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(54) **Method for eliminating corrosion stains caused by acid foodstuffs from marble surfaces**

Verfahren zum Entfernen von Flecken verursacht durch Korrosion durch säurehaltige Lebensmittel von Marmoroberflächen

Procédé d'elimination des tâches de corrosion à cause des produits alimentaires acides ou des produits similaires des surfaces de marbre

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## Description

**[0001]** The invention refers to a method to eliminate the stains onto the marble surfaces, generally level, without shift said surfaces. This avoids the use of a smoothing mill that, to eliminate the stain, works as far as the no eaten into layer with the actuation of a subsequent buffing. Currently, infact, the stains that form onto the marble surfaces for different causes are eliminated only actuating the removal of the plane and its transport in a worker in marble workshop. In this seat the stain or the stains are eliminated using specific machinery having the characteristic to eliminate all the marble superficial layer, also the no stained parts, and then a buffing is actuated. For surfaces not mobile, like floors or stairs, or surfaces not easy to be dismounted machines to be transported are used that actuate the same working of the machines present in the workshops. But these machines need skilled workers for their use and also voltages generally not present in the house electric connection. Aim of the present invention is to create a method to eliminate the stains onto the marble surface without the necessity to remove the marble plane of the interested surface, without the use of specific machinery and with workings to be actuated to persons not skilled in this field. It is known that the stains formation is frequently due to the acid substances or similar absorption. Infact, also only for having placed an ash-try with dirty under border, for example dirty of fruitjuice or any other acid substance, onto a marble plane , the absorption generated the stain. Also the presence of acid substances onto a floor, onto a wall or onto stairs, if not immediately cleaned, generate stains to be eliminated only with particular workings. In this situation the aesthetic damage on these surfaces remains till the total buffing of the same surface is actuated with high costs that justify said working only in the case of more stains or when the stains and the wear and tear suggested the total sanding with abrasive and the subsequent buffing. US 145971, US 370551 and US 5 490 883 all describe a method for cleaning a marble surface by applying an aqueous solution comprising oxalic acid. The invented method permits, instead, to actuate the immediate elimination of the formed stain onto the marble and the reinstatement of the original lucid layer. The advantages coming from the invented method so essentially consist in the fact to eliminate the stain quickly and to not must use particular machinery and skilled persons with the relative costs, this with a final result equal to the one obtained with the workings known in the prior art and without removing the stained surface. The invented method is following described in the particulars and in the drawings of table 1 which show a working example. Figure 1 is perspective view of a component used in the invented method. Figure 2 is transversal section view of a buffer to be used with the mixture to be used for giving again to the marble the original polishing. The invented method uses a polishing buffer 1 with under abrasive sheets 2, or part with abrasive dust, and a second spongy buffer 3. Onto said spongy buffer 3 is placed a mixture 4 consists of oxalic acid in grain 5 of a diameter from four millimetres to eight millimetres and, in the same quantity, to this mixture is added other milled oxalic acid 6 having a dimension smaller of the grains 5 but not in dust. This second milled oxalic acid 6 has so the dimension of coarse sand. To all this mixture at the end is added, in quantity like the middle of one of the two components already used, a marble polishing dust 7, known in the art with commercial name "potè polishing dust". This mixture, that to treat a corrosion stain left to something with a dimension of a glass bottom, is composed of about ten grams of oxalic acid in grain, of about ten grams of milled oxalic acid and of about five grams of polishing dust, is the fundamental element to bring the marble to the original conditions. The working method provides a first cleaning phase of the surface 8 to treat, using a neuter deterging distributed with a spray, with subsequent rinsing with water by means of sponge and with drying actuated with a felt cloth. After about a hour, with the marble surface dry so that the stain of acid substance is visible, the abrasive polishing buffer 1 is used. The stain to be eliminated is wet with a little quantity of water and so to form a water thin layer covering the same stain. Indicatively for a stain left to a glass about twenty-five grams of water are used, the abrasive polishing buffer 1 is used making rotating movements onto the surface to be treated for about one minute. During the action of the buffer onto the stain the water is coloured of the marble colour to confirm the reactions of the material to the proceeding. After about a minute the marble surface is cleaned with a dry cloth. In this phase the treated marble surface must be opaque and uniform, with the sign of the stain. In the case that the stain or part of the same are still present, the surface must be wet again with a thin layer water and must be used again the abrasive polishing buffer 1 with the modes previous described. Onto the opaque stain formed onto the treated marble is then placed, by means of the spongy buffer 3, the mixture 4 adding a water drop. Then are actuated, with strong wiping, circular movements onto the opaque part for about two minutes. At the end of this working the marble surface is cleaned with a dry cloth, with the corrosion stain not more present. In the case that opaque parts still are present, is used again the mixture 4 by means of the spongy buffer 3 with the same modes and so till the complete elimination of the opaque parts. To have a marble surface with bigger lucidity is then used a marble polish without frustrate the invented polishing method. The described method so eliminates the stains onto all kinds of marbles with results equal to the particular known workings.

