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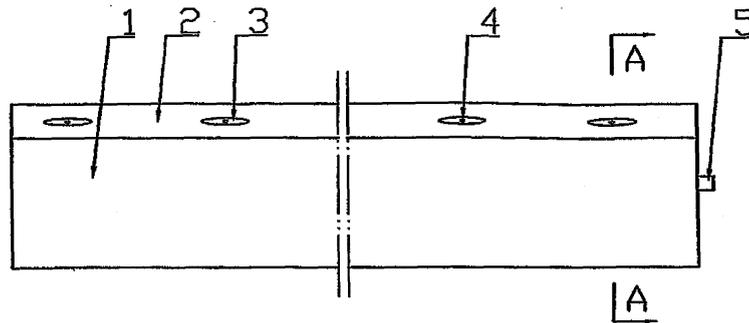
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(54) **A GRINDING METHOD OF STRIP GLASS AND A VACUUM SUCTION PLATE USED IN THE SAME**

(57) A grinding method of a strip glass comprises: the strip glass to be ground is absorbed to a vacuum suction plate, then the strip glass is transferred to the glass edge chamfering apparatus by the vacuum suction plate. Grinding a side of the strip glass forms a predefined slant. Also, the strip glass is turned over and is absorbed

to vacuum suction plate, then the strip glass is transferred to the glass edge chamfering apparatus and grinding the other side of strip glass forms a slant, which is the same as the predefined slant. This invention can grind a strip glass having a width of 10mm or great smaller. The present method prevents a waste of the strip glass.



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Description

[Technical Field]

[0001] The present invention relates to a grinding method of strip glass and a vacuum suction plate used in the same, primarily used for grinding to form strip glass with single ridge and double slants having small width (generally smaller than 15mm) in glass edge chamfering apparatus.

[Background Art]

[0002] During the architecture and fitment, glass becomes more popular. Grinding glass edge is an important step in process of glass, but conventional glass edge chamfering apparatus cannot grind the glass having width smaller than 15mm to form strip glass with single ridge and double slants, since the conventional clamps cannot clamp the glass having width smaller than 15mm, so that a great number of glass material having width smaller than 15mm cannot be used and then be wasted to pollute our environment. In the meanwhile, it is highly difficult and dangerous as clamping the glass manually, so it is necessary to provide a glass edge chamfering apparatus to solve this technical problem.

[Content of invention]

[0003] The object of the present invention is to provide a grinding method of strip glass and a vacuum suction plate used in the same to overcome the problem in which the conventional technology cannot grind strip glass. The technical projects of the invention are as follows: a grinding method of a strip glass, in which firstly, the strip glass to be ground is absorbed to a vacuum suction plate; secondly, the strip glass is transferred to the glass edge chamfering apparatus by the vacuum suction plate and a side of the strip glass is grinded to form a predefined slant; finally, the strip glass is turned over and is absorbed to vacuum suction plate, and then the strip glass is transferred to the glass edge chamfering apparatus and the other side of strip glass is grinded to form a slant which is the same as the above said predefined slant.

[0004] A vacuum suction plate comprises base plate, on edge of one side of which is provided with a suction surface in which is provided with suction grooves for absorbing the strip glass; exhaust passages are disposed within the base plate, communicated on one end thereof with an exhaust port on one end of the base plate, and intercommunicated with the suction grooves through branch passages and groove branch passages: and the suction surface has thickness smaller than other sections of the base plate to form an obtuse angle concave section at the corner.

[0005] The suction surface is composed of a suction layer made of elastic material adhered onto the surface of the base plate.

[0006] The suction layer is made of rubber or plastic or other elastic materials.

[0007] The said base plate can be formed by means of two sections engaged and adhered with each other, and the said exhaust passages and branch passages are disposed between the engaged surfaces of the said two sections.

[0008] The said base plate is made of metal, glass, plastic or polymethyl methacrylate plastics.

