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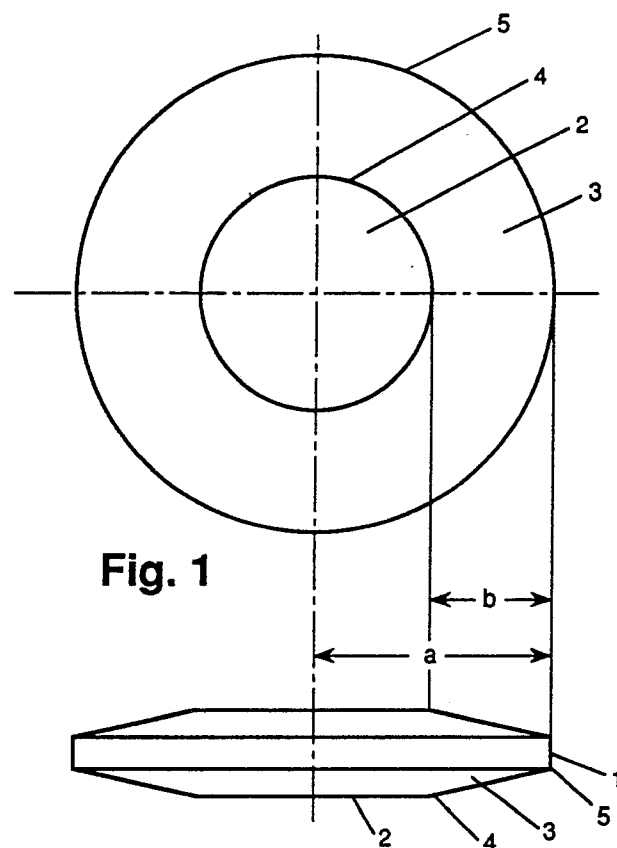
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(54) **Coin.**

(57) A coin comprising a circumferential rim (1; 11; 31; 41), a middle portion (2; 12; 22; 32; 42) having on opposite sides of the coin a bearing surface, and a border portion (3; 13; 23; 33; 43) situated between the middle portion (2; 12; 22; 32; 42) and the circumferential rim (1; 11; 31; 41). The border portion extends annularly throughout the periphery of the coin and at least a part of the border portion has on opposite sides of the coin a surface enclosing an angle deviating from a right angle with the bearing surface of the middle portion on the side of the coin where said part of the border portion is situated. These features permit a coin resting on a flat surface to be tilted by pressing its border portion, and thus to be readily picked up or to be slid over another coin.



**Fig. 1**

**Fig. 2**

## Coin

The invention relates to a coin comprising a circumferential rim, a middle portion having a bearing surface on opposite sides of the coin, and a border portion situated between the middle portion and the circumferential rim, which border portion extends annularly throughout the periphery of the coin and on opposite sides of the coin recedes relatively to a middle portion in the direction of the circumferential rim.

There have long been known plate-shaped coins comprising on opposite sides an essentially flat surface, in each of which surfaces often an effigy is struck, and a circumferential rim between the two essentially flat surfaces. Furthermore, such coins are usually disc-shaped, i.e. circular in top view. The thickness of such coins is generally the same throughout, except for the elevation constituting the effigy, and a thickening along the circumferential rim in the form of upright ridges bounding the two surfaces.

A drawback of such coins is that it is very difficult to pick them up from a flat surface. This holds in particular for handicapped people; in situations where it is hard to perform finely controlled movements, for instance when it is very cold or when one is wearing gloves; and in situations where change must be picked up continually and quickly, for instance at cash desks and public office windows. To overcome this problem sometimes special change trays are used which are shaped to facilitate the coins being picked up, but that is a roundabout solution effective only where such change trays are provided.

Further, FR-A-1192794 discloses a chip or token shaped as defined in the opening paragraph herein, in which the middle portion joins the border portion step-wise by means of a right-cylindrical wall, which border portion is plate-shaped and of uniform thickness. Thus a chip or token is obtained having a central concentric prominent portion, which is intended upon insertion into a slot of a further device to operate a contact or the like in order for said device to be switched on or activated.

It is an object of the present invention to provide a coin designed so that the above-mentioned drawbacks and problems as regards picking up coins are removed.

To this effect, a coin of the type described above is characterized, according to the invention, in that on opposite sides of the coin at least a part of the border portion comprises a surface enclosing an angle deviating from a right angle with the bearing surface of the middle portion on the side of the coin where said part of the border portion is

situated.

