(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number : **0 364 872 B1**

(12) # EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification : **30.08.95 Bulletin 95/35**

(51) Int. Cl.[6] : **G08B 13/14,** G11B 33/04, G11B 23/023

(21) Application number : **89118894.8**

(22) Date of filing : **11.10.89**

(54) **Anti-theft device for compact discs and the like.**

(30) Priority : **17.10.88 IT 31688**

(43) Date of publication of application : **25.04.90 Bulletin 90/17**

(45) Publication of the grant of the patent : **30.08.95 Bulletin 95/35**

(84) Designated Contracting States : **AT BE CH DE ES FR GB GR IT LI LU NL SE**

(56) References cited :
WO-A-88/09141
DE-A- 2 335 965
DE-A- 2 433 570
DE-A- 2 811 535

(56) References cited :
DE-A- 2 837 610
DE-A- 3 742 020
FR-A- 2 248 575
GB-A- 2 106 770
US-A- 4 243 142

(73) Proprietor : **NECCHI S.r.l.**
Via L. Einaudi 8 Zona D 4
I-15100 Alessandria (IT)

(72) Inventor : **Necchi, Pietro**
Via Wagner 34
I-15100 Alessandria (IT)

(74) Representative : **Robba, Eugenio et al**
Studio "INTERPATENT"
via Caboto 35
I-10129 Turin (IT)

Note : Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid (Art. 99(1) European patent convention).

EP 0 364 872 B1

Description

The invention relates to an anti-theft device to be fitted in exhibitors for compact discs, music cassettes, video cassettes, or the like, according to the pre-characterizing part of claim 1.

An anti-theft device of this kind is known from the documents DE-A-2335965 and GB-A-2106770.

In both of the said documents an anti-theft device is described, that corresponds to the preamble of claim 1. In this device, the open side of each cassette-carrying frame, through which a cassette is insertable into the cassette-carrying frame and is withdrawable therefrom, is turned toward the side lying opposite to the channel-shaped support in which the cassette-carrying frames are stationary, but are pivotably mounted by means of opposite, coaxial holding pins.

Each cassette-carrying frame is formed by two half-frames, and at least one half-frame is provided at the cassette-carrying frame open side with a retaining abutment which is capable to overlap the matching side of the cassette placed in the cassette-carrying frame. At least one of the frame halves is sideward movable, i.e., it is slidable or tiltable, between a releasing, outwardly apart position in which the cassette can be extracted from the cassette-carrying frame, and a retaining, inwardly inserted position in which the cassette cannot be removed from the cassette-carrying frame. The movable frame half can be secured in its retaining position by means of a movable, i.e., slidable or tiltable, locking bar which is mounted on the mating side of the channel-shaped support, and is operable with a lock and a key.

The invention aims to provide an anti-theft device of the aforementioned kind, that is quite safe and reliable and at the same time not much noticeable, and furthermore is of a simple and economical construction.

This problem is solved by the invention by the combination of the features according to the characterizing part of claim 1.

Some preferred embodiments of the anti-theft device according to the invention, form the subject of the dependent claims.

Some embodiments of the invention will be disclosed more in detail hereinafter by referring to the accompanying drawings, in which:

Figure 1 is a perspective view showing a disc-carrying frame according to a first embodiment of the anti-theft device according to the invention.

Figure 2 is a perspective view showing the first embodiment of the anti-theft device according to the invention, with a disc-carrying frame in its constrained condition to the respective disc-carrying frame support.

Figures 3 to 6 show four successive steps of the operation for fitting a disc-carrying frame in the anti-theft device according to Figure 2, in a cross-sectional view through the respective disc-carrying frame support.

Figures 7 and 8 are two part-sectional top views of the anti-theft device according to Figures 1 to 6, with the bolt member being shown in Figure 7 in its disc-carrying frame releasing position, and in Figure 8 in its disc-carrying frame constraining position.

Figure 9 is an axial sectional view in an enlarged scale of one of the disc-carrying frame holding pins in a further embodiment of the anti-theft device according to the invention.

Figures 10 to 13 show four successive steps of the operation for fitting a disc-carrying frame according to Figure 9, in the anti-theft device according to the second embodiment of the invention.

Referring to Figures 1 to 8, the anti-theft device for compact discs, which is meant for being fitted in exhibitors for these discs, comprises a set of disc-carrying frames 1 having three sides formed with an internal groove 2, and a fourth side which is open, since it is formed with a longitudinal slot 3, through which a compact disc can be inserted into the respective disc-carrying frame 1, and engaged in the internal grooves 2 thereof. Thus, a compact disc housed in a disc-carrying frame 1 can be withdrawn therefrom only through the slot 3 in the said disc-carrying frame 1.

The two facing parallel surfaces of a disc-carrying frame 1, which delimit the slot 3 for insertion of a compact disc in the respective frame 1, can be provided with opposite projections 4, that can be formed by means of external depressions, and that allow to snappingly insert a compact discs therebetween, whereby a compact disc is prevented from fortuitously slipping out of its disc-carrying frame 1 through the said slot 3.

At both ends of their open side formed with the slot 3, a disc-carrying frame 1 has two disc-carrying frame holding cylindrical coaxial pins 5 and 6 which protrude from the opposite sides of the respective disc-carrying frame 1. The disc-carrying frame holding pin 6 provided on one side of a disc-carrying frame 1 (the right-hand side in the Figures), has its free end formed with an end section 106 of a reduced diameter. A helical spring M is fitted and engaged on the disc-carrying frame holding pin 5 provided on the other side of the disc-carrying frame 1.

The anti-theft device for compact discs also comprises a support designated as a whole by numeral 7, which forms an integrating part of an exhibitor for compact discs, or the like, or which can be fixed in any suitable manner to an exhibitor of this type, or the like.

The support 7 substantially is channel-shaped, and comprises two spaced apart, parallel sides 8, 9. In the shown embodiment, these sides 8, 9 have a

box-like, or almost box-like profile, and are interconnected by a flat bottom member 11. The casing 12 of a lock, such as a cylinder safety lock, which is operable by means of the respective key 13, is fixedly arranged at one end of the channel-shaped support 7, between the sides 8, 9 thereof.

Both sides 8, 9 of the channel-shaped support 7 have each a series of equispaced respective holes 18, 19 which are formed in opposite positions in the facing walls of the said sides 8, 9. The holes 18 formed in the side 8 of the channel-shaped support 7 are coaxial to the holes 19 formed in the opposite side 9 of the said support 7. The diameter of all the holes 18, 19 in the sides 8, 9 is slightly greater than the diameter of the disc-carrying frame holding pins 5, 6.

From each hole 19 formed in the side 9 of the channel-shaped support 7 (the right-hand side in the Figures), which is associated with the disc-carrying frame holding pins 6 formed with a reduced diameter end section 106, a notch 29 extends to the free edge of the said side 9 (in the shown example, up to the upper edge thereof), and is of a width which is smaller than the diameter of the disc-carrying frame holding pins 6, but which is slightly greater than the diameter of the said pin 6 end section 106 of a reduced diameter.

Housed in the opposite side 8 of the channel-shaped support 7 (the left-hand side in the Figures), is a bolt member 16 which is longitudinally slidably guided therein, and extends substantially over the whole expanse of the respective side 8, and is formed with a series of holes 116, which are equispaced by the same distance as the holes 18 formed in the side 8 of said support 7. The holes 116 in the bolt member 16 lie at the same level as the holes 18 in the said side 8. In the shown embodiment, the slidable bolt member 16 is a channel member, but the same may have, similarly to the sides 8, 9, any other suitable profile, different from the shown profile.

The bolt member 16 is connected with the mechanism of the lock 12 in any suitable manner, such as by means of a latch 112 which is operated by the lock 12 and is engaged in a respective hole in the bolt member 16. Thus, the bolt member 16 can be alternately moved at will by means of the key 13, into a disc-carrying frame releasing position, and into a disc-carrying frame constraining position. The disc-carrying frame releasing position is shown in Figures 3, 4, 5, and 7, and in such a position the holes 116 in the bolt member 16 come to coincide with the holes 18 in the matching side 8 of the channel-shaped support 7, whereby a disc-carrying frame 1 can be fitted in the said support 7, and can be disconnected therefrom, as disclosed hereinafter. The disc-carrying frame constraining position is shown in Figures 2, 6, and 8, and in such a position the holes 116 in the bolt member 16 come to be offset from the holes 18 in the side 8 of the channel-shaped support 7, so that the holes 18 in the wall of the said side 8 are at least partly closed from the outside by the bolt member 16, whereby a disc-carrying frame 1 is thus constrained to both sides 8, 9 of the said support 7, as disclosed hereinafter.

