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Device for precision aiming of weapons.

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A device for precision aiming of weapons comprising a rear sight (1) and a front sight (2), wherein the rear sight (1) is provided with an additional rear sight (1) element (3) in the shape of an axially symmetrical geometric three-dimensional solid, which is positioned in the centre of the notch (4) of the rear sight (1) and is attached in a detachable or non-detachable manner, and the front sight (2) is provided with a cut-out (5) located in the centre of the front sight (2), the width of which is greater than the visible upper part of the additional element (3) of the rear sight (1).

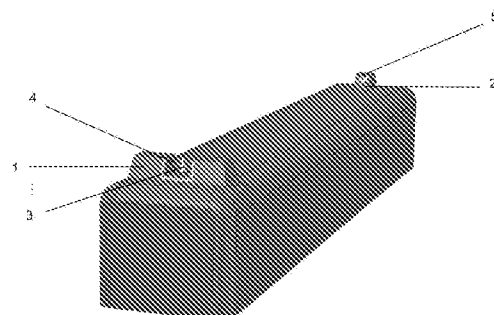


Fig. 1

Device for precision aiming of weapons

Field of the Invention

The invention relates to the field of weapons, specifically, the solution of a mechanical sight, which will make aiming at the target more accurate, for weapons containing a rear sight and a front sight, particularly for small handguns and pistols.

Background of the Invention

Mechanical sights are devices designed to aim firearms at a selected target. Mechanical sights are used primarily when firing weapons designed for line-of-sight shooting. Typical use is on hand-held barrel weapons, but they are also used on mechanical weapons such as crossbows.

A limitation in using mechanical sights is the ability of human vision. It is necessary to observe both the sight and the target simultaneously when aiming. The human eye cannot see near and distant objects sharply at the same time. This leads to errors when aiming with mechanical sights. If aiming is done in conditions of reduced visibility or if the shooter has a visual impairment, aiming with mechanical sights becomes even more difficult.

Open mechanical sights are the simplest in terms of construction. They are usually made up of two main elements - a front sight and a rear sight. The front and rear sights are arranged in one plane, and they are axially symmetrical along the longitudinal axis of the gun barrel. The front and rear sights can have different shapes.

The front sight is the front part of the mechanical sights and is located at the muzzle of the barrel. A typical front sight includes a post, blade, bead or yoke aligned along the axis of the barrel. The front sight is in some embodiments provided with a colour, a contrasting colour is used, e.g. white, red, orange, reflective green, reflective yellow, etc. The colour is applied to all or part of the front sight. The rear sight is the rear part of the mechanical sights. The rear sight can be fixed or height or side adjustable. A typical rear sight includes an additional U notch, variously open V and others, a groove or a circular hole.

Both sight elements, the rear sight and the front sight, are permanently attached to the weapon or are replaceable. By replacing them, it is possible to change the aiming options for one weapon in connection with the purpose for which the weapon is used, e.g. target weapons, competition weapons, or in connection with the shooting and aiming conditions, e.g. day, night, etc.

Mentioned sights are mainly part of short firearms. According to the Czech Act No. 119/2002 Sb., as amended, a short firearm is a weapon whose barrel length does not exceed 300 mm or whose total length does not exceed 600 mm.

Said sights are designed to allow firearm users to hit a large target quickly without precision aiming. With these known aiming devices, it is impossible to hit a small target at a longer distance.

The process of aiming a firearm involves aiming the front sight at the target and then aligning the front sight in the notch, groove, or circular hole of the rear sight. Current solutions have a rear sight with a notch for aiming at the front sight, where both the notch and the front sight are large dimensions, which makes aiming fast but not accurate. The result is that the shooter aims quickly and hits the target but misses the desired point on the target at long distances. This use is suitable for rapid response to the need to shoot - quickly hitting a large target - anywhere. When shooting at short distances, e.g. 10-15 m, the deviation in aiming and subsequently hitting a point on the target is small. When shooting at a long distance, e.g. 25-50 m, the deviation in aiming and subsequently hitting a point on the target is large, or the target is not hit at all. Other well-known weapons are equipped with a notch on the rear sight and a small front sight, which allows the shooter to aim at the target accurately, but the shooter needs more time to aim, which makes the shooting more accurate, but slower.

