pressure covers the surface of the edge of the door and causes an intersection between the tooled joint and the outer, not the inner, rim of the door edge, so when defining a boundary for the painting in this outer rim it prevents the door edge is painted.

**[0006]** So that the new proposed invention distinguishes substantially of the patent WO02057024, PCT ES02/00022 (CORTAVITARTE) because the new patent

when is applied to joints formed by doors on a frame or in general by planes perpendicular to a frame, allows the painting of the whole door edge until the inner rim, makes it possible to define a boundary for the painting of the frame to the outer rim, and since it is not inserted by external pressure on the joint with the closed door but adhered to the frame with the open door it doesn't need to be made of a material with the same characteristics of strength, endurance and flexibility that rubber has, so it can be made of elastomeric materials like foam rubber or similar which as well as a lesser economical cost they have the advantage that they could be cut by the operator's hand in a short time with no need to use instruments, obtaining a positioning of the joint more quick and effective. The patent US 5939173 (VOSS) consists of an adhesive elastomeric filler body that is introduced into the joint and it adheres to the frame to prevent the painting from penetrating into the joint but it does not allow the definition of a boundary for the painting in the rims of the door nor the frame.

**[0007]** The patent WO 9521700 (HILLS) consists of an amorphous elastomeric filler body that is introduced into the joint and it is supported by means of a elongated portion to the inner side of the door, but it does not define a boundary nor trace the outline of the painting in the outer rim of the frame (because since it is amorphous it doesn't cause an intersection in a right angle with the rim), nor in the outer rim of the door edge (for the same reason) and it does not allow the painting of the edge of the door until its inner rim. In the proposed invention the band or sheet that projects out from the surface is used to its supporting by adhesion to the frame and since it projects out of the surface it causes the effect of defining a boundary or tracing the outline of the painting in the outer rim of the edge and at the same time by means of the sealing elastomeric body, since the joint is sealed by the contact with the inner side of the door, it allows the painting of the edge of the door until the inner rim.

### Disclosure of the invention

**[0008]** The present invention consists of a tooled joint sealing strip formed by two adjacent surfaces like the one that is formed by the door and a frame like the one that an automobile bodyworks or similar has that is composed by an elastomeric body to fill the joint that has a lateral sheet with an adhesive along its outer side and that projects out of the surface to allow a boundary for the spray-painting is defined in the rim.

**[0009]** The invention now proposed is appropriated specifically to a joint formed by two adjacent surfaces like the one that is formed by the plane of a door and its frame and consists of a joint that is not inserted by pressure from the outside with the closed door but it adheres to the frame with the open door and when the door closes causes the closing of the joint to be painted making it possible too the definition of a boundary for the painting in the inner rim of the door and in the outer rim of the

frame. It consists of an elastomeric body as foam rubber or any other filler material that has a flat lateral sheet or band with an adhesive in its external face to be fixed on the frame. When the door is closed on the frame with the joint adhered to the frame, the elastomeric body closes the bottom of the joint by means of its external or upper face that is in contact with the inner face of the door and that it allows to define a boundary for the painting of the door until the inner rim of the edge. At the same time the lateral sheet or band adhered to the frame is made of a semirigid material and it projects out in respect of the perpendicular plane of the upper or external face of the elastomeric body the necessary height to get round the thickness of the door and to be more than some milimetres from the plane that forms the outer surface to be treated, so that the outer rim of the frame is cut allowing the definition of a boundary or the tracing of an outline of the painting until the outer rim of the frame while the painting is being done.

[0010] It is essential in the new invention that the sealing elastomeric body seals or close up the tooled joint to the height of the plane that forms the inner face of the door to allow the spray-painting or impregnation of the door edge but not the whole joint and that said elastomeric body is joined to a lateral sheet narrower than the tooled joint, this sheet is made of another material with more strenght that projects out the outer plane formed by the two adjacent surfaces to allow to define a boundary or to trace an outline to the painting in the line that is formed by the outer rim of the frame and having the lateral sheet in its outer face an adhesive to the whole set is fixed to the frame allowing that the external or upper face of the sealing elastomeric body gets into contact with the inner face of the door to close up the joint, being both materials of a low cost and susceptible of being cut by hand with no need of instruments to cut.

