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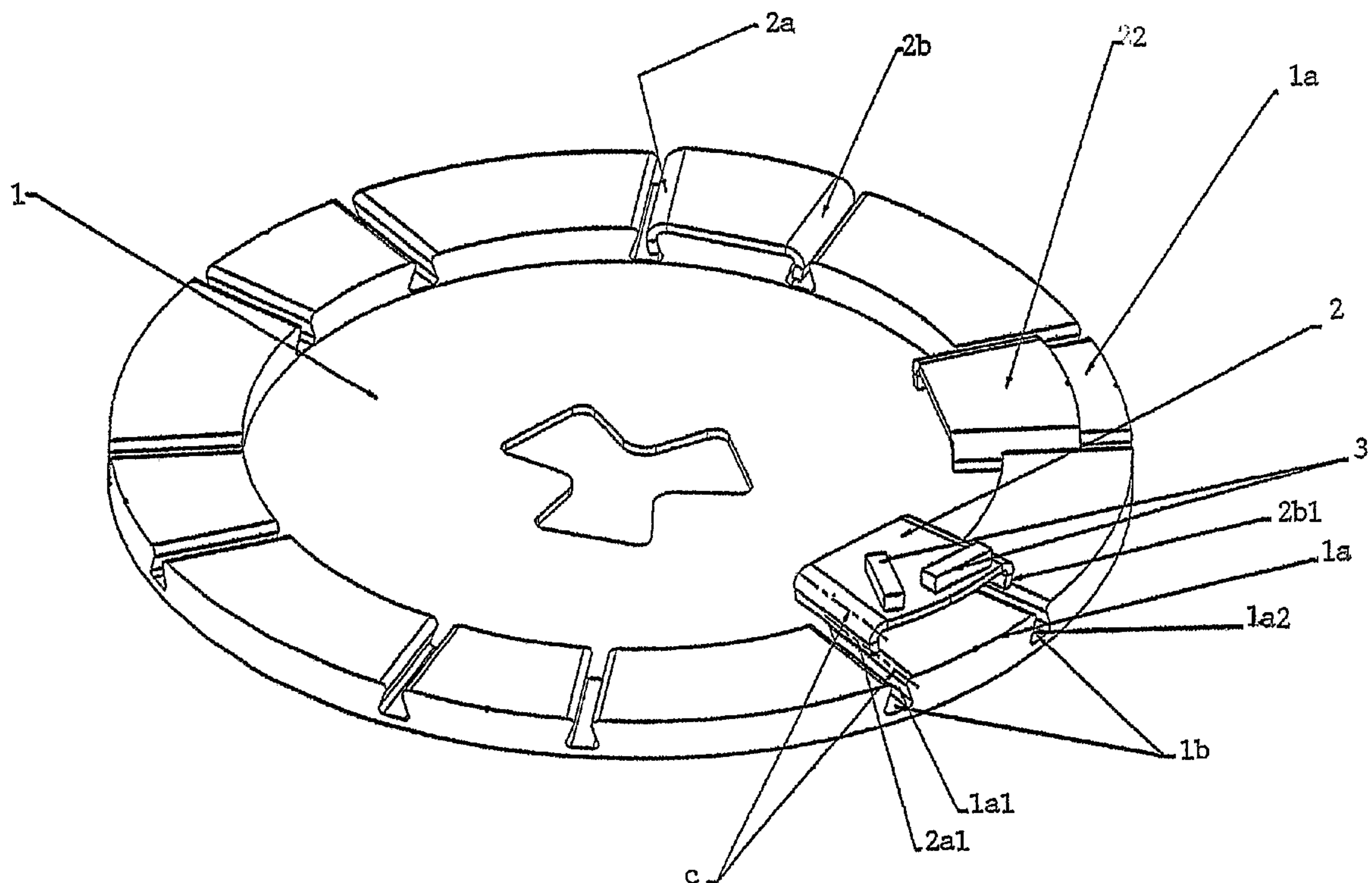
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(54) Title: CARRIER PLATE HOLDING AN ABRADING ELEMENT AND ABRADING PLATE



(57) **Abrégé/Abstract:**

The invention concerns a carrier plate (2) holding an abrading element, for detachable mounting on a rotatably mounted abrading plate (1) driven during use, for abrading stone or concrete floors, which carrier plate (2) has sides (2a, 2b) which form an acute angle with each other. The sides (2a, 2b) have flanges (2a1, 2b1) which are formed for surrounding engagement with a shoulder (1a) arranged on the abrading plate (1) so that the carrier plate (2) can be fixed on the abrading plate (1) with an engagement based on form and friction.

