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PRESENTATION ARRANGEMENT FOR PRESENTING A DOOR CYLINDER AND INSERTION PART FOR SUCH A PRESENTATION ARRANGEMENT

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Abstract

A presentation arrangement for presenting a door cylinder, in particular a double cylinder or a knob cylinder, comprises a packaging, in particular a paperboard packaging or cardboard packaging, that has a receiver for the door cylinder, wherein the receiver has, at an outer wall, a fastening opening through which a fastening device can be guided, and can in particular be screwed into a cylinder fixing screw bore of the inserted door cylinder, in order to fix the door cylinder in the receiver, wherein the packaging comprises a stabilizing device for stabilizing the fixing of the door cylinder in the receiver, said fixing taking place by means of the introduced fastening device.

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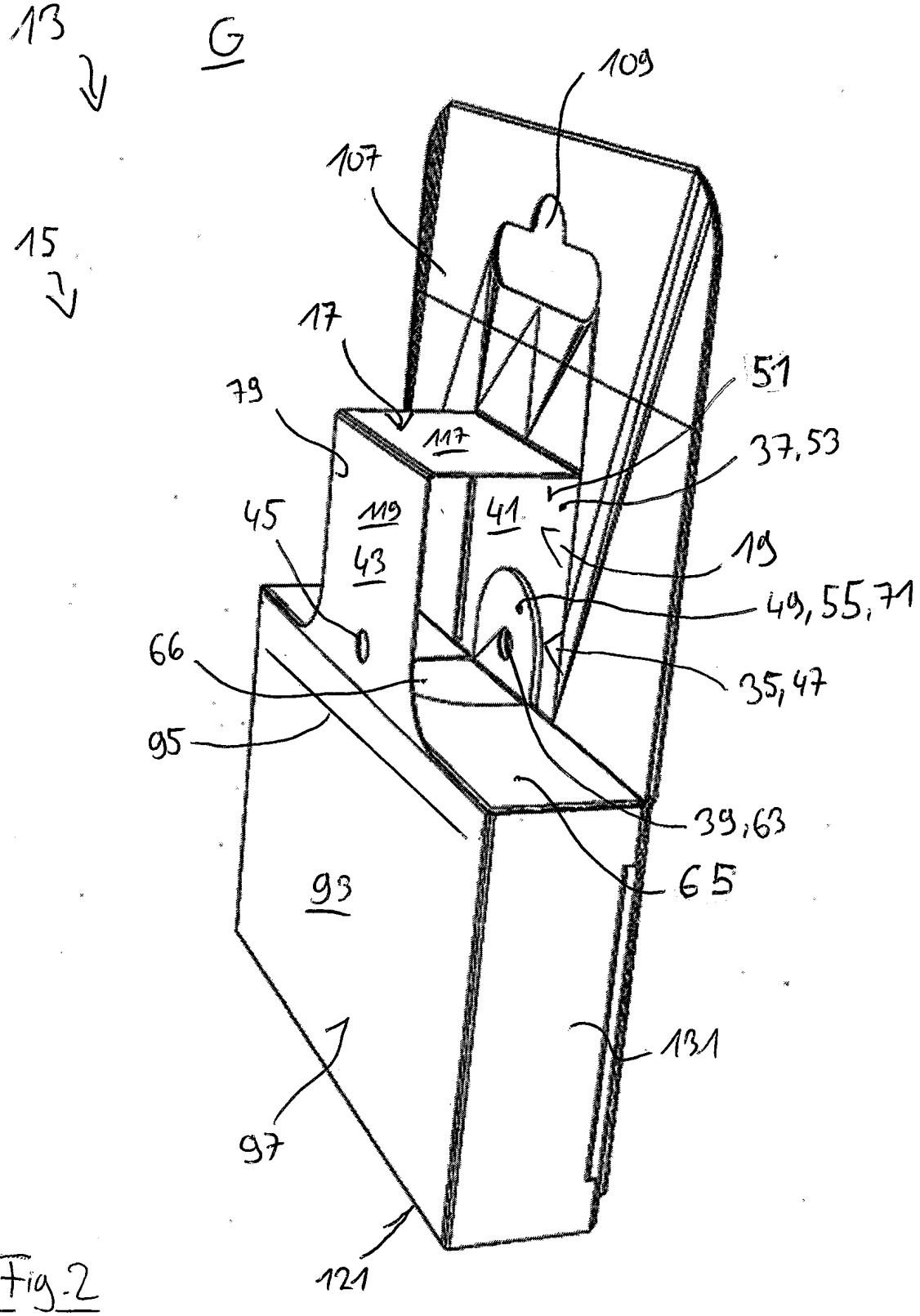

Fig. 2

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Presentation arrangement for presenting a door cylinder and insertion part for such a presentation arrangement

The invention relates to a presentation arrangement for presenting a door cylinder, in particular a double cylinder or a knob cylinder, comprising a packaging that has a receiver for the door cylinder.

Door cylinders may in particular be used in door locks, wherein the door cylinder may, for instance, be inserted into a mortise lock at a door leaf of a door to be able to selectively block the door against an unauthorized opening or to release it for an opening. For this purpose, a door cylinder may in particular have a cylinder core which may be rotated by means of a key and in which a plurality of core pins are arranged that, when the key is introduced into a keyway of the cylinder core, sort housing pins, which are preloaded towards the cylinder core by respective housing springs, to enable a rotation of the cylinder core. However, if the key is not introduced, the housing pins may engage into bores in the cylinder core, which are associated with the core pins, and may hereby block a rotation of the cylinder core.

Furthermore, door cylinders may, for example, be configured as double cylinders in order, for instance, to be able to be actuated by means of a key from both sides of a door leaf into which the door cylinder is inserted. Furthermore, a configuration as a knob cylinder may also be provided, wherein a door cylinder configured in this way may be actuable at one side by a rotatable knob, while an actuation by a key has to take place at the opposite side. For example, such a knob cylinder may be used to be able to lock a house door from an inner side or an inner space of the house by turning the knob or to be able to release said house door for an opening, whereas, from the outer side, the associated key may be required to actuate the door cylinder.

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In this regard, door cylinders exist in numerous variants and require different configurations and dimensions in order, for instance, to be able to fit door leaves of different thicknesses with respective suitable door cylinders. When presenting door cylinders for sale, the aim is therefore to offer a possibility of viewing the door cylinder in order, for example, to be able to directly detect or at least estimate the length of the door cylinder without having to search for any information on a packaging. For this purpose, the door cylinder may, for example, be inserted into transparent and closed receivers of the packaging that hold the door cylinder in the packaging and simultaneously allow the door cylinder to be viewed. For instance, blister packs with transparent plastic receivers for the door cylinder may be considered in this respect.

However, there is only a limited material selection available for such transparent receivers and packaging so that the packaging may currently not be made from sustainable materials and may only be produced using plastics. Such plastic packaging is furthermore undesirably complex to manufacture and may also be difficult for the customer to handle when removing the door cylinder.

The packaging of the presentation arrangement of the present invention, which has a receiver for the door cylinder, may in particular be configured as a paperboard packaging or cardboard packaging. Furthermore, the receiver has, at an outer wall, a fastening opening through which a fastening device, in particular a screw, may be guided, and may in particular be screwed into a cylinder fixing screw bore of the inserted door cylinder, in order to fix the door cylinder in the receiver. In addition, the packaging has a stabilizing device for stabilizing the fixing – that is provided by the introduced fastening device – of the door cylinder in the receiver.

Since the receiver is configured with a fastening opening at an outer wall, through which fastening opening a fastening device may be guided and may be introduced

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into the receiver in order to fix the door cylinder in the receiver, a fixing of the door cylinder in the receiver may first take place without the door cylinder having to be completely enclosed by the receiver. This in particular makes it possible that the door cylinder may also be securely held in the receiver even when the receiver is, for example, laterally opened so that the door cylinder may laterally extend out of the receiver. Due to such a configuration of the receiver, explained here by way of example, the door cylinder or at least a section of the door cylinder projecting laterally from the receiver may be directly detected and viewed from the outside so that, for example, a dimension or overall length of the door cylinder may be directly inferred from a length of a section of the door cylinder projecting from the receiver. This may, for example, enable a quick orientation with respect to a door cylinder required, for instance, for a specific door leaf having a predefined thickness if a plurality of mutually different door cylinders are offered on a common shelf in respective presentation arrangements. Furthermore, a type of door cylinder, for example a double cylinder or a knob cylinder, may also be directly detectable based on sections projecting from the receiver and/or sections not enclosed by the packaging without having to study the packaging.