The transversal clearance between the two sides 8, 9 of the channel-shaped support 7 is slightly greater than the width of a disc-carrying frame 1. Thus, a disc-carrying frame 1 can be fitted between the two sides 8, 9 of the channel-shaped support 7 for a set of disc-carrying frames 1, with its open side (slot 3) turned toward the bottom member 11 of the said support 7, by causing the frame-holding side pins 5, 6 in this disc-carrying frame 1 to be engaged in two opposite holes 18 and 19 in the sides 8, 9 of the channel-shaped disc-carrying frame support 7. In order to have a disc-carrying frame fitted between the said sides 8, 9, the bolt member 16 is moved into its disc-carrying frame releasing position (Figures 3, 4, 5, and 7), and by inclining this disc-carrying frame 1 transversely to the bottom 11 of the channel-shaped disc-carrying frame support 7, and by holding this frame 1 against the bolt member 16, its frame-holding pin 5 provided with a spring M, is fitted into a hole 18 in the side 8 of the said support 7, and into the coinciding hole 116 in the bolt member 16, so that the spring M, which is caused to cooperate with the said side 8, will be compressed, as shown in Figure 3. This disc-carrying frame 1 being held against the bolt member 16, so that the loaded condition of spring M is being maintained, is then returned into its normal horizontal position, substantially parallel to the bottom member 11 of the channel-shaped disc-carrying frame support 7. Thus, the opposite frame-holding pin 6 of this disc-carrying frame 1 is engaged by means of its reduced diameter end section 106, in a notch 29 in the respective side 9 of the channel-shaped disc-carrying frame support 7, and is moved down and fitted into the relative hole 19 formed in the said side 9, as shown in Figure 4. The said disc-carrying frame 1 being no more held against the bolt member 16, is then urged by the loaded spring M, transversely to the channel-shaped disc-carrying frame support 7, toward the opposite side 9 thereof, (toward the right in the Figures), so that the disc-carrying frame holding pin 5 will be disengaged from the hole 116 in the bolt member 16, while being still kept engaged in the hole 18 in the respective side 8 of the disc-carrying frame support 7, and the opposite disc-carrying frame holding pin 6 will be simultaneously engaged in the respective hole 19 in the opposite side 9 of the said support 7, as shown in Figure 5. The bolt member 16 is finally moved into its disc-carrying frame constraining position (Figures 1, 6, and 8), in which it provides an abutment for the fore end of the respective disc-carrying frame holding pin 5 to bear there-against, whereby it prevents a disc-carrying frame 1 from being moved transversely to the channel-shaped disc-

carrying frame support 7, away from the one or the other side 8, 9 thereof, to such an extent that the one or the other of its disc-carrying frame holding pins 5, 6 may be disengaged from the respective holes 18, 19 in the sides 8, 9 of the said support 7.

In such a constrained condition, a disc-carrying frame 1 can be turned, about its frame-holding pins 5, 6, in the holes 18, 19 formed in both sides 8, 9, of the channel-shaped disc-carrying frame support 7, so that this frame is pivotable relative to the said support 7, from a forwardly inclined position to a rearwardly inclined position, and vice-versa. It is thus possible to screen as usual the compact discs contained in a plurality of disc-carrying frames 1, which as described above, are fitted the one after the other in the disc-carrying frame support 7, and are each held in a pair of respective opposite holes 18, 19 formed in both sides 8, 9 of support 7. At the same time, it is impossible to draw a compact disc out of the respective disc-carrying frame 1, since the open side (slot 3) of this disc-carrying frame 1 is turned toward the bottom member 11 of the disc-carrying frame support 7, so that it is beyond reach. The fact that the compact discs are retained in the respective disc-carrying frame 1 by being snappingly engaged between the projections 4 in the respective disc-carrying frame 1, prevents the discs from accidentally slipping out of the said frame 1, and from contacting the bottom member 11 of the disc-carrying frame support 7.

To draw a compact disc out of the respective disc-carrying frame 1, the said frame has to be removed from its support 7. For such a removal, the bolt member 16 shall be moved by means of the key 13, into its disc-carrying frame releasing position (Figures 3, 4, 5, and 7), and the disc-carrying frame holding pins 5, 6 shall be disengaged from the sides 8, 9 of the disc-carrying frame support 7, by reversing the operation by which the said pins 5, 6 have been engaged in the disc-carrying frame support 7.

The embodiment of the anti-theft device according to the invention, which is shown in Figures 9 to 13, substantially corresponds to the embodiment as described above by referring to Figures 1 to 8. However, in the embodiment according to Figures 9 to 13, the pin for holding the disc-carrying frame 1 in the wall of side 8 of the channel-shaped disc-carrying frame support 7, which is associated with the bolt member 16, has no spring M fitted thereon, but consists of a disc-carrying frame holding pin 50, which is a sprung pin, so that this pin 50 is elastically yieldable in the axial direction, and is provided with a tapering end section 150. This axially sprung disc-carrying frame holding pin 50 can be made in many different ways. One possible embodiment of this pin 50 is shown in Figure 9. According to this embodiment, a cylindrical hollow cap 51 forming the real and proper disc-carrying frame holding pin 50, and being provided with a tapering end section 150, is axially slidably fitted on a preferably hollow coaxial guide pin 52 being integral with the respective side of a disc-carrying frame 1. Fitted between the bottom,of the hollow guide pin 52 and the fore end side of the slidable cylindrical cap 51 is a helical spring M1 urging outwardly the slidable cap 51. By means of abutments 53, 54, the axially slidable cap 51 is engaged in the guide pin 52. Many other embodiments of sprung pins of this type are however contemplated by the known art, and may be just used in place of the described pin according to Figure 9.

In the embodiment of the anti-theft device shown in Figures 9 to 13, from each one of the holes 18 formed in the side 8 of the disc-carrying frame support 7, which is associated with the bolt member 16, a notch 28 similarly extends to the free edge, and partly into the upper surface of the said side 8. The width of the notches 28 is smaller than the diameter of the sprung disc-carrying frame holding pin 51, but is slightly greater than the diameter of the tapering end section 150 of said pin 50. The holes 216 formed in the bolt member 16, which are susceptible to coaxially coincide with the holes 18 in the side 8 of the disc-carrying frame support 7, with the bolt member being set in its disc-carrying frame releasing position, have a diameter which is smaller than the diameter of the sprung disc-carrying frame holding pin 50, but which is slightly greater than the diameter of the tapering end section 150 of said pin 50.

The procedure for fitting a disc-carrying frame 1 in an anti-theft device according to the embodiment shown in Figures 9 to 13, is as follows:

The bolt member 16 is moved, into its disc-carrying frame releasing position, and the sprung frame-holding pin 50 in a disc-carrying frame 1 is fitted into a hole 18 in the relative side 8 of the disc-carrying frame support 7, by causing at first its tapering end section 150 to be fitted into the notch 28 in the said hole 18, and by inclining the disc-carrying frame 1 transversely to the channel-shaped disc-carrying frame support 7, as shown in Figure 10. Nextly, the disc-carrying frame is moved transversely toward the side 8 of the said support 7, which is associated with the bolt member 16. Thus, the tapering end section 150 of the sprung disc-carrying frame holding pin 50 is engaged in a hole 216 in the bolt member 16, and the said pin 50 is caused to bear endwise against the bolt member 16, and it is "squeezed", since it elastically yields in the axial direction, so that its spring M1 will be compressed, as shown in Figure 10. The inclined disc-carrying frame 1 being still held toward and against the bolt member 16, is then returned into its normal horizontal position, substantially parallel to the bottom member 11 of the channel-shaped disc-carrying frame support 7, and its opposite disc-carrying frame holding pin 6 is simultaneously fitted by means of its reduced diameter end section 106, into the notch 29 in the respective side

