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- (71) Applicant (for all designated States except US): **SECUMARK LTD** [CY/CY]; 1, Stasinou Avenue, Mitsi Bldng 1, 3rd Floor, Offices. 13, 14, 1060 Nicosia (CY).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **REPTA, Jaroslav** [CZ/CZ]; M. Horákové 261/19, 674 01 Třebíč (CZ).
- (74) Agent: **HUDCOVÁ, Ludmila, Judr.**; Gen. Sochora 705, 674 01 Třebíč (CZ).
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- (54) Title: METAL MICRODOT INCLUDING THE DATA FOR PROPERTY IDENTIFICATION AND PROTECTION PURPOSES

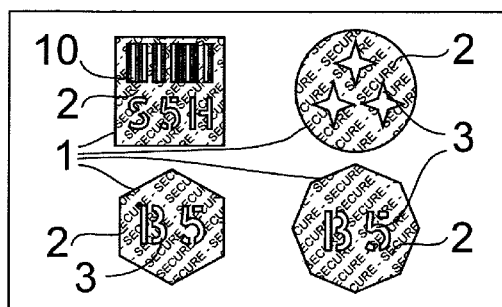


Fig.1

(57) Abstract: The solution relates to the metal microdot including the data for the property identification and protection purposes, the principle of which consists in the fact that it is created of the high-temperature resistant and chemically and mechanically treatable metal of the optional size and shape, and it is provided with the etched identification data (3) in a form of alphanumeric symbols, pictures and/or bar codes (10). The solution also serves for identification of various objects on or into which in this way produced microdot is implemented in order to verify the authenticity, origin or owner of objects marked like this.

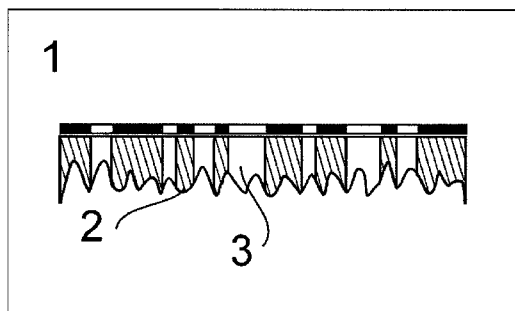


Fig.2



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Metal Microdot Including the Data for Property Identification and Protection Purposes

Field of the art

The invention relates to the metal microdot including the data for the property identification and protection purposes, which can be, as an advantage, provided against forgery with diffraction microgratings, and which serves for identification of various objects on or into which it is implemented, and where the unique data in a form of alphanumeric symbols, pictures and/or a bar code serve for verification of the authenticity, origin or owner of objects marked like this.

Present State of the art

So far, we have used a lot of protecting elements for the protection of documents, property, vehicles and other products, the purpose of which is to prevent their forgery as much as possible and, simultaneously, to allow the recognition of the forged products or the identification of the lost or stolen objects.

At the present time we distinguish and use transparent plastic identification elements, which is usually a plastic wheel, ca 1mm in diameter, on the surface of which variable information is placed. Production of such an identification element consists in laying the variable information on the surface of the transparent plastic foil in a photographic method, and consequently, the wheel is cut out of the plastic such prepared. This product is to be laid by means of a liquid medium and a plastic pot on the marked objects. Furthermore, again in presence of a liquid medium, using a brush, it is laid on various objects in order to protect them. In accordance with variable information it is possible, in case of lost or theft, to be identified by manual reading of the variable code on this product, and thus to identify the owner of the given object. Such variable information is to be read using a microscope. The disadvantage of this solution is zero protection against forgery and low thermal and chemical resistance.

Another known solution refers to the nickel identification scale consisting of the holographic pattern and an alphanumeric code, which is laid on the pattern in a galvanic method. This solution is described in the Czech patent document CZ-PS 294820, where the basic material

for the galvanic process is nickel the advantages of which are e.g. lower thermal resistance of the marked material, which can cause the harm to the code, e.g. in fire or other thermal load, etc. Another advantage is also considerable production intensity and limited stability of variable information readability.

The closest known solution is described in the utility model CZ 18064, where intelligent microelements containing data and machine-readable variable information are protected and where these microelements are created from the high-temperature resistant and electronically or chemically treatable metal of an optional size and shape. The machine-readable information is laid on the microdots in a form of another layer.

The disadvantages of this design of microelements consist mainly in the fact that the machine-readable information might occur inactive in some sorts of varnishes and solvents. Another disadvantage is the reading intensity of the machine-readable information towards the engineering facilities and the quality of the optical readability of the data.

