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(12) # EUROPEAN PATENT APPLICATION

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(54) **Method for manufacturing in situ and laying over a basin bottom and/or bank, a mat.**

(57) For manufacturing and laying a mat comprised of mineral asphalt (8) or similar which is laid over a carrier comprised for example of a geotextile (4) or similar industrial product, said materials (8) which will form the mat are dumped over said carrier (4), while the carrier is being moved in the direction of the basin (1) and the unit formed by the carrier (4) with the material (8) dumped thereon, is further pulled in the water until the resulting mat (4,8) is spread over the desired length on the basin bottom (2) and/or bank (3).

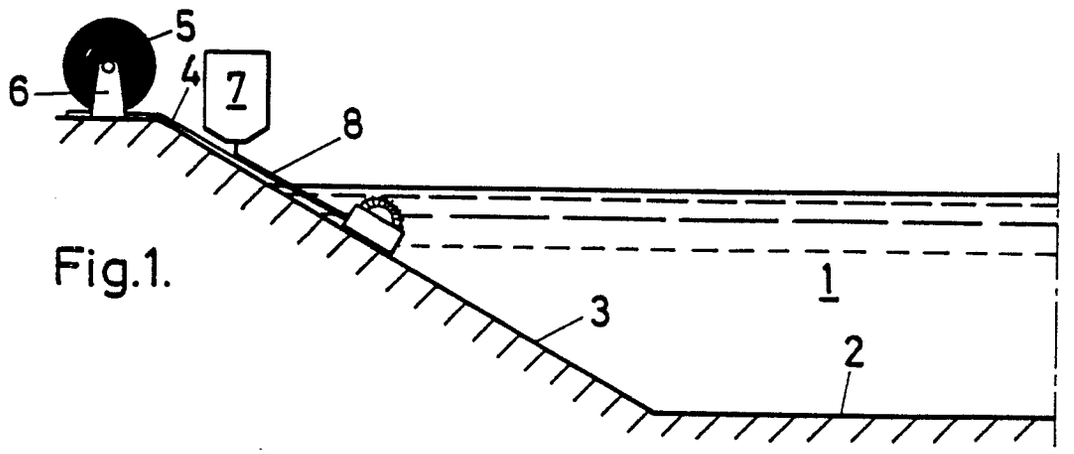

Fig.1.

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Method for manufacturing in situ and laying over a basin bottom and/or bank, a mat.

This invention relates to a method for manufacturing in situ and laying over the bottom and/or the bank of a basin, a mat comprised of mineral asphalt or similar which is laid over a carrier comprised for example of a geotextile or similar industrial product.

As the laying of mats comprised of mineral asphalt and a geotextile, is more and more used, it is of importance to so coordinate the required operations therefor, that forming the mat proper and spreading same over the bottom and/or bank of the basin means a substantial saving in time and manual labour.

There must be understood with the wording "basin", canals, rivers, river mouths, lakes, docks, running waters or not.

To make this possible according to the invention, said materials which will form the mat are dumped over said carrier, while the carrier is being moved in the direction of the basin and the unit formed by the carrier with the material dumped thereon, is further pulled in the water until the resulting mat is spread over the desired length on the basin bottom and/or bank.

The invention further pertains to an equipment for the working under optimum conditions, of the method according to the invention.

For this purpose, the equipment according to the invention comprises means for bringing on a carrier, those bituminous materials which mainly comprise the mat, and an apparatus for holding said mat, pulling same through the water and releasing same remotely.

In a possible embodiment of the invention, said means for pulling through the water, said geotextile with the bituminous materials dumped thereon, are comprised of a spiked roller which can enter the geotextile and remains locked relative to a frame, while means are provided to unlock remotely said spiked roller relative to said frame to enable releasing said geotextile from the spiked roller.

Other details and advantages of the invention will stand out from the following description of a method for manufacturing in situ and laying over a basin bottom, a mat comprised of mineral asphalt or similar and a carrier from geotextile, for example, or a similar product, according to the invention. This description is only given by way of non limitative example, and with reference to the accompanying drawings, in which:

Figure 1 is a diagrammatic showing of the method according to the invention, in a first step thereof.