9 of the said support 7, and is then moved down and engaged in the respective hole 19 formed in the said side, as shown in Figure 12. Thereafter, the disc-carrying frame 1 being no more held against the bolt member, will be automatically moved transversely to the channel-shaped disc-carrying frame support 7, toward the opposite side of the said support 7, owing to the original length of the sprung disc-carrying frame holding pin 50 being elastically restored, as a result of the elastic recovery of its spring M1. Thus, the disc-carrying frame holding pin 6 lying opposite to the said sprung pin 50, is engaged in the respective hole 19 formed in the side 9 of the channel-shaped disc-carrying frame support 7, as shown in Figure 12. The bolt member 16 is finally moved into its disc-carrying frame constraining position, and by being so moved, it expels the tapering end section 150 of the sprung disc-carrying frame holding pin 50 from the respective hole 216 in the bolt member 16, so that the disc-carrying frame 1 is urged against the opposite side 9 of the channel-shaped disc-carrying frame support 7, and the sprung disc-carrying frame holding pin 50 is axially "squeezed", since its expanse is so reduced as a result of its spring M1 being compressed, that the said pin 50 is no more allowed to elastically yield by an appreciable extent in the axial direction, as shown in Figure 13. With the squeezed sprung pin 50 being set in this position, in which this pin 50 is still engaged in the respective hole 18 in the side 8 of the channel-shaped disc-carrying frame support 7, and is caused to bear with its tapering end section 150 against the bolt member 16 locked in its disc-carrying frame constraining position, the disc-carrying frame 1 can be no more removed from the one or the other side 8, 9 of the said support 7, to such an extent that the tapering end section 150, or the reduced diameter end section 106, respectively of the disc-carrying frame holding pin 50, and of the disc-carrying frame holding pin 6, may not be moved to the notch 28, 29 in the associated side 8, 9, whereby the disc-carrying frame 1 is prevented from being released from the sides 8, 9 of the disc-carrying, frame support 7.

Of course, the invention is not limited to the above described and shown embodiments, and the same may be widely changed and modified, the more so in construction, so as to be adapted to any particular manufacturing requirements and suitabilities. Thus, for example, instead of being a clear frame, the disc-carrying frame 1 may be provided with proper flat members for closing one or both of its faces, so that when both of its faces are closed, the said frame is given the form of a flat box, with one open side (slot 3). The anti-theft device according to the invention, is however not limited to the application in exhibitors for compact discs, but the same may be adavantageously used, by adapting as required its construction and size, also in exhibitors for any other articles, such as music cassettes, video cassettes, and the like. For such a purpose, the disc-carrying frames or boxes 1 will be so made and sized as to be capable to contain each a video cassette, or two music cassettes arranged side by side, or the like. The channel-shaped disc-carrying frame support 7 may be fitted in an exhibitor and may be oriented in any suitable manner, more particularly, the bottom member 11 of said support 7 may be placed either in a horizontal, or in an inclined, or vertical plane.

Claims

1. An anti-theft device to be fitted in exhibitors for compact discs, music cassettes, video cassettes, or the like, comprising:

   a) A set of disc-carrying frames (1) provided with an open side (slot 3) through which a compact disc is insertable into the respective disc-carrying frame (1) and is withdrawable therefrom, each disc-carrying frame (1) being provided at opposite ends of one of its sides with coaxial disc-carrying frame holding pins (5, 6) protruding from the disc-carrying frame (1),

   b) a channel-shaped disc-carrying frame support (7) with both of its sides (8, 9) being provided with a series of coaxial opposite holes (18, 19), two in number for each disc-carrying frame (1), having each a diameter which is slightly greater than the diameter of the disc-carrying frame holding pins (5, 6),

   c) disc-carrying frame holding pins (5, 6) pivotably fitted into either of two associated, opposite coaxial holes (18, 19) in the sides (8, 9) of the channel-shaped support (7),

   characterized by the combination of the following features:

   d) the holding pins (5, 6) are provided at opposite ends of the open side of the disc-carrying frame (1), and this open side of the disc-carrying frame (1) is turned toward the channel-shaped support (7),

   e) a means is provided for constraining and releasing the disc-carrying frame holding pins (5, 6) to and from the sides (8, 9) of the channel-shaped support (7),

   f) said means consists of a bolt member (16) which is arranged on the outward wall at one side (8) at least of the said channel-shaped support (7), and is slidably guided along the said side (8), and is formed with a series of holes (116, 216) of a diameter which is slightly greater than the diameter of the disc-carrying frame holding pins (5, 6), the said holes (116, 216) being equally spaced apart by the same distance as the respective holes (18) formed

in the side (8) of the channel-shaped suport (7),
g) the said bolt member (16) is movable by means of a lock (12) with a key (13) so as to be caused to take alternately:
h) a disc-carrying frame releasing position, in which its holes (116, 216) come to coincide with the holes (18) in the said side (8) of the channel-shaped support (7), whereby a disc-carrying frame (1) can be so positioned and moved transversely to the sides (8, 9) of the channel-shaped support (7), as to cause its frame-holding pins (5, 6) to be engaged the one after the other in the respective, coaxial opposite holes (18, 19) formed in either sides (8, 9) of the said support (7), and to be disengaged from the said holes (18, 19), a disc-carrying frame being thus pivotably fitted-in between the two sides (8, 9) of the said channel-shaped support (7), or being disconnected therefrom, and
i) a disc-carrying frame constraining position, in which the holes (116, 216) in the bolt member (16) come to be offset from the holes (18) in the matching side (8) of the channel-shaped support (7), these latter holes (18) being at least partly closed from the outside by the bolt member (16) itself, whereby a disc-carrying frame (1) is prevented from being moved transversely to the sides (8, 9) of the said channel-shaped support (7), to such an extent that would be sufficient for its frame-holding pins (5, 6) to be disengaged from the respective, coaxial opposite holes (18, 19) in the said sides (8, 9).

2. The anti-theft device according to Claim 1, characterized in that an elastic member, such as a helical spring (M), is provided on each one of the disc-carrying frame holding pins (5) to be engaged in a respective hole (18) formed in the side (8) of the channel-shaped disc-carrying frame support (7), which is associated with the bolt member (16), and is caused to cooperate with the said side (8), the opposite disc-carrying frame holding pins (6) being each formed with a reduced diameter end section (106), and a notch (29) extends from each one of the holes (19) in the respective side (9) of the channel-shaped disc-carrying frame support (7), and is formed substantially radially to the respective hole (19), and transversely to the said side (9), and reaches at least to the free edge thereof, the said notch having a width which is smaller than the diameter of the respective disc-carrying frame holding pin (6), but which is slightly greater than the reduced diameter end section of said pin (6).

3. The anti-theft device according to Claim 1, characterized in that the frame-holding pin (5) and the frame-holding pin (6) in a disc-carrying frame (1) are respectively formed with a tapering end section (150) and with 1 a reduced diameter end section (106), and a notch (28, 29) extends radially from each hole (18, 19) in either sides (8, 9) of the channel-shaped disc-carrying frame support (7), and is of a width which is smaller than the diameter of the 5 respective disc-carrying frame holding pin (50, 6), but is slightly greater than the diameter of the tapering end section (150) and the reduced diameter end section (106) of the respective disc-carrying frame holding pin (50, 6), the frame-holding pin (50) turned toward the side (8) of support (7), which is associated with the bolt member (16), being axially sprung, so that this pin (50) is elastically yieldable in the axial direction, and the holes (216) formed in the bolt member (16) have a diameter which is smaller than the diameter of the respective disc-carrying frame holding pin (50), but is slightly greater than the diameter of the tapering end section (150) of the said pin (50).

4. The anti-theft device according to any one or more of the preceding Claims, characterized in that the sides (8, 9) of the channel-shaped disc-carrying frame support (7) have a box-like, or almost box-like profile, and are interconnected by a bottom member (11).

5. The anti-theft device according to any one or more of the preceding Claims, characterized in that the bolt member (16) has a box-like, or almost box-like profile, such as a C profile.

6. The anti-theft device according to any one or more of the preceding Claims, characterized in that the bolt member (16) is connected with the angularly movable latch (112) of a lock (12) which is fixedly arranged in the channel-shaped disc-carrying frame support (7), between the two sides (8, 9) thereof.

