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(54) **COATED ABRASIVE PRODUCT**

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(57) **ABSTRACT**

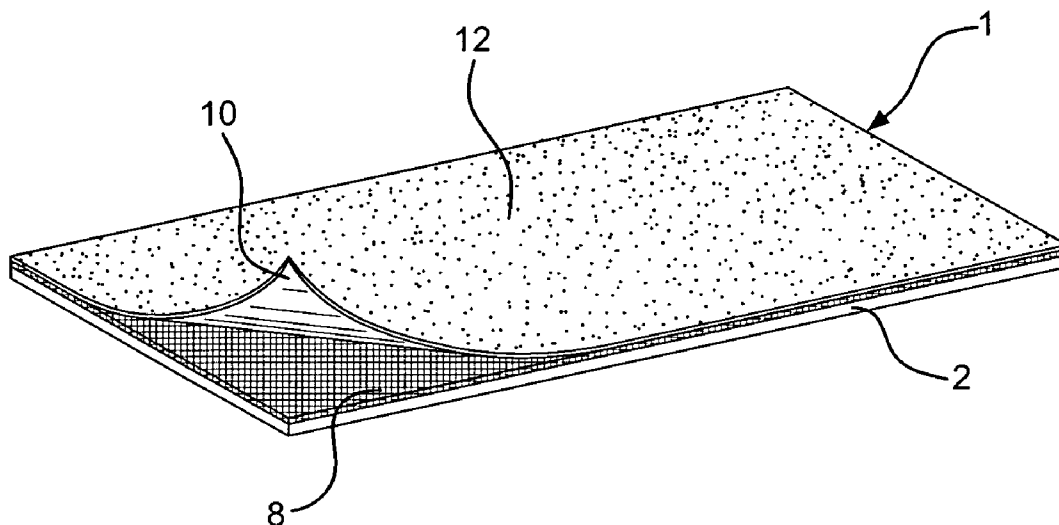
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A coated abrasive product has a backing member, a layer of adhesive and a planar paper or cloth-like abrasive sheet attached to the backing member via the adhesive layer. The backing member is made of a pliant, malleable, metallic material, configured to be bent and shaped into a multitude of different, fixed shapes and configurations. In use during sanding operations, the abrasive sheet remains attached to the backing member, while conforming to the fixed configurations of the backing member.



