

COMMONWEALTH OF AUSTRALIA

P/00/001
Section 29

The Patents Act 1990

PATENT REQUEST: CONVENTION PATENT

634 112

We, fischerwerke Artur Fischer GmbH & Co. KG, being the person identified below as the Applicant, request the grant of a patent to the person identified below as the Nominated Person, for an invention described in the accompanying standard complete specification. Full application details follow:-

Applicant: fischerwerke Artur Fischer GmbH & Co. KG
Address: Weinhalle 14-18, D-7244 Waldachtal 3/Tumlingen, Germany

Nominated Person: fischerwerke Artur Fischer GmbH & Co. KG
Address: Weinhalle 14-18, D-7244 Waldachtal 3/Tumlingen, Germany

Invention Title: Container for magnetic tape cassettes

Name of actual Inventor: Christoph Stephan

Address for service in Australia: CALLINAN LAWRIE, 278 High Street, Kew 3101, Victoria, Australia

Attorney Code: CL

Convention Details

<u>Application Number</u>	<u>Country</u>	<u>Country Code</u>	<u>Date of Application</u>
P 40 39 954.0	Germany	DE	14 December 1990

Drawing number recommended to accompany the abstract - Fig. 3

DATED this 27th day of November, 1992.

fischerwerke Artur Fischer GmbH & Co. KG
By their Patent Attorneys:
CALLINAN LAWRIE



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This is a Multiple Use Form Covering:
Convention
Non-Convention
PCT National Phase

NOTICE OF ENTITLEMENT

We, fischerwerke Artur Fischer GmbH & Co. KG
of, Weinhalde 14-18, D-7244 Waldachtal 3/Tumlingen, Germany

being the applicant in respect of Application No. 10224/92 state the following:-

The person nominated for the grant of the patent

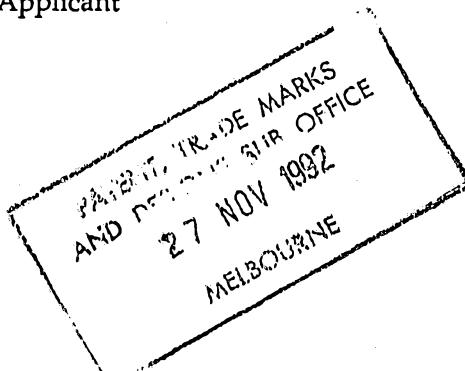
- (i) has entitlement from the actual inventor by virtue of the fact that said person would, if a patent was to be granted or an application made by the actual inventor, be entitled to have the patent assigned to it;
- (ii) is the applicant of the basic application.

The basic application listed

- (i) on the request form is the first application made in a Convention country in respect of the invention.

DATED this 27th day of November, 1992.


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Jeffrey P. Winch
Patent Attorney for the Applicant





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(54) Title
CONTAINER FOR MAGNETIC TAPE CASSETTES
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(56) Prior Art Documents
US 4030601
US 3677396
(57) Claim

1. A container for magnetic tape cassettes, said container comprising: a housing having a plurality of receiving compartments for magnetic tape cassettes; a plurality of base plates separating said compartments from one another; a lockable slider member ejectable under a spring action to a position in which a magnetic tape cassette arranged on said base plate can be removed; resilient locking means provided on said slider member and formed as pivotable rocker arms adapted to engage two reel hubs of a magnetic tape cassette; projections arranged on said base plate; a plurality of elevations, said rocker arms having laterally mounted pegs which, when said slider member is ejected, disengage said rocker arms from said reel hub by running beneath said projections and, when said slider member is inserted, engage said rocker arms in said reel hub by running on said elevations, wherein said locking means are arranged in an insertion direction of said slider member so that a longitudinal insertion of a

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magnetic tape cassette is possible, each of said locking devices being formed by two of said rocker arms arranged side-by-side and pivotable independently of one another, said base plate being provided with projections associated with each rocking arm for its disengagement; and a sliding element mounted on said base plate and displaceable by a magnetic tape cassette transversely to the insertion direction, a respective elevation being arranged for engagement of one of said two rocker arms of said locking device.