So there are known handguns for rapid fire, these are equipped with a notch on the rear sight and a front sight of large dimensions, with the help of which it is possible to aim quickly, but not accurately. There are also handguns designed for accurate aiming, and their firing is slower; these weapons are equipped with a notch on the rear sight and a small front sight. These are mainly sporting weapons where accurate target shooting is evaluated. The shooter, in this case, has enough time to aim.

If the user of the weapon would like to change the purpose of its use, it is possible to replace the sights, the rear sight and the front sight, within the state of the art, which represents a certain inconvenience and takes time.

To use the weapon differently, two weapons are needed or parts of the sights need to be changed. There is no known weapon equipped with a sight that would allow fast and accurate aiming at the same time. Precision of aiming is possible by adding additional devices, e.g. optical, laser, etc., which are larger than mechanical sights and which, on weapons, especially short handguns, interfere with during use and when handling.

Summary of the Invention

The above-mentioned disadvantages are eliminated by a device for precision aiming of weapons containing a rear sight and a front sight, the essence of which consists is that the rear sight is provided with an additional rear sight element in the form of an axially symmetrical geometric three-dimensional solid, which is located in the centre of the notch of the rear sight and is attached in a detachable or non-detachable manner, and the front sight is provided with a cut-out located in the centre of the front sight, the width of which is greater than the visible upper part of the additional rear sight element. The weapon provided with the present invention includes two types of sights in one sight, a large-size sight and a small-size sight. The shooter chooses the appropriate sight to shoot as needed.

The additional element of the rear sight is in the shape of an axially symmetrical geometric three-dimensional solid, e.g. a pyramid, a cone, a plate, a cube, a cuboid, a cylinder, or a blade.

The additional rear sight element is attached to the rear sight notch in a detachable or non-detachable manner. The preferred variant allows the additional element in the rear sight to be removed or replaced.

The additional rear sight element is made of metal or plastic or a combination thereof, e.g. steel, brass, polymer.

The additional rear sight element is made by casting to the centre of the rear sight or is attached by a fastener, e.g. a screw, or is glued to the centre with an adhesive.

To attach the additional rear sight element to the rear sight notch, any shape of the standard rear sight is used.

The additional rear sight element is preferably provided with a contrasting colour.

The cut-out in the front sight is located in the centre of the front sight. The cut-out is made by milling or cutting. The cut-out is axially symmetrical, e.g. in the shape of the letter U or V. The width of the cut-out in the front sight is greater than the visible upper part of the additional rear sight element for the possibility of aiming.

Preferably, the cut-out or front sight is provided with a contrasting colour for easier and faster

aiming. Alternatively, the front sight can be provided with a coloured geometric symbol, e.g. circle, rectangle, etc.

In another preferred embodiment, a circular hole is milled in the middle of the cut-out in the front sight, symmetrically along the longitudinal axis, for placing the connecting material to fasten the front sight to the barrel of the weapon.

By providing the existing sights with an additional rear sight element and a cut-out in the front sight, the shooter's aiming is supplemented by the additional possibility of aiming using the additional rear sight element and the cut-out in the front sight. Using the new solution, the shooter is able to aim at the designated point on the target much more accurately.

The device described above can be fitted to standard or mass-produced weapons with absolutely minimal additional costs. The device described above can be added to existing sights. Any already known rear sight shape can be fitted with this additional rear sight element; the additional rear sight element is made by casting or fixing with fastening material, which represents very low additional costs. Providing standard shapes of front sights with a cut-out is also done at a very low additional cost, e.g. by milling.

The above described construction of the aiming device with the additional rear sight element and the front sight cut-out allows very fast accurate aiming. When aiming, the user very easily aims with eye the additional rear sight element with the front sight cut-out. Accurate aiming is made possible by the shapes and small size of the additional rear sight element and the front sight cut-out, which must be aligned during aiming. Thanks to this aiming, the shooter can hit the desired target quickly and accurately.

A weapon, particularly a short handgun, provided with the invention described above enables a target to be hit quickly at a shorter distance and accurately at a long distance, which is impossible with any known weapon. The weapon provided with this invention includes a large sight and a small sight at the same time, a combination of two types of sights, which allows the shooter to choose the appropriate sight for shooting, without having to change the weapon or change the sight on the weapon. The weapon provided with the described invention allows the shooter the option of fast or accurate aiming on a single weapon. This function can be used, e.g. with weapons of the police, security guard, etc.; such a weapon can hit the opponent or perpetrator with great accuracy. The advantage of using the above described invention is fast and accurate shooting with one sight.