Since the presentation arrangement is thus so-to-say equipped with a fixing device for fixing the door cylinder in the receiver, which fixing device may comprise the fastening opening and/or the fastening device, the receiver does not necessarily have to be designed as transparent since, for example, sections of the door cylinder projecting from the receiver may provide a possibility of directly viewing the door cylinder. Therefore, non-transparent materials may also be used for the receiver and/or the packaging as a whole so that, for example, a configuration as paperboard packaging or cardboard packaging and a production from other sustainable materials is made possible. Furthermore, materials that are as easy to process as possible may be selected that may also offer an improved handling of the packaging for a customer or buyer.

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With such a fixing of the door cylinder in the receiver, there is, however, generally the problem that the fastening device guided through the fastening opening may be deflected by forces, for example, occurring during a transport or an attachment of the presentation arrangement for presenting the door cylinder so that forces may be transmitted to boundaries of the fastening opening. As a result, damage to the boundaries may, however, occur and the fastening opening may, for example, wear out, which in turn impairs the reliable and durable fixing of the door cylinder in the receiver.

However, to prevent such an impairment or weakening of the fixing, the presentation arrangement has a stabilizing device that is configured to stabilize the fixing of the door cylinder in the receiver of the packaging. In particular, such a stabilizing device may in this respect be configured to achieve a more stable guidance of the fastening device compared to a mere guidance through the fastening opening at the outer wall of the receiver, as explained in more detail below.

Furthermore, the stabilizing device may, for example, be configured to provide an additional fixing device to stabilize the fixing of the door cylinder. For example, the stabilizing device may for this purpose comprise an insertion part in which the door cylinder may be insertable, whereupon the insertion part together with the inserted door cylinder may be insertable into the receiver and fixable therein. For example, such an insertion part may be used to enable a rectilinear contact of the arrangement formed by the door cylinder and the insertion part at the outer wall of the receiver in order, as a result, to minimize a transmission of forces to the fastening device that could lead to a deflection of the fastening device.

Furthermore, the stabilizing device may also have an additional fastening device to be able to achieve an additional fixing and thus stabilization of the door cylinder in the receiver. For instance, an additional adhesive bonding of the door cylinder in

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the receiver may be considered in order, for example, to fix the door cylinder to a lower side and to minimize a deflection of the door cylinder that may, in turn, lead to a deflection of the fastening device.

Such possibilities are also explained in more detail below.

Furthermore, the presentation arrangement may generally be formed by the packaging into whose receiver the door cylinder may be inserted. Alternatively thereto, in some embodiments, the presentation arrangement may, however, also comprise the door cylinder that may in particular be inserted into the receiver.

In particular, in some embodiments, the packaging may consist of paperboard and/or cardboard – apart from any adhesive material for adhesively bonding individual layers of the packaging.

In some embodiments, the stabilizing device may not be visible from the outside – and in particular when the door cylinder is inserted into the receiver. In particular, in such embodiments, the stabilizing device may therefore be provided at and/or attachable to the packaging such that the stabilizing device does not impair the presentation of the door cylinder and the packaging may appear unchanged from the outside compared to a presentation arrangement without a stabilizing device.

In some embodiments, the outer wall of the receiver may be formed by a rear wall of the packaging. In such embodiments, it may thus be provided that the fastening opening, through which the fastening device may be introduced into the receiver in order to fix the door cylinder, is not visible from a front side of the presentation arrangement or the packaging. The fixing of the door cylinder may therefore in particular take place in a form that does not impair the presentation of the door cylinder.

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In some embodiments, the stabilizing device may comprise an outer wall reinforcement of the outer wall.

As already explained above, one difficulty when fixing the door cylinder is in particular that any deflections of the fastening device may lead to damage to boundaries of the fastening opening and/or to the fastening opening, as a result of which the fastening opening may wear out, for example. This, in turn, may impair the fixing of the door cylinder as a whole.

However, since an outer wall reinforcement of the outer wall may be provided in some embodiments, it may in particular be achieved that the fastening device may be guided through a reinforced and/or thickened wall section compared to the pure outer wall in order, as a result, to achieve an improved guidance and support of the fastening device when passing through into the receiver. Due to such a reinforced outer wall, the resistance of the fastening opening compared to forces transmitted as a result of deflections of the fastening device may in particular be increased to be able to prevent any damage to the boundary of the fastening opening and thus to the fastening opening itself.

In some embodiments, the outer wall reinforcement may be formed at an inner side of the receiver, said inner side facing the inserted door cylinder.

In such embodiments, the outer wall reinforcement may thus in particular be concealed by the door cylinder inserted into the receiver so that the outer wall reinforcement may not be recognizable from the outside and the presentation of the door cylinder is impaired. For example, the outer wall reinforcement may therefore not be directly detectable even when a customer or buyer inspects the presentation arrangement while holding and/or turning the presentation arrangement. Rather, an outer side of the outer wall of the receiver that is visible from the outside may in particular be smooth in such embodiments, wherein a

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screw head of a screw screwed into the fastening opening as the fastening device may, for example, be recognizable at the outer wall, however. In this regard, the type of fixing of the door cylinder per se may possibly be recognizable from the outside, but not the additional outer wall reinforcement as well.

In some embodiments, the outer wall may be formed by a first layer of packaging material, said first layer having the fastening opening. In such embodiments, the stabilizing device may further comprise, as the outer wall reinforcement, a second layer of packaging material, said second layer contacting the inner side of the outer wall, wherein the second layer may have a further fastening opening that may be oriented in alignment with the fastening opening of the first layer. The fastening device may therefore be guidable through the fastening opening and the further fastening opening in order to fix the door cylinder.

Consequently, in such embodiments, it may be provided that the fastening device, in order to fix the door cylinder, may be guided not only through a single-layer outer wall of the receiver, but through two layers of packaging material in order, as a result, to be able to achieve an improved guidance and support of the fastening device. In this respect, it may in particular be provided that the second layer of packaging material may only extend as a stabilizing section in an environment of the fastening opening, whereas a section of the outer wall of the receiver that is further away from the fastening opening may only be formed by a layer of packaging material. On the other hand, it is also possible for the entire outer wall to be covered at the inside by a second layer of packaging material, wherein, in such embodiments, it is ultimately also possible to speak of a two-layer outer wall of the receiver.

In some embodiments, the second layer may form a local outer wall reinforcement in a stabilizing section of the receiver that surrounds the fastening opening,

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whereas the receiver may be bounded in a single layer by the outer wall in sections that extend laterally beyond the stabilizing section.

In some embodiments, the packaging may be provided flat in an initial state and may be transferrable into a state of use by folding, wherein the second layer of packaging material may be able to be brought into contact with the first layer of packaging material by the folding.

Such a provision of the packaging in a flat initial state may in particular enable a simple manufacture of the packaging in that the packaging may, for example, be provided as a simple punched part in order, starting from this, to be able to be folded into the state of use. Therefore, due to this subsequent folding and transfer into the state of use, the receiver for the door cylinder may in particular be formable to be able to insert the door cylinder. Furthermore, in some embodiments, it may be provided that sections of the packaging are adhesively bonded or bondable to one another in the state of use in order to stabilize the packaging in the state of use.

Since the second layer of packaging material, starting from such a flat initial state, may also be able to be brought into contact with the first layer of packaging material during the transfer of the packaging into the state of use by a simple folding, the desired outer wall reinforcement may be achieved in a simple manner and by a packaging that is ultimately provided in one part without, for example, an additional component having to be separately fixed to the outer wall of the receiver as an outer wall reinforcement.

In this regard, in some embodiments, it may in particular be provided that the packaging is provided as an integrally single-piece component. In particular, it may thus be provided with the packaging that it may be formed without connecting two

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originally separate components. As mentioned, this may be achieved, for example, by folding a packaging that is flat in the initial state.