Patentansprüche

1. Anti-Diebstahlvorrichtung zum Einbau in Schaukästen für CD-Platten, Musik-Kassetten, Video-Kassetten, oder dergleichen, umfassend:
a) einen Satz Rahmen (1) zur Aufnahme von Kassetten, mit einer offenen Seite (Schlitz 3), durch die eine Kassette in den entsprechenden Rahmen (1) zur Aufnahme von Kassetten einschiebbar und wieder daraus entnehmbar ist, wobei jeder Rahmen (1) zur Aufnahme von Kassetten an den gegenüberliegenden En-

den einer seiner Seiten mit koaxialen Haltezapfen (5, 6) für den Rahmen zur Aufnahme von Kassetten versehen ist, die gegenüber dem Rahmen (1) zur Aufnahme von Kassetten vorstehen,

b) eine kanalförmige Halterung (7) für den Rahmen zur Aufnahme von Kassetten, wobei beide Seiten (8, 9) derselben mit einer Reihe von einander koaxial gegenüberliegenden Bohrungen (18, 19) versehen sind, und zwar jeweils zwei für jeden Rahmen (1) zur Aufnahme von Kassetten, die jeweils einen Durchmesser aufweisen, der geringfügig größer ist als der Durchmesser der Haltezapfen (5, 6) des Rahmens zur Aufnahme von Kassetten,

c) Haltezapfen (5, 6) des Rahmens zur Aufnahme von Kassetten, welche schwenkbar in zwei einander zugeordneten, einander gegenüberliegenden koaxialen Bohrungen (18, 19) in den Seiten (8, 9) der kanalförmigen Halterung (7) eingepaßt sind,

gekennzeichnet durch die Kombination der folgenden Merkmale:

d) die Haltezapfen (5, 6) sind an einander gegenüberliegenden Enden der offenen Seite des Rahmens (1) zur Aufnahme von Kassetten vorgesehen und diese offene Seite des Rahmens (1) zur Aufnahme von Kassetten ist gegen die kanalförmige Halterung (7) gerichtet,

e) es sind Mittel vorgesehen zum Einsetzen der Haltezapfen (5, 6) des Rahmens zur Aufnahme von Kassetten in und zum Freigeben derselben aus den Seiten (8, 9) der kanalförmigen Halterung (7),

f) diese Mittel bestehen aus einem Bolzenteil (16), der an der Außenwand an zumindest einer Seite (8) der kanalförmigen Halterung (7) angeordnet ist und der gleitend entlang dieser Seite (8) geführt ist und eine Reihe von Bohrungen (116, 216) aufweist, deren Durchmesser geringfügig größer ist als der Durchmesser der Haltezapfen (5, 6) des Rahmens zur Aufnahme von Kassetten, wobei die Bohrungen (116, 216) in gleichmäßigen Abständen gleich jenen Abständen der entsprechenden Bohrungen (18) in der Seite (8) der kanalförmigen Halterung (7) angeordnet sind,

g) der Bolzenteil (16) ist mittels eines Verschlusses (12) mit einem Schlüssel (13) so verschiebbar, daß er alternierend:

h) eine Stellung zur Freigabe des Rahmens zur Aufnahme von Kassetten einnimmt, in der dessen Bohrungen (116, 216) sich mit den Bohrungen (18) in der Seite (8) der kanalförmigen Halterung (7) decken, wobei der Rahmen (1) zur Aufnahme von Kassetten so positioniert und quer zu den Seiten (8, 9) der kanalförmigen Halterung (7) verschiebbar ist, daß die Haltezapfen (5, 6) des Rahmens einer nach dem anderen in die entsprechenden koaxialen, gegenüberliegenden Bohrungen (18, 19) einrasten, die in den beiden Seiten (8, 9) der kanalförmigen Halterung (7) vorgesehen sind und aus diesen Bohrungen (18, 19) gelöst werden, so daß ein Rahmen zur Aufnahme von Kassetten somit schwenkbar zwischen den beiden Seiten (8, 9) der kanalförmigen Halterung (7) eingesetzt oder daraus entnommen werden kann, und

i) eine Stellung zum Einsetzen des Rahmens zur Aufnahme von Kassetten einnimmt, in der die Bohrungen (116, 216) im Bolzenteil (16) bezogen auf die Bohrungen (18) in der entsprechenden Seite (8) der kanalförmigen Halterung (7) versetzt sind, wobei die Bohrungen (18) zumindest teilweise von außen durch den Bolzenteil (16) selbst abgedeckt sind und dadurch verhindert wird, daß ein Rahmen (1) zur Aufnahme von Kassetten quer zu den Seiten (8, 9) der kanalförmigen Halterung (7) in dem Ausmaß bewegbar ist, das ausreichen würde, um die Haltezapfen (5, 6) des Rahmens aus den jeweiligen koaxialen gegenüberliegenden Bohrungen (18, 19) in den Seiten (8, 9) zu lösen.

2. Anti-Diebstahlvorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß ein elastischer Teil, wie beispielsweise eine Schraubenfeder (M), an jedem Haltezapfen (5) des Rahmens zur Aufnahme von Kassetten vorgesehen ist, der in eine entsprechende Bohrung (18) eingreift, die in der Seite (8) der kanalförmigen Halterung (7) für den Rahmen zur Aufnahme von Kassetten ausgebildet ist, welche dem Bolzenteil (16) zugeordnet ist und zwangsweise mit der Seite (8) zusammenwirkt, und jeder gegenüberliegende Haltezapfen (6) des Rahmens zur Aufnahme von Kassetten einen Endabschnitt (106) mit verkleinertem Durchmesser aufweist und sich von jeder der Bohrungen (19) eine Raste (29) in die entsprechende Seite (9) der kanalförmigen Halterung (7) des Rahmen zur Aufnahme von Kassetten erstreckt und im wesentlichen radial zur entsprechenden Bohrung (19) und quer zur Seite (9) ausgebildet ist und zumindest bis zu dessen freies Ende reicht, wobei diese Raste eine Breite aufweist, die kleiner ist als der Durchmesser des entsprechenden Haltezapfens (6) des Rahmens zur Aufnahme von Kassetten, jedoch geringfügig größer ist als der Endabschnitt mit verkleinertem Durchmesser des Haltezapfens (6).

3. Anti-Diebstahlvorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß der Haltezapfen (5)

und der Haltezapfen (6) am Rahmen (1) zur Aufnahme von Kassetten jeweils mit einem kegelförmigen Endabschnitt (150) und einem Endabschnitt (106) mit verkleinertem Durchmesser ausgebildet sind und eine Raste (28, 29) sich radial von jeder Bohrung (18, 19) in die zwei Seiten (8, 9) der kanalförmigen Halterung (7) des Rahmens zur Aufnahme von Kassetten erstreckt und eine Breite aufweist, die kleiner ist als der Durchmesser des entsprechenden Haltezapfens (50, 6) des Rahmens zur Aufnahme von Kassetten, jedoch geringfügig größer ist als der Durchmesser des kegelförmigen Endabschnittes (150) und des Endabschnittes (106) mit dem verkleinerten Durchmesser des entsprechenden Haltezapfens (50, 6) des Rahmens zur Aufnahme von Kassetten, wobei der Haltezapfen (50) des Rahmens, der zur Seite (8) der kanalförmigen Halterung (7) gerichtet ist, die dem Bolzenteil (16) zugeordnet ist, axial gefedert ist, so daß der Haltezapfen (50) in axialer Richtung elastisch nachgibt, und die im Bolzenteil (16) ausgebildeten Bohrungen (216) einen Durchmesser aufweisen, der kleiner ist als der Durchmesser des entsprechenden Haltezapfens (50) des Rahmens zur Aufnahme von Kassetten, jedoch geringfügig grösser ist als der Durchmesser des kegelförmigen Endabschnittes (150) dieses Haltezapfens (50).

4. Anti-Diebstahlvorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Seiten (8, 9) der kanalförmigen Halterung (7) für die Rahmen zur Aufnahem von Kassetten ein kastenförmiges, oder fast kastenförmiges Profil aufweisen und über einen Bodenteil (11) miteinander verbunden sind.

5. Anti-Diebstahlvorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der Bolzenteil (16) ein kastenförmiges, oder fast kastenförmiges Profil, wie beispielsweise ein C-Profil, aufweist.

6. Anti-Diebstahlvorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der Bolzenteil (16) mit einer winkelig bewegbaren Klinke (112) eines Verschlusses (12) verbunden ist, der fest zwischen den Seiten (8, 9) in der kanalförmigen Halterung (7) für die Rahmen zur Aufnahme von Kassetten angeordnet ist.

