

UNITED STATES PATENT OFFICE

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ABRASIVE COMPOUND

No Drawing.

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This invention relates to abrasive preparations, and more particularly to a solid greaseless compound to be used to produce a thin flexible coating of abrasive on wheels for producing "brushed" or "satin" finishes on metals, such as brass, bronze, German-silver, steel, copper, silverware, etc., and for abrading and finishing other surfaces.

One object of the present invention is to provide an abrasive compound which may be cheaply manufactured, which will be easy and safe to apply, which will produce a lasting finish, which when properly encased will not deteriorate in storage, and which will be capable of withstanding heat, cold, and moist air conditions.

A further object is to provide a greaseless abrasive compound which will eliminate the usual preliminary "cutting down" operation and the final washing and drying operations.

A further object is to provide an abrasive compound which when in use will effect a great reduction of the spoilage and rejections due to staining or scratching occurring in the final washing and drying operations.

Brushed surfaces are generally produced with a brush by the use of oil and pumice, water and pumice, or grease-containing combinations. One disadvantage of such combinations was that they would not adhere to the wheel but would fly off and deposit a layer on the work, covering it up so that the progress of the operation could not be seen. Moreover, before such work could be lacquered or covered with a protective coating, it had to be washed thoroughly and dried. This caused a big percentage of spoilage due to staining, scratching, and "spotting out."

By means of the present invention, the above and other disadvantages have been avoided, and an abrasive compound has been produced which besides avoiding several of the usual operations, will adhere tenaciously to the wheel and will not deposit on the work during the operation. Consequently, the work will be left clean, so that the finish the wheel is producing will be visible to the operator at all times. Moreover, since the abrasive remains on the wheel, the work will not have to be subjected to any subsequent

cleaning operation, but a lacquer or other protecting coating may be supplied immediately after the abrading operation.

A specific example of the invention will now be described:

10 pounds of ground glue are first soaked in 32 pounds of cold water from one to two hours. 3 ounces of beta naphthol are then added, and the mixture is heated about half an hour over a water bath at about 150 degrees F. until completely dissolved. 95 pounds of finely ground abrasive, such as aluminium oxide, are then added to the glue solution, while vigorously stirring the mass to thoroughly incorporate the abrasive. A solution consisting of a mixture of 47.8 cc. formalin (40% formaldehyde solution) and 142.2 cc. of glycerine is then added to the mixture of hot glue and abrasive, and the entire mass is stirred thoroughly for about six minutes, or until ready to be poured into suitable molds or containers. After allowing the compound to cool and set for about 5 hours, the containers of moist compound may be shipped to the trade. The mixture after pouring will then have the following proportions: glue 7.27%, beta naphthol .137%, water 23.25%, abrasive 69.00%, formalin .082%, and glycerine .285%.

Preferably however, the solidified material will be removed from the molds before shipping and dried for a period of from 5 hours to 3 weeks so as to reduce the moisture content.

The material may then be coated with a water-proof material, such as lacquer or varnish, to prepare it for shipment.

The invention, broadly construed, lies in the compounding of glue, beta naphthol, water, abrasive, formalin, and glycerine in the given proportions. The glue acts as a binder for the other ingredients and causes the abrasive to adhere to the wheel. The water acts as a solvent and a softening agent. The beta naphthol acts as a preservative to prevent decomposition of the glue. The formalin combines chemically with the glue to form an insoluble substance of high melting point and causing the compound to have a rubber-like consistency. The glycerine acts as a re-

tarding agent for preventing too rapid hardening or "setting" of the greaseless compound which might interfere with the ease of pouring it into the shipping containers or molds.

5 The greaseless compound is preferably marketed in the form of a cylindrical bar, and as described above, is either cast in a container or coated with a waterproof material. In use, the end of the bar of compound
10 will be pressed against a grease-free revolving wheel which is preferably constructed of a plurality of loose muslin discs. The bar is held against the revolving wheel until a thin layer of the greaseless compound has
15 been deposited, after which the wheel is allowed to rotate for at least 15 seconds longer before using, so that its moisture content will be sufficiently dried out. The wheel with its thin dry flexible coating is then ready for the
20 cutting down or finishing operation, the article being held against the revolving wheel until the desired finish has been secured. The article may then be lacquered or coated in the usual way without the necessity of washing and drying.

After the wheel has once been coated with the greaseless compound, it may be maintained in proper working condition by the use of only a small amount of the compound.

30 The chief advantage of the present invention is that it eliminates two or more costly operations in the cutting down or finishing process as mentioned above.

While there has been disclosed in this specification one example of how the invention may be embodied, it will be understood that the invention is not to be limited to this example, but may be modified and embodied in various ways without departing from its
40 spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the followings claims.

Having thus fully described the invention, what is claimed as new and for which it is
45 desired to secure Letters Patent is:

1. A solid abrasive preparation comprising a mixture of glue, water, abrasive, formalin, and glycerine, said preparation being readily transferable to a revolving buffing
50 wheel by friction.

2. An abrasive preparation comprising a mixture of glue, water, abrasive, formalin, and glycerine, together with beta naphthol.

3. An abrasive preparation comprising a
55 mixture of glue, water, abrasive, formaldehyde, a glue preservative and an agent for retarding the setting reaction between the glue and formaldehyde, said preparation being readily transferable to a revolving buffing
60 wheel by friction.

4. An abrasive preparation comprising a mixture of about 7% glue, 23% water, 69% abrasive, .08% formalin, and .29% glycerine.

5. A solid abrasive preparation comprising
65 a mixture of glue, water, abrasive, and

an agent for combining with said glue for raising the melting point of the mass, said preparation being transferable to a buffing or polishing implement by rubbing action.

In testimony whereof, I have affixed my
signature to this specification. 70

ROBERT S. LEATHER.

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