In some embodiments, the second layer of packaging material may be foldable over from a base section of the receiver, on which the door cylinder inserted into the receiver is supported at a lower side, towards the outer wall. Therefore, in such embodiments, the base section of the receiver may in particular have an opening in the region from which the second layer is folded over as an outer wall reinforcement. However, this opening may in particular also be covered from above by the inserted door cylinder and from below by further components of the packaging and may therefore not be visible from the outside.

In some embodiments, the first layer may form a rear wall of the packaging and the second layer may be formed by a tab that may be folded up at an inner side of the receiver, said inner side facing the inserted door cylinder.

Such a tab may in particular be narrower than the overall width of the receiver and/or the packaging in order to form, as a stabilizing section, a so-to-say local outer wall reinforcement of the outer wall of the receiver at which the fastening opening is formed. Once again, by arranging the tab at an inner side of the receiver, it may be achieved that the tab is not visible from the outside when the door cylinder is inserted in order that the desired presentation of the door cylinder is not disturbed by the stabilizing device. Equally, the design of the first layer as a rear wall of the packaging may enable the fastening device to be introduced from a rear side of the packaging into the receiver so that the fastening device and the type of fixing may initially not be visible on a presentation of the door cylinder by means of the presentation arrangement, for example in a shelf of a salesperson.

However, in some embodiments, it may generally also be provided that the fastening opening is formed at a front wall of the receiver so that the fixing may

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take place from a front side of the packaging. In such embodiments, an outer wall reinforcement of the above-explained kind may generally also be provided, wherein such an outer wall reinforcement may not be visible from the outside either, in particular by forming a second layer at an inner side of the outer wall facing the door cylinder, so that the presentation of the door cylinder is again not impaired.

Alternatively or in addition to the aforementioned second layer and/or the tab, in some embodiments, the stabilizing device may also have a boundary reinforcement for reinforcing a boundary of the fastening opening. For example, the stabilizing device may for this purpose have a reinforcing ring that is, for example, made of metal or plastic and that may be able to be plugged and/or clipped into the fastening opening to circumferentially reinforce the fastening openings. In such embodiments, the fastening device may therefore be introducible through a reinforcing ring into the receiver to transmit any forces to the reinforcing ring and to prevent a direct interaction with the boundary of the fastening opening.

Furthermore, as an alternative to a folding over of a tab or an attachment of a second layer of packaging material by folding, provision may also be made to adhesively bond a second layer of separate packaging material as an outer wall reinforcement to the outer wall and in particular to its inner side.

In some embodiments, the receiver may have lateral openings through which the inserted door cylinder projects laterally from the receiver, in particular at both sides.

As already explained, the fixing of the door cylinder by the fastening device may in particular enable such a projection of the door cylinder since the door cylinder does not have to be bounded from all sides in the receiver in order not to slip out

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of the receiver. Since the receiver does not have to be completely closed, but may have lateral openings, the door cylinder inserted into the receiver may project laterally from the receiver so that the door cylinder – or at least its section projecting from the receiver – may be viewed directly from the outside. For example, a dimension or overall length of the door cylinder and a type of the door cylinder may thereby be directly inferred from a length of a section of the door cylinder projecting from the receiver, in particular a respective one of the sections projecting at both sides of the receiver.

In particular, it may therefore be provided that the door cylinder inserted into the receiver projects at both sides from respective lateral openings of the receiver. In this regard, a respective section of the door cylinder may in particular be recognizable at both sides of the receiver when the door cylinder is inserted into the receiver. Accordingly, the receiver may in particular have two lateral openings through which the inserted door cylinder may project.

In some embodiments, the receiver may be bounded by a rear wall of the packaging and by a boundary section extending along an upper side and a front side of the inserted door cylinder, wherein the packaging may furthermore have a base section on which the door cylinder inserted into the receiver may be supported at a lower side.

In such embodiments, it may thus be provided that the boundary section so-to-say encloses the door cylinder in a belt-like manner and thereby holds it in the receiver. The door cylinder may further be enclosed or supported at four of a total of six sides by the rear wall and the base section in order, however, to be able to extend out of the receiver, for example, through outer sides of the receiver that are open in some embodiments so that the door cylinder inserted into the receiver and fixed therein may be recognized from the outside.

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In some embodiments, a second fastening opening may be provided at a front wall of the receiver that is opposite the outer wall, through which second fastening opening a second fastening device, in particular a second screw, and/or the fastening device may be guidable in order to center the door cylinder in the receiver. A second fastening device may furthermore in particular likewise be screwable into a cylinder fixing screw bore of the inserted door cylinder.

In particular, in such embodiments, it may thus be provided that the door cylinder may be held at both sides in the receiver by respective fastening devices in order, as a result, to ensure that the door cylinder is precisely oriented. This, too, may in particular enable an as exact and direct as possible a detection of a dimension of the door cylinder in embodiments in which the door cylinder projects laterally from the receiver.

The fastening opening and/or the second fastening opening may in particular have a diameter corresponding to the cylinder fixing screw bore.

Furthermore, a fastening device introduced through the fastening opening may, for example, be guidable through a cylinder fixing screw bore of the inserted door cylinder and introducible into or through the second fastening opening in order, as a result, to be able to achieve a two-sided fixing of the door cylinder by a single fastening device.

In some embodiments, the packaging may have a display section that is arranged below the receiver in a state of use and that has a measuring scale for measuring a length of the inserted door cylinder.

Such a display section having a measuring scale may in particular make it possible to directly read off a length of a door cylinder inserted into the receiver and possibly laterally projecting from the receiver. In this regard, an observer of

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the presentation arrangement may, for example, make a preselection, based on the recognizable door cylinder, with respect to a door cylinder that may possibly be suitable for a specific application to then be able to select a door cylinder of a suitable dimension based on the measuring scale of the presentation arrangement by taking a closer look at the packaging of the preselected door cylinders. This may thus make it possible to select a door cylinder that is suitable for a specific application more quickly from a selection of different door cylinders presented by respective presentation arrangements.

In some embodiments, the packaging may have a storage box for receiving instructions for use and/or at least one key for the door cylinder, wherein the storage box may in particular be arranged below the receiver in a state of use of the presentation arrangement.

Due to such a storage box, any components required in addition to the door cylinder may thus also be organized and reliably stored. Furthermore, the above-mentioned display section with the measuring scale may be arranged at a front side of the storage box, wherein the arrangement of the storage box below the receiver may in particular make it possible to arrange the door cylinder above the measuring scale so that its length or dimension may be read off the measuring scale without problems.

Furthermore, in some embodiments, the packaging may be erectable on a base of the storage box. This may in particular offer an alternative to a suspension of the packaging at respective suspension openings to be able to extend the possibilities for presenting the door cylinder.

In general, the packaging may therefore be able to be suspended and/or erected in some embodiments. To enable a suspension of the packaging, the packaging may in particular have one or more, in particular precisely one or precisely two,

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suspension openings arranged above the receiver. Two mutually laterally offset suspension openings may in this respect be provided, in particular for long door cylinders to be presented, to be able to prevent a tilting of the suspended packaging.

In some embodiments, the receiver may be arranged centrally or off-center at the packaging with respect to a longitudinal extent of the door cylinder inserted into the receiver.

The receiver may in particular be arranged at the packaging such that the fastening opening and/or a center of the receiver is aligned with a cylinder fixing screw bore of a door cylinder to be inserted and the door cylinder may be arranged in the packaging by insertion into the packaging such that a center of gravity of the door cylinder lies at the center of the packaging with respect to a longitudinal axis of the inserted door cylinder. This may in particular enable the presentation arrangement to be suspended at a centrally oriented suspension opening without the packaging tilting, wherein an adaptation to a respective door cylinder and its center of gravity relative to the cylinder fixing screw bore may take place through a respective arrangement of the receiver. The arrangement of the receiver (centrally/off-center) may in this regard be adapted to the respective door cylinder to be inserted and to be presented.

In some embodiments, the stabilizing device may have an insertion part into which the door cylinder may be inserted, wherein the insertion part may be inserted into the receiver of the packaging when the door cylinder is inserted, and wherein the insertion part has an insertion part fastening opening which is aligned with the fastening opening and into which the fastening device, which may be guided through the fastening opening, may be introduced.