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AUSTRALIA

PATENTS ACT 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

ORIGINAL

TO BE COMPLETED BY APPLICANT

Name of Applicant: fischerwerke Artur Fischer GmbH & Co. KG

Actual Inventor: Christoph Stephan

Address for Service: CALLINAN LAWRIE, 278 High Street, Kew, 3101, Victoria,
Australia

Invention Title: "CONTAINER FOR MAGNETIC TAPE CASSETTES"

The following statement is a full description of this invention, including the best method of performing it known to us:-

Container for magnetic tape cassettes

The invention relates to a container having several receiving compartments for magnetic tape cassettes, separated from one another by base plates, according to the preamble of claim 1.

DE-PS 22 48 408 discloses storage containers for magnetic tape cassettes in which the magnetic tape cassettes are laid flat on a slider member which can be pushed against a spring force into the container housing and after being pushed in is locked. Locking projections are arranged spaced from one another side by side on the slider member or, where the magnetic tape cassette is inserted longitudinally, one behind the other; these locking projections engage the hubs on the recording tape reels of the magnetic tape cassette and prevent them from turning. The locking projections are of rigid construction, so that the slider member has to be ejected a corresponding distance out of the housing in order to remove the magnetic tape cassette or to position it on the slider member from above.

DE-PS 24 62 769 proposes a container for a magnetic tape cassette in which locking devices in the form of pivotable rocker arms lock into the reel hubs of the magnetic tape cassette as the slider member is pushed in and disengage them again when the slider member is ejected. This known functioning principle, however, requires the slider member to be ejected sufficiently far out of the housing for the reel hub to be exposed so that the rocker arm can be disengaged therefrom. Because both reel hubs of the cassette have to be immobilized to secure the tape, this means that when the cassette is inserted longitudinally and the locking devices are arranged on behind the other, the slider member has to be ejected virtually

completely out of the housing. When using the container in motor vehicles, however, the space for the slider member to be ejected such a distance is very frequently not available. In addition, ejection for such a distance requires spring elements with a correspondingly long spring travel, and slider member constructions with guides corresponding to the ejection travel. Furthermore, disengagement depends on a predetermined spring action of the rocker arm, which in the engaged state is under constant stress. The spring action diminishes through fatigue so that after a certain time a reliable disengagement cannot be guaranteed.

The invention is based on the problem of producing a container having several receiving compartments for magnetic tape cassettes, separated from one another by base plates, in which these above-mentioned problems are avoided.

In accordance with the first aspect of the present invention, therefore, there is provided a container for magnetic tape cassettes, said container comprising: a housing having a plurality of receiving compartments for magnetic tape cassettes; a plurality of base plates separating said compartments from one another; a lockable slider member ejectable under a spring action to a position in which a magnetic tape cassette arranged on said base plate can be removed; resilient locking means provided on said slider member and formed as pivotable rocker arms adapted to engage two reel hubs of a magnetic tape cassette; projections arranged on said base plate; a plurality of elevations, said rocker arms having laterally mounted pegs which, when said slider member is ejected, disengage said rocker arms from said reel hub by running beneath said projections and, when said slider member is inserted, engage said rocker arms in said reel hub



by running on said elevations, wherein said locking means are arranged in an insertion direction of said slider member so that a longitudinal insertion of a magnetic tape cassette is possible, each of said locking devices being formed by two of said rocker arms arranged side-by-side and pivotable independently of one another, said base plate being provided with projections associated with each rocking arm for its disengagement; and a sliding element mounted on said base plate and displaceable by a magnetic tape cassette transversely to the insertion direction, a respective elevation being arranged for engagement of one of said two rocker arms of said locking device.

In accordance with a further aspect of the present invention there is provided a container for magnetic tape cassettes, comprising: a housing having a plurality of receiving compartments for magnetic tape cassettes; a plurality of base plates separating said compartments from one another; a lockable slider member ejectable under a spring action to a position in which a magnetic tape cassette arranged on said base plate can be removed; resilient locking means provided on said slider member and formed as pivotable rocker arms adapted to engage two reel hubs of a magnetic tape cassette; projections arranged on said base plate; a plurality of elevations, said rocker arms having laterally mounted pegs which, when said slider member is ejected, disengage said rocker arms from said reel hub by running beneath said projections and, when said slider member is inserted, engage said rocker arms in said reel hub by running on said elevations; a pivotable closure flap mounted on said slider member and immobilizable in an extended and folded-up position; and means for immobilizing said pivotable closure flap.