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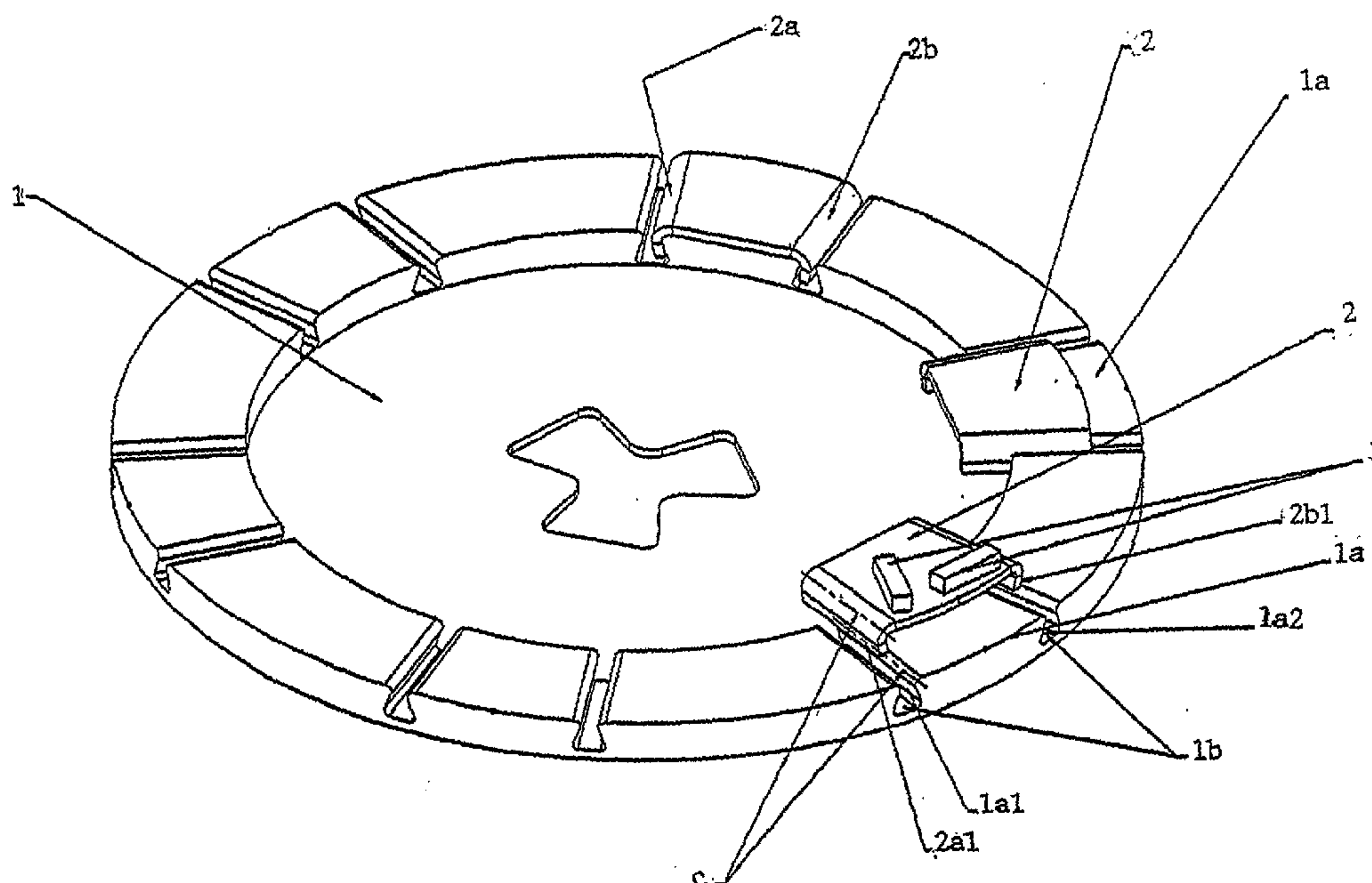
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(54) Title: CARRIER PLATE HOLDING AN ABRADING ELEMENT AND ABRADING PLATE