Figure 2 is a diagrammatic showing of the method according to the invention, in a second step thereof.

Figure 3 shows on a larger scale, a detail from the equipment according to the invention.

In figures 1 and 2, the basin is shown in 1 and the bottom thereof in 2. The bank is here in the shape of a slope or talus 3. The bank profile as shown in figures 1 and 2 is in no way limitative for the method according to the invention. Any other shape for the bank or the bottom might indeed be considered. It is however clear that the method according to the invention can be worked here under the best conditions.

Before describing the method in detail, it should be made clear that the mats which are being used here are made form geotextiles or diaphragms which are intended to serve as foundation or reinforcement for the mineral asphalt. The geotextile strip 4 is present here preferably in the form of a roll 5 which is mounted on a stand 6 which can be located along the basin. The displacement of the stand may occur on rails, but said stand may also form part of a device which is movable on wheels or caterpillar tracks.

A spreading machine 7 is also part of the stand.

The wording "spreading machine" means that unit which may comprise a mixing device for preparing the mineral asphalt and a metering or proper spreading device. The spreading machine 7 preferably belongs to the stand 6 the roll 5 is also part of. Said spreading machine may possibly also be comprised of a hydraulic crane.

The mineral asphalt laid continuously or discontinously by the spreading machine 7 over the geotextile strip 4 is visible in figures 1 and 2, and bears reference numeral 8.

Various apparatus may be used to hold the geotextile strip during the displacement thereof along the bank and over the bottom. There is described hereinafter, only by way of explanation of the method according to the invention, an advantageous embodiment which makes use of a "spiked roller".

The geotextile strip whereon no mineral asphalt is dumped in this location, is thus locked with the free end thereof by a spiked roller 9 relative to a frame 10. Said geotextile end is wound once or twice at the most about the spiked roller 9. Said spiked roller is mounted in a frame 10. On the spiked roller shaft 12, there is secured a ratchet wheel 13 wherein a pawl 14 with pivot 15 grips. The pawl 14 may be retained pressed in the teeth from ratchet wheel 13, under its own weight or

under the action of a spring 16. By pulling on a rope 18 in the direction of arrow 17, the pawl is pulled out of the ratchet wheel and the spiked roller 9 is free to revolve about the shaft 12 thereof when the frame 10 is pulled further in the direction of arrow 19.

The rope 18 may be pulled upwards from a pontoon 20, but this might also occur in some other way, depending on the local conditions.

When a mat comprised of a geotextile 4 with a mineral asphalt layer 8 dumped thereon is brought in place, the equipment comprised of the spreading machine 7 and accesories thereof, is moved sidewise over the required distance, that is cross-wise to the direction the mat is pulled along, and the same operations may be repeated.

There will appear quite clearly from the above description of the equipment and method according to the invention, the large advantages which the invention offers, not only for spreading mats regularly over the bottom, but also when considering the time and working hours which are normally taken into account.

The invention is not however limited to the above-described embodiment and many changes may be brought thereto without departing from the scope of the invention.

As clearly stated, the end of the geotextile strip may be gripped with other means than a spiked roller. Said end may indeed be clamped between gripping members which do not show any likeness with the spiked roller described by way of example, and which may also be remotely controlled. The carrier whereon the mineral asphalt is being dumped on, may also have a structure similar to a geotexilte.

Claims

1. Method for manufacturing in situ and laying over the bottom (2) and/or the bank (3) of a basin (1), a mat comprised of mineral asphalt (8) or similar which is laid over a carrier comprised for example of a geotextile (4) or similar industrial product, characterized in that said materials (8) which will form the mat are dumped over said carried (4), while the carrier is being moved in the direction of the basin (1) and the unit formed by the carrier (4) with the material (8) dumped thereon, is further pulled in the water until the resulting mat (4,8) is spread over the desired length on the basin bottom (2) and/or bank (3).