Brief Description of the Drawings

The invention is explained in more detail in the accompanying drawings, wherein Fig. 1 shows a

spatial view of the sight; Fig. 2(a) shows an alignment of the rear sight and the front sight according to the prior art; Fig. 2(b) shows an alignment of the rear sight and the front sight according to the invention; Fig. 3 shows a detail of the rear sight; and Fig. 4 shows a detail of the front sight.

Example of Invention Embodiment

The device for precision aiming of weapons comprises a rear sight 1 and a front sight 2, wherein the rear sight 1 is provided with a additional rear sight 1 element 3 positioned in the centre of a notch 4 of the rear sight 1 and the front sight 2 is provided with a cut-out 5 located in the centre of the front sight 2.

The additional rear sight 1 element 3 is cone-shaped. The additional rear sight 1 element 3 is located in the centre of the notch 4 of the rear sight 1. To attach the additional rear sight 1 element 3 to the notch 4 of the rear sight 1, any shape of the standard rear sight is used. The additional rear sight 1 element 3 is fastened detachably with fasteners by means of a screw. The additional rear sight 1 element 3 is made of steel and manufactured by casting.

The cut-out 5 in the front sight 2 is located in the centre of the front sight 2 and is axially symmetrical. The cut-out 5 in the front sight 2 is made by milling into the standard produced front sight 2. In the centre of the cut-out 5 in the front sight 2 a circular hole 6 is milled axially symmetrically along the longitudinal axis to accommodate a fastener which serves to secure the front sight 2 to the barrel of the weapon.

The notch 4 of the rear sight 1 is marked on the front side, as seen by the shooter, with a line in green colour which follows the edge of the notch 4 of the rear sight 1. The front sight 2 is marked with a green circle in the upper front part from the shooter's view, wherein the circle is broken in the place of cut-out 5. The coloured highlighting helps the shooter to aim quickly when using large sights.

Industrial Applicability

The proposed solution is applicable to weapons, particularly short handguns, which are equipped with mechanical sights.

CLAIMS

1. A device for precision aiming of weapons comprising a rear sight (1) and a front sight (2) **characterised in that** the rear sight (1) is provided with an additional rear sight (1) element (3) in the shape of an axially symmetrical geometric three-dimensional solid, which is positioned in the centre of the notch (4) of the rear sight (1) and is attached in a detachable or non-detachable manner, and the front sight (2) is provided with a cut-out (5) located in the centre of the front sight (2), the width of which is greater than the visible upper part of the additional rear sight (1) element (3).
2. A device for precision aiming of weapons comprising a rear sight (1) and a front sight (2) according to claim 1, **characterised in that** the centre of the cut-out (5) in the front sight (2) is provided with an axially symmetrical hole (6) for accommodating fastening material.

Ansprüche

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1. Vorrichtung zum Präzisionszielen von Waffen umfassend eine Kimme (1) und ein Korn (2), **dadurch gekennzeichnet, dass** die Kimme (1) mit einem zusätzlichen Element (3) der Kimme (1) in Form eines axialsymmetrischen, geometrischen, dreidimensionalen Festkörpers, welcher in der Mitte des Einschnitts (4) der Kimme (1) positioniert und lösbar oder nichtlösbar befestigt ist, versehen ist und das Korn (2) mit einem in der Mitte des Korns (2) angeordneten Ausschnitt (5), dessen Breite größer als der sichtbare obere Teil des zusätzlichen Elements (3) der Kimme (1) ist, versehen ist.
2. Vorrichtung zum Präzisionszielen von Waffen umfassend eine Kimme (1) und ein Korn (2) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Mitte des Ausschnitts (5) im Korn (2) mit einem axialsymmetrischen Loch (6) zur Aufnahme von Befestigungsmaterial versehen ist.

