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Budman

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[54] **ABRASIVE CLOTH CLEANER**

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[52] **U.S. Cl.** ..... **15/160,** 51/262 A

[51] **Int. Cl.** **B24b 53/02,** B24b 53/10

[58] **Field of Search** ..... 15/160, 256.5, 105, 15/77, 210 A, 21 R, 21 B; 51/262 A, 1; 198/229; 134/9, 6

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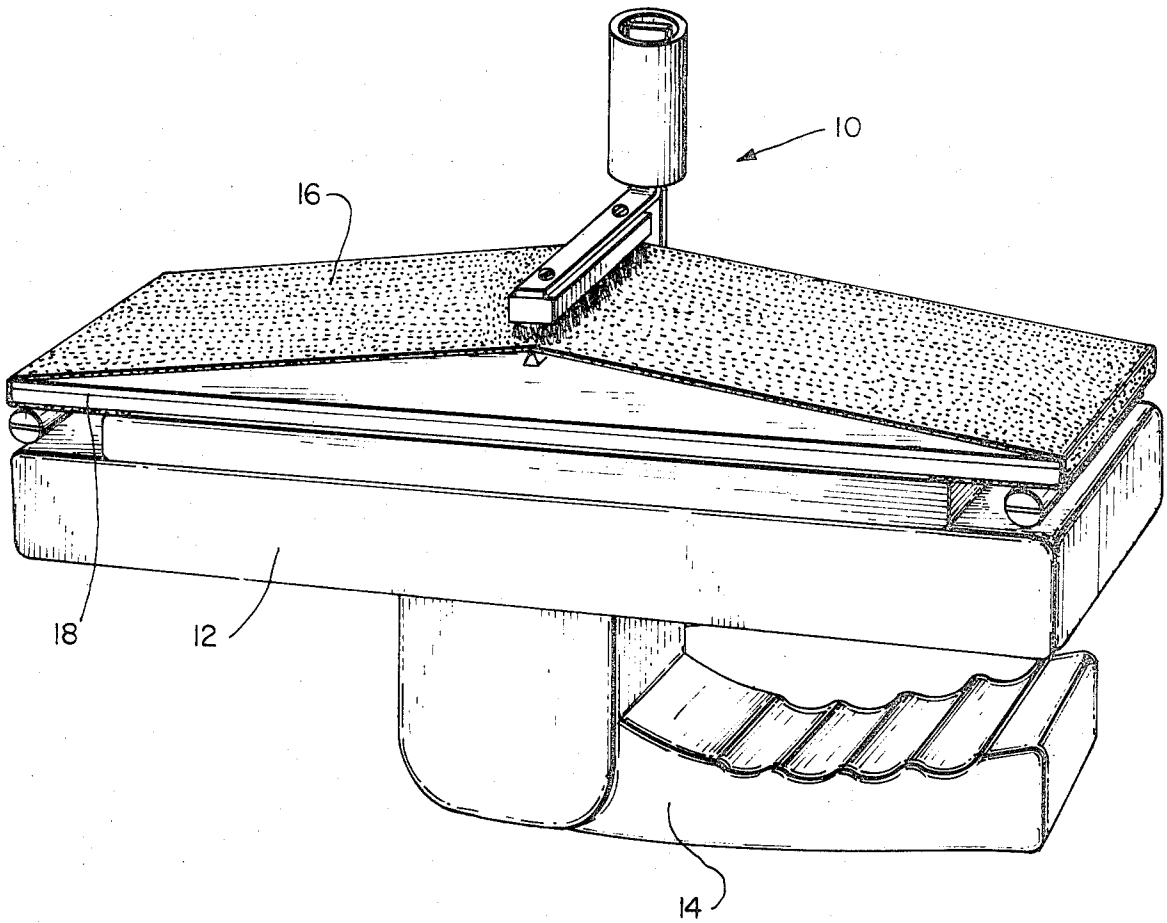
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[57] **ABSTRACT**

A tool for cleaning abrasive paper. A bar having a narrow top edge is fixed to a handle, the handle also carrying a brush. The bar is inserted beneath abrasive paper to open the clogged areas, the brush then displacing the debris between the abrasive particles.