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When the insertion part is inserted into the receiver, the insertion part fastening opening may in particular be aligned with the fastening opening so that the insertion part may be fixable in the receiver by the guiding through of the fastening device.

Such an insertion part may further in particular function as a shaping part to adapt the arrangement of the insertion part and the inserted door cylinder to a shape adapted to the receiver compared to a shape of the door cylinder and to be able to achieve an improved fixing of the door cylinder in the receiver.

Furthermore, in some embodiments, the insertion part may not extend laterally out of the receiver. In this regard, in such embodiments, the insertion part may be configured to receive only a central section of the door cylinder positioned in the receiver, but without itself being visible outside the receiver. An insertion part dimensioned in this way may therefore be used and inserted into the receiver without impairing the presentation of the door cylinder and in particular of sections of the door cylinder projecting from the receiver.

In some embodiments, the door cylinder may have a door cylinder shape having a core receiving section, which is substantially circular in cross-section, for receiving a rotatable cylinder core and having a flange section, which projects radially away from the core receiving section, for receiving at least one housing pin and at least one housing spring. The insertion part may have an insertion recess into which the flange section may be inserted substantially without play, wherein, when the door cylinder is inserted, the insertion part extends perpendicular to the flange section at least up to a portion of the core receiving section that is disposed the furthest outwardly perpendicular to the flange section. The insertion part may have an insertion part rear wall which is formed as straight and with which the insertion part inserted into the receiver may be supported at the outer wall receiver.

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In particular, due to the insertion part, a straightening of the door cylinder shape may thus so-to-say take place so that, after inserting the door cylinder into the insertion part, an overall arrangement with a straight rear wall may ultimately be inserted into the receiver. This may make it possible to pull the straight rear wall of the insertion part, in particular by introducing the fastening device or a screw, against an outer wall of the receiver, in particular likewise a straight wall, in order hereby to achieve a stable fixing of the door cylinder in the receiver. Furthermore, a transmission of any tilting moments during deflections of the fastening device to boundaries of the fastening opening may thereby in particular be avoided since such tilting moments may be led off via the surfaces of the insertion part and the receiver that contact one another in a straight manner.

In some embodiments, the flange section may be curved and/or arcuate at a lower side opposite the core receiving section. Accordingly, in some embodiments, the insertion recess may also be curved and/or arcuate at a lower side.

Furthermore, in some embodiments, the insertion recess may have an arcuate support for the core receiving section. Alternatively thereto, in some embodiments, the insertion recess may be formed completely in a shape corresponding to the flange section and may be configured to (at least sectionally) receive and/or enclose only the flange section of the door cylinder.

In some embodiments, when the door cylinder is inserted, the insertion part fastening opening may be aligned with a cylinder fixing screw bore formed at the flange section, wherein the fastening device may be introducible through the fastening opening and the insertion part fastening opening into the cylinder fixing screw bore in order to fix the door cylinder in the receiver.

Therefore, the insertion part fastening opening may in particular have a diameter corresponding to the cylinder fixing screw bore.

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In particular, in such embodiments, the door cylinder may be able to be pulled against an inner wall of the insertion part, and the insertion part against the outer wall of the receiver, by the fastening device and in particular by a screw in order, as a result, to be able to achieve a reliable fixing of the door cylinder in the receiver.

In some embodiments, the insertion part may have a second insertion part fastening opening that is opposite the insertion part fastening opening and that is configured, when the insertion part is inserted into the receiver, to be aligned with a second fastening opening of the receiver that is opposite the fastening opening. In embodiments with such an insertion part, a two-sided fixing of the door cylinder in the receiver may in particular also take place.

In some embodiments, the insertion part may have a latching nose, in particular an elastically deformable latching nose, that is configured, when the door cylinder is inserted, to engage into a closing nose recess of the door cylinder and to secure the door cylinder in the insertion part.

The door cylinder may in particular have a closing nose that projects radially beyond the core receiving section and that may rotate with the core receiving section, for example, to be able to drive a latch of a door. To enable such a rotary movement of the closing nose, the door cylinder and in particular a housing of the door cylinder may, however, have a closing nose recess in which the closing nose may be guidable and into which the closing nose may in particular engage in the case of an orientation in alignment with the flange section. In particular, such a closing nose recess may therefore face in the direction of the flange section and/or – in the state of use of the door cylinder – may be arranged above a cylinder fixing screw bore. Furthermore, with a door cylinder configured as a double cylinder, the closing nose may in particular be centrally arranged between two halves of the

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double cylinder so that the closing nose may likewise be centrally arranged in the receiver on an insertion of the lock cylinder into the receiver.

Such a closing nose recess may furthermore in particular provide an edge at the door cylinder with which the mentioned latching nose of the insertion part may interact in order, in particular, to be able to secure the door cylinder against a removal from the insertion part. Since the latching nose may in particular be elastically deformable, the door cylinder may, for example, be introducible into the insertion part, wherein the latching nose may deform during the introduction in order, however, to snap back against the elastic deformation after a complete introduction of the insertion part and to secure the door cylinder in the insertion part by engaging at the closing nose recess. To enable the insertion of the door cylinder, the latching nose may further have a displacement chamfer facing the door cylinder to be inserted.

In some embodiments, a key for actuating the door cylinder may be associated with the door cylinder, wherein the closing nose of the door cylinder may be deflected out of the closing nose recess when the key is removed. In such embodiments, the latching nose may be configured to engage into the closing nose recess at a side of the closing nose recess that is opposite the deflected closing nose.

In particular, due to the deflection, provided in such embodiments, of the closing nose with the key removed, a free space in the closing nose recess may thus be produced at a side opposite the deflection of the closing nose and may be cleverly utilized by the latching nose to fix the door cylinder to the insertion part. Furthermore, provision may in particular be made to present the door cylinder in the presentation arrangement with the key removed.

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In some embodiments, the insertion part may have a passage opening opposite the latching nose for an arrangement of the deflected closing nose.

An arrangement of the closing nose out of alignment with the flange section in the insertion part may in particular be made possible by such a passage opening.

In some embodiments, the insertion part may be a 3D printed component. In particular, the insertion part may therefore have a layer design to be able to be built up successively by individual layers formed in a 3D printing process. Such a 3D printing process may in particular enable variously shaped insertion parts to be able to be produced in a simple manner corresponding to a respective door cylinder to be presented. Furthermore, sustainable materials may be used in such a process to be able to produce an overall sustainable presentation arrangement.

In some embodiments, the packaging may be provided flat in an initial state and may be transferrable by folding into a state of use in which the receiver is formed, wherein the packaging may in particular be provided as a punched part in the initial state.

Due to a packaging provided in this way, a simple manufacture of the packaging may in particular also be achieved in that it may be provided merely as a flat punched part and may be transferrable into the state of use, in which the receiver for the door cylinder is formed, by a simple folding and possibly by an adhesive bonding of individual sections of the packaging to one another. Furthermore, such foldable packaging may be easily produced using sustainable materials and, for example, from paperboard or cardboard.

In some embodiments, the packaging may comprise a rear wall section that forms a rear wall of the packaging in the state of use, wherein the rear wall section may be connected to a structure section of the packaging by a bending line, in

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particular a fold. The receiver may furthermore be formable by folding the structure section.

In such embodiments, the packaging formed flat in the initial state may in particular be divided by the bending line into the rear wall section, on the one hand, and the structure section, on the other hand, wherein the structure section may in particular have even further bending lines to be able to give the packaging the structure desired in the state of use, in particular with the receiver, by folding along the bending lines.

In general, one, a selection of a plurality of or all of the bending lines mentioned below may be formed by respective folds to enable a precise and simple folding of the packaging.

In some embodiments, the rear wall section may have the fastening opening through which the fastening device may be guided in order to fix the door cylinder in the receiver.

In some embodiments, the rear wall section may therefore form the mentioned outer wall of the receiver.

In some embodiments, the structure section may have a support section that is foldable into contact with the rear wall section, wherein the support section and the rear wall section may have respective suspension openings that may be brought into alignment with one another by the folding, and wherein the presentation arrangement may be suspendable at the suspension openings. In particular, the packaging may therefore be designed with two layers in a region in which the support section extends, wherein the suspension openings bounded by two layers may enable a stable and reliable suspension of the packaging or of the

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presentation arrangement, in particular also when the door cylinder is inserted into the receiver.

