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W. E. FOSTER

POLISHING WHEEL AND PROCESS FOR TREATING SAME

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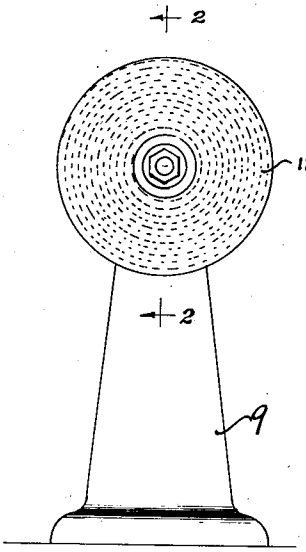


Fig. 1

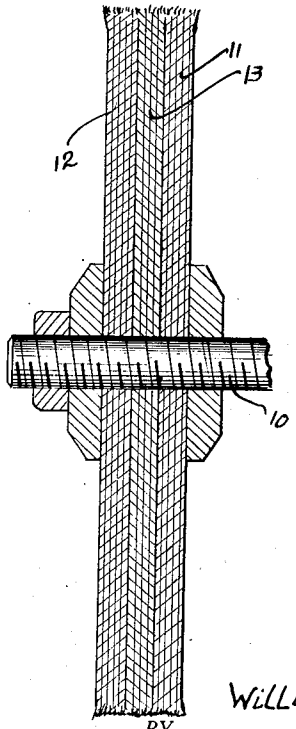


Fig. 2

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POLISHING WHEEL AND PROCESS FOR TREATING SAME.

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My invention relates to a new and useful improvement in a polishing wheel and the process for treating the same and has for its object the provision of a polishing wheel adapted for the performance in a polishing operation of functions heretofore performed in two different operations. In polishing operations as carried on today a standard sewed buff made up from one or more bleached cotton disc sections, is used for the initial polishing before the material is subjected to the buffing operation. After having been polished with the standard sewed buff, the material is then submitted to the polishing operation in which a felt wheel is used. By employing the invention set out herein, the polishing operation is completed when the work is operated upon by the standard sewed buff so that the polishing of the material with the felt wheel is entirely dispensed with. The present invention comprises a process of treating the bleached cotton disc sections so as to place them in a condition for effecting the polishing operation without requiring the submission of the work to the polishing by the felt wheel. The process also has as its object the infusion into the bleached cotton disc section of certain materials which are designed to produce the desired effect in order to eliminate the secondary operation with the felt wheel.

Another object is the provision of a standard sewed buff made up from bleached cotton disc sections secured together by adhesive or glue and so arranged and constructed as to present in operation the same effect as a unitary structure.

Other objects will appear hereinafter.

The invention consists in the process and the resulting product which are described herein and for the purposes of illustrating the built up buffing wheel I have shown the same in the accompanying drawings which form a part of this specification and in which,

Fig. 1 is an elevational view of the polishing wheel embodied in the invention.

Fig. 2 is a sectional view of the wheel taken on substantially line 2—2 of Fig. 1.

The process of treating the bleached cotton disc sections which are customarily used in polishing operations has a tendency to stiffen the material and also serves to infuse into the material the ingredients necessary for effecting the proper polishing of the material to be polished in one operation. This process involves the employment of a mixture comprising boiled linseed oil, water, pine tar or other suitable deodorant and boiled glue. The boiled linseed oil is mixed with the water in the proportion of one part of oil to five parts of water, to this mixture is added a suitable deodorant and for the purposes of illustrating the practical working of the invention, I specify one sixteenth part of pine tar as a suitable deodorant. The deodorant is used for the purpose of stiffening or eliminating the obnoxious odor of the glue which is used in the mixture. To the oil, water and deodorant there is added one part of boiled glue, a sufficient quantity of the mixture being provided to permit the proper carrying on of the process on a practical and economical scale. After these various ingredients have been mixed in the proportions set out, the mixture is brought to the boiling point and the bleached cotton disc sections are then immersed in the mixture and retained therein until fully saturated throughout. The complete saturation of the discs will, it is believed be evidenced by the disappearance of all air bubbles from the discs. After complete saturation in this mixture the discs are then removed and allowed to drip so that the excess saturation may then remove itself. The discs are then placed in a press sufficient to press all of the water from them, the solution of oil and glue remaining in the fabric from which the discs are made. In this pressing operation of course, a quantity of the oil is removed also. I have found from practical operation that a subjection of the disc to the pressure which may be exerted by a single man with a hand screw press is sufficient to produce the desired results. The discs are then permitted to dry, this drying operation being carried on naturally in the atmosphere or artificially by some drying process if desired. After the discs are thoroughly dried they are then ready for use, the oil and glue having penetrated throughout the disc and left in the disc in the form and of such consistency and so imbedded in the fabric of the disc as to leave no undesired effect. The discs may be used singly but generally it is desired that the polishing wheel be built up from several of these disc sections. In building the polishing wheel from the several sections I prefer to coat the adjacent faces of the discs with glue and then submit the several discs to press until the glue is