5 Claims, 2 Drawing Figures



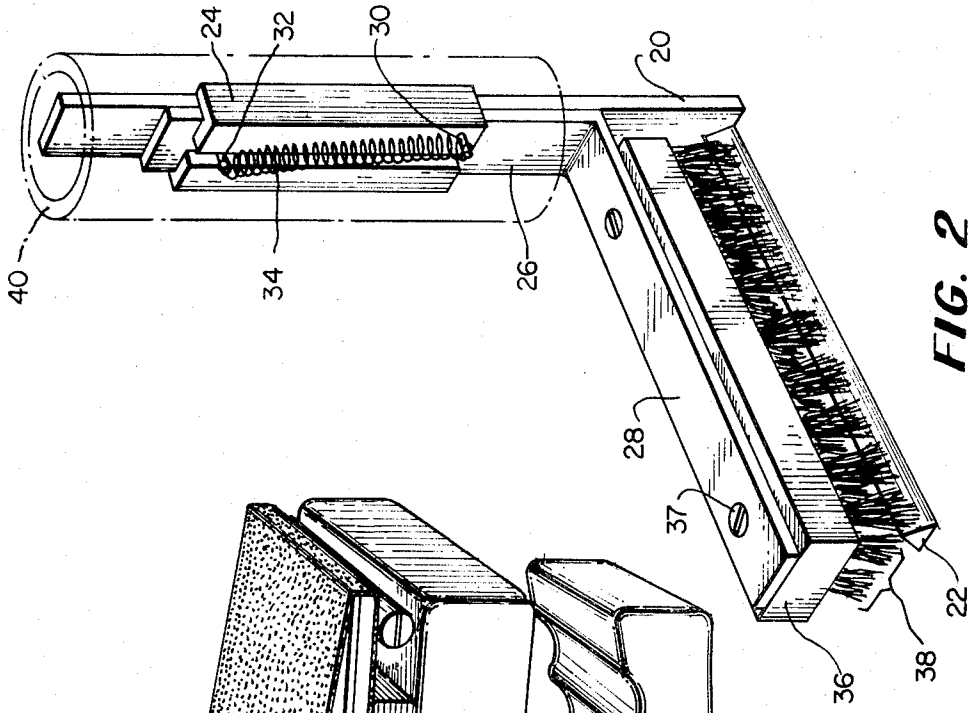


FIG. 2

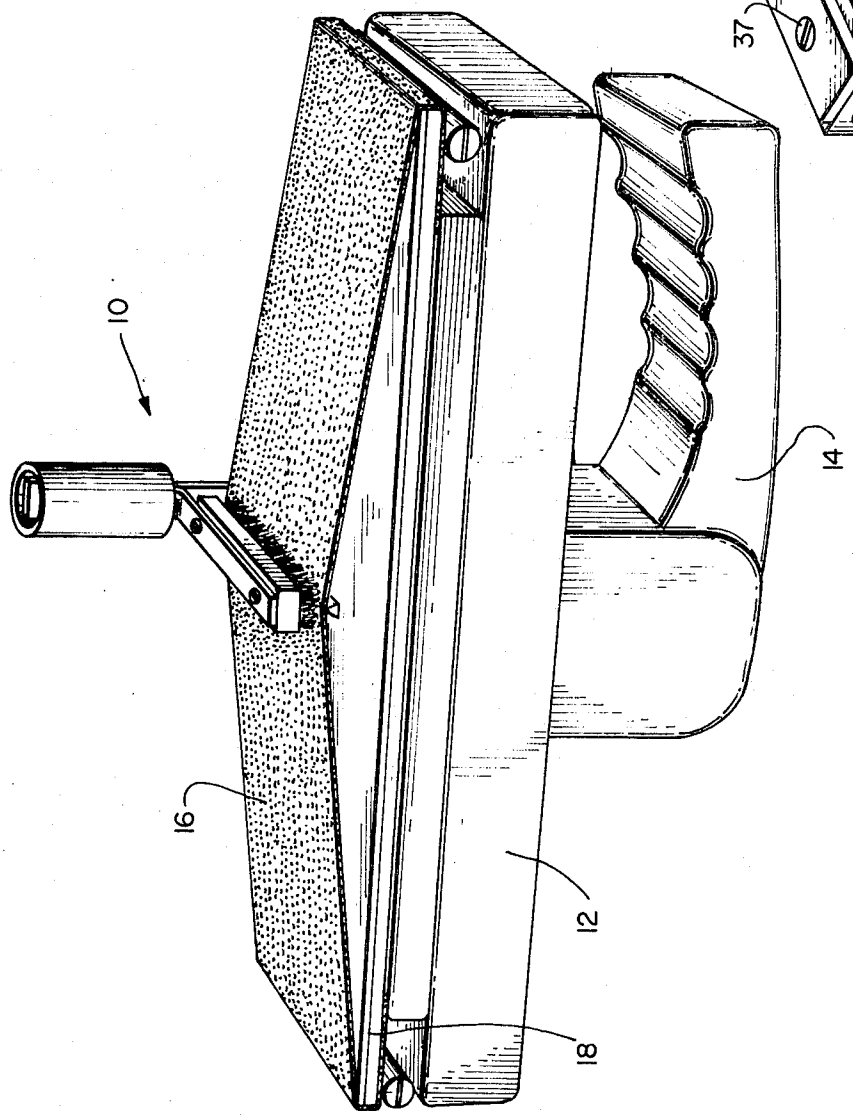


FIG. 1

ABRASIVE CLOTH CLEANER

This invention relates to a tool for cleaning abrasive papers and fabrics.

An abrasive paper or fabric is formed by depositing an aggregate of hard and irregular particles on a flexible base, such as paper or fiber, with the aid of an adhesive on the flexible base. The average size and composition of the abrasive particles varies according to the intended use, as does the composition of the flexible backing and the particular adhesive employed. During the use of such papers the material against which they are rubbed is of a lesser hardness than the hardness of the particles. These particles are sometimes called the grit of the paper. As the relatively soft area or surface is worn down by the cutting and shearing action of the hard particles, the spaces between the grit become filled with the softer material. Much of this softer material may be dislodged from between the grit by mechanical vibration or jarring, blowing it off, etc. In the event, however, that the softer material is particularly tacky or particularly fine, the dislodgement of the softer material from the interstices between the grit becomes more difficult. With the continued buildup of this softer substance, the abrading effect of the paper or cloth is diminished until a point is reached where the paper must be discarded.

The cleaning tool according to the practice of this invention permits rapid cleaning of an abrasive paper or cloth by positively dislodging the softer material from the interstices or spaces between the grit. Since the grit particles themselves are often stil intact, retaining their original roughness, this positive dislodgement can increase the effective life of the abrasive fabric by as much as 25 percent. In view of the