In some embodiments, one or two respective suspension openings may be formed at the rear wall section and the support section. In particular, embodiments with two respective suspension openings may enable a suspension of the packaging at two suspension points in order, for instance, to also be able to securely suspend presentation arrangements with heavy or long door cylinders against a tilting.

In some embodiments, the support section may have a U-shaped recess, wherein a boundary section of the packaging may be held at a lower side of the U-shaped recess facing the bending line and may be connected to the support section by a lower side bending line. The boundary section may further be foldable along the lower side bending line relative to the support section, wherein the boundary section may be divided by a further bending line into an upper side section and a front side section foldable along the further bending line relative to the upper side section. The upper side section may be configured, in the state of use, to extend along an upper side of the door cylinder inserted into the receiver, whereas the front side section may be configured to extend along a front side of the door cylinder inserted into the receiver in the state of use.

The boundary section may thus in particular be the boundary section already mentioned above that may enclose the door cylinder in the receiver so-to-say in a belt-like manner to hold the door cylinder in the receiver. The arrangement or at least partial arrangement of the boundary section in the U-shaped recess of the support section may in particular enable the boundary section to be folded out of the support section, so to speak, so that the upper side section (in the state of use) may extend substantially perpendicular to the support section, whereas the front side section (in the state of use) may extend substantially in parallel with the support section.

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In some embodiments, the front side section may have a second fastening opening through which a second fastening device or the fastening device may be guidable, and may in particular be introducible into a cylinder fixing screw bore of the inserted door cylinder, in order to center the door cylinder in the receiver. In particular, the mentioned two-sided fixing of the door cylinder in the receiver may thus take place and/or the front side section may form a front wall of the receiver.

Furthermore, in some embodiments, the boundary section may be held centrally or off-center at the support section. As already explained, this may enable a coordination with the respective door cylinder to be inserted such that a center of gravity of the door cylinder coincides with a center of the packaging.

In some embodiments, the front side section may merge into a display section that may be wider than the front side section with respect to a width direction that is oriented perpendicular to a height direction leading from the rear wall section to the structure section in the initial state. The display section may in particular be designed with a width corresponding to the support section. Due to this widening from the front side section to the display section, the packaging may thus so-to-say be returned to a basic width of the packaging from the receiver that is designed with a smaller width and that enables a lateral projection of the door cylinder.

In some embodiments, the display section may have a measuring scale for measuring a length of the door cylinder inserted into the receiver and projecting laterally from the receiver. Again, the measuring scale may thus be arranged directly below the front side section (in the state of use) to enable an unproblematic reading off of the length of the door cylinder.

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In some embodiments, the display section may be connected to a rear side section by a lower base section, wherein the lower base section may be connected to the display section by a first base bending line and to the rear side section by a second base bending line. Furthermore, the rear side section may be able to be brought into contact with the rear wall section by folding the packaging along the first base bending line and along the second base bending line.

The lower base section may furthermore, in particular viewed along the aforementioned height direction, have a length corresponding to the mentioned upper side section of the receiver so that, in the state of use, the display section may in particular extend in parallel with the rear wall section and the lower base section may extend in parallel with the upper side section.

In some embodiments, the lower base section may be oriented substantially perpendicular to the display section in the state of use. Furthermore, the display section, the lower base section and the rear side section may, in the state of use, define a storage box for receiving instructions of use and/or at least one key.

Since the lower base section, as explained above, may in particular have a length corresponding to the upper side section of the boundary section, the storage box may thus be formed with a depth corresponding to the receiver. The orientation of the lower base section perpendicular to the display section may further enable the packaging to be placed on the lower base section for a presentation of an inserted door cylinder, in particular as an alternative to a presentation with the packaging suspended.

The display section, the lower base section and/or the rear side section may, in some embodiments, be connected by respective closure bending lines to respective closure sections extending laterally outwardly, wherein the storage box may be laterally closable by folding the closure sections. In particular, the storage

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box may therefore be closed in the manner of a package by folding over respective closure sections.

In some embodiments, the rear side section may be adhesively bonded to the rear wall section in the state of use. Therefore, in the region of the rear side section, the packaging may also in particular be designed with two layers in the state of use.

In some embodiments, the rear side section may be connected by a receiver bending line to a base section that, by folding along the receiver bending line, may be transferred into an orientation oriented substantially perpendicular to the rear side section and may be configured, in the state of use, to form a base of the receiver for supporting the inserted door cylinder at a lower side of the door cylinder. The base section may therefore in particular be the aforementioned base section.

Furthermore, in embodiments with a storage box, the base section may be configured to bound the storage box at an upper side. In particular, the base section may therefore also be connected to a closure section, in particular at both sides to a respective closure section, via a closure bending line, wherein the storage box may be closable in conjunction with the further closure sections by folding the closure section.

In some embodiments, at the base section, a tab may be formed that is connected to the rear side section at the receiver bending line and that may be brought into contact with the rear wall section in the state of use. The tab may further have a further fastening opening that, in the state of use, may be oriented in alignment with the fastening opening formed at the rear wall section. As already explained, an outer wall reinforcement may thus be formable by folding over the tab relative to the base section to be able to reliably support a fastening device for fixing the

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door cylinder, which fastening device is guided through the fastening opening and the further fastening opening.

In some embodiments, the base section may be connected by a fastening bending line to a fastening section that, in the state of use, may be fastened, in particular adhesively bonded, to an inner wall of the display section. Due to such a fastening or adhesive bonding of the fastening section to an inner wall of the display section, the packaging and in particular the aforementioned storage box may thus be reliably closable to be able to arrange all the sections in accordance with the orientation desired in the state of use.

In some embodiments, a length of the structure section may correspond to approximately twice a length of the rear wall section, wherein the length of the structure section may in particular correspond to 1.5 times to up to 2.5 times or to 1.8 times to up to 2.2 times the length of the rear wall section. The length may in particular be measured along the aforementioned height direction.

In some embodiments, the packaging may be able to be transferred, in particular pushed or pulled, from the state of use into a flat transport state in which an upper side section of the receiver that extends above the inserted door cylinder in the state of use and a base section of the receiver that supports the inserted door cylinder at a lower side in the state of use extend in parallel with a rear wall of the packaging.

Such embodiments may in particular make it possible to first transfer the packaging into the state of use and for this purpose, for example, to adhesively bond any sections of the packaging to one another that are to be adhesively bonded so that the packaging is ready for receiving the door cylinder. However, since the packaging may be transferrable into a flat transport state after a transfer into the state of use, packaging provided in this way may be transported or stored

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in a simple and space-saving manner in order, only at a later time, to be fitted with the door cylinders to be presented.

In some embodiments, the presentation arrangement may further comprise the door cylinder, in particular a double cylinder or a knob cylinder, that may be inserted into the receiver.

Moreover, in some embodiments, the presentation arrangement may comprise the fastening device, in particular a screw, for fixing the door cylinder in the receiver.

Furthermore, in some embodiments, the door cylinder may extend laterally, in particular at both sides, out of the receiver. As already explained, this may in particular make it possible to recognize the door cylinder directly from the outside of the presentation arrangement and in particular to be able to detect a dimension, a length and/or a type of the door cylinder.

In some embodiments, the presentation arrangement may comprise a key for the door cylinder that may be received in a storage box arranged below the receiver.

In particular, various embodiments have been explained above in which a fastening device, in order to fix the door cylinder, may be introduced through a respective fastening opening, already formed at the packaging, of the packaging and/or of the receiver into the receiver. However, for the sake of completeness, it should be pointed out that such a pre-formed fastening opening for fixing the door cylinder by means of a fastening device is not absolutely necessary in order to implement a fixing of the door cylinder in the sense of the invention. In principle, a fastening device and/or a screw may rather, for example, also simply be guidable and/or screwable through the packaging material in order, for instance, to be able to engage into a cylinder fixing screw bore of the door cylinder and/or the aforementioned insertion part fastening opening and, as a result, to be able to fix

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the door cylinder in the receiver. In such embodiments, the fastening opening may thus so-to-say be formed in the course of the introduction of the fastening device into the receiver.