Revendications

1. Dispositif antivol à installer dans des présentoirs pour disques compacts, cassettes audio, cassettes vidéo, ou analogues, comprenant :

a) un ensemble de cadres porte-disques (1), prévus avec un côté ouvert (fente 3) à travers lequel un disque compact peut être inséré dans le cadre porte-disque respectif (1) et peut être retiré de celui-ci, chaque cadre porte-disque (1) étant pourvu aux extrémités opposées de l'un de ses côtés de picots coaxiaux (5, 6) de maintien du cadre porte-disque, saillant à partir du cadre porte-disque (1),

b) un support de cadre porte-disque, en forme de canal (7) avec ses deux côtés (8, 9) pourvus d'une série de trous coaxiaux opposés (18, 19), au nombre de deux pour chaque cadre porte-disque (1), ayant chacun un diamètre qui est légèrement plus grand que le diamètre des picots (5, 6) de maintien du cadre porte-disque,

c) des picots (5, 6) de maintien du cadre porte-disque adaptés de façon pivotante dans l'un ou l'autre de deux trous coaxiaux opposés associés (18, 19) dans les côtés (8, 9) du support en forme de canal (7),

caractérisé par la combinaison des caractéristiques suivantes :

d) les picots (5, 6) de maintien sont prévus aux extrémités opposées du côté ouvert du cadre porte-disque (1), et ce côté ouvert du cadre porte-disque (1) est tourné vers le support en forme de canal (7),

e) des moyens sont prévus pour retenir et relâcher les picots (5, 6) de maintien du cadre porte-disque vers et à partir des côtés (8, 9) du support en forme de canal (7),

f) lesdits moyens consistent en un élément de barreau (16) qui est disposé sur la paroi extérieure d'un côté (8) au moins dudit support en forme de canal (7), et est guidé de façon coulissante le long dudit côté (8), et est formé avec une série de trous (116, 216) d'un diamètre qui est légèrement plus grand que le diamètre des picots (5, 6) de maintien du cadre porte-disque, lesdits trous (116, 216) étant également espacés l'un de l'autre de la même distance que les trous respectifs (18) formés dans le coté (8) du support en forme de canal (7),

g) ledit élément de barreau (16) peut être déplacé au moyen d'un verrou (12) avec une clé (13) de façon à être amené à prendre alternativement :

h) une position de relâchement du cadre porte-disque, dans laquelle ses trous (116, 216) viennent coïncider avec les trous (18) dans ledit côté (8) du support en forme de canal (7), ce qui a pour conséquence qu'un cadre porte-disque (1) peut être positionné et déplacé transversalement vers les côtés (8, 9) du sup-

port en forme de canal (7), pcur amener ses picots (5, 6) de maintien du cadre à s'engager l'un après l'autre dans les trous coaxiaux opposés respectifs (18, 19), formés dans les deux côtés (8, 9) dudit support (7), et à se désengager desdits trous (18, 19), un cadre porte-disque étant ainsi installé de fçon pivotante entre les deux côtés (8, 9) dudit support en forme de canal (7), ou étant détaché de ceux-ci, et

i) une position de retenue du cadre porte-disque, dans laquelle les trous (116, 216) dans l'élément de barreau (16) viennent à être décalés des trous (18) dans le côté correspondant (8) du support en forme de canal (7), ces derniers trous (18) étant au moins en partie obturés depuis l'extérieur par l'élément de barreau (16) lui-même, ce qui a pour conséquence qu'un cadre porte-disque (1) est empêché d'être déplacé transversalement vers les côtés (8, 9) dudit support en forme de canal (7), dans une mesure qui serait suffisante pour que ses picots (5, 6) de maintien du cadre soient désengagés des trous coaxiaux opposés respectifs (18, 19) dans lesdits côtés (8, 9).

2. Dispositif antivol suivant la revendication 1, caractérisé en ce qu'un élément élastique, tel qu'un ressort hélicoïdal (M), est prévu sur chacun des picots (5) de maintien du cadre porte-disque à engager dans un trou respectif (18) formé dans le côté (8) du support de cadre porte-disque en forme de canal (7), qui est associé à l'élément de barreau (16), et est amené à coopérer avec ledit côté (8), chacun des picots opposés (6) de maintien du cadre porte-disque étant formé avec une section d'extrémité de diamètre réduit (106), et en ce qu'une encoche (29) s'étend à partir de chacun des trous (19) dans le côté respectif (9) du support de cadre porte-disque en forme de canal (7), et est formée substantiellement radialement jusqu'au trou respectif (19), et transversalement jusqu'audit côté (9), et atteint au moins le bord libre de celui-ci, ladite encoche ayant une largeur qui est plus petite que le diamètre du picot (6) respectif de maintien du cadre porte-disque, mais qui est légèrement plus grande que la section d'extrémité de diamètre réduit dudit picot (6).

3. Dispositif antivol suivant la revendication 1, caractérisé en ce que le picot (5) de maintien du cadre et le picot (6) de maintien du cadre dans un cadre porte-disque (1) sont respectivement formés avec une section d'extrémité en pointe (150) et avec une section d'extrémité de diamètre réduit (106), et en ce qu'une encoche (28, 29) s'étend radialement partir de chaque trou (18, 19) dans l'un ou l'autre des côtés (8, 9) du support de cadre porte-disque en forme de canal (7), et a une largeur qui est plus petite que le diamètre du picot (50, 6) respectif de maintien du cadre porte-disque, mais légère ment plus grande que le diamètre de la section d'extrémité en pointe (150) et de la section d'extrémité de diamètre réduit (106) du picot (50, 6) respectif de maintien du cadre porte-disque, le picot (50) de maintien du cadre tourné vers le côté (8) du support (7), qui est associé à l'élément de barreau (16), faisant saillie axialement, de telle façon que ce picot (50) soit élastiquement escamotable en direction axiale, les trous (216) formés dans l'élément de barreau (16) ayant un diàmètre qui est plus petit que le diamètre du picot (50) respectif de maintien du cadre porte-disque, mais légèrement plus grand que le diamètre de la section d'extrémité en pointe (150) dudit picot (50).

4. Dispositif antivol suivant l'une quelconque ou plusieurs des revendications précédentes, caractérisé en ce que les côtés (8, 9) du support de cadre porte-disque en forme de canal (7) ont un profil en forme de boîte, ou presque en forme de boîte, et sont réunis par un élément de fond (11).

5. Dispositif antivol suivant l'une quelconque ou plusieurs des revendications précédentes, caractérisé en ce que l'élément de barreau (16) a un profil en forme de boîte, ou presque en forme de boîte, tel qu'un profil en C.

6. Dispositif antivol suivant l'une quelconque ou plusieurs des revendications précédentes, caractérisé en ce que l'élément de barreau (16) est raccordé au loquet angulairement mobile (112) d'un verrou (12) qui est fixement disposé dans le support de cadre porte-disque en forme de canal (7), entre les deux côtés (8, 9) de celui-ci.