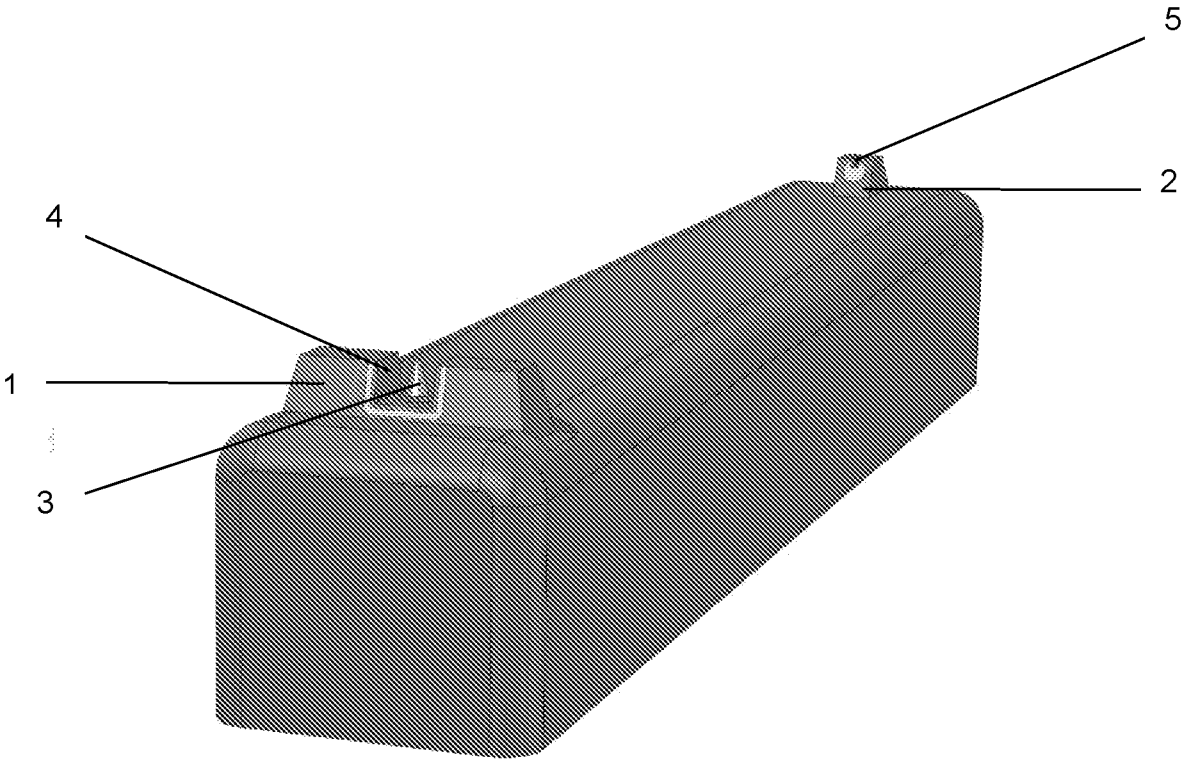


Fig. 1

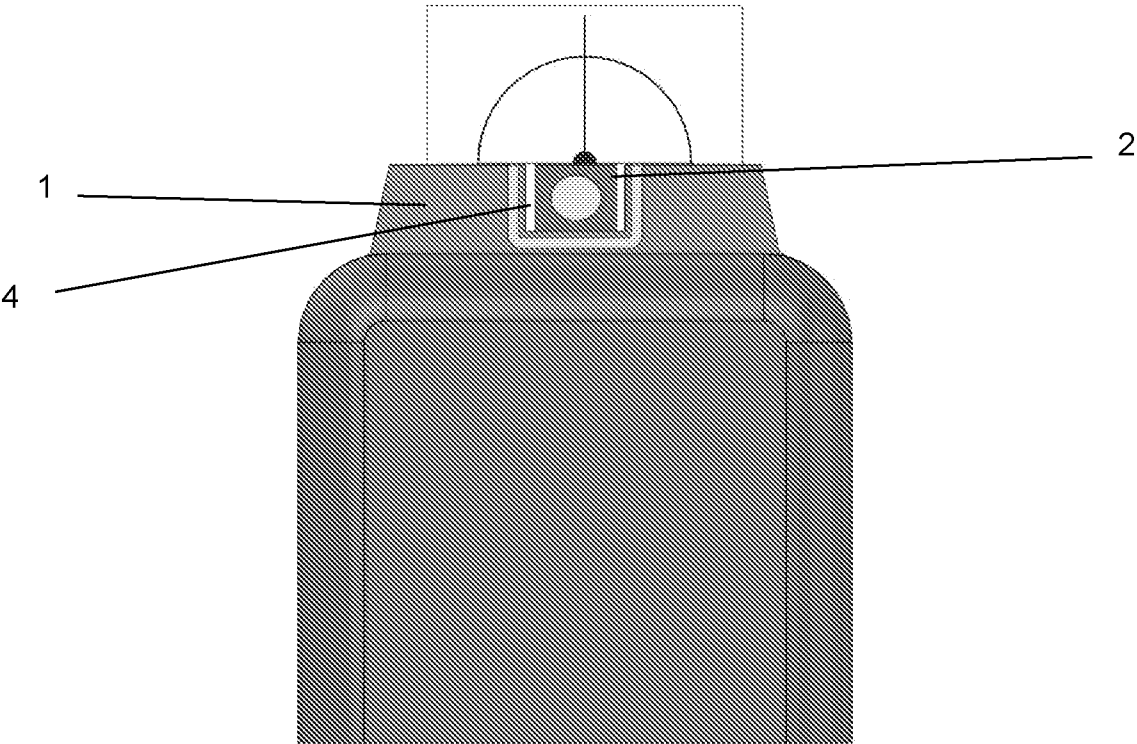