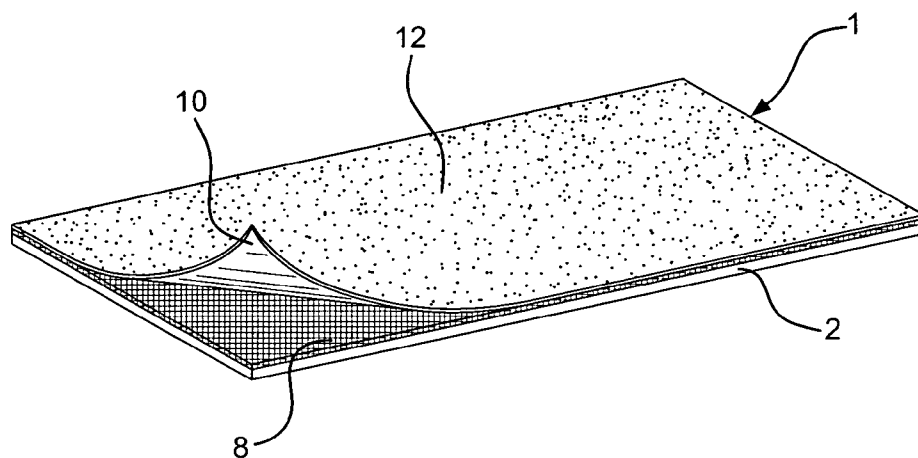


FIG. 1

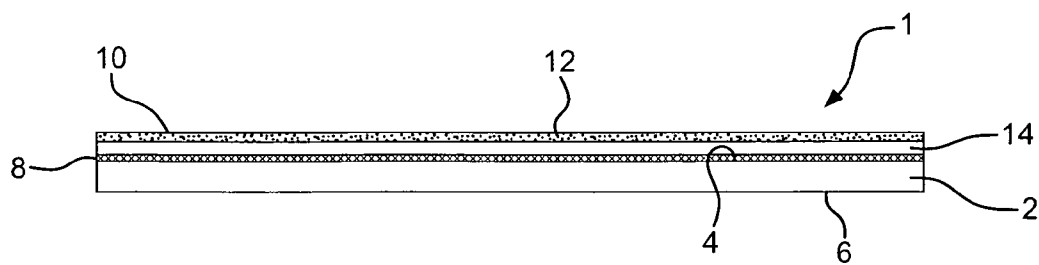


FIG. 2

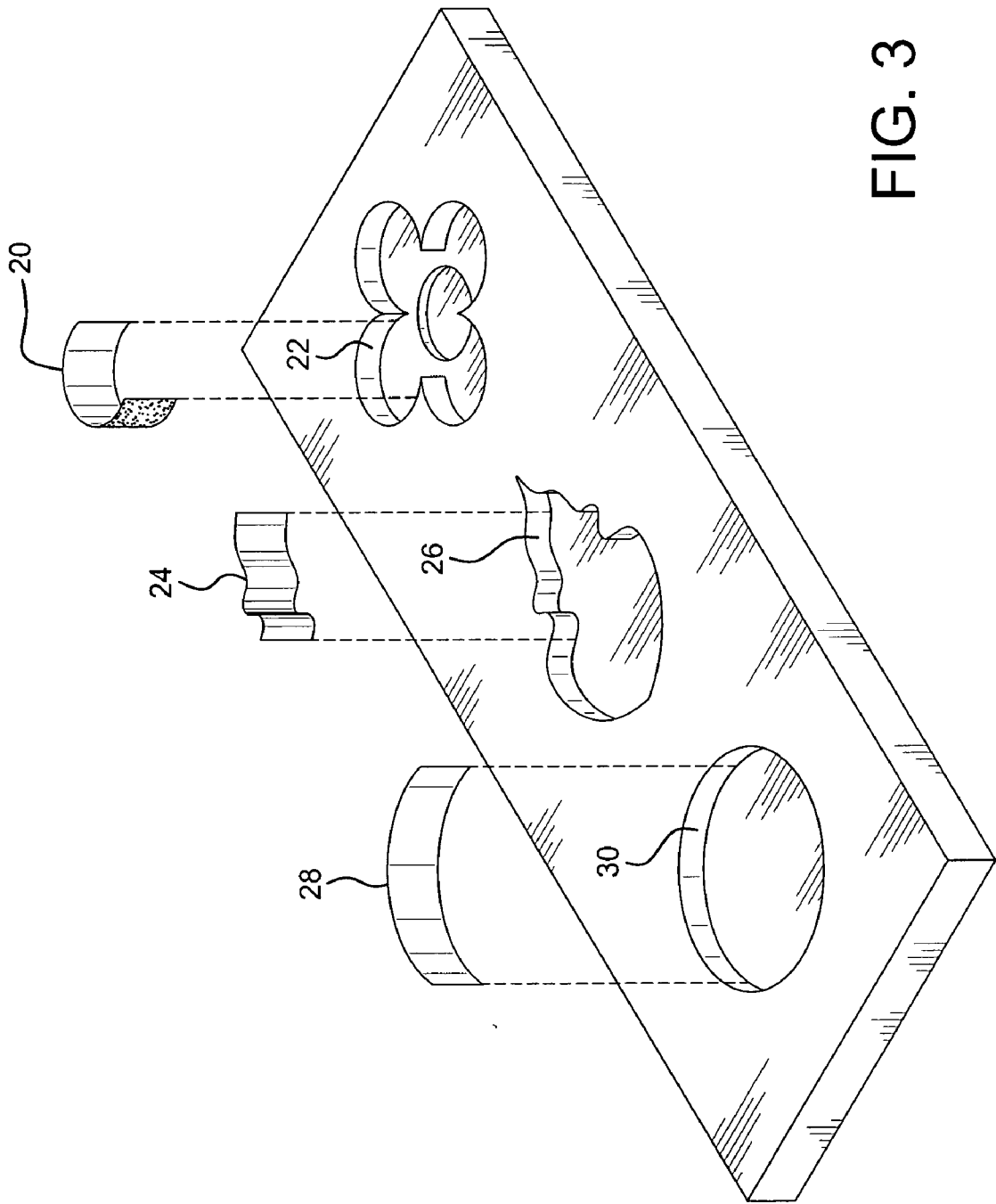


FIG. 3

COATED ABRASIVE PRODUCT

BACKGROUND OF THE INVENTION

[0001] Coated abrasive materials such as sandpaper, emery cloth, and the like, have long been commonly used to smooth and polish various types of surfaces, especially wood, metal and different types of plastics. Such abrasive materials are also utilized to shape and form products or to roughen and texture surfaces.

[0002] However, these types of abrasive, coated, materials routinely have a flimsy, paper or cloth backing, which has a number of disadvantages. For example, manual use of sandpaper type products inevitably results in tearing or breaking apart of the backing of the product. The product becomes mutilated and unusable, especially when concentrated pressure is applied on it. This is especially the case when there is the need to smooth irregular surfaces and edges, whose outer surfaces are curved, angled, or otherwise difficult to get to. An additional problem is presented when one attempts to conform sandpaper products into a shape which permits ready access to such surfaces. The paper or cloth-like nature of the backing material makes it impossible to contour the sandpaper product for detail work on specific surfaces, such that the material retains its shape to conform with these surfaces. Use of currently available sandpaper products is most inefficient in sanding, smoothing, and texturing operations on irregular surfaces.

SUMMARY OF THE INVENTION

[0003] It is thus an object of the present invention to overcome the limitations and disadvantages of prior coated abrasive sanding products.