As the slider member is ejected, the peg mounted laterally on the pivotable rocker arm slides beneath a projection arranged on the base plate. The rocker arm is thereby disengaged from the reel hub. The travel for the disengagement of the rocker arm is determined by the distance of the peg mounted on the rocker arm from the projection arranged on the base plate. The disengagement travel is therefore independent of the ejection travel of the slider member. It is therefore sufficient to eject the slider member far enough for the magnetic tape cassette to be readily gripped. Because the locking devices are disengaged, the cassette can be removed by being withdrawn from the receiving compartment.

As the slider member is pushed in with the cassette positioned thereon, the peg runs onto an



elevation arranged opposite to the projection, and brings the pivotable rocker arm into the engaged position. Both the disengaged position and the engaged position are fixed by the projections and elevations respectively, so that a proper functioning of the rocker arm as locking means is guaranteed even with frequent use.

For a transverse insertion of the magnetic tape cassette, the two locking devices are arranged side by side, in the case of a longitudinal insertion they are arranged in alignment one behind the other in the sliding direction.

When the magnetic tape cassette is inserted longitudinally, it is advantageous for each locking device to be formed by two rocker arms arranged side by side and pivotable independently of one another. A projection on the base plate is associated with each rocker arm for common disengagement thereof, whereas for the engagement of the rocker arms there is provided only one elevation for the two rocker arms of a locking device arranged in pairs. This elevation is arranged on a sliding element which is mounted in the base plate and is displaceable by the magnetic tape cassette transversely to the insertion direction. This special construction for a longitudinal insertion of a magnetic tape cassette allows a tape to be immobilized regardless of the position in which the cassette is placed on the slider member. The reel hubs of the cassettes are in fact arranged offset from the middle in the longitudinal direction of the cassette, so that only the rocker arm lying offset in the same direction is engaged. Because the elevation arranged on the sliding element in each case pushes upright only one rocker arm for engagement, the other rocker arm remains in the disengaged position. The respective matching rocker arm is thereby brought into

engagement in that the sliding element is displaced with the elevation arranged on it by the magnetic tape cassette. The displacement of the sliding element is effected by way of the enlargement arranged on the cassettes, which comes into contact with an inclined stop member of the sliding element passing through the upper side of the base plate.

In further development of the invention, the rocker arm can be injection-moulded in one piece with the slider member, so that it is connected thereto by way of an integral hinge, and the elevations and projections can be provided with ramps for actuation of the rocker arm.

To protect the magnetic tape cassette from dust and dirt, it is advantageous to mount a pivotable closure flap on the slider member by way of an integral hinge; the closure flap can be immobilized in a closed and an open end position by a leaf spring biased between the slider member and the closure flap.

The invention is explained in detail below with reference to the drawings, in which:

Figure 1 shows the container with several receiving compartments for magnetic tape cassettes;

Figure 2 shows the receiving compartment for a magnetic tape cassette inserted longitudinally with base plate and the slider member in the ejected position;

Figure 3 shows the receiving compartment shown in Figure 2 with the slider member in the inserted position; and

Figure 4 shows a plan view of the base plate with the slider inserted as shown in Figure 3.



The container 1 illustrated in Figure 1 has three receiving compartments 2 for magnetic tape cassettes 3, the closure flap 4 of the middle receiving compartment being opened for removal of the magnetic tape cassette. The receiving compartments 2 are formed by base plates 5, which are inserted in rails of the side walls of the container 1 and are immobilized in the apertures 7 of the side walls by means of locking projections 6. In order to be able to determine whether a cassette is inserted in the compartment 2 without opening the closure flap 4, windows 8 are arranged in the closure flaps.

The two reel hubs 9 of the magnetic tape cassette 3 are secured against turning with the locking device illustrated in Figures 2 and 2a. The locking devices are formed by a rocker arm 10 which is mounted by way of an integral hinge 11 in a recess 12 on the slider member 13. The slider member 13 is guided in the base plate 5, which serves to divide the container into receiving compartments 2. A groove-shaped curved path 14 is machined into the base plate 5 at the rear end thereof, which, in conjunction with the tongue 16 arranged on the slider member 13 and engaging with a projection 15 into the curved path 14, forms a closure mechanism which can be both locked and unlocked by pressure on the slider member.