## Claims

1. Method to eliminate localized stains from corrosion due to acid foodstuffs or similar onto marble surfaces, providing to eliminate the stains without the ne-

cessity to remove said surfaces and without using particular machines for smoothing and polishing said surfaces, **characterized in** the fact to use a polishing buffer (1) with under abrasive sheets (2) and a second spongy buffer (3) having a mixture (4) consists of oxalic acid in grain (5) of a diameter from four millimetres to eight millimetres and, in the same quantity, to have added other milled oxalic acid (6) having a dimension smaller of the grains (5) but not in dust, and that to this mixture is added, in quantity like the middle of one of the two components already used, a marble polishing dust (7), and that the components of the mixture are mixing.

**2.** Method to eliminate localized stains from corrosion due to acid foodstuffs or similar onto marble surfaces, as per claim 1, **characterized in that** it provides a first cleaning phase of the surface (8) to treat, using a neuter deterging distributed with a spray, with subsequent rinsing with water by means of sponge and with drying actuated with a felt cloth; and that, after about a hour, the abrasive polishing buffer (1) is used making rotating movements and pressure onto the marble stain wet with a little quantity of water; and that after to have cleaned the marble surface with a dry cloth having an opaque and uniform surface without stain, onto the opaque part is placed the spongy buffer (3) with the mixture (4) adding a water drop; and that strong wiping with circular movements are actuated for about two minutes and at the end a dry cloth is passed so having a surface without stain and polished.

**3.** Method to eliminate localized stains from corrosion due to acid foodstuffs or similar onto marble surfaces, as per claim 2, **characterized in that** in the case that the stain is still present the polishing is actuated again adding the mixture (4) onto the opaque parts by the spongy buffer (3) and repeating the work.

**4.** Method to eliminate localized stains from corrosion due to acid foodstuffs or similar onto marble surfaces, as per claim 1, **characterized in that** the polishing is actuated with a spongy buffer having a mixture (4) consists of oxalic acid in grain (5) of a diameter from four millimetres to eight millimetres and, in the same quantity, to milled oxalic acid (6) not in dust and to marble polishing dust (7) in quantity like the middle of one of the two components already used and that said mixture is mixed.

**Patentansprüche**

**1.** Verfahren zum Entfernen von Flecken verursacht durch Korrosion durch säurehaltige Lebensmittel von Marmoroberflächen, das vorsieht, die Flecken zu entfernen, ohne das Bedürfnis von Entfernen der genannten Oberflächen und ohne besondere Maschinen für das Polieren und Glättung der genannten Flächen zu benutzen, **dadurch gekennzeichnet, daß** eine Schleifstopfen (1) mit unteren Schleifblättern (2) und noch einem Schwammstopfen (3) zu benutzen; dieser Schwammstopfen (3) enthält eine Mischung (4), die aus Oxalsäure aus vier bis acht Millimetern Durchmesser Körnen (5) und, in gleicher Menge, noch aus einer anderen gemahltem Oxalsäure (6) mit kleineren Körnen (5), aber nicht Pulverkörnen, zusammengesetzt ist, und dieser Mischung wird ein Polierpulver (7) für Marmor quantitativ gleich die Hälfte eines der zwei schon benutzten Bestandteilen hinzugefügt, und die Bestandteilen der Mischung werden vermischt.