[0004] It is the object of the present invention to provide a coated abrasive product which will hold its shape and integrity when used for sanding operations.

[0005] It is another object of the present invention to provide a coated abrasive product which can be bent and contoured into a multitude of different shapes and configurations for use during sanding operations.

[0006] It is still another object of the present invention to provide a coated abrasive product which will rigidly maintain its pre-formed shape and configuration during sanding operations.

[0007] It is a further object of the present invention to provide a coated abrasive product which will not rip, tear, break apart or otherwise become unusable during sanding operations.

[0008] These and other objects are accomplished by the present invention, a coated abrasive product which comprises a backing member, a layer of adhesive, and a planar paper or cloth-like abrasive sheet attached to the backing member via the adhesive layer. The backing member is made of a pliant, malleable, metallic material, configured to be bent and shaped into a multitude of different, fixed shapes and configurations. In use during sanding operations, the abrasive sheet remains attached to the backing member, while conforming to the fixed configurations of the backing member.

[0009] The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The invention, itself, however, both as to its design, construction and use, together with additional fea-

tures and advantages thereof, are best understood upon review of the following detailed description with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is an isometric view of a representation of the coated abrasive product of the present invention.

[0011] FIG. 2 is an elevation view of a representation of the coated abrasive product of the present invention.

[0012] FIG. 3 is a depiction of the coated abrasive product in use.

DETAILED DESCRIPTION OF THE INVENTION

[0013] It is initially noted that FIGS. 1 and 2 of this disclosure are not to scale and are sized merely to better describe and depict the elements of the invention.

[0014] Coated abrasive product 1 of the present invention comprises backing member 2 having upper surface 4 and lower surface 6. Backing member 2 is a pliant, flexible, malleable material which is easily and manually bent, but which can be shaped into any number of different fixed, rigid configurations. It is anticipated that backing member 2 will be made of aluminum, with a thickness of approximately 0.01 inches. However, backing member 2 is not to be considered restricted to the type of material or a specific thickness dimension. Any equivalent material sized to function as described herein, can be used and is contemplated.

[0015] A layer of adhesive 8 is applied uniformly over upper surface 4 of backing member 2. A thin, two-sided planar sheet 10, which may be paper, cloth or its equivalent, configured is to be positioned on and permanently attached to adhesive layer 8. Planar sheet 10 is coated with a plurality of abrasive particles 12. Underside 14 of sheet 10 adheres to the layer 8 such that coated abrasive product 1 forms a single, integral unitary rigid, yet bendable, sheet.

[0016] It is contemplated that planar sheet 10 can be sandpaper, emery paper, or an equivalent flexible, paper-like sheet material with an abrasive top surface. The material must have an undersurface which can readily adhere to backing member 2 via adhesive layer 8 to form a permanent, non-detachable bond.

[0017] It is anticipated that coated abrasive product 1 will be manufactured in conveniently sized sheets capable of being cut to desired size with sheet metal cutters or clippers. Once cut to convenient size, coated abrasive product 1 can easily be bent and conformed to be most efficiently configured to provide sanding operations on items which must be smoothed, specifically items with irregular edges and surfaces, not easily accessed with regular sand or emery paper. FIG. 3 depicts how the coated abrasive product of the invention can typically be used.

[0018] In FIG. 3, the coated abrasive product has been bent: into partial circle 20 to conform with circular surface 22 to be sanded; into an irregular shape 24 to conform with surface 26 to be sanded; and into an arc shape 28 to conform with surface 30 to be sanded.

[0019] Thus, coated abrasive product 1, formed as appropriate and needed, provides a rigid sanding product which can readily be used to sand curved and irregular surfaces, without fear that the product will tear, rip, break apart, become mutilated and unusable, or make unwanted contact with adjacent surfaces.

[0020] Certain novel features and components of this invention are disclosed in detail in order to make the invention clear in at least one form thereof. However, it is to be clearly understood that the invention as disclosed is not necessarily limited to the exact form and details as disclosed, since it is apparent that various modifications and changes may be made without departing from the spirit of the invention.

1. A coated abrasive product comprising:

- a backing member with upper and lower surfaces, said backing member comprising a pliant and malleable metallic material configured to be bent and shaped into a multitude of different, rigid, fixed configurations;
- a layer of adhesive located on the lower surface of the backing member; and
- a thin, two-sided planar sheet with two sides, one side coated with a plurality of abrasive particles, said sheet

attached on its second side to the lower surface of the backing member by means of the adhesive layer, whereby when the backing member is bent and shaped into a multitude of different, rigid, fixed configurations, the sheet remains attached to the backing member and conforms to the fixed configurations of said backing member.

2. The coated abrasive product as in claim 1 wherein the planar sheet is a paper material.

3. The coated abrasive product as in claim 1 wherein the backing member is aluminum.

4. The coated abrasive product as in claim 1 wherein the adhesive permanently bonds the sheet to the backing member.

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