dried. The glue which has been carried into the fabric of the discs assists the glue placed upon the face of the disc in thoroughly and firmly cementing the various disc sections together, so that the resultant product is a polishing wheel having all the appearance and adapted for performing all of the functions in a satisfactory manner of a unitary structure.

The presence of the glue in the fabric, carried there on account of the immersion, serves in conjunction with the slight amount of oil which remains in the fabric, to give an exceptionally high lustre to the material polished. The glue also serves to stiffen the fabric so that the polishing effect of the fabric, thus treated, is far superior to the polishing effect of the fabric untreated. The wheel constructed from discs in this manner is possessed of a greater life, the increase in durability being due to the ingredients which are carried into the fabric.

In the drawings, I have shown an embodiment of my invention in a polishing wheel. The wheel is generally mounted upon the standard 9 by means of a shaft 10 and in the form in the drawings, I have shown three standard sewed buffs, 11, 12 and 13 which are pressed together and glued in position. In the drawing, the lines separating the separate discs are made considerably heavier than would appear from the actual device, in order to bring out the lines of demarkation. When the discs are covered with glue on their faces and pressed closely together, the glue within the disc seems to have an absorbing effect on the glue placed on the face of the discs, so that the glue enters into the fabric quite deeply, leaving very little glue between the faces, themselves. When it is attempted to glue standard sewed buff discs together without being treated, as set out herein, there is considerable glue between the discs, which causes an undesirable result when the wheel is used for polishing purposes. This layer of glue is dispensed with entirely in a wheel formed, as set out herein.

The glue in the disc serves to stiffen it and the oil being heated very quickly when the wheel is subjected to work, causes the glue contained within the disc to be softened, so that the cushion effect is always present on the periphery of the wheel.

The mixture may have added to it, if desired, a suitable coloring matter, although the presence of the coloring matter in the mixture in which the disc sections are immersed is left to the discretion of the user and may be dispensed with, if desired.

While I have illustrated and described the preferred method of treating the discs and securing them together, as well as the preferred proportions of ingredients set out, I do not wish to limit myself to the exact operation of the process, as described, but desire to avail myself of such variations and modifications in the process as come within the scope of the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. The process of treating discs adapted for use as polishing wheels comprising the infusion into the fabric of the wheels of oil and glue in a mixture with each other.

2. The process of treating polishing wheel material which consists in saturating the same with a solution of oil, glue and water and removing the excessive oil and water.

3. As a product of manufacture, a polishing wheel material having infused into it a quantity of glue and oil.

4. A method of forming the polishing wheel from a plurality of sections consisting in infusing into said sections a mixture of oil and glue and gluing the faces of said sections together with separately applied glue.

5. The method of forming a polishing wheel from a plurality of superimposed sections consisting in infusing into each of said sections a mixture equally of oil and glue, pressing the surplus oil from each of said sections and gluing the faces of said sections together by affixing thereto an independent layer of glue.

In testimony whereof, I have signed the foregoing specification.

WILLIAM E. FOSTER.