extensive use or service performed by abrasive papers and cloths in many industries, this represents a significant increase in abrasive longevity. The tool according to this invention further permits in situ cleaning of abrasive papers in many instances, this representing a still further economy. This stems from the fact that the abrasive paper or cloth may be cleaned while still on the tool holder or mount, the number of changes being thereby diminished.

The tool according to the practice of this invention may be foremd from an elongated bar having an upper and narrow edge. The bar and its edge is adapted to be placed beneath a tensioned fabric paper or cloth and pulled in such a direction that the cloth is displaced, at the bar, in a direction normal to its plane. The cleaning tool of this invention further includes a brush, such as a wire brush, whose bristles contact the front or grit surface of the paper. The elongated bar serves to open up the space between the abrasive particles and permit the entry of the bristles of the brush to forcibly and positively displace the softer material which has found its way in the interstices and which rests upon the paper or cloth.

While workers in the abrasive art are aware of the problem caused by the entry and lodging of foreign material between the grit particles in a flexible abrasive cloth, no solution so simple as that here presented is known. Thus, Olson U.S. Pat. No. 3,241,268 recognizes impairment of abrasive action by such foreign matter. His solution does recognize the necessity for opening up the grit mosaic but does not disclose the concept of nor apparatus for removing the foreign material.

IN THE DRAWINGS

FIG. 1 is a perspective view illustrating the cleaning tool of this invention as applied to a conventional sanding or abrading tool.

FIG. 2 is a perspective view of the cleaning tool of this invention.