### Description of the drawings

[0011] Figure 1 is presented in section, with the joint sealing elastomeric body (1), the projecting lateral sheet or band (2), the door or plane perpendicular (3) to the inner face of the frame, the frame (4), the outer rim of the frame (5), the outer rim of the door (6) and the inner rim of the door (7). Figure 2 corresponds to claim 3, figure 3 to claim 5, figure 4 to claim 6, figure 5 to claim 7 and figure 6 to claim 8.

### Instructions as to the best way of bringing the invention into effect

[0012] The joint is formed by two elements. As the best way of bringing the invention into effect firstly it is proposed an elastomeric parallelepiped sealing body (1) narrow enough to seal the joint and to get into contact with the inner face of the door and that has in the one of its lateral faces that is in contact with the frame a lateral band or sheet made of semirigid material (2) narrower

than the joint to allow the intake of spray-painting in the joint to the closing and it is in a right angle with the external or outer face fo the sealing elastomeric body. The lateral sheet or band on its outer face has an adhesive substance to allow its fixing to the frame (4) and projects out both in respect of the upper o external face of the sealing elastomeric body (1) forming a right angle with it , as well as in respect of the frame (4), enough to produce a dihedron of intersection in the outer rim of the frame, and by means of the upper or external face of the sealing elastomeric body when it is in contact with the inner face of the door, causes the intersection with the inner rim of the door edge allowing the intake of the painting into the joint to paint the door edge, without penetration any more than the line of intersection of the upper or external face of the sealing elastomeric body so at the same time it allows to define a boundary for the painting of the edge of the door until the inner rim of the edge.

### Ways of commercial use

[0013] The proposed invention is susceptible to be commercially used in the sector of spray-painting, enamelling and treatment of surfaces.

### Claims

1. TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES consisting of a sealing joint of a tooled joint formed by a flat surface perpendicular to another like a door that is closed on a frame or similar esentially **characterized** to be formed by a sealing elastomeric body (1) of a joint that has in the one of its faces that has to be in contact with the frame (4) a lateral band or sheet that projects out of the tooled joint (2) and adheres to the frame by means of an adhesive placed on its outer face when the door that is perpendicular to the frame is open, so that when the door (3) is closed on the frame (4) the upper or external face of the sealing elastomeric body not only seals the joint in its bottom part but it gets in contact with the inner face of the door (3) allowing the painting of the edge of the door and the definition of a boundary or a cutting of its painting in the inner rim of the door (7) and the painting of the outer rim of the door (6) and of the door edge, being the lateral band or sheet narrower than the width of the joint to allow the painting to intake until the upper or external face of the sealing elastomeric body (1), being made of a semirigid material joined to the upper external face of the sealing elastomeric body and having a height that projects out of the joint what is necessary to form between the outer face of said lateral band or sheet and the outer surface of the frame a dihedron in a right angle to allow defining a boundary for the painting in the outer rim of the frame

- (5).
2. TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES according to claim 1, essentially **characterized** because the sealing elastomeric body is parallelepipedic, solid or with the tooled bore. 5
  3. TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES according to claim 1 essentially **characterized by** having as a sealing elastomeric body a semirigid sheet perpendicular to the lateral band or sheet that forms a T with the lateral sheet. 10
  4. TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES according to claim 1 essentially **characterized by** having a tooled sealing elastomeric body to save material and to make easy its squashing by the plane of the door increasing the compression against it. 15
  5. TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES according to claim 1 essentially **characterized by** having joined to the lateral band or sheet a sealing elastomeric body in a curved to the inside form sheet not enough to close the circle to allow its adaptation to the door by compression. 20
  6. TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES according to claim 1 essentially **characterized by** having a sealing elastomeric body in the form of a sheet with a part that is in contact with the inner face of the door that in the tooled joint would form a V with the lateral band or sheet. 25
  7. TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES according to claim 1 essentially **characterized by** having a sealing elastomeric body in the form of a trihedron with one of its sides perpendicular to the lateral band or sheet and in contact with the inner face of the door, another side joined to said lateral band or sheet in a right angle with the previous one and with its base that joins both sides obliquely. 30
  8. TOOLED JOINT SEALING STRIP INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES according to claim 1 essentially **characterized by** having a semicylin- 35

dric sealing elastomeric body with its flat base as an external face perpendicular to the lateral band or sheet.