2. Equipment for manufacturing in situ and laying over the bottom (2) and/or the bank (3) of a basin (1), a mat comprised of mineral asphalt (8) or similar which is laid over a carrier comprised for example of a geotextile (4) or similar industrial product, characterized in that it comprises means (7) for bringing on a carrier (4), those bituminous materials (8) which mainly comprise the mat, and an apparatus (9,10) for holding said mat, pulling same through the water and releasing same remotely.

3. Equipment as defined in claim 2, characterized in that said apparatus (9,10) for pulling through the water, said geotextile (4) with the bituminous materials (8) dumped thereon, is comprised of a spiked roller (9) which can enter the geotextile (4) and remains locked relative to a frame (10), while means are provided to unlock remotely said spiked roller (9) relative to said frame (10) to enable releasing said geotextile (4) from the spiked roller (9), when the mat has been pulled to the required location.

4. Equipment as defined in claim 3, characterized in that said spiked roller (9) is provided with at least one pawl (14) and a ratchet-wheel mechanism (13) for retaining said spiked roller (9) locked relative to said frame (10).

5. Equipment as defined in claim 2, characterized in that said apparatus for pulling through the water said carrier (4) with the viscous materials (8) dumped thereon, is comprised of a clamping device wherein one end from said carrier (4) may be gripped, and means to remotely-control said clamping device.

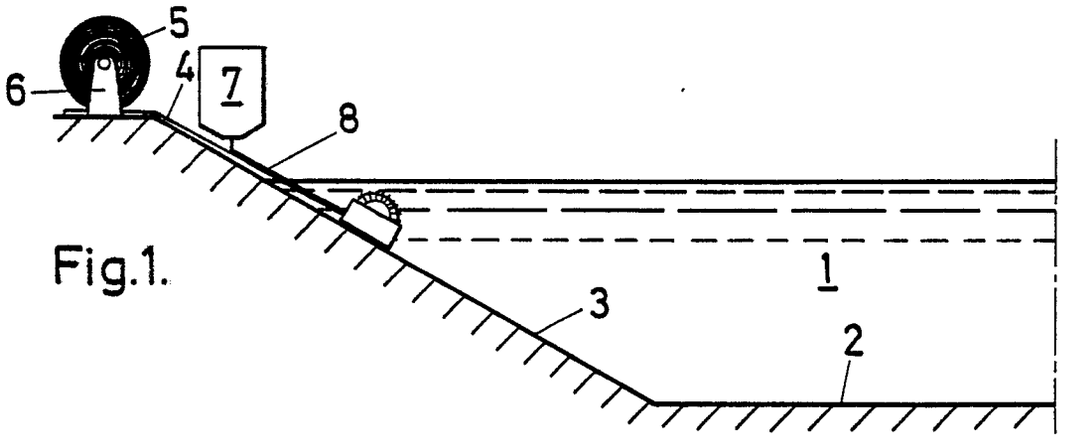

Fig.1.

