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POLISHING OR BUFFING COMPOSITION
AND METHOD OF USING THE SAME
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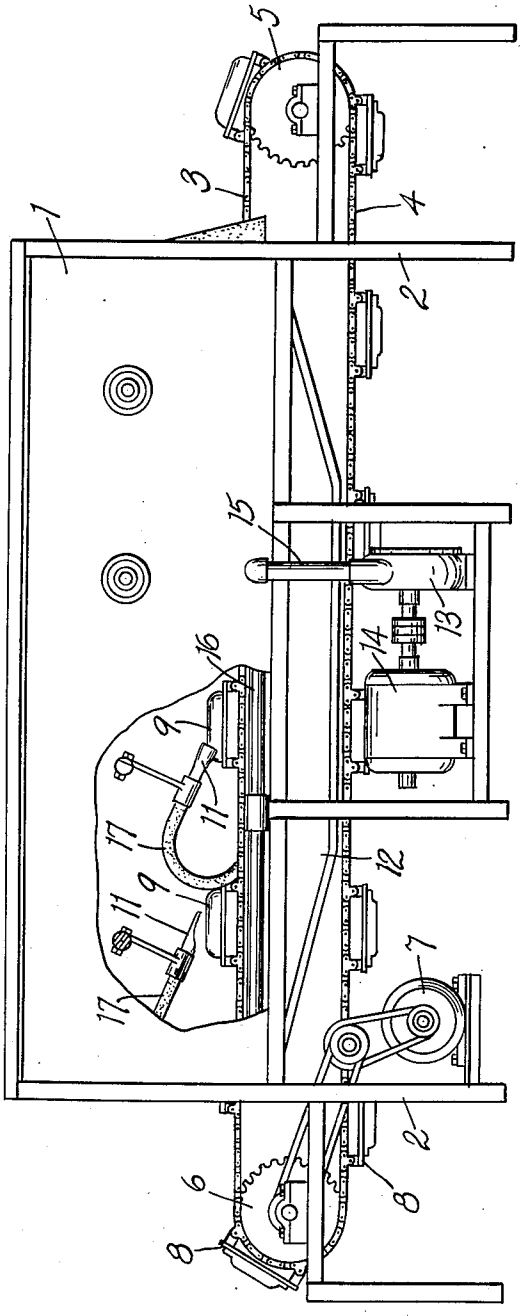


Fig. 1.

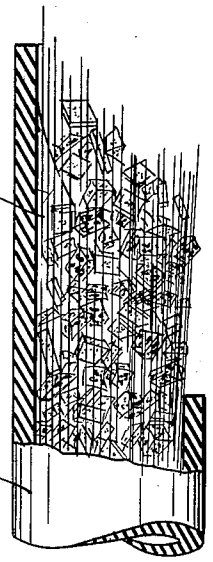


Fig. 2.



Fig. 4.



Fig. 3.

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POLISHING OR BUFFING COMPOSITION AND METHOD OF USING THE SAME

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Application February 1, 1950, Serial No. 141,768

8 Claims. (Cl. 51—282)

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This invention relates to improvements in polishing or buffing compositions and methods of using the same.

The main objects of this invention are:

First, to provide a method of polishing or buffing which is highly efficient and enables the simultaneous polishing of various portions of a piece of work by means of impinging jets of a liquid vehicle and without manual manipulation of the workpieces as they are being polished or buffed.

Second, to provide a method of polishing which enables the rapid and effective polishing of work with a minimum of manual effort.

Third, to provide a novel and efficient blast polishing or buffing composition.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary side elevational view of an apparatus suitable for use in the practice of my method and the use of my polishing or buffing composition.

Fig. 2 is an enlarged fragmentary view partially in longitudinal section of a blast nozzle of the apparatus illustrated in Fig. 1 and suitable for use in the practice of my method.

Fig. 3 is an enlarged view of one type of the elements of my polishing composition.

Fig. 4 is a perspective view of another type of the elements of my polishing composition.

In Fig. 1 I have illustrated an apparatus suitable for the practice of my method, this apparatus being the subject matter of my copending application for Letters Patent executed December 27, 1949, Serial No. 135,922, filed December 30, 1949. That apparatus consists generally of an elongated cabinet 1 supported on suitable legs 2 and having openings in the ends thereof receiving the upper reach 3 of the conveyer 4. This conveyer is supported at its ends by the sprocket wheels 5 and 6, the sprocket wheel 6 being driven from the motor 7.

The conveyer is provided with a plurality of work holders 8, pieces of work 9 being shown thereon. As the work is translated through the cabinet by means of the conveyer it is subjected to impinging blast jets designated generally by the numeral 10 in Fig. 2 and directed upon the work by the nozzles 11. These nozzles are desirably adjustably mounted as described in my said copending application.

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The cabinet is provided with a sump 12, the pump 13 driven by the motor 14 having its inlet (not illustrated) connected to this sump. The discharge 15 of the pump is connected to the header 16 which is suitably connected as by the flexible conduits 17 to the nozzles. With this arrangement the workpieces are translated in a predetermined path and successively subjected to a plurality of the blast jets 10. Desirably the liquid vehicle is under a pressure of 200 pounds per square inch and is of a cream-like consistency.