A coin according to the invention can be readily picked up by pressing the thinner border portion with one or more extremities of the hand. This causes the coin to tilt relatively to the surface that supports it. The opposite part of the border portion will come off the flat surface, whereupon the coin can be tipped up at the location of said opposite part of the border portion, so that the coin will further tilt until a substantially vertical position is reached where the coin can be readily taken hold of. It is possible to press a random part of the border portion of the coin with one or more fingers and then tip up the opposite border part with the thumb or, conversely, to press down a random part of the border portion with the thumb and tip up the opposite part of the border portion with one or more fingers.

An additional advantage of the coin according to the invention is that a plurality of coins may readily be picked up simultaneously in a pile because the coins are easily made to slide over each other. The coins' sliding over each other is facilitated in that pressure is brought to bear on the coins when they are slid towards each other. Practice has shown that a number of coins are thus caused to tilt, parts of their border portions being accordingly moved away from the surface relatively to other coins. As a result, when the coins are slid towards each other, the circumferential rims will not butt against each other and the coins can readily be slid over each other.

The coins' sliding over each other is further facilitated in that the coins have relatively thin rims, so that even if the rims do strike each other, only a slight deviation in a direction transverse to the surface is sufficient to permit the coins to slide over each other.

Picking up a plurality of coins that have not entirely been slid over each other is further facilitated in that by pressing the topmost coin the coins below it may also be caused to tilt. The coin resting fully on the surface will also tilt and can be tipped up obliquely from below so that it will tilt further. Tipping the bottommost coin further up will cause the other coins to tilt accordingly and thus the coins can be readily picked up along with the bottommost coin.

Thus the coin according to the invention provides the possibility of replacing an everyday action which continually causes irritation by a pleasant, smooth and harmonious action.

An extra advantage of the coin according to the invention is that the number of coins held in a pile in one's hand can easily be counted because there

is an intermediate space between two adjacent coins. A further advantage of the coin according to the invention is that it is easy to distinguish from other coins, while different coins according to the invention can be designed so as to be readily distinguishable from each other by designing the thinned border portions in different ways. The invention moreover saves material in that a part of the coin is designed as having a lesser material thickness.

The border portion need not be thinner than all parts of the middle portion. It is enough for the border portion to be so designed as to be thinner than the thickest part of the middle portion. It is possible, for instance, to design the middle portion as having a cavity or even a hole or providing the middle portion on opposite sides with for instance three elevations which determine the distance between the bearing surfaces.

Further, the invention can be realized both in the form of disc-shaped coins having a circumference which is circular in top view, and in the form of differently shaped coins, for instance elliptic, oval or polygonal in top view.

The thinner border portion extends from the circumferential rim to the middle portion of the coin over a distance that is preferably at least one-third of the distance from the circumferential rim to the centre. Then the force that must be applied to the border portion for the coin to be tilted is relatively small. It has been taken into account here that the centre of action of the force applied to the coin by the extremity of the hand is generally at some distance from the rim of the coin.

Preferably, all parts of the thinner border portion lie within frustoconical surfaces defined by straight lines extending transversely to the circumferential rim from the circumferential rim to the transition between the border portion and the middle portion defining the largest thickness of the coin, so that the coin when being tilted will tilt about that transition until the circumferential rim reaches the surface which supports the coin.

In a further embodiment of the invention the surfaces of the border portion may be convex, thus permitting the coin to roll smoothly and without jolts when it is tilted. In addition, the absence of ridges further facilitates the coins being slid over each other for them to be picked up collectively or piled up.

The border portion may have the same width throughout the circumference of the coin and be of uniformly varying thickness viewed transversely to the circumferential direction, so that an essentially rotationally symmetrical coin is obtained. It is also possible for the transition to be designed in the form of one or more straight lines and for the surface of the border portion to be formed with a

plurality of straight surfaces forming a border with a faceted appearance as of a cut precious stone.

When, in accordance with the present invention, the border portion of a disc-shaped coin is formed with radially disposed ribs sloping from the middle portion to the circumferential rim, the effect can be achieved that coins that are slid over each other will centre relatively to each other, so that forming a pile will be facilitated.

The stability of a pile of coins according to the invention can be further improved by arranging all parts of the coin between two planes which are defined by upright ridges along the circumference of the middle portion.