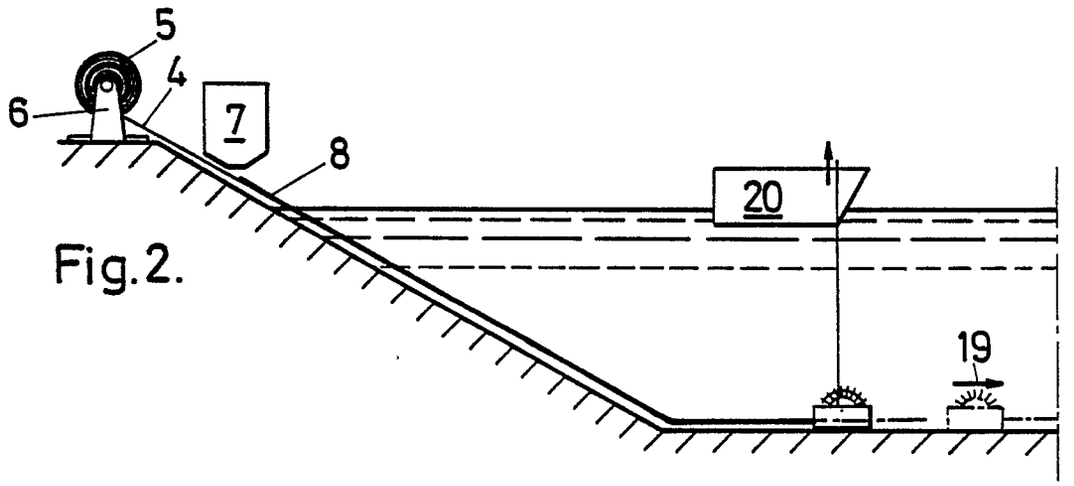

Fig.2.

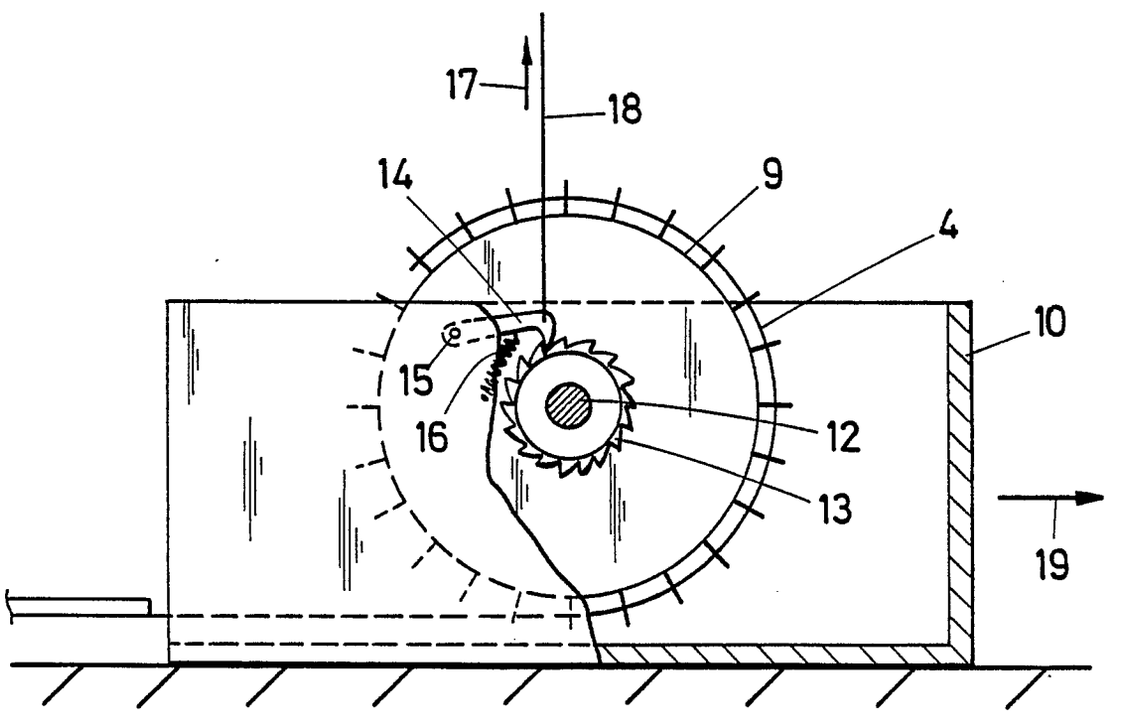

Fig.3.

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EUROPEAN SEARCH REPORT

Application Number

EP 87 20 1589

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
Y	DE-B-1 016 197 (BLANDINIERES) * Column 4, lines 48-70; columns 5,6; figures 1,2 *	1,2	E 02 B 3/12
Y	US-A-2 570 271 (PICKETT) * Column 3, lines 9-26; figure 1 *	1,2	
A	FR-A-2 429 872 (TREFILUNION)		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

E 02 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	23-11-1987	HANNAART J.P.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
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