**2.** Verfahren zum Entfernen von Flecken verursacht durch Korrosion durch säurehaltige Lebensmittel von Marmoroberflächen, nach Anspruch 1, **dadurch gekennzeichnet daß** eine erste Phase der Reinigung der behandelnden Oberfläche (8) vorsieht, und in dem ein neutrales mit Spritze verteiltes Reinigungsmittel und mit folgender Wasserausspülung durch einen Schwamm und mit Abtrocknen durch ein Fitztuch benutzt wird; und daß nach einer Stunde wird der Schleifstopfen (1) mit Kreisbewegungen und Druck über den durchnässten Fleck des Marmors durch eine kleine Menge Wasser benutzt; und daß nach der Reinigung der Marmoroberflächen mit einem abtrocknen Tuch und der Erreichung einer glanzlosen, gleichförmigen und flecklosen Oberfläche liegt der Schwammstopfen (3) auf dem glanzlosen Teil mit der Mischung (4), und mit noch einem Wassertropfen werden energische Reiben durch kreisbewegungen für ungefähr zwei Minuten bewirkt, und am Ende wird ein abtrocknes Tuch benutzt, um eine flecklose und glänzende Oberfläche zu erreichen.

**3.** Verfahren zum Entfernen von Flecken verursacht durch Korrosion durch säurehaltige Lebensmittel von Marmoroberflächen, nach Anspruch 2, **dadurch gekennzeichnet daß** wenn der Fleck noch dabei ist, die Glättungstätigkeit neulich durch das Hinzufügen der Mischung (4) auf die glanzlosen Teilen durch den Schwammstopfen (3) gemacht wird, und man kann die Tätigkeit wiederholen.

**4.** Verfahren zum Entfernen von Flecken verursacht durch Korrosion durch säurehaltige Lebensmittel von Marmoroberflächen, nach Anspruch 1, **dadurch gekennzeichnet daß** die Glättung durch einen Schwammstopfen mit einer Mischung (4) gemacht wird, die aus Oxalsäure mit vier bis acht Millimetern Durchmesser Körnen (5) und in gleicher Menge, aus gemahlten pulverlosen Oxalsäure (6) und Polierpulver für Marmor quantitativ gleich die Hälfte eines der zwei schon benutzten Bestandteilen zusammenge-

setzt ist, und diese Mischung wird gemischt.

**Revendications**

1. Procédé d'élimination des tâches de corrosion à cause de produits alimentaires acides ou des produits alimentaires acides out des produits similaires des surfaces de marbre qui prévoit l'élimination des tâches sans devoir déplacer les surfaces et sans employer des outillages spécifiques pour polir et cirer dites surfaces, **caractérisée par le fait qu'**on va employer un bourrelet abrasif à même de polir (1) doué de feuilles abrasifs au dessous (2) et un deuxième bourrelet spongieux (3) qui contient un mélange (4) composé par acide oxalique en grains (5) dont le diamètre est de quatre a huit millimètres et, en la même quantité on va employer d'autre acide oxalique haché (6) dont la dimension est plus petite que les grains (5) mais ce n'est pas de poudre, et que à dit mélange on va ajouter en une quantité correspondant a la moitié d'un de deux composantes employés, une poudre à même de polir les surfaces telles que le marbre (7), et que tout en mélangeant les composantes.

2. Procédé d'élimination des tâches de corrosion à cause de produits alimentaires acides ou des produits alimentaires acides out des produits similaires des surfaces de marbre, selon la revendication 1, **caractérisée par le fait que** dit procédé envisage d'abord une phase initiale de nettoyage de la surface (8) à traiter, en utilisant un détergent neutre distribué grâce a vaporisateur, suivi per un rinçage d'eau à l'aide d'une éponge et séchage obtenu par l'emploi d'un drap de feutre; et que, après une demi-heure environ, le bourrelet abrasif (1) est employé en faisant des mouvements circulaires et en exercant une pression sur la tâche du marbre imbibée d'une petite quantité d'eau; et que après avoir nettoyé la surface du marbre avec un tissue sec obtenant ainsi une surface opaque et uniforme sans tâches, sur la zone opaque on va placer le bourrelet abrasif spongieux (3) tout en unissant le mélange (4) et en ajoutant une goutte d'eau, et que on procedéra a frotter de manière énergique grâce à des mouvements circulaires de presque deux minutes et que, une fois accomplie cette procedure on passera un drap sec tout en obtenant une surface parfaitement polie et sans tâches.