The purpose of the engineering solution is to restrain the above mentioned deficiencies and to create a metal microelement to protect the documents and any other objects and products from other metals and materials featuring better properties for the given purpose than nickel and plastic and whose processing for the microelements creation purpose is both economical and technically affordable. The purpose is also to ensure the high readability of codes and accurate division of elements, which is guaranteed by means of chemical etching and mechanical division of elements via cutting.

Chemical etching and mechanical cutting of metal elements seems technologically easy and effective processions of metal division.

Background Art

The above mentioned limitations can be remedied and the purpose of the engineering solution is realized by means of the microdot bearing the data for the purposes of property identification and protection, the principle of which consists in the fact that it is created of the high-temperature resistant and chemically and mechanically treatable metal of the optional size and shape, and it is provided with the etched identification data in a form of alphanumeric symbols, pictures and/or bar codes.

The advantage of this engineering solution is a possibility of using various metals which can be processed both through etching and mechanically, which brings a particularly larger possibility of using, compared to the predominantly used so far plastic and nickel identification elements which, in extreme cases, do not show the required thermal and mechanical resistance.

Overview of the Figures of the Drawing

In the drawing enclosed, in Fig. 1, you can see an exemplary solution of the metal microdot containing the data. Fig. 2 shows the sectional view through the microdots with data.

Example of the Embodiment of the Invention

Fig. 1 bears the view of a group of metal microdots 1, which are made of thermal resistant metal, thickness from 1 μm to 15 μm , of an optional size and shape. The surface of the metal microdots 1 is furnished with diffraction microgratings 2 bearing identification data 3 which, in form of alphanumeric symbols, pictures and/or bar code 10, are processed by means of etching and cutting.

Fig. 2 shows the sectional view through the metal microdot 1 with evident diffraction micrograting 2 bearing identification data 3.

PATENT CLAIMS

Metal microdot with data for the property identification and protection purposes, **characterized in that** it is created of the high-temperature resistant and chemically and mechanically treatable metal of the optional size and shape, and it is provided with the etched identification data (3) in a form of alphanumeric symbols, pictures and/or bar codes (10).

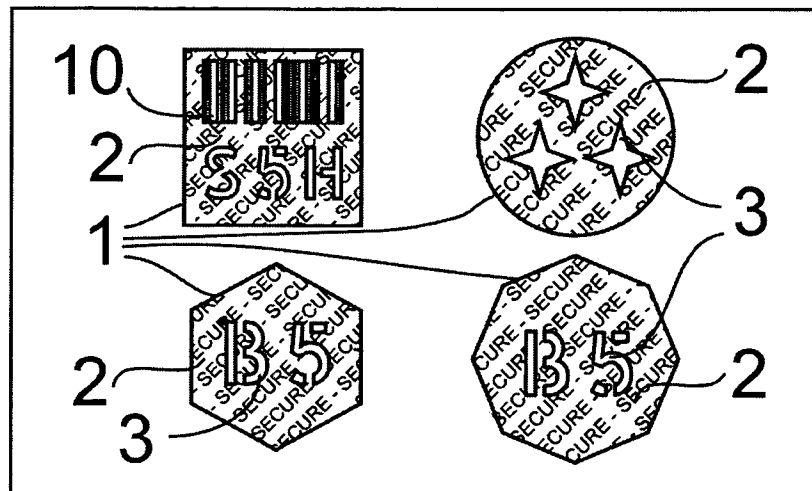


Fig.1

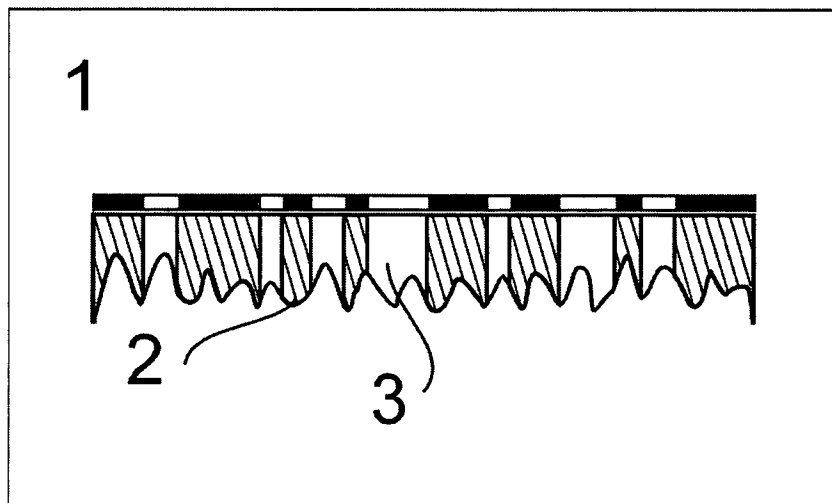


Fig.2