(57) Abstract: The invention concerns a carrier plate (2) holding an abrading element, for detachable mounting on a rotatably mounted abrading plate (1) driven during use, for abrading stone or concrete floors, which carrier plate (2) has sides (2a, 2b) which form an acute angle with each other. The sides (2a, 2b) have flanges (2a1, 2b1) which are formed for surrounding engagement with a shoulder (1a) arranged on the abrading plate (1) so that the carrier plate (2) can be fixed on the abrading plate (1) with an engagement based on form and friction.

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CARRIER PLATE HOLDING AN ABRADING ELEMENT
AND ABRADING PLATE

Technical field

- 5 The present invention concerns a carrier plate holding an abrading element and an abrading plate device according to the preamble of the respective independent claims.

Technical background

- 10 A machine, preferably for abrading stone and concrete floors, is known for example from PCT/SE93/00865. The abrading element, fixed on a carrier plate which in turn is detachably mounted on the abrading plate, must be considered a consumable. Changing the abrading element is labour-intensive and time-consuming, and adversely affects the production time of the abrading machine.

- 15 Examples of known devices for detachable mounting of abrading elements on abrading discs are shown in DE-1 127 745, US-1,470,957 and US-5,076,023.

Summary of the invention

- 20 The object of the present invention is to produce a device of the type described initially which facilitates the replacement of the abrading element and hence contributes to a better working environment and increased production.

- 25 The invention is defined by the enclosed independent claim. Embodiments arise from the enclosed dependent claims and the following descriptions and enclosed drawings.

- Thus a carrier plate holding an abrading element is produced, for detachable mounting on a rotatably mounted abrading plate driven during use, for abrading stone or concrete floors, which carrier plate has sides which form an acute angle with each other. The carrier plate is characterised in that the sides have flanges which are designed for surrounding engagement with a shoulder arranged on the abrading plate so that the carrier plate can be fixed on the abrading plate with an engagement based on form and friction.
- 30

An abrading plate is also produced for abrading stone or concrete floors, which
abrading plate is rotatably mounted and driven during use and formed for detachable
mounting of at least one carrier plate holding an abrading element. The abrading
plate is characterised by a shoulder arranged on the abrading plate which has side
5 edges forming an acute angle with each other and which is designed for engagement
with flanges arranged on the carrier plate so that the carrier plate by surrounding
engagement can be fixed on the abrading plate in an engagement based on form and
friction.

10 The invention thus achieves the simplified mounting of carrier plates on the abrading
plate, which mounting is also quick to both establish and release.

As a particular characteristic of the invention shows, because of the acute angle
between the undercut groove and naturally also between the corresponding edges
15 shaped complementary to the groove on the carrier plate, the engagement between
the groove and the carrier plate edges can be established and released very quickly.

Carrier plates according to the invention also have the advantage that they can be
produced at relatively low cost.

20

Brief description of the drawings

The invention will be explained below in more detail with reference to the enclosed
drawings.

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Fig. 1 shows a preferred embodiment of the device according to the invention.

Fig. 2 shows an alternative embodiment of the invention.

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Description of embodiments

On the drawing 1 indicates an abrading plate which is mounted rotatably and for
abrasion is driven by a motor as is explained in more detail in the patent publication

cited initially. On the abrading plate is detachably fixed a number of carrier plates 2 positioned according to a predetermined pattern, each supporting a number of abrading segments 3 placed in a predetermined manner on the carrier plate 2.