The invention further relates to an insertion part for receiving a door cylinder, which insertion part may be inserted into a receiver of a packaging of a presentation arrangement of the kind disclosed herein. The insertion part may have an insertion part fastening opening into which a fastening device may be introduced in order to fasten the door cylinder in the insertion part.

As already explained, such an insertion part may in particular be a component of a stabilizing device of a presentation arrangement of the kind disclosed herein in order to enable stable fixing of the door cylinder in the receiver. However, such an insertion part may in particular also be provided independently of the packaging explained above to be able to interact with the packaging and to fix the door cylinder in the receiver.

In some embodiments, the insertion part fastening opening may be configured, when the door cylinder is inserted, to be aligned with a cylinder fixing screw bore that is formed at a flange section of the door cylinder.

Furthermore, in some embodiments, the door cylinder may have a door cylinder shape having core receiving section, which is substantially circular in cross-section, for receiving a rotatable cylinder core and having a flange section, which projects radially away from the core receiving section, for receiving at least one housing pin and at least one housing spring. The insertion part may further have an insertion recess into which the flange section may be inserted substantially without play, wherein, when the door cylinder is inserted, the insertion part may extend perpendicular to the flange section at least up to a portion of the core receiving section disposed the furthest outwardly perpendicular with respect to the

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flange section. The insertion part may have an insertion part rear wall formed as straight, wherein the insertion part rear wall may be configured, when the insertion part is inserted into the receiver of the packaging, to be supported at the outer wall of the receiver.

As mentioned, the insertion part may thus in particular enable a straightening of the door cylinder shape in order to enable an areal support in the receiver.

In some embodiments, the insertion part may have a latching nose, in particular an elastically deformable latching nose, that is configured, when the door cylinder is inserted, to engage into a closing nose recess of the door cylinder and to secure the door cylinder in the insertion part.

Furthermore, in some embodiments, the insertion part may be a 3D printed component.

Furthermore, one or more of the features of the insertion part and/or the door cylinder insertable therein already explained above in connection with the presentation arrangement may also be provided in the insertion part explained above independently of the presentation arrangement.

The invention will be explained in the following purely by way of example with reference to embodiment examples and to the drawings.

There are shown:

Fig. 1 a door cylinder configured as a double cylinder;

Fig. 2 a packaging of a presentation arrangement comprising a receiver into which the door cylinder may be inserted;

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Figs. 3A and 3B respective representations of packaging in an initial state that may be transferred by folding into a state of use in which the receiver for receiving the door cylinder is formed;

Figs. 4A and 4B a perspective view and a front view of an insertion part for receiving the door cylinder; and

Fig. 5 a perspective view of a further embodiment of the insertion part for receiving the door cylinder.

Fig. 1 shows the basic design of a door cylinder 81 that is configured by way of example as a double cylinder 81, that extends along a longitudinal axis L and that has a first single door cylinder 11 and a second single door cylinder 61. In this respect, the single door cylinders 11 and 61 are connected to one another via a connecting bridge 59. Such a door cylinder 81 may, for example, be provided to be inserted into a mortise lock of a door or into a door leaf to be able to selectively lock or unlock the door from both sides. To be able to axially fix the door cylinder 81 with respect to the longitudinal axis L in such a mortise lock, the connecting bridge 59 has a cylinder fixing screw bore 69 so that a pulling out of the double cylinder 81 inserted into the mortise lock may be prevented by introducing a cylinder fixing screw, not shown, into the cylinder fixing screw bore 69.

To be able to use the double cylinder 81 for locking or unlocking, for example a door, a respective cylinder core 31, which is rotatably supported in a cylindrical core receiving section 23 of the outer housing 21, is inserted into a respective outer housing 21 of the single door cylinders 11 and 61, respectively. The cylinder cores 31 have respective key introduction openings 75 to be able to introduce a suitable key, not shown, and to be able to rotationally actuate the cylinder cores 31 for selectively locking or unlocking a door.

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Furthermore, a rotation of the cylinder cores 31 may be transmitted to a closing nose 73 of the door cylinder 81 to be able to move a latch of a mortise lock, for example. The closing nose 73 projects radially beyond the core receiving sections 31 and is guided in a closing nose recess 33, but, with the key removed, is outwardly deflected relative to a flange section 25 of the door cylinder 81.

To prevent a co-rotation of the outer housings 21 of the single door cylinders 11 and 61 during a closing process and to be able to rotationally fixedly support the door cylinder 81 in a mortise lock, the outer housings 21 have, in addition to the cylindrical core receiving section 23, the flange section 25 projecting radially away from said core receiving section with respect to the longitudinal axis L. Furthermore, respective housing pins preloaded by housing springs towards the associated cylinder core 31 may be supported in the flange section 25 and, when the key is removed, engage into bores of the cylinder core 31 and block the cylinder core 31 against a rotation. By introducing the associated key into the key introduction openings 75, core pins supported in the cylinder core 31 may, however, be sorted and the housing pins may be urged out of the cylinder core 31 into the flange section 25, whereupon the cylinder core 31 may be rotatable by means of the key. Therefore, the core receiving section 23 and the flange section 25 form a conventional door cylinder shape 147.

Door cylinders 81 of this kind and door cylinders of different kinds, in particular of different lengths, may generally be used in a variety of applications, for example, to be able to be inserted into door leaves of different thicknesses and to be able to be used for locking the respective door. On a presentation of such door cylinders 81, it is therefore necessary for potential buyers to be able to detect a dimension or length along the longitudinal axis L as directly as possible in order to be able to select potentially suitable door cylinders 81 from a plurality of different door cylinders presented.

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However, this may often require door cylinders 81 to be presented in transparent packaging, wherein only a limited material selection is available for this purpose and such packaging must thus usually be made of transparent plastic. However, a production from sustainable materials is generally not possible. Furthermore, such plastic packaging may be undesirably complex to produce and may possibly be unreasonably difficult for a customer to open.

Fig. 2 therefore illustrates a presentation arrangement 13 comprising a packaging 15 in which a presentation of the door cylinder 81 or another door cylinder may take place without the door cylinder 81 having to be received in a closed receiver for this purpose.

Rather, the packaging 15 has a receiver 17 into which the double cylinder 81 may be inserted, wherein the receiver 17 has lateral openings 19 so that the double cylinder 81 inserted into the receiver 17 may project at both sides from the receiver 17 and may be recognized and viewed directly from the outside of the packaging 15. To be able to nevertheless secure the door cylinder 81 inserted into the receiver 17 in the receiver 17 and to hold it reliably therein, the packaging 15 has a fixing device 35 that is configured to prevent a lateral slipping of the door cylinder 81 out of the receiver 17.

In the embodiment illustrated here, the fixing device 35 in particular comprises a fastening opening 39 which is formed at an outer wall 37 of the receiver 17 and through which a fastening device, not shown in the Figures, may be introduced into the receiver 17 (cf. also Figs. 3A and 3B). Furthermore, the fastening device, in particular a screw, may be screwable into the aforementioned cylinder fixing screw bore 69 when the door cylinder 81 is inserted into the receiver 17 in order, as a result, to secure the door cylinder 81 in the receiver 17. Furthermore, at a front wall 43 of the receiver 17 that is opposite the outer wall 37, which is formed

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by a rear wall 41 of the packaging 15, a second fastening opening 45 is provided through which a second fastening device, likewise not shown in the Figures, may be guided and may be introduced into the receiver 17 so that the double cylinder 81 may be fixed at both sides in the receiver 17 and may thereby be held in a stable and centered manner. However, as an alternative to a second fastening device, provision may also be made to introduce the fastening device, which is introduced through the fastening opening 39, through the fastening opening 39 and the cylinder fixing screw bore 69 of the inserted door cylinder 81 into the second fastening opening 45 in order, as a result, to be able to achieve a fixing and centering of the door cylinder 81 at both sides.

The packaging 15 of the presentation arrangement 13 thus allows the door cylinder 81 to be inserted such that sections of the door cylinder 81 projecting laterally from the receiver 17 may be directly visible. The fixing device 35 in turn makes it possible to prevent a slipping out of the door cylinder 81 so that the receiver 17 does not have to completely surround the door cylinder 81 and therefore does not have to be transparent.