In the position illustrated, the slider member 13 with the magnetic tape cassette is fully inserted, and locked under the bias of the spring element 17. As the slider member 13 is inserted, the rocker arm 10 runs onto the elevation 18 moulded on the base plate 5 and in so doing snaps into the toothed configuration 19 of the reel hub 9 of the magnetic tape cassette 3. The reel hub is thereby prevented from turning. If the slider member is unlocked, and moved by the spring element 17 into the removal position, the rocker arm 10



slides down off the elevation 18 and, as a result of the pegs 20 arranged on it running beneath the oppositely located projections 21 of the base plate 5, is pressed downwards and disengages the reel hub. After disengagement, it is possible to draw the cassette by hand completely out of the receiving compartment.

The embodiment of the locking device illustrated in Figures 2 and 2a is suitable both for transverse insertion of the cassette, in which the locking devices are arranged side by side on a correspondingly wide slider member, and for longitudinal insertion, provided that the cassette is always pushed in in the same position.

In the embodiment according to Figures 2 to 4, it is possible to insert the cassette 3 longitudinally in both positions. This is achieved in that the locking devices are formed by two rocker arms 10a, 10b arranged side by side and pivotable independently of one another, on which the pegs 20 are arranged projecting at right angles. Each of the two rocker arms is offset from the middle by the same distance as the reel hubs 9 of a magnetic tape cassette 3. As the slider member 13 is ejected, all four rocker arms are disengaged by the projections 21 associated with each rocker arm. At the same time, the cassette is pushed by the slider member 13 into the removal position. To withdraw the cassette from the receiving compartment 2, the closure flap 4 held in the extended position by an angled leaf spring 22 is pressed downwards. The bend in the leaf spring 22 also immobilizes the closure flap 4 in this position.

In Figures 3 and 4 the receiving compartment 2 is illustrated with a cassette 3 inserted. First of all, when the closure flap 4 is opened, the cassette is pushed in until it meets the stop 23 arranged on the



slider member 13. As the cassette is inserted, the cassette enlargement 24 located on the one side pushes away the wedge-shaped control element 25 of the sliding element 26 lying on the same side, and displaces the sliding element transversely to the direction of insertion of the cassette into the opposite end position. After the closure flap 4 has been folded up, in which closure position it is again immobilized by the leaf spring 22, the slider member 13 is then pushed with the inserted cassette 3 into the receiving compartment 2. Through the displacement of the sliding element 26 the two elevations 18a arranged on the sliding element 26 and aligned with one another are also displaced until only the rocker arms 10a matching the position of the magnetic tape cassette run onto the two aligned elevations 18a to engage the reel hubs 9.

The claims defining the invention are as follows:

1. A container for magnetic tape cassettes, said container comprising: a housing having a plurality of receiving compartments for magnetic tape cassettes; a plurality of base plates separating said compartments from one another; a lockable slider member ejectable under a spring action to a position in which a magnetic tape cassette arranged on said base plate can be removed; resilient locking means provided on said slider member and formed as pivotable rocker arms adapted to engage two reel hubs of a magnetic tape cassette; projections arranged on said base plate; a plurality of elevations, said rocker arms having laterally mounted pegs which, when said slider member is ejected, disengage said rocker arms from said reel hub by running beneath said projections and, when said slider member is inserted, engage said rocker arms in said reel hub by running on said elevations, wherein said locking means are arranged in an insertion direction of said slider member so that a longitudinal insertion of a magnetic tape cassette is possible, each of said locking devices being formed by two of said rocker arms arranged side-by-side and pivotable independently of one another, said base plate being provided with projections associated with each rocking arm for its disengagement; and a sliding element mounted on said base plate and displaceable by a magnetic tape cassette transversely to the insertion direction, a respective elevation being arranged for engagement of one of said two rocker arms of said locking device.
2. A container for magnetic tape cassettes, said container comprising: a housing having a plurality of receiving compartments for magnetic tape cassettes; a plurality of base plates separating said compartments from one another; a



lockable slider member ejectable under a spring action to a position in which a magnetic tape cassette arranged on said base plate can be removed; resilient locking means provided on said slider member and formed as pivotable rocker arms adapted to engage two reel hubs of a magnetic tape cassette; projections arranged on said base plate; a plurality of elevations, said rocker arms having laterally mounted pegs which, when said slider member is ejected, disengage said rocker arms from said reel hub by running beneath said projections and, when said slider member is inserted, engage said rocker arms in said reel hub by running on said elevations; a pivotable closure flap mounted on said slider member and immobilizable in an extended and folded-up position; and means for immobilizing said pivotable closure flap.