- 5 The carrier plates 2 each have two sides 2a, 2b which form an acute angle with each other and on the abrading plate 1 are a number of elements 1a positioned according to the said pattern and complementary to the sides 2a, 2b of the respective carrier plate. The sides 2a, 2b and the element edges stand in an undercut relationship to each other and are directed so that a radius from the centre of the abrading plate
10 divides the acute angle pointing towards the abrading plate centre 1 into two essential equal parts.

The sides 2a, 2b of the carrier plate 2 are formed with downward and inward pointing flanges 2a1, 2b1, where the transition between the plane of the abrading
15 plate and the plane of flanges 2a1, 2b1 is rounded so that for reasons of production and strength the flanges are curved about an imaginary axis c parallel to the sides 2a, 2b of the carrier plate 2. In the preferred embodiment shown in fig. 1, the said complementary-shaped element 1 comprises a shoulder 1a formed by a radial groove 1b produced in the abrading plate 1, the side edges 1a1, 1a2 of which are intended to
20 stand in engagement with the sides 1a1, 1a2 surrounding the flanges 2a1, 2b1. The tip of the acute angle points radially inwards so that the forces occurring on abrasion prevent the carrier plate 2 from leaving the protrusion 1a. This achieves the advantage that the carrier plate 2 is held on the protrusion 1a with an engagement based on friction.

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In the embodiment in fig. 2 the element 1a comprises protrusions projecting from the abrading plate 1, otherwise the statements above relating to the embodiment in fig. 1 apply accordingly.

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CLAIMS

1. Carrier plate (2) holding an abrading element, for detachable mounting on a rotatably mounted abrading plate (1) driven during use, for abrading stone or concrete floors, which carrier plate (2) has sides (2a, 2b) which form an acute angle with each other, characterised in that the sides (2a, 2b) have flanges (2a1, 2b1) which are formed for surrounding engagement with a shoulder (1a) arranged on the abrading plate (1) so that the carrier plate (2) can be fixed on the abrading plate (1) with an engagement based on form and friction.
2. Carrier plate (2) holding an abrading element according to claim 1, characterised in that said flanges (2a1, 2b1) are angled inwards and downwards for engagement with the shoulder (1a) arranged on the abrading plate.
3. Carrier plate (2) holding an abrading element according to claim 1 or 2, characterised in that said sides (2a, 2b) are directed so that said acute angle points towards the centre of the abrading plate (1), a radius from the centre of the abrading plate (1), which radius divides the angle into two equal parts, divides the carrier plate (2) into two essentially equal parts.
4. Carrier plate (2) holding an abrading element according to any of the previous claims, characterised in that the carrier plate (2) can be fixed on the abrading plate (1) by movement in the direction away from the abrading plate centre.
5. Carrier plate (2) holding an abrading element according to claim 1, characterised in that the sides (2a, 2b) of the carrier plate (2) have surfaces which are essentially cylindrically curved about an axis (c) parallel to the respective sides (2a, 2b), and which are formed so as to come into contact with the complementary-shaped surface on the shoulder (1a).

6. Abrading plate (1) for abrading stone or concrete floors, which abrading plate (1) is rotatably mounted and driven during use and is designed for detachable mounting of at least one carrier plate (2) holding an abrading element, characterised by a shoulder (1a) arranged on the abrading plate (1), which shoulder has side edges (1a1, 1a2) which form an acute angle with each other and which are designed for engagement with flanges (2a1, 2ab) arranged on the carrier plate (2) so that the carrier plate (2) by surrounding engagement can be fixed on the abrading plate (1) with an engagement based on form and friction.
7. Abrading plate (1) according to claim 6, characterised in that the shoulder (1a) is formed by a radial groove (16) produced in the abrading plate (1).
8. Abrading plate (1) according to claim 6, characterised in that the shoulder (1a) forms a protrusion projecting from the abrading plate (1).
9. Abrading plate (1) according to claim 6, characterised in that the side edges (1a1, 1a2) of the shoulder (1a) are undercut.

Fig. 1