9. PRODUCTION METHOD TO SEALING A TOOLED JOINT INCLUDING A LATERAL SHEET FOR DEFINING A BOUNDARY FOR THE PAINTING OF EDGES essentially **characterized** because the operator adheres to the frame (4) when the door that is perpendicular to the frame is open a semirigid sheet (2) that projects out of the frame and the tooled joint and later the operator adheres an independent sealing elastomeric body by means of another adhesive to the other sheet, so that when the door (3) is closed on the frame (4) the upper or external face of the sealing elastomeric body not only seals the joint by its bottom part but it gets in contact with the inner face of the door (3) allowing the painting of the edge of the door and the definition of a boundary or a cutting for the painting in the inner rim of the door (7) and the painting of the outer rim of the door (6) and of the edge of the door, being the lateral band or sheet narrower than the width of the joint to allow the intake of the painting until the upper or external face of the sealing elastomeric body (1), and being made of a semirigid material joined to the external upper face of the sealing elastomeric body and having a height that projects out of the joint what is necessary to form a dihedron in a right angle that enables to define a boundary for the painting in the outer rim of the frame (5) between the outer face of said lateral band or sheet and the outer surface of the frame. 40

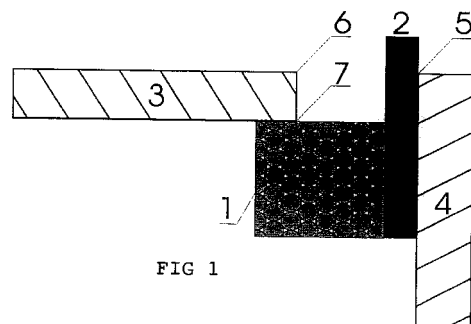


FIG 1

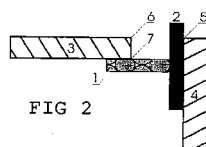


FIG 2

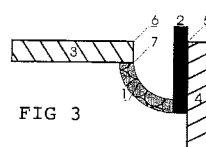


FIG 3

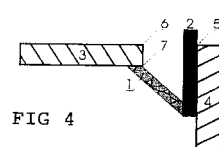


FIG 4

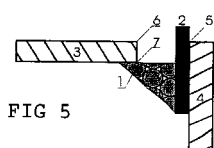


FIG 5

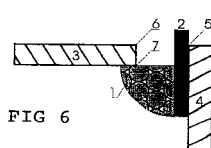


FIG 6

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/ ES 2006/000484

## A. CLASSIFICATION OF SUBJECT MATTER

see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B05B 15/04, B60J 10/08

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

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

CIBEPAT,EPODOC, WPI, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/0022158 A1 (VOSS) 21.02.2002 paragraphs [0235]-[0249]; figures 9, 21, 29, 44-76	1-3, 8, 9
Y		4-6
Y	US 5281292 A (ZOLLER) 25.01.1994 column 5, lines 51-57; figure 4	4
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A	CH 630994 A5 (BOREL, P.) 15.07.1982 abstract; claim 8; figure 2	1,6
A	US 5128176 A (SCHMIDT) 07.07.1992  -----	

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance.	
"E" earlier document but published on or after the international filing date	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"O" document referring to an oral disclosure use, exhibition, or other means	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents, such combination being obvious to a person skilled in the art
"P" document published prior to the international filing date but later than the priority date claimed	
	"&" document member of the same patent family

Date of the actual completion of the international search

08.May.2007 (08.05.2007)

Date of mailing of the international search report

(10/05/2007)

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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Form PCT/ISA/210 (patent family annex) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ ES 2006/000484

CLASSIFICATION OF SUBJECT MATTER

*B05B 15/04* (2006.01)

*B60J 10/08* (2006.01)



**REFERENCES CITED IN THE DESCRIPTION**

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