[0009] The advantage of the invention lies in: by means of vacuum-pumping, let the strip glass tightly adsorb suction surface, and combine base plate with strip glass as a whole, then make use of base plate for carrying strip glass to process on glass edge chamfering apparatus, it could grind the strip glass in 10mm width, even less than 10mm width, thus effectively solve the issue that the present clamp could not clamp strip glass. Simple structure is easy to implement and convenient to use. By means of processing mentioned in the invention, many abandoned strip glass could be processed into useful finishing material, making full use of glass material and reducing the waste of resources.

[0010] The above and other advantages and characterizes of the invention will become more clear with reference to following detailed description accompany with figures.

[Description of Drawings]

[0011]

FIG. 1 is a structural view illustrating the side having suction surface:

FIG. 2 is a cross-section view along the line A-A of figure 1 (the example with suction layer).

FIG. 3 is a cross-section view along the line A-A of figure 1 (the example with suction layer).

Reference numbers: 1-base plate; 2-suction surface; 3-suction groove; 4-groove branch passage; 5-exhaust port; 6-branch passage; 7-exhaust passage; 8-suction layer.

[Best Mode]

[0012] Reference to figures 1 to 3, the vacuum suction plate of the present invention comprises a base plate 1. on edge of one side of which is provided with a suction surface 2 in which is provided with a suction groove 3. Exhaust passages 7 are disposed within the base plate 1, communicated on one end thereof with an exhaust port 5 on one end of the base plate 1, and intercommunicated with the suction grooves 3 through branch passages 6 and groove branch passages 4. The suction groove 3 has function of improving the area and force of suction and shape of random.

[0013] Reference to figures 2 and 3, the suction surface 2 has thickness smaller than other sections of the base plate 1 and form a slant which has maximal thickness at the joint to the base plate 1 forms an obtuse angle concave section (step). When processing the glass strip, the obtuse angle concave Section is employed as function of positive stop, that is, a side of the processed glass strip resists against the joint of the concave section to prevent moving during the process of glass strip.

[0014] As shown in figure 3, the suction surface 2 is composed of a suction layer 8 made of elastic material adhered onto the surface of the base plate 8. A groove 3 and groove branch passages 4 are provided on the suction layer 8. It is advantageous for absorbing the surface of glass onto the suction layer 8 as it is elastic. The suction layer 8 can be made of rubber, plastic or materials with similar performance.

[0015] Regarding the convenience of production, the said base plate 1 can be formed by means of two sections engaged and adhered with each other, so that the said exhaust passages 7 and branch passages 6 can be disposed between the engaged surfaces of the said two sections and easily processed.

[0016] The said base plate 1 can be made of metal, glass, plastic, polymethyl methacrylate plastics, toughened glass or other materials.

[0017] As implementing according to the present invention, a hose is connected between the exhaust port 5 and the air extracting port of vacuum pump. The glass strip to be processed is placed onto the suction surface 2 of the invention, and the vacuum pump is activated to extract air to form vacuum status so that the glass strip is absorbed onto the suction surface 2. Subsequently, the invention is placed onto the glass edge chamfering apparatus to grind external side of the glass strip to form a slant, and then the glass strip is turned over and grinded with the other side thereof so that the glass strip can be processed to obtain the shape of single ridge and double slants or the other similar shape.