While the door cylinder 81 may thus project laterally from the receiver 17, the receiver 17 has, in addition to the aforementioned rear wall 41 or outer wall 37, a boundary section 79 having an upper side section 117 that extends above the inserted door cylinder 81 and a front side section 119 that extends along a front side 120 of the inserted door cylinder 81 and that forms the aforementioned front wall 43 of the receiver 17. Furthermore, a base section 65 is provided in the packaging 15 to be able to support the door cylinder 81 at its lower side 83 in the receiver 17. In this regard, the inserted door cylinder 81 may ultimately be enclosed and held by the receiver 17 at four of the six space sides, wherein the complete fixing of the door cylinder 81 by the fixing device 35 may take place. The boundary section 79 in this respect so-to-say forms a belt which encloses the door cylinder 81 and which, due to the fixing of the door cylinder 81 to the cylinder fixing

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screw bore 69 in the receiver 17, only covers a central section of the door cylinder 81 inserted into the receiver 17, whereas the laterally projecting sections remain visible.

Furthermore, a display section 93 is provided below the door cylinder 81 inserted into the receiver 17 and has a measuring scale 95 via which the actual length of the door cylinder 81 may be directly readable. This may enable a potential buyer to first make a preselection, based on the visible part of the door cylinder 81, of door cylinders that may possibly be suitable for a specific application in order, starting from this preselection, to then be able to directly select the actually required door cylinder 81 by reading off at the measuring scale 95.

The display section 93 further forms a part of a storage box 97 which is formed below the receiver 17 and into which, for example, instructions for use and/or a key (not shown) associated with the door cylinder 81 may be insertable.

Since the presentation arrangement 13 comprising the packaging 15 thus offers a possibility of presenting the door cylinder 81 in a visible manner in the packaging 15 without the door cylinder 81 having to be completely held in a closed receiver, the boundary section 79 in particular does not necessarily have to be made of a transparent material, because even if a central section of the door cylinder 81 is concealed by the cylinder fixing screw bore 69, the dimension, the length and/or the design of the door cylinder 81 may be detected. In principle, any desired materials may therefore be used for the packaging 15 so that the packaging 15 may, for example, also be formed as a paperboard packaging or cardboard packaging without restricting the presentation of the door cylinder 81 in the packaging 15.

However, a formation of the packaging 15 from paperboard or cardboard in particular poses the problem that any deflections of a fastening device guided

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through the fastening opening 39 or also the second fastening opening 45 may lead to a force transmission to boundaries of the fastening openings 39 and 45 and, as a result, to damage to these boundaries, which may, for example, result in the fastening openings 39 and 45 wearing out. This may in turn impair the reliable fixing of the door cylinder in the receiver 17.

To counter this problem, in the presentation arrangement 13 illustrated by means of Fig. 2, a stabilizing device 47 is further provided that is configured to stabilize the fixing of the door cylinder in the receiver 17 that took place through the fastening opening 39.

In the embodiment illustrated by means of Fig. 2, the stabilizing device 47 for this purpose in particular has an outer wall reinforcement 49 for reinforcing the outer wall 37 in a stabilizing section surrounding the fastening opening 39. The outer wall reinforcement 49 is formed, by way of example, by a tab 71 that may be folded away from the base section 65 and that has a further fastening opening 63 that may be brought into alignment with the fastening opening 39 at the outer wall 37 by folding over the tab 71. In this regard, the stabilizing device 47 provides, in particular in addition to a first layer 53 of packaging material which is formed by the rear wall 41 of the packaging 15 and thus the outer wall 37, a second layer 55 of packaging material in the form of the folded-over tab 71 so that the fastening device may ultimately be guided through two layers – the layers 53 and 55 – of packaging material in order to fix the door cylinder 81 in the receiver 17, and the fixing of the door cylinder 81 may thus be stabilized. The tab 71 therefore so-to-say defines a local stabilizing section, in which the reinforcement of the outer wall 37 takes place, around the fastening opening 39.

Due to such a folding over of the tab 71, the outer wall reinforcement 49 may further be achieved in a simple manner and in particular without the need to attach an additional element or component to the packaging 15. A base section opening

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66, from which the tab 71 is folded out, is hereby indeed produced in the base section 65, but the door cylinder 81 may still be stably supported on the base section 65 due to the lateral projection. Furthermore, such a folding over of the tab 71 makes it possible to arrange the outer wall reinforcement 49 at an inner side 51 of the receiver 17 that, when the door cylinder 81 is inserted, is concealed by the door cylinder 81 and is thus not visible from the outside. In this regard, the stabilizing device 47 and the outer wall reinforcement 49 may be formed without hereby impairing the presentation of the door cylinder 81 in the packaging 15 or the visible visual design of the packaging 15.

Figures 4A to 5 further illustrate that the stabilizing device 47 may – alternatively or in addition to the outer wall reinforcement 49 – have an insertion part 139, wherein a first embodiment of the insertion part 139 is illustrated in Figs. 4A and 4B and a second embodiment of the insertion part 139 is illustrated by means of Fig. 5.

As Fig. 4A shows, the insertion part 139 has an insertion recess 145 which is modeled on the door cylinder shape 147 and into which in particular the flange section 25 of the door cylinder 81 may be inserted substantially without play. Furthermore, the insertion part 139 according to the embodiment of Figs. 4A and 4B has a support 155 for the core receiving section 23 of the door cylinder 81, on which the core receiving section 23 of the inserted door cylinder 81 may be supported.

The insertion part 139 further extends up to a portion 140 of the core receiving section 21 that is disposed the furthest outwardly perpendicular with respect to the flange section 25 and that has a straight insertion part rear wall 151 so that, by inserting the door cylinder 81 into the insertion opening 145 of the insertion part 139, the door cylinder shape 147 may ultimately be straightened and an arrangement with an insertion part rear wall 151 that is formed as straight may be provided by the arrangement of the door cylinder 81 and the insertion part 139.

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The arrangement of the insertion part 139 and the door cylinder 81 may therefore be supported with the insertion part rear wall 151 at the outer wall 37 of the receiver 17 when the insertion part 139 and the door cylinder 81 inserted therein are inserted into the receiver 17. As a result, a stabilized fixing of the door cylinder 81 in the receiver 17 may also take place in that any tilting moments may be areally transmitted from the insertion part rear wall 151 to the outer wall 37 to be able to protect boundaries of the fastening openings 39, 45 and 63 from damage.

Furthermore, the insertion part 139 has an insertion part fastening opening 141 and a second insertion part fastening opening 143 that are configured to be aligned with the fastening opening 39 and the second fastening opening 45, respectively, when the insertion part 139, with the door cylinder 81 inserted therein, is inserted into the receiver 17. This makes it possible to introduce a fastening device, which is introduced through the fastening opening 39 or the second fastening opening 45 into the receiver 17, into the insertion part fastening openings 141 and 143 in order, as a result, to securely receive the insertion part 139 in the receiver 17. Furthermore, it may be provided that the insertion part fastening openings 141 and 143 are aligned with the cylinder fixing screw bore 69 when the door cylinder 81 is inserted so that the aforementioned fastening devices may be screwed through the insertion part fastening openings 141 and 143 into the cylinder fixing screw bore 69 of the inserted door cylinder 81 in order to secure the door cylinder 81 in the receiver 17.

Furthermore, Fig. 4B illustrates that the insertion part 139 has a latching nose 149, in particular an elastically deformable latching nose 149, that may engage into the closing nose recess 33 of the door cylinder 81 when the door cylinder 81 is inserted in order to secure the door cylinder 81 against a removal from the insertion part 139.

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The embodiment according to Fig. 5 differs from the embodiment according to Figs. 4A and 4B in particular in that in this embodiment no support 155 is provided for the core receiving section 21, but only the flange section 25 may be inserted into the insertion opening 145. Nevertheless, when the door cylinder 81 is inserted, the insertion part 139 extends perpendicular to the flange section 25 up to a portion of the core receiving section 121 that is disposed the furthest outwardly in order, as a result, to enable the desired straightening of the door cylinder shape 147 and a support at the straight insertion part rear wall 151 after an insertion into the receiver 17 of the packaging 15. Furthermore, in the insertion part 139 according to Fig. 5, a passage opening 153 is provided into which the closing nose 73 that is deflected with the key removed according to Fig. 1 may engage. Due to such a deflection of the closing nose 73, a free space is created at a side of the closing nose recess 33 that is opposite the deflection, into which free space a latching nose 149 may also engage in the embodiment according to Fig. 5 to be able to stably receive the door cylinder 81 in the insertion part 139.