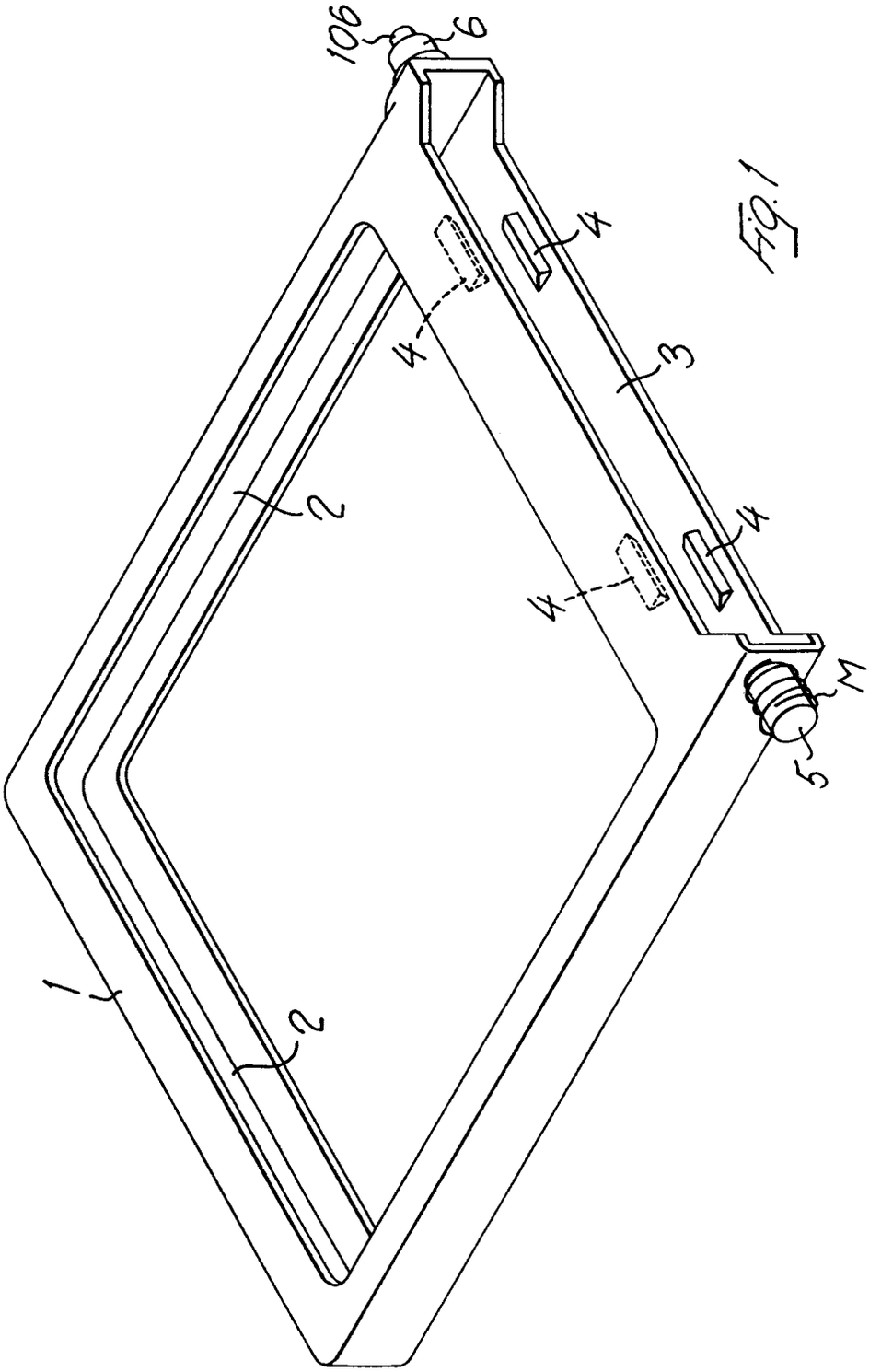


Fig. 1

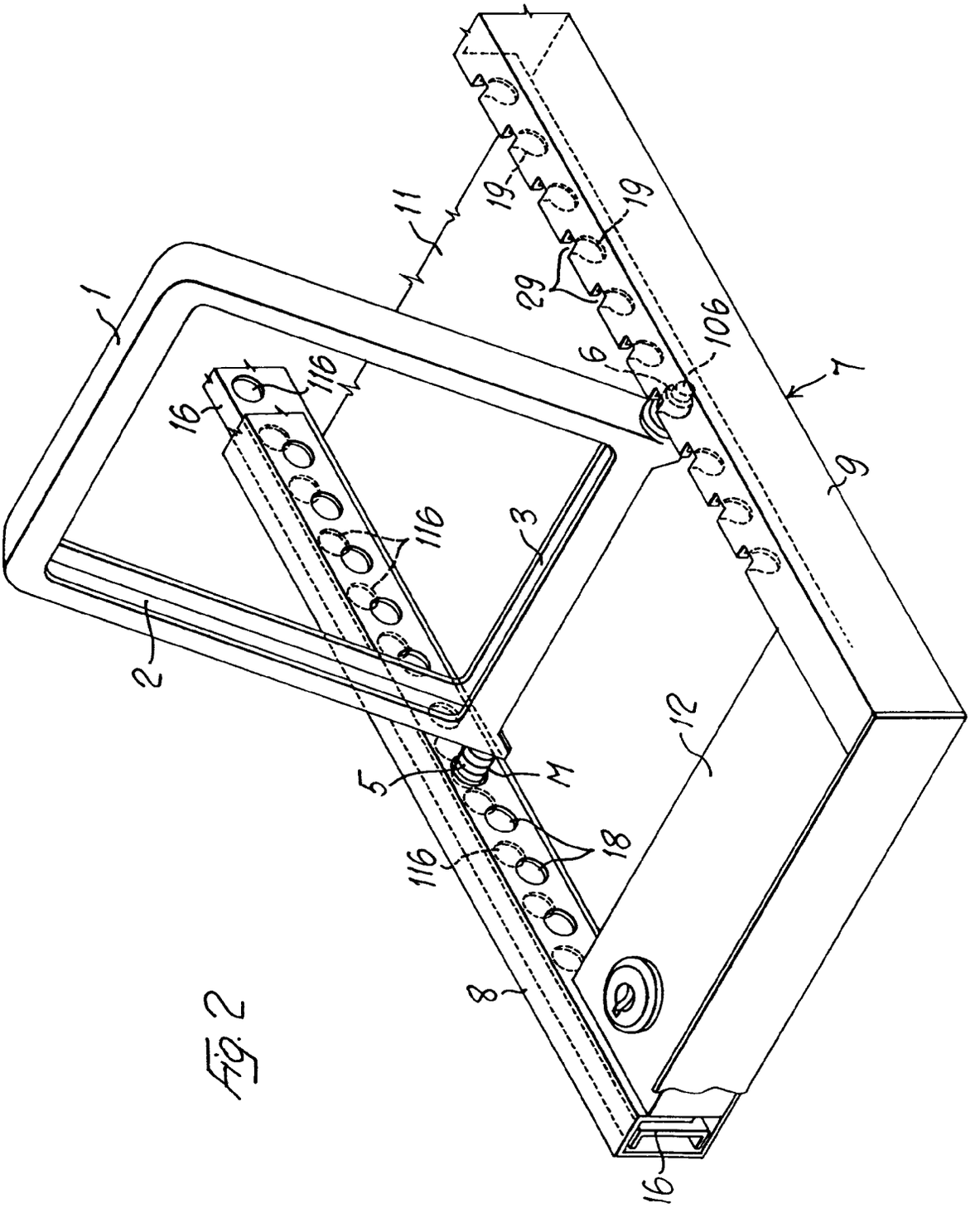


Fig. 2

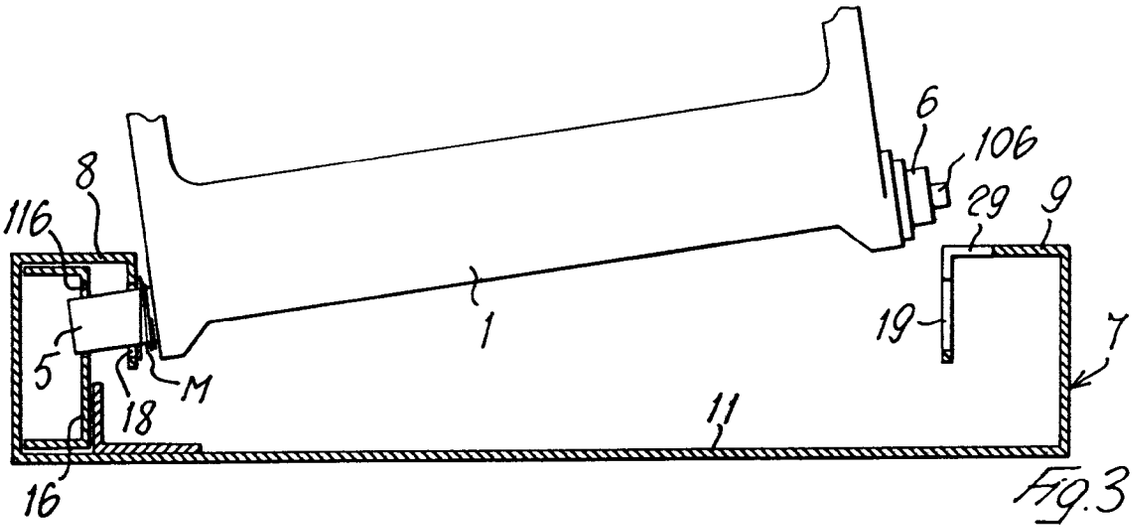


Fig.3

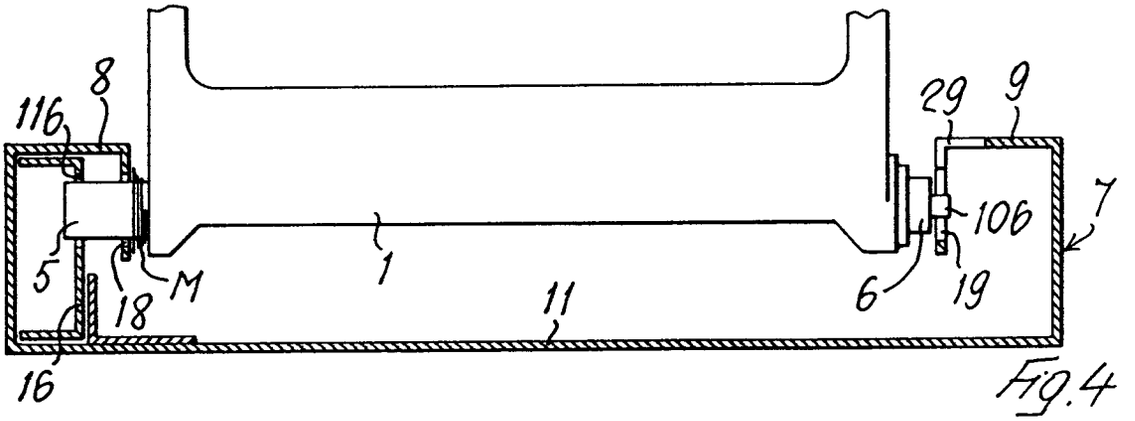


Fig.4