The invention will now be further described with reference to some embodiments as shown in the accompanying drawings, in which

Fig. 1 is a top view of a first embodiment of the coin according to the invention;

Fig. 2 is a side elevational view of the coin according to Fig. 1;

Fig. 3 is a top view of a second embodiment of the coin according to the invention;

Fig. 4 is a cross-sectional view taken along line IV-IV in Fig. 3;

Fig. 5 is a top view of a third embodiment of the coin according to the invention;

Fig. 6 is a side elevational view of a fourth embodiment of the coin according to the invention;

Fig. 7 is a side elevational view of a fifth embodiment of the coin according to the invention.

Fig. 1 and Fig. 2 show a first embodiment of a coin according to the invention in top and side elevational view, respectively. The coin shown comprises a right-cylindrical circumferential rim 1, a middle portion 2 and a border portion 3, the transition between the border portion 3 and the middle portion 2 being designated by reference numeral 4 and the transition between the border portion 3 and the cylindrical circumferential rim 1 being designated by reference numeral 5. The views according to Figs 1 and 2 show that the border portion 3 has a frustoconical configuration extending from the transition 4 to the transition 5.

The coin according to Figs 1 and 2 can be readily picked up by bringing a force to bear on the border portion 3, preferably close to the circumferential rim, with at least one of the fingers or the thumb, so that the coin will tilt on the transition 4 in the vicinity of the point where pressure is applied to the coin. Due to the tilt the opposite portion of the coin is moved away from a surface that supports the coin and thus can be readily tipped up further with the thumb or at least one of the other fingers and be picked up while being held by two fingers.

Because the border portion of the coin according to Figs 1 and 2 is of frustoconical configuration,

the coin can tilt about a point of the transition 4 in the vicinity of the point where pressure is applied to the border portion 3, until transition 5 reaches the surface which supports the coin.

The letter a designates the perpendicular distance from the circumferential rim 1 to the centre of the coin. The letter b designates the perpendicular distance from the circumferential rim 1 to the transition 4, which distance is equal to the width of the border portion 3. Taking into account that when pressure is applied to the border portion 3, the point of action of the pressure is usually at some distance from the circumferential rim 1, the coin's ready tipping is ensured if the width b of the border portion 3 is at least one-third of the distance a from the circumferential rim 1 to the middle of the coin.

The embodiment shown in Figs 3 and 4 comprises a circumferential rim 11, a middle portion 12 and a border portion 13. As in the previous embodiment, the border portion is of frustoconical configuration joining the circumferential rim 11 at transition 15. The transition 14, on the other hand, is a right-cylindrical face forming a step-like transition between the middle portion 12 and the border portion 13. The middle portion 12 further comprises a recess 16 having a circular circumference, which recess 16 is thus surrounded by an upright, continuous, annular ridge.

This ridge improves the pile stability of the coin in that it defines a flat, limited bearing surface, while in recess 16 an effigy can be struck in relief, which effigy is thus prevented from wearing off fast by the upright ridge.

In the embodiment shown in Fig. 5 the border portion 23 comprises an essentially flat disc 23a and ribs 23b radially extending from transition 25 to transition 24, the top surface of these ribs slanting upwardly from transition 25 to transition 24. In this embodiment, too, stepped transitions as shown in Fig. 4 may be provided. In addition to an aesthetic effect the radially disposed ribs 23b will have a centring effect on the coins relative to each other when the coins are slid over each other. Instead of ribs as shown in Fig. 5, intersecting slanting triangles may be provided, producing a faceted border, the transition 24 optionally being of polygonal configuration too.

Fig. 6 shows a coin having a convex border portion 33 smoothly merging with the middle portion 32. When the coin is tipped up, it rolls over the surface depending on the amount of pressure applied and the point where the pressure is applied. The degree of the coin's tilt can thus be varied, whereas, by contrast, in the case of a frustoconical surface a tipping motion once begun almost immediately brings about a particular, but at the same time stable, tilted position. A further effect of the embodiment according to Fig. 6 is that because the

surfaces of the border portion 33 and the middle portion 32 smoothly merge with each other, these two surfaces will appear to be one and will thus at first sight seem to differ less from a conventional coin. A particularly smooth tipping action can be obtained by forming the border portion 33 with a continuous convex surface extending up to or substantially up to the middle of the coin.

Of course it is also possible for the border portion to be of concave configuration, as shown in Fig. 7 at 43. In an embodiment of this type any marks or effigies applied to the surface of the border portion 43 are better protected against wear because the marks and effigies are applied in a recessed portion. As in the embodiments according to Figs 3 and 4, the middle portion 42 may be of concave configuration to avoid a sharp transition portion inside the recess which might gather dirt. Further, transition 45 between the border portion 43 and the circumferential rim 41 is rounded off; of course it would have been possible make it beveled.