The liquid vehicle is desirably a mixture of oleic acid, mineral oil, Tripoli paste or other suitable abrasive paste in proportions of one gallon of the Tripoli paste to one pint mineral oil and sufficient oleic acid to produce a cream-like consistency. The Tripoli paste or other abrasive is selected in accordance with the type of work. For example, to buff or polish steel and other hard materials the Tripoli paste, commercially designated as "coarse size," may be suitably used. When the work is of softer grade such as brass, zinc die castings or aluminum, I use one gallon of medium size Tripoli paste and for finer results one cup or one-half pint of aluminum oxide, "fine flour grade" may be added for each gallon of the Tripoli paste. To this mixture I add fragments of sponge rubber and fragments of felt, desirably of the order of one-quarter inch in diameter or width. The pieces which I desirably use range from one-eighth inch to one-half inch in longest dimension.

I believe that the pores of the sponge rubber carry and deliver the abrasive upon or into adhering contact with the surface of the work and that the deformable felt wipes the abrasive along the surface as the felt is forcibly discharged against the work. The oleic acid is highly desirable as a fluid vehicle as it is non-corrosive and may be easily washed from the work.

The work is desirably placed on the conveyer at one end of the cabinet and taken off at the same end so that one workman keeps the conveyer loaded. The method is highly efficient and eliminates the necessity for manual manipulation of the work as is required on buffing wheels. It results in a very uniform polishing and buffing as the work is subjected to repeated impinging blasts of the polishing medium or composition.

The sponge rubber and felt fragments yield to the contour of the work as they are discharged against the same so that the entire exposed surface of the work as it is translated past the jets is effectively treated. For polishing or buffing relatively soft objects the felt may be such as is

commercially designated as being of medium hardness and for hard materials felt commercially designated as hard felt may be used. The proportions of the sponge rubber fragments and the felt fragments may be considerably varied but one quart of sponge fragments to four quarts of the felt fragments is satisfactory, and the proportions of the fragments to the liquid vehicle may desirably be one quart of the sponge rubber fragments and four quarts of the felt fragments to one gallon of Tripoli paste, one-half pint of mineral oil with such quantity of oleic acid added thereto as will result in a heavy cream-like fluid.

The apparatus illustrated and more fully illustrated and described in my said copending application is highly efficient for the practice of my method.

I have not illustrated and described other apparatus which might be used for the practice of my method as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

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

1. The method of polishing or buffing comprising the steps of translating a plurality of work pieces in succession in a predetermined path and successively subjecting the work pieces as they are translated in such path to a plurality of jets of a liquid vehicle under pressure of the order of two hundred pounds per square inch, the vehicle being of a cream-like consistency and carrying fragments of sponge rubber and fragments of felt, and an abradant, the fragments being of the order of ¼ inch in diameter and in proportions of approximately one quart of the sponge rubber fragments to three quarts of the felt fragments.

2. The method of polishing or buffing comprising the steps of translating a plurality of work pieces in succession in a predetermined path and successively subjecting the work pieces as they are translated in such path to a plurality of jets of a liquid vehicle under pressure of the order of two hundred pounds per square inch, the vehicle carrying fragments of sponge rubber and fragments of felt, and an abradant.

3. The method of polishing or buffing comprising the steps of subjecting the work to an impinging high pressure blast of a liquid vehicle of cream-like consistency carrying fragments of sponge rubber and fragments of felt, and a powdered abradant, the fragments being the order of one-fourth of an inch in diameter and in proportions of approximately one part by measure of rubber fragments to three parts by measure of felt fragments.

4. The method of polishing or buffing comprising the steps of translating a plurality of work-pieces in succession in a predetermined path and successively subjecting the work as it is so translated to a plurality of impinging blasts of a liquid vehicle having in suspension fragments of sponge rubber and fragments of felt in proportions of approximately one part by measure of sponge rubber to three parts by measure of the felt fragments, and an abradant.

5. The method of polishing or buffing comprising the steps of blast impinging the work with a liquid vehicle carrying small fragments of sponge rubber and small fragments of felt, and a powdered abradant.

6. A polishing or buffing composition comprising a mixture of Tripoli paste, mineral oil, pea size pieces of sponge rubber, pea size pieces of medium hard felt and oleic acid in approximate proportions of one gallon of the Tripoli paste, one pint of the mineral oil, one quart of the sponge rubber, three quarts of the felt and sufficient oleic acid to produce a creamy consistency.

7. A polishing or buffing composition comprising a liquid vehicle of cream-like consistency, fragments of sponge rubber and fragments of felt, and a powdered abradant, the fragments being of the order of one-fourth inch in diameter, the sponge rubber and felt being in the proportions of approximately one part sponge rubber to three parts felt.

8. A polishing or buffing composition comprising a liquid vehicle of cream-like consistency, fragments of sponge rubber and fragments of felt, and a powdered abradant.

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