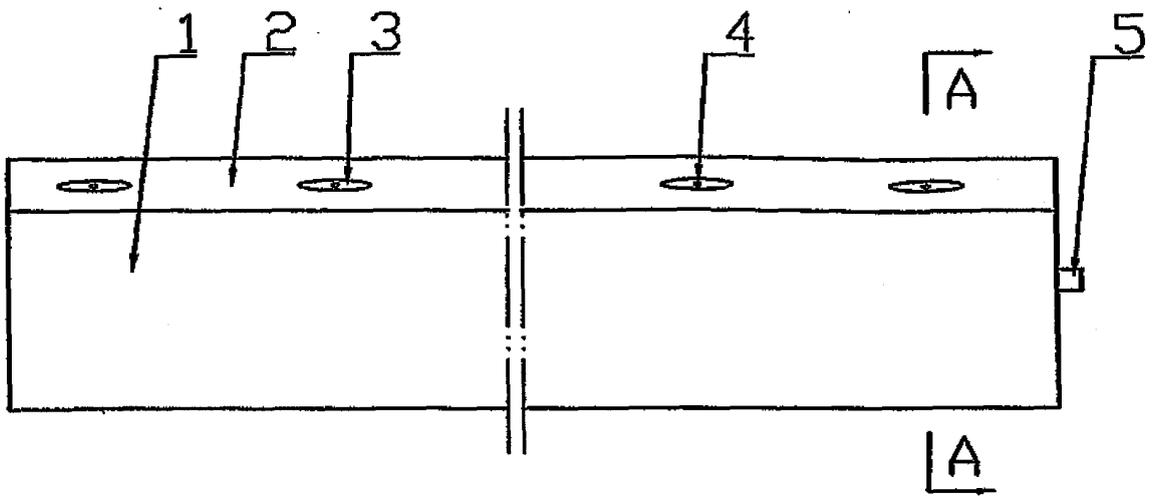
[0018] The above described is only the preferred embodiments of the present invention, which is just illustration and not limitation to the invention. Those skilled in the art can understand that the invention may be modified and amended on many places without separating from the scope and spirit of the invention which are limited in the protective scope of this invention.

transferred to the glass edge chamfering apparatus and the other side of strip glass is grinded to form a slant which is the same as the above said predefined slant.

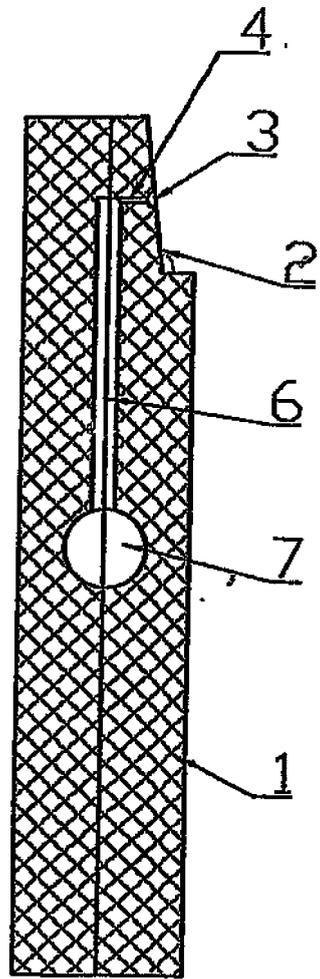
- 5 2. A vacuum suction plate used for grinding the strip glass, **characterized in that**: the plate comprises base plate, on edge of one side of which is provided with a suction surface in which is provided with suction grooves for absorbing the strip glass; exhaust passages are disposed within the base plate, communicated on one end thereof with an exhaust port on one end of the base plate, and intercommunicated with the suction grooves through branch passages and groove branch passages; and the suction surface has thickness smaller than other sections of the base plate to form an obtuse angle concave section at the corner.
- 10 3. The vacuum suction plate according to claim 2, **characterized in that** the suction surface is composed of a suction layer made of elastic material adhered onto the surface of the base plate.
- 15 4. The vacuum suction plate according to claim 3, **characterized in that** the suction layer is made of rubber or plastic.
- 20 5. The vacuum suction plate according to claim 2, **characterized in that** the said base plate can be formed by means of two sections engaged and adhered with each other, and the said exhaust passages and branch passages are disposed between the engaged surfaces of the said two sections.
- 25 6. The vacuum suction plate according to claim 2, **characterized in that** the said base plate is made of metal, glass, plastic or polymethyl methacrylate plastics.
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Claims