3. The container as claimed in claim 1 or claim 2, wherein on the two longitudinal sides of said slider element there are arranged wedge-shaped control members penetrating the associated base plate and projecting above the upper side thereof for displacement of said sliding element.

4. The container as claimed in any one of the preceding claims, wherein each said rocker arm is attached to said slider member by an integral hinge.

5. The container as claimed in any one of the preceding claims, wherein elevations and projections are provided with ramps.

6. The container as claimed in any one of the preceding claims, wherein on said slider member there is mounted by way of an integral hinge a pivotable closure flap which can be immobilized in an extended and a folded-up position by a leaf spring biased between said slider member and said closure flap.



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7. A container as claimed in any one of the preceding claims substantially as hereinbefore described with reference to any one of Figures 1 to 5.

D A T E D this 27th day of November 1992.

fischerwerke Artur Fischer GmbH & Co. KG

By their Patent Attorneys:

CALLINAN LAWRIE



Abstract

Container (1) for magnetic tape cassettes (3) divided into separate receiving compartments (2) by base plates (5) on each of which there is mounted a lockable slider member (13) which can be ejected by means of a spring element (17) into a position in which the magnetic tape cassette (3) can be removed; on the slider member (13) there are arranged resilient locking devices that engage the two reel hubs (9) of the magnetic tape cassette, said locking devices being in the form of rocker arms (10) with laterally mounted pegs (20), which, as the slider member (13) is ejected, disengage the rocker arms from the reel hubs by running beneath projections (21) arranged on the base plate and, as the slider member is inserted, engage the rocker arms in the reel hubs by running onto elevations (18).

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Fig. 1

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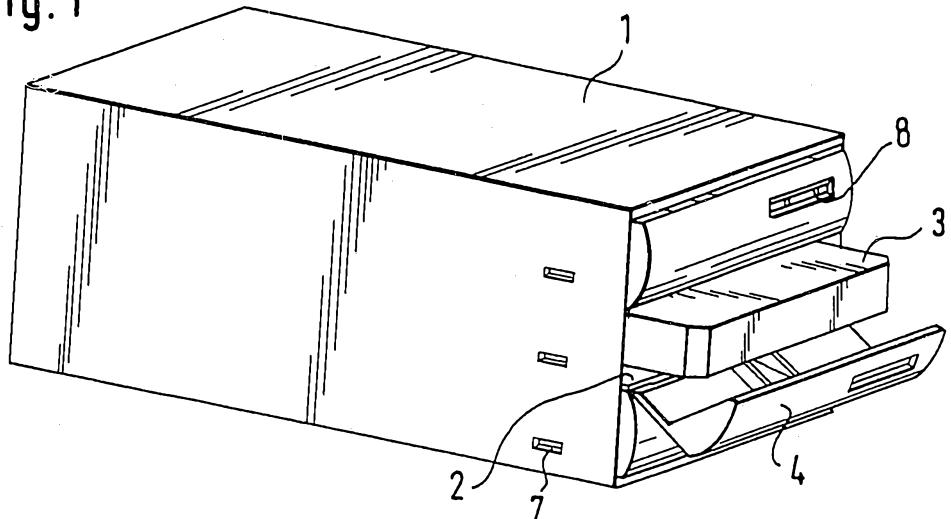