3. Procédé d'élimination des tâches de corrosion à cause de produits alimentaires acides ou des produits alimentaires acides out des produits similaires des surfaces de marbre, selon la revendication 2, **caractérisée par** le fait, au cas où la tâche subsiste encore il est toutefois possible de polir en ajoutant le mélange (4) sur les zones opaques à l'aide du bourrelet spongieux (3) et en répetant l'operation.

4. Procédé d'élimination des tâches de corrosion à cause de produits alimentaires acides ou des produits alimentaires acides out des produits similaires des surfaces de marbre, selon la revendication 1, **caractérisée par le fait que**, on peut polir la surface à l'aide d'un bourrelet spongieux imbibé d'un mélange (4) fait de acide oxalique en grains (5) ayant un diamètre de quatre à huit millimetres et, en la même quantité, de acide oxalique haché mais pas en poudre (6) et d'une poudre à même de polir la marbre (7) dans une quantité correspondant à la moitié d'un de deux composantes déjà employés et tout en employant le mélange.

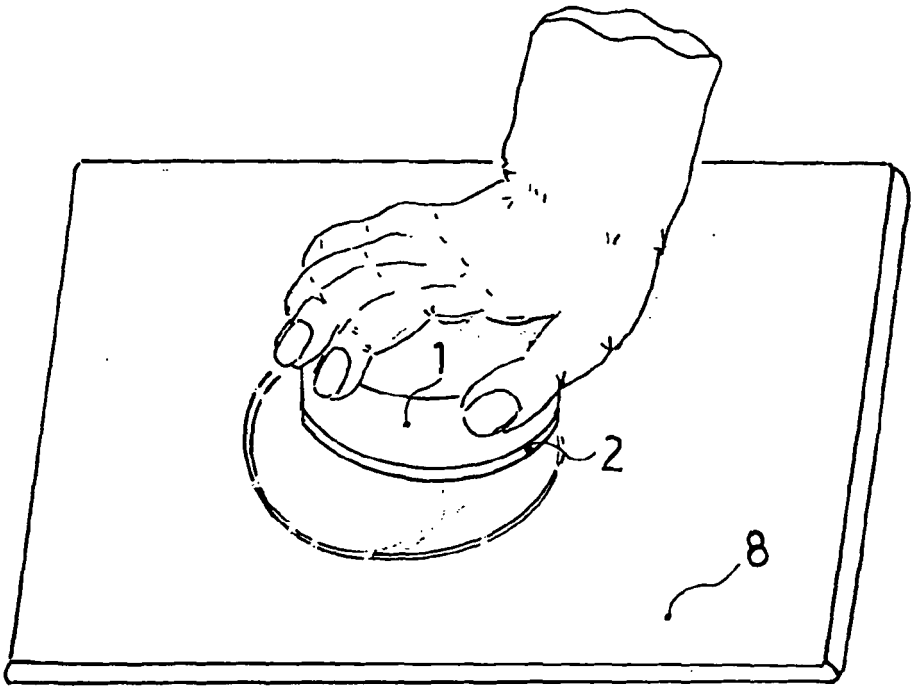



FIG.1

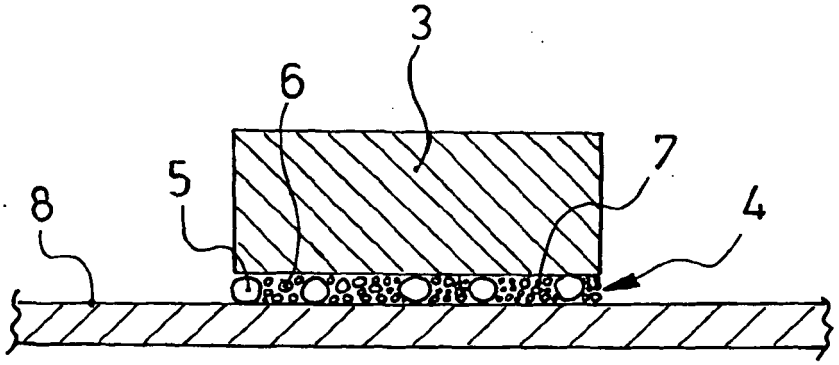



FIG.2

## REFERENCES CITED IN THE DESCRIPTION

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