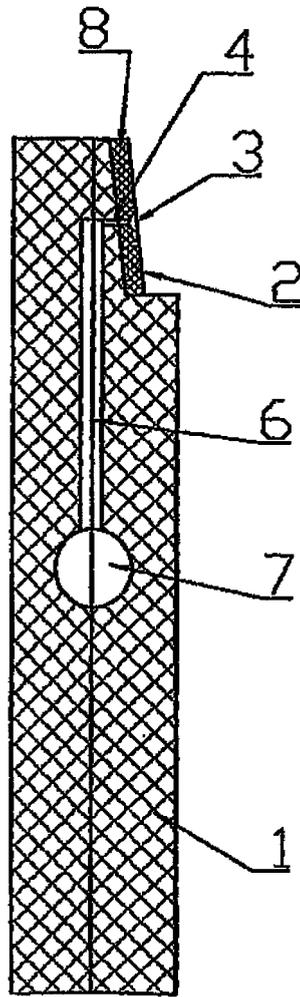
- 50 1. A grinding method of a strip glass, **characterized in that**: firstly, the strip glass to be ground is absorbed to a vacuum suction plate; secondly, the strip glass is transferred to the glass edge chamfering apparatus by the vacuum suction plate and a side of the strip glass is grinded to form a predefined slant; finally, the strip glass is turned over and is absorbed to vacuum suction plate, and then the strip glass is
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2006/000668

A. CLASSIFICATION OF SUBJECT MATTER

B24B9/10 (2006.01) i

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) B24B9/10, B24B 9/08, B24B 9/06, B24B 9/02, B24B 9/00, B24B7/26, B24B7/24, B24B7/22, B24B7/20, B24B7/00, B24B47/00, B24B37/04

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

Chinese invention patent applications and utility models from 1985

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNPAT、WPI、EPODOC、PAJ; glass, grind+, finish+, vacuum+, chamfer+, bevel+, suct+, end, notch, concave, recess, small, thin

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN,Y,2621878 (SHI, Mike) 30.June 2004 (30.06.2004) page 5, line 6 – line 33; page 7, line 8 – line 18; figures 1-3	1
Y	see the above	2-4, 6
Y	JP,A,9029625 (SONY CORP) 04. February 1997 (04.02.1997) column 2, line 14 – line 44, figure 1	2-4, 6
A	CN,Y,2366232 (HUANQIU MACHINERY CO LTD QINGD) 01. March 2000 (01.03.2000) claim 1	1-2
A	CN,Y,2456885 (FUYAO GLASS INDUSTRY GROUP CO) 31. October 2001 (31.10.2001) abstract	1-2
A	US,A,4597228 (CITIZEN WATCH CO LTD) 01. July 1986 (01.07.1986) column 5, line 10 – line 66, figure 4	1-6
A	US,A,5028182 (PARK KYUNG) 02. July 1991 (02.07.1991) column 2, line 35 – column 4, line 13, figures 3-4	1-6

 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	“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
“E” earlier application or patent but published on or after the international filing date	“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 such documents, such combination being obvious to a person skilled in the art
“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)	“&” document member of the same patent family
“O” document referring to an oral disclosure, use, exhibition or other means	
“P” document published prior to the international filing date but later than the priority date claimed	

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2006/000668

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN,Y,2621878	30. June 2004 (30.06.2004)	NONE	
JP,A,9029625	04. February 1997 (04.02.1997)	NONE	
CN,Y,2366232	01. March 2000 (01.03.2000)	NONE	
CN,Y,2456885	31. October 2001 (31.10.2001)	NONE	
US,A,4597228	01. July 1986 (01.07.1986)	EP,A,0147094	03. July 1985 (03.07.1985)
		DE,C,3476348	02. March 1989 (02.03.1989)
US,A,5028182	02. July 1991 (02.07.1991)	NONE	

Form PCT/ISA/210 (patent family annex) (April 2005)