Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).
Description

[0001] The present invention relates to a device for providing a pattern on concrete surfaces or other embossable material surfaces comprising a pattern roll intended to be moved across such a surface.

[0002] The purpose of the present invention is to obtain a simplified and improved embossing device for embossing concrete surfaces or other embossable material surfaces.

Background of the invention

[0003] It is previously known, in e.g. US-A-5,033,906, a system for embossing of an embossable surface, which system consists of a drum/barrel with a number of, distantly arranged from each other, radially proceeding ridges and a number of perpendicularly proceeding ridges, between such pairs of radial ridges, to imitate a joint of bricks. The drum, made of aluminium, is provided with a sealable opening at the gable/side through which a heavily weighing liquid can be filled into and drained off from the barrel. Further, the drum is connected to a vibrator for vibrating the surface which has just been embossed, e.g., a concrete surface.

[0004] On one hand, it has been shown that the metal drums themselves are not particularly suitable for treating concrete, especially not aluminium since it easily corrodes in an alkaline environment, further metal working is costly. Change of the embossing pattern is also not particularly easy, and above all, it is costly due to the cost of the metal embossing drum. Further, working of fantasy patterns is difficult on a metal surface, or to be brought onto a metal surface.

[0005] It has also been shown that the quality of the embossing itself could be improved, partly through an improved release of the material being embossed, partly by improving the embossing as such.

[0006] Thus, the problem has been to obtain a rational drum with improved release properties to the material being embossed, as well as an improved embossing quality as such.

Description of the invention

[0007] Surprisingly, it has now been shown possible to solve this entire quality problem through the present invention, characterized in that the device comprises one, inner drum provided with a pulling device, which drum is arranged to be provided with a ballast as well as an outer embossing drum of a polymeric material, where the inner and the outer drum are slidably arranged relative each other.

[0008] Primarily, the material being embossed is much easier released from the embossing roll by the present invention, especially for the case of concrete, which improves the quality of the pattern being embossed as such, secondly, by the slipping joint between the two drums, an improved movement is achieved against the material surface being embossed, which leads to an improved embossment as such.

[0009] The present invention will now be described with reference to the enclosed drawings, yet without being limited hereto, where:

FIG. 1 shows a dismounted device according to the present invention in a perspective view, and
FIG. 2 shows an assembled device according to the present invention.

[0010] 1 represents a pulling pole for the manual forward pulling, which pulling pole is Y-shaped designed, where between the upper arms 2 of the Y, a smooth drum is provided and arranged to enable a free rotation between the pulling pole 1 and the drum 3. The drum 3 is sealed and provided with a sealable opening 5, arranged on one of its gables 4. A liquid, such as water, can be brought into the drum 3, through the opening 5, to act as a ballast or weight on the device. A drum 6 is thread onto the drum 3, which outer drum 6 constitutes an embossing drum, i.e. it exhibits a relief pattern designed to penetrate in the material being embossed, or be filled up by the material being embossed. Usually a pattern exists representing the splices between bricks put in joints, in a way that the pattern on the embossing drum 6 consists of protruding grooves or ridges 7, 8, which ridges partly are radially arranged 7, partly exhibit proceeding transverse ridges 8 between those ridges 7. The transverse ridges 8 are then displaced in respect to each other in such way that they imitate a brick joint, where the bricks are displacely localised in respect to each other. Through pulling of the device across a concrete surface or another surface, made of an embossable material, a pattern is embossed on the surface, corresponding that of the embossing roll 6. The different ridges 7, 8 in the above shown example, will then form the splices 9 in an imitated brick joint.

[0011] Other suitable patterns are for example hexagonal surfaces with a side of 46 mm, a depth of 15 mm and a width of 12 mm, which pattern is adapted for embossing stable floors, especially for cattle, to avoid slipping injuries and permit the elimination of water and urine through the splices, i.e. to attain an improved keeping of animals.

[0012] It is obvious that every other pattern can be applied on the embossing surface of the embossing drum 6. Especially complicated patterns can be achieved by casting of the polymeric material used for the embossing drum 6, at the same time as casting a whole embossing drum 6. At simplified patterns, the pattern can be brought onto the surface of the drum and be adhered to this through welding, glueing or other suitable method.

[0013] The embossing drum 6 can be manufactured of any suitable polymeric material, such as polyethylene, polycarbonate and other thermoplastic polymers, copolymers and/or compositions of polymers or cured...
polymers with suitable wear resistance and shape resistance.

Claims

1. Device for providing a pattern on concrete surfaces or other embossable material surface comprising an embossing roll designed to be moved by means of rolling across such a surface;
   characterized in,
   that the device comprises an inner drum (3) provided with a pulling device (1) which drum is arranged to be provided with a ballast, and an outer embossing drum (6) of a polymeric material, where the inner drum (3) and the outer embossing drum (6) are slidably arranged relative to each other.

2. Device according Claim 1,
   characterized in,
   that the embossing roll (6) exhibits an embossing surface corresponding a brick joint with an deep-embossed splice (9).

3. Device according Claim 1,
   characterized in,
   that the embossing roll (6) exhibits an embossing surface corresponding to hexagonally bounded surfaces with a deep-embossed splice (9).

Patentansprüche

1. Vorrichtung zum Prägen von Betonoberflächen oder anderen prägbaren Materialoberflächen, umfassend eine Prägewalze, die dazu ausgebildet ist, durch Rollen über eine derartige Oberfläche bewegt zu werden.
   dadurch gekennzeichnet, dass
   die Vorrichtung umfasst
   eine innere Trommel (3), die mit einer Zugvorrichtung (1) ausgestattet ist und die derart ausgebildet ist, dass sie mit Ballast ausstattbar oder ausgestattet ist, und
   eine äußere Prägetrommel (6) aus einem polymeren Material, wobei die innere Trommel (3) und die äußere Prägetrommel (6) aufeinander gleitbar angeordnet sind.

2. Vorrichtung nach Anspruch 1,
   dadurch gekennzeichnet, dass
   die Prägewalze (6) eine geprägte Oberfläche erzeugt, die entsprechend einer Ziegelsteinmauer mit tief eingeprägten Fugen (9) ausgebildet ist.

3. Vorrichtung nach Anspruch 1 oder 2,
   dadurch gekennzeichnet, dass

Revendications

1. Dispositif pour fournir un motif sur des surfaces de béton ou sur une autre surface de matériau pouvant être gaufré comportant un rouleau de gaufrage conçu pour être déplacé par l’intermédiaire d’un roulage à travers une telle surface,
   caractérisé en ce que,
   le dispositif comporte un tambour intérieur (3) muni d’un dispositif de traction (1), lequel tambour est agencé pour être muni d’un ballast, et un tambour de gaufrage extérieur (6) d’un matériau polymère, le tambour intérieur (3) et le tambour de gaufrage extérieur (6) étant agencés de manière coulissante l’un par rapport à l’autre.

2. Dispositif selon la revendication 1,
   caractérisé en ce que,
   le rouleau de gaufrage (6) présente une surface de gaufrage correspondant à un joint de brique ayant une jointure gaufrée profondement (9).

3. Dispositif selon la revendication 1,
   caractérisé en ce que,
   le rouleau de gaufrage (6) présente une surface de gaufrage correspondant à des surfaces délimitées de manière hexagonale ayant une jointure gaufrée profondément (9).