Fig. 2

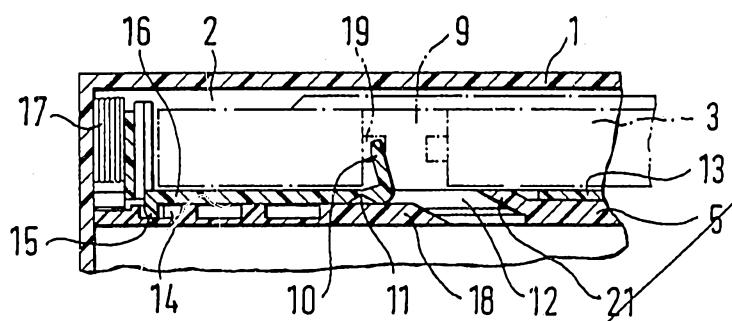
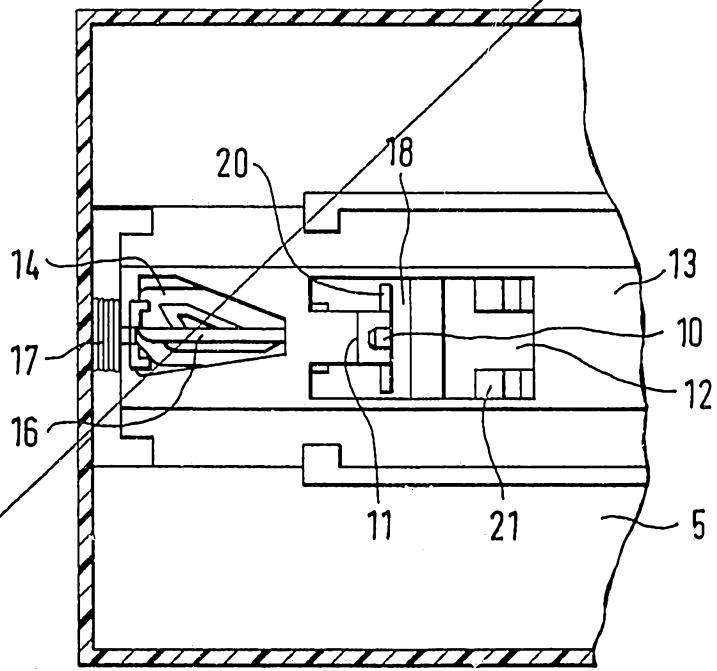


Fig. 2a



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Fig. 2

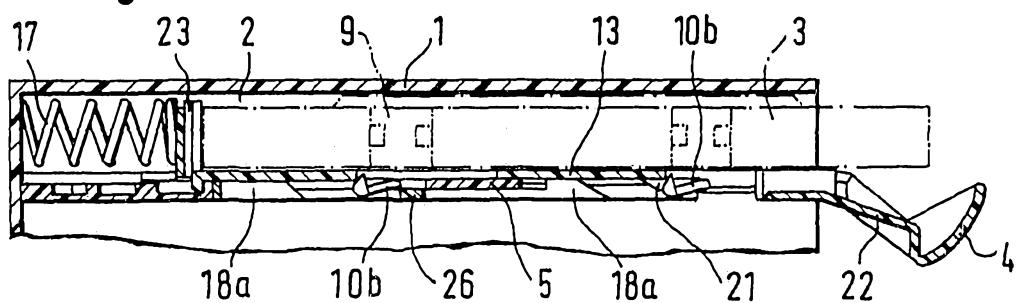


Fig. 3

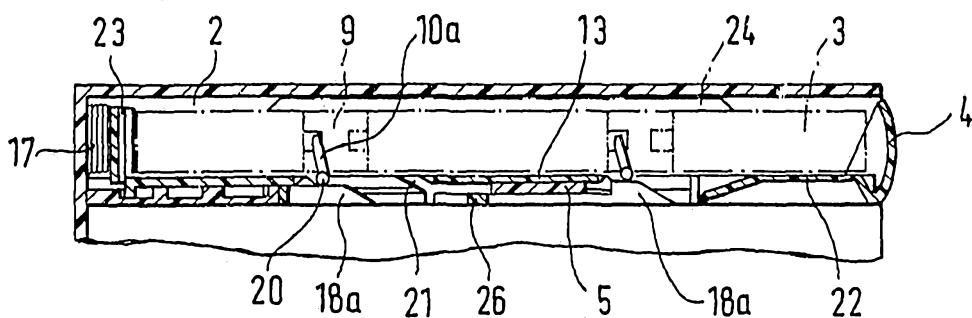


Fig. 4