Fig. 2 a)

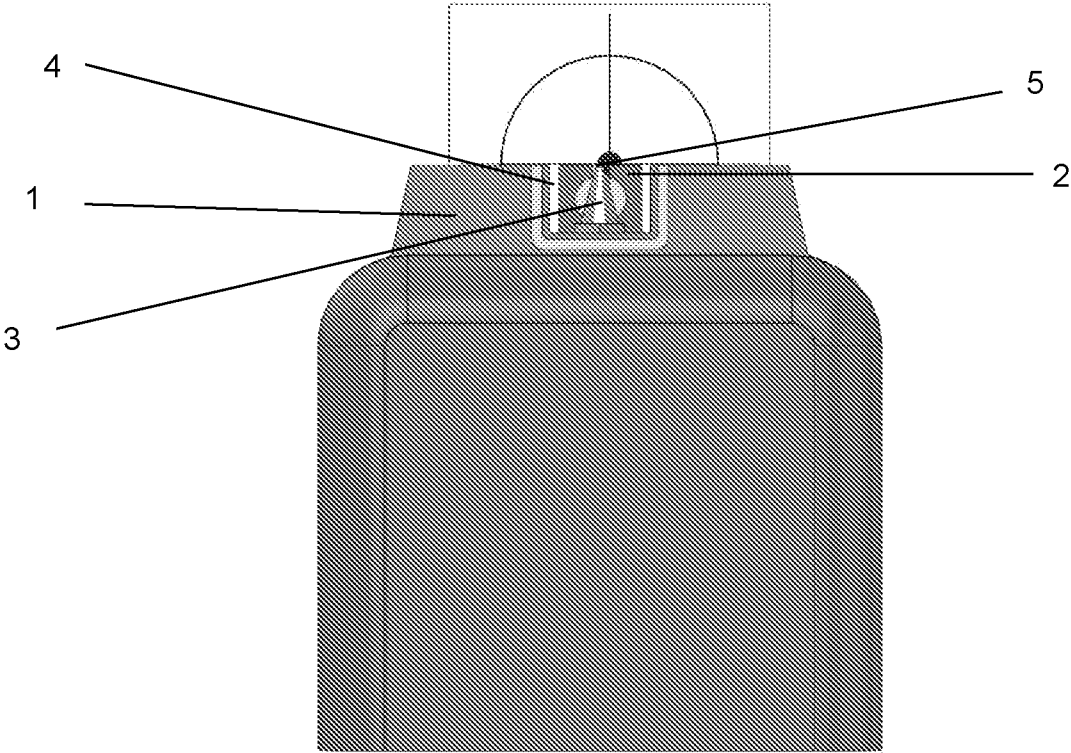


Fig. 2 b)