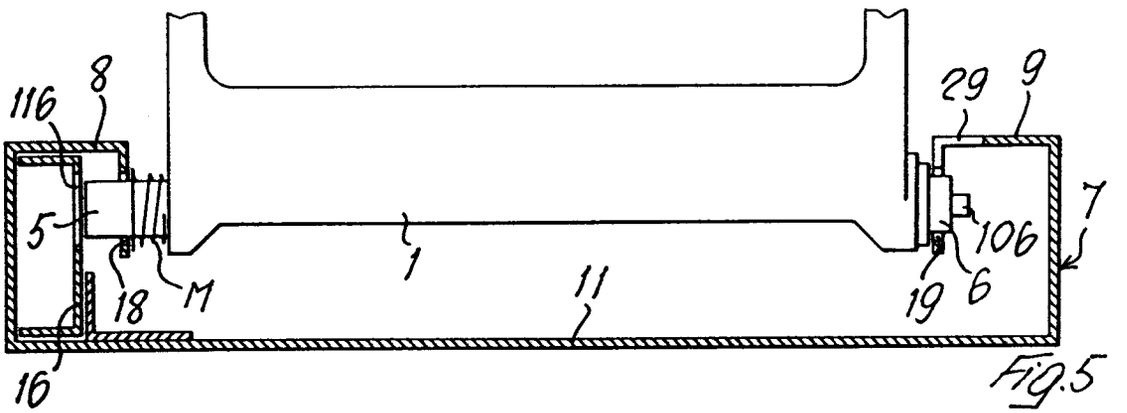


Fig.5

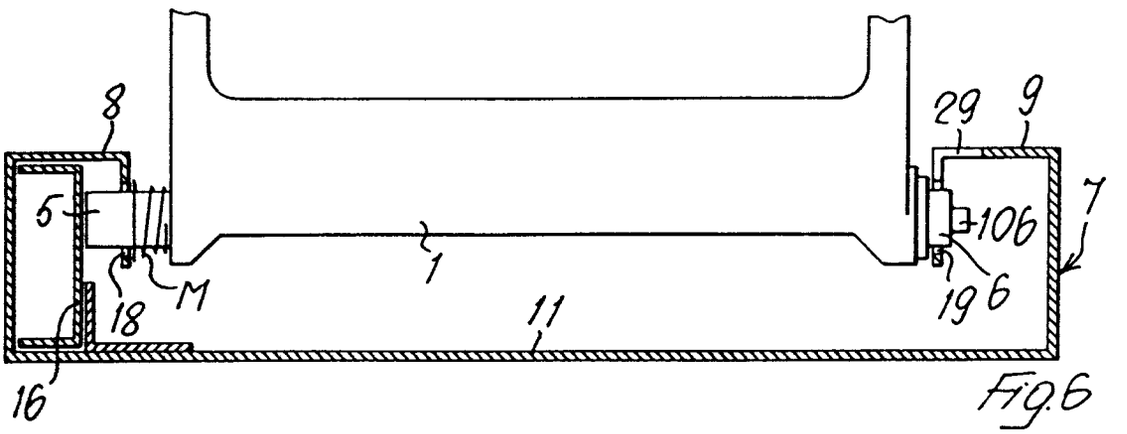


Fig.6

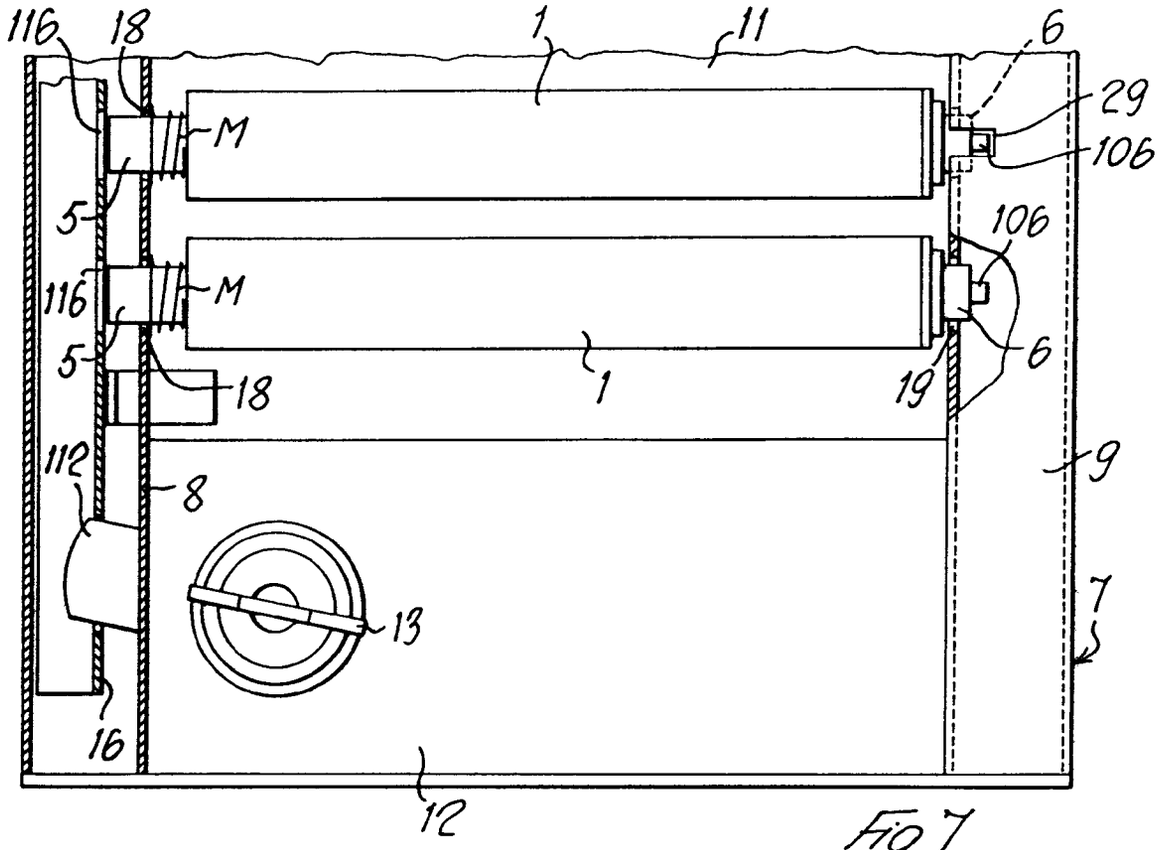


Fig. 7

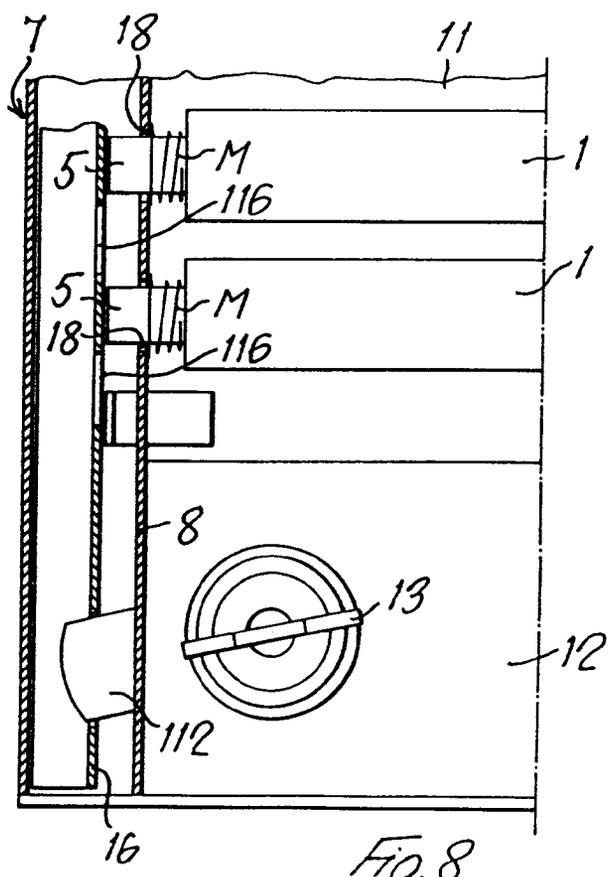


Fig. 8

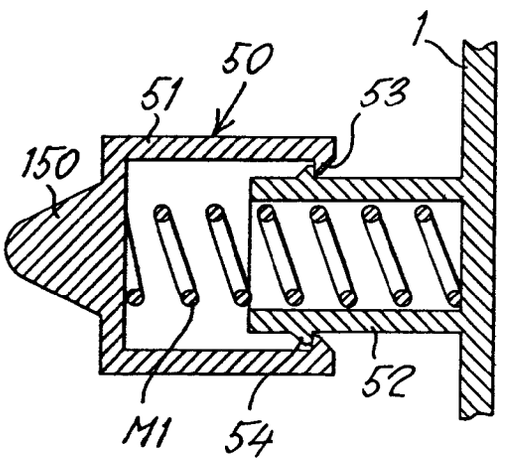