It goes without saying that within the scope of the invention many modifications and variations will readily occur to one skilled in the art. Thus reference has already been made to a border portion of optionally faceted configuration. Further, an upright ridge as shown in Fig. 4 could be discontinuous or even consist of only three projections. The embodiments regarding which no mention was made of a recess in the middle portion may also be provided with such recesses, while, further, effigies, marks, grooves or text may be provided on or in any desired surface of the coin, including the circumferential rim. The rounded transitions 45 between the circumferential rim 41 and the border portion 43, shown in Fig. 7, may be designed so that they merge with each other.

## Claims

1. A coin comprising a circumferential rim (1; 11; 31; 41), a middle portion (2; 12; 22; 32; 42) having on opposite sides of the coin a bearing surface, and a border portion (3; 13; 23; 33; 43) situated between the middle portion (2; 12; 22; 32; 42) and the circumferential rim (1; 11; 31; 41), said border portion extending annularly throughout the periphery of the coin and on opposite sides of the coin receding relatively to a middle portion (2; 12; 22; 32; 42) in the direction of the circumferential rim (1; 11; 31; 41), characterized in that on opposite sides of the coin at least a part of the border portion (3; 13; 23; 33; 43) comprises a surface enclosing an angle deviating from a right angle with the bearing surface of the middle portion (2; 12; 22; 32; 42) on the side of the coin where said part of

the border portion (3; 13; 23; 33; 43) is situated.

2. A coin according to claim 1, characterized in that the entire border portion (3; 13; 33; 43) on opposite sides of the coin comprises a surface containing an angle deviating from a right angle made with the bearing surface of the middle portion (2; 12; 22; 32; 42) on the side of the coin where that part of the border portion (3; 13; 33; 43) is situated.

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3. A coin according to claim 1 or 2, characterized in that on opposite sides of the coin said part of the border portion (23b) or the entire border portion (3; 13) has a surface of frustoconical configuration with straight generatrices.

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4. A coin according to claim 1 or 2, characterized in that on opposite sides of the coin said part of the border portion or the entire border portion (33) has a surface that is convexly curved.

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5. A coin according to claim 1 or 2, characterized in that on opposite sides of the coin said part of the border portion or the entire border portion (43) has a surface that is concavely curved.

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6. A coin according to any one of the preceding claims, characterized in that the surface, which encloses an angle deviating from a right angle with the bearing surface of the middle portion (22) on the side of the coin where that part of the border portion is situated, is situated on a plurality of ribs (23b), which extend from the middle portion (22) to the circumferential rim (25).

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7. A coin according to claim 1 or 2, characterized in that on opposite sides of the coin said part of the border part or the entire border part has a surface comprising slanting faces bounded by straight lines for forming a faceted border.

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8. A coin according to any of the preceding claims, characterized in that the border portion (3) extends from the circumferential rim (1) to the middle portion of the coin over a distance (b) of at least one-third of the distance (a) from the rim to the centre of the coin.

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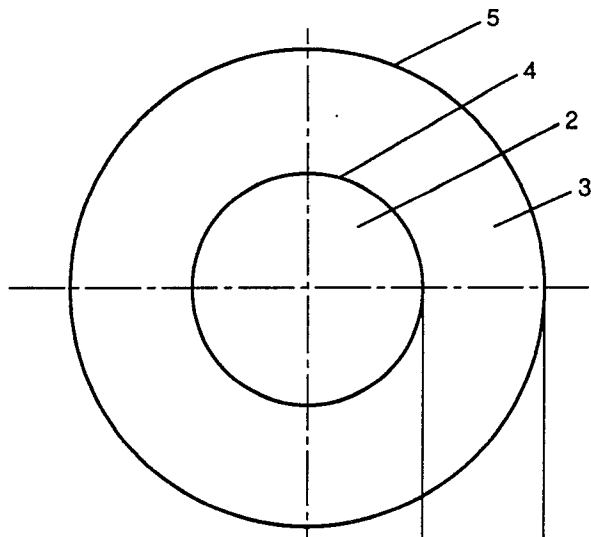
9. A coin according to any of the preceding claims, characterized in that all parts of the coin are situated between two bearing surfaces, one on each side of the coin, each bearing surface being defined by at least three points on the middle portion (2; 12; 22; 32; 42) on the corresponding side of the coin.