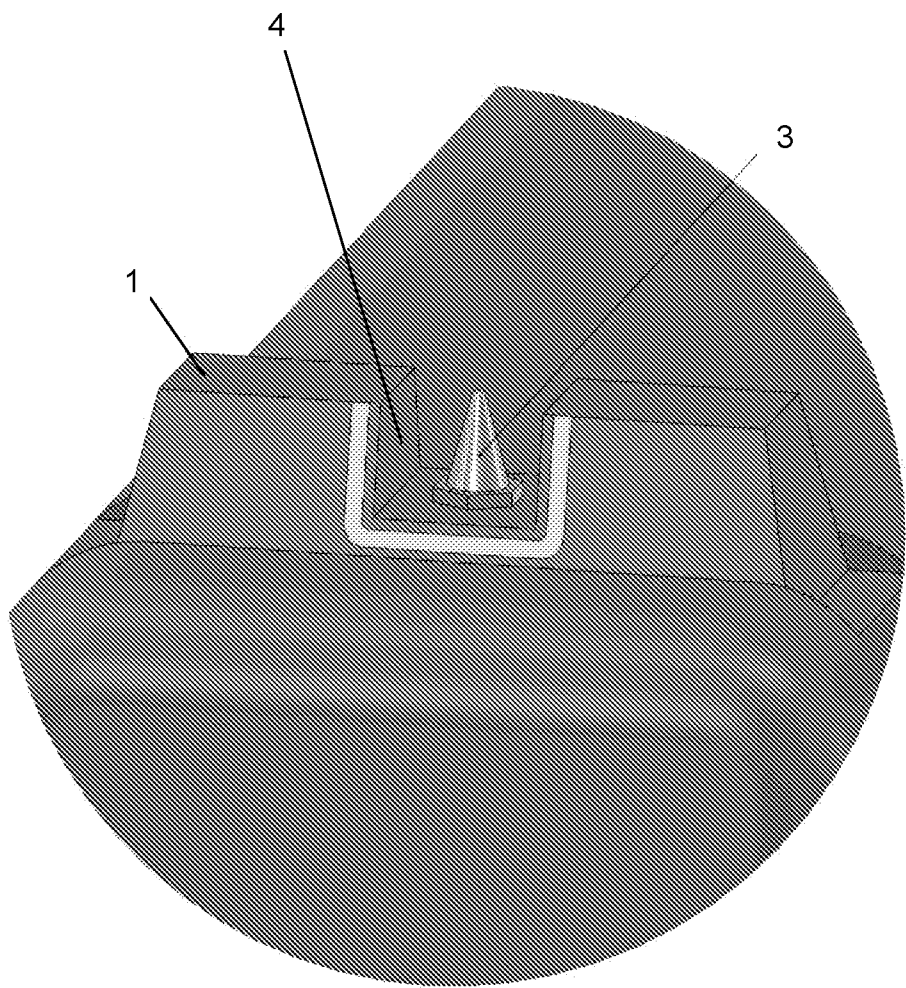


Fig. 3

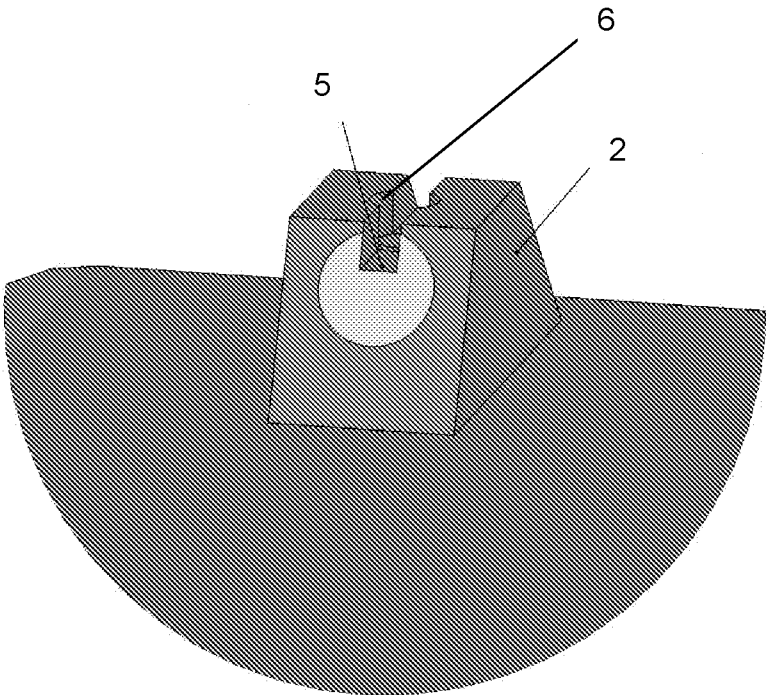


Fig. 4