Referring now to the drawings, the numeral **10** denotes generally the cleaning tool of this invention and is illustrated as cleaning an abrasive paper or fabric secured to a hand-held abrasive tool **12** provided with a handle **14.** The abrasive tool **12** may carry an electric motor, not illustrated, for continuously rotating a band **16** of abrasive cloth or paper. It will be understood, however, that the invention is not to be considered as limited to mechanical abrasive tools of the illustrated type, but may also be applied where the ends of the abrasive cloth **16** are fastened to a different support. The numeral **18** denotes a mount of any convenient construction for the continuous band **16** of abrasive fabric.

The numeral **20** denotes a vertical standard whose lower end carries a horizontally disposed bar **22.** This bar is generally triangular in cross section so as to provide a sharp upper edge. Conveniently, the bar **22** may be affixed to the standard **20** as by welding in the preferred form wherein they are both formed of metal. The numeral **24** denotes a sleeve element affixed to standard **20** and which slidably encompasses within its overlying portions another vertical standard **26.** The standard **26** is preferably formed of metal and carries an integral extension **28** at right angles to it. The numeral **30** denotes a peg or abutment secured to sleeve **24,** while numeral **32** denotes a similar abutment of peg carried by slidable standard **26.** A spring **34** interconnects these two pegs and normally urges the standard **26** down so that a force will be required to displace the member **28** upwardly from the indicated position. pg,5

A wire brush having a body **36** is secured to the extension **28** as by means of screws **37** and carries a plurality of wire bristles indicated by the numeral **38.** The numeral **40** indicates a cylindrical handle which may be suitably attached to the standard **20** to facilitate gripping.

As indicated at FIG. **1** of the drawings, the cleaning tool is used in the following manner. The motorized abrasive grinder **12** is held upside down, in the indicated position. The lateral extension **28** which carries the brush handle **36** is pulled upwardly against the tension in spring **34.** This permits sufficient clearance between the bottom of the bristles **38** and the bar **22** so as to enable the latter to be placed underneath the indicated segment of the abrasive cloth **16.** The bar **22** is given a slight upward motion to thereby place the abrasive cloth in tension, thereby distorting the plane of the cloth into two planes which intersects at the top of the bar **22.** This upward motion of the tool causes the grit particles immediately adjacent the bar **22** to become displaced from each other, thereby opening up the spaces between them. The lateral extension **28** is now released, allowing the wire brush to fall upon or test the grit. The bristles **38** are now able to penetrate between the grit particles adjacent the bar **22** and thereby positively dislodge the foreign material between the grit particles. The cleaning tool **10** is now moved back and

forth, along the length of the fabric abrasive **16** to thereby clean a segment of the paper. The tool **10** is now removed, the next segment of the continuous band **16** of abrasive cloth is now cleaned in a similar manner. This process is continued for each segment of the abrasive cloth, until the entire cloth has been cleaned.

It will be apparent that the cloth **16** need not be removed from its holder. For different sizes and qualities of abrasive papers and cloths, different brushes **36** may be employed, merely by unscrewing the fastening elements **37** and inserting a different brush. While a sharpened edge along the bar **22** has been successfully employed, the upper edge may be less sharp than illustrated, so long as the bar **22** performs the function of opening up the spaces between the grit.

What is claimed is:

1. A tool for cleaning an abrasive cloth or paper including:

a. a horizontal bar having an upper continuous edge,

b. a vertical standard secured at its bottom to one end of said bar,

c. a horizontally disposed brush where bristles are downwardly directed and lie generally in a plane containing said bar edge,

d. means for slidably mounting said brush on said vertical standard, whereby the bristles of the brush may move away from the bar to define a gap therebetween.

2. The cleaning tool of claim **1** wherein said bar edge is defined by the intersection of two planar surfaces.

3. The cleaning tool of claim **1** including,

a. means for biasing said brush downwardly, towards and against said bar.

4. The cleaning tool of claim **1** wherein said (d) means is defined by:

a. an angle member having a horizontal portion affixed to the brush and a vertical portion slidable on said vertical standard,

b. a sleeve for maintaining said vertical angle member and said vertical standard in slidable parallelism.

5. The cleaning tool of claim **4** including a tension spring connected between said vertical standard and said vertical angle member to bias said brush downwardly, towards and against said bar.

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