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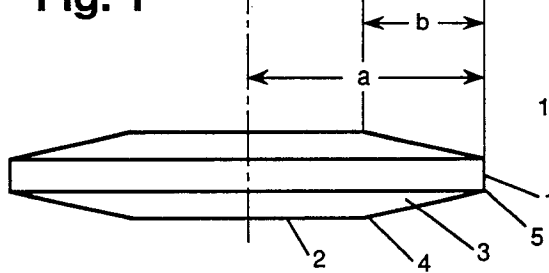
10. A coin according to any one of claims 1-8, characterized in that all parts of the coins are situated between two planes which are defined by upright ridges along the circumference of the middle portion (12).

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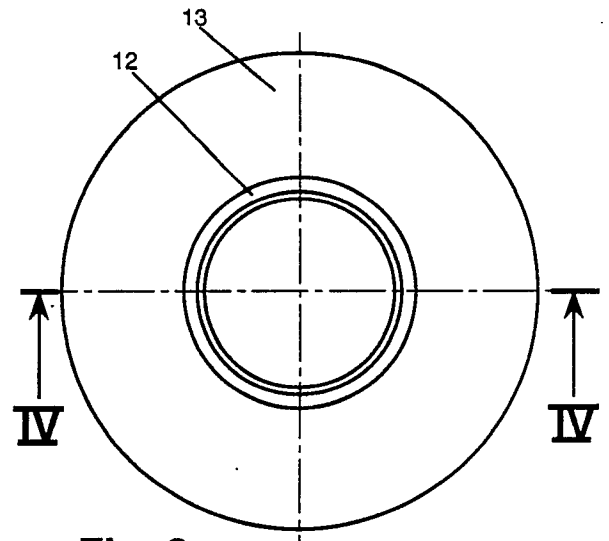
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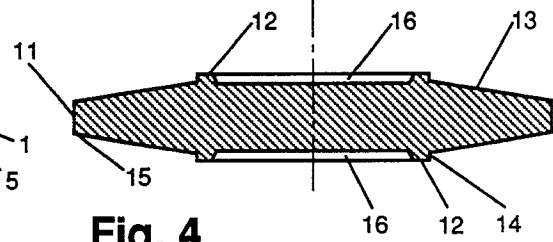
**Fig. 1**



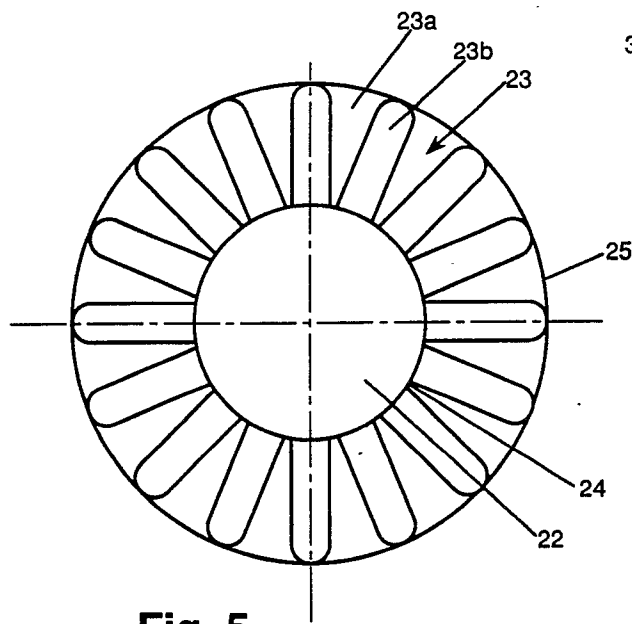
**Fig. 2**



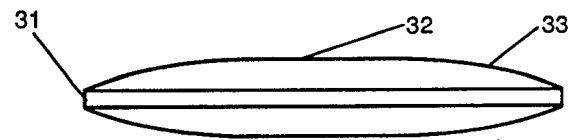
**Fig. 3**



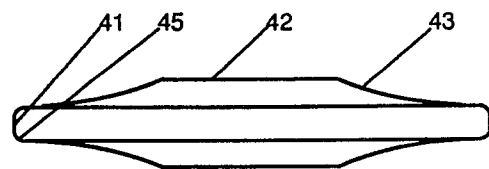
**Fig. 4**



**Fig. 5**



**Fig. 6**



**Fig. 7**