Fig. 9

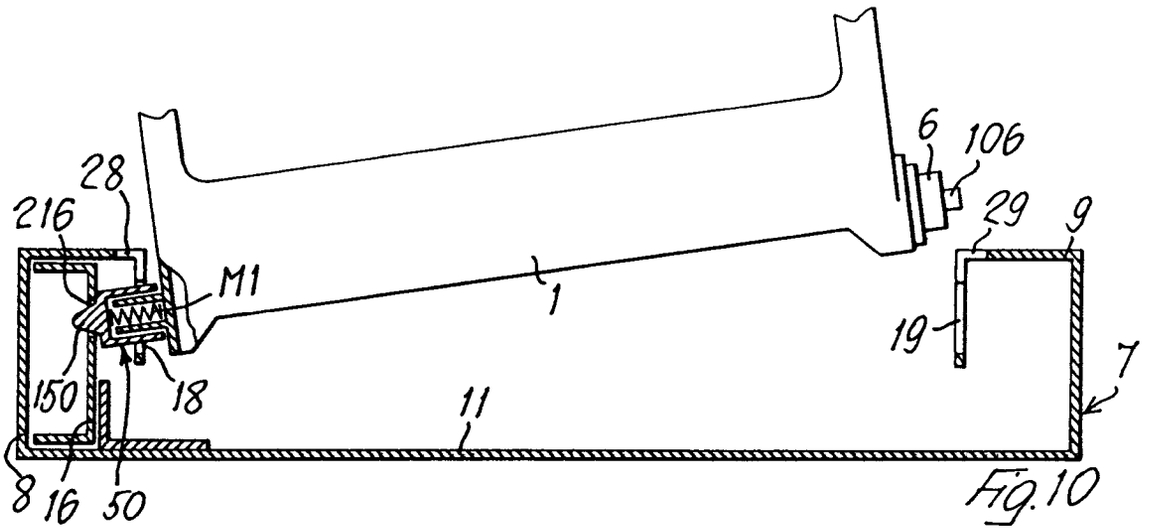


Fig.10

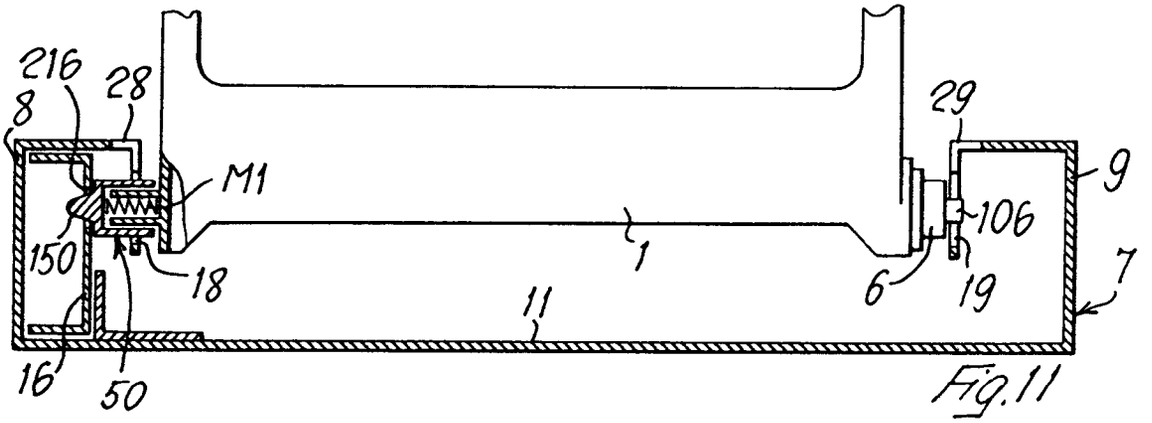


Fig.11

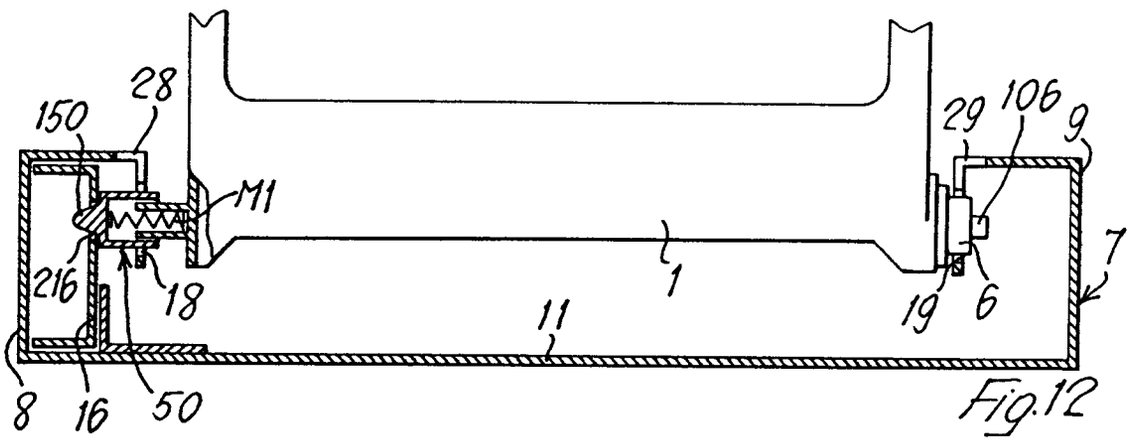


Fig.12

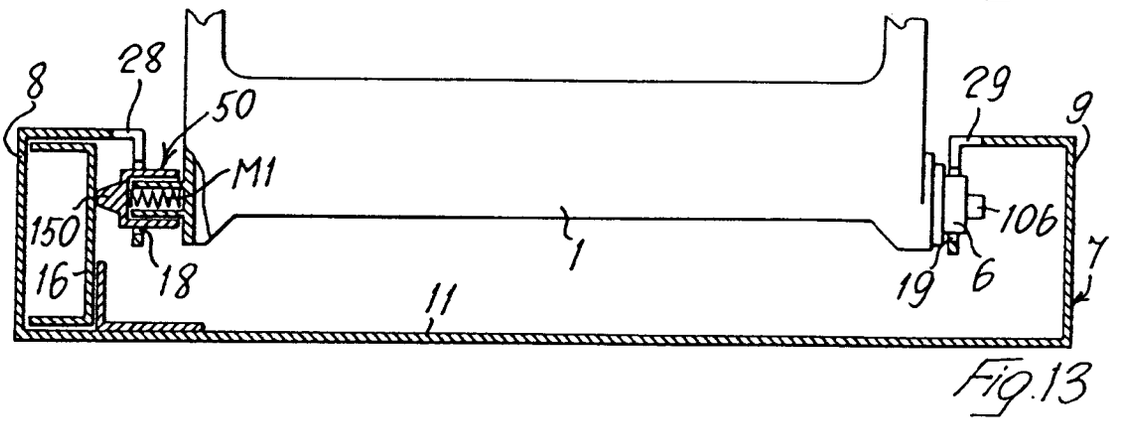


Fig.13