Both the insertion part 139 according to Figs. 4A and 4B and the insertion part 139 according to Fig. 5 may in particular be a 3D printed component, wherein such a manufacture may in particular enable a simple adaptation to respective door cylinders to be used.

While Fig. 2 shows the packaging 15 in a state of use G, in which the receiver 17 is formed and the door cylinder 81 may be inserted into the receiver 17, Figs. 3A and 3B show the packaging 15 in a flat initial state A in which the packaging 15 is provided as a flat punched part 99. However, by folding and, if necessary, adhesively bonding individual sections of the packaging 15, the packaging 15 may be easily transferred starting from the initial state A into the state of use G.

Figs. 3A and 3B in this respect show that the packaging 15 initially has a rear wall section 101 that is connected by a bending line 103, in particular a fold, to a

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structure section 105 at which the receiver 17 may be formed. To transfer the packaging 15 from the initial state A into the state of use G, the structure section 15 may be folded relative to the rear wall section 101, wherein a support section 107 of the structure section 105 may come into contact with the rear wall section 101 and may, for example, be adhesively bonded thereto. The rear wall section 101 and the support section 107 have a respective suspension opening 109 that may be superposed on one another by the folding and may enable a suspension of the presentation arrangement 13. In other embodiments not shown in the Figures, however, two respective offset suspension openings 109 may, for example, be provided at the rear wall section 101 and the support section 107 in order, for example, to be able to suspend heavy or long door cylinders without the risk of the packaging 15 tilting. Furthermore, Figs. 3A and 3B, for example, show that the aforementioned fastening opening 39 may in particular be formed at the rear wall section 101 and thus at the rear wall 41 of the packaging 15.

The support section 107 further has a U-shaped recess 111 at whose lower side 91 the aforementioned boundary section 79 is held at a lower side bending line 113. The boundary section 79 is divided into the aforementioned upper side section 117 and the front side section 119, wherein the upper side section 117 and the front side section 119 are separated from one another by a further bending line 115. Thus, by appropriately folding the boundary section 79 at the lower side bending line 113 and the further bending line 115, the upper side section 117 and the front side section 119 may thus be transferred into the desired orientation to extend along an upper side 118 and a front side 120 of the door cylinder inserted into the receiver 17. Furthermore, the front side section 119 has the aforementioned second fastening opening 45 via which the inserted door cylinder 81 may be centered, for example.

While Fig. 3A illustrates an embodiment in which the boundary section 79 is centrally held at the support section 105 so that the receiver 17 is also centrally

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formed at the packaging 15, Fig. 3B shows an embodiment with the receiver 17 arranged off-center. Due to such an off-center arrangement, door cylinders may, for example, be stably held in the packaging 15 whose center of gravity is offset from the cylinder fixing screw bore 69.

The front side section 119 subsequently transitions into the display section 93 that has likewise already been mentioned, wherein, on this transition, a width of the packaging 15 measured along a width direction, which is oriented perpendicular to a height direction extending from the rear wall section 101 to the structure section 105, increases and in particular again reaches the width of the support section 107. The measuring scale 95 provided at the display section 93 in some embodiments is not shown in Figs. 3A and 3B.

A lower base section 121 is connected to the display section 93 via a first base bending line 123 and is in turn connected to a rear side section 127 via a second base bending line. By folding the packaging 15 along the base bending lines 123 and 125, the lower base section 121 may in particular be transferred into an orientation oriented perpendicular to the rear wall section 101 to be able to form a base of the storage box 97, as Fig. 2 shows. On the other hand, the rear side section 127 connected to the lower base section 121 via the second base bending line 125 may be transferred into an orientation in parallel with the rear wall section 101 in order furthermore to be adhesively bonded to the rear wall section 101, for example. Moreover, the packaging 17 may, for example, be erectable at the lower base section 121 as an alternative to a suspension at the suspension openings 93.

The aforementioned base section 65 is connected to the rear side section 127 via a receiver bending line 133 and may, in turn, be brought into an orientation perpendicular to the rear wall section 101 by a corresponding folding to be able to form a base of the receiver 17 and to be able to support the door cylinder at the

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lower side 83 in the receiver 17. The aforementioned tab 71 having the further fastening opening 63 is furthermore formed at the base section 65 and may be brought into contact with the rear wall section 101, and thus with the outer wall 37 of the receiver 17, by folding relative to the base section 65 to be able to form the mentioned outer wall reinforcement 49 of the stabilizing device 47.

The base section 65 is further connected via a fastening bending line 135 to a fastening section 137 that may be brought into contact with the display section 93, and adhesively bonded thereto, by folding in particular at an inner side of the storage box 97 in order to stabilize the packaging 15 and in particular to close the storage box 97.

In the embodiment shown, the display section 93, the lower base section 121, the rear side section 127 and the base section 65 are further connected via respective closure bending lines 129 to closure sections 131 that may close the storage box 97 by a corresponding folding.

In illustrative terms and to summarize, the packaging 15 may thus be transferred from the initial state A into the state of use G after a folding of the rear wall section 101 relative to the support section 107, starting from the fastening section 137, by rolling in such that the fastening section 137 comes into contact with the display section 93 at an inner side of the storage box 97 that is thereby formed, wherein furthermore, for example, the support section 107 may be adhesively bonded to the rear wall section 101, the rear side section 127 may be adhesively bonded to the rear wall section 101 and/or the fastening section 137 may be adhesively bonded to the inner side of the display section 93.

Furthermore, in some embodiments, the packaging 15, starting from the state of use G shown in Fig. 2, but in particular with closure sections 131 not yet folded in, may be transferrable, by pushing the display section 93 away from the support

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section 107, into a flat transport state in which the upper side section 117, the base section 65 and the lower base section 121 are aligned substantially in parallel with the support section 107. This transport state may in particular enable a space-saving storage and/or transport of packaging 5 that is already fully prepared but not yet fitted. Only when the packaging 15 is fitted with a door cylinder 81 may the packaging then be transferred from the transport state back into the state of use G to enable the insertion of the door cylinder 81 into the receiver 17.

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Reference numeral list

11	single door cylinder
13	presentation arrangement
15	packaging
17	receiver
19	lateral opening
21	housing
23	core receiving section
25	flange section
31	cylinder core
33	closing nose recess
35	fixing device
37	outer wall
39	fastening opening
41	rear wall
43	front wall
45	second fastening opening
47	stabilizing device
49	outer wall reinforcement
51	inner side of the receiver
53	first position
55	second position
57	holding section
59	connecting bridge
61	single door cylinder
63	further fastening opening
65	base section
66	base section opening
67	recess
69	cylinder fixing screw bore
71	tab
73	closing nose
75	key introduction opening
81	door cylinder
83	lower side
91	lower side
93	display section
95	measuring scale
97	storage box
99	punched part
101	rear wall section
103	bending line
105	structure section
107	support section

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109	suspension opening
111	U-shaped recess
113	lower side bending line
115	further bending line
117	upper side section
118	upper side
119	front side section
121	lower base section
123	first base bending line
125	second base bending line
127	rear side section
129	closure bending line
131	closure section
133	receiver bending line
135	fastening bending line
137	fastening section
139	insertion part
141	insertion part fastening opening
143	second insertion part fastening opening
145	insertion recess
147	door cylinder shape
149	latching nose
151	insertion part rear wall
153	passage opening
155	support
A	initial state
G	state of use
L	longitudinal axis

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The claims defining the invention are as follows:

1. A presentation arrangement for presenting a door cylinder,
said presentation arrangement comprising a packaging that has a receiver for the door cylinder,
wherein the receiver has, at an outer wall, a fastening opening through which a fastening device can be guided in order to fix the door cylinder in the receiver,
wherein the presentation arrangement comprises a stabilizing device for stabilizing the fixing – that is provided by the introduced fastening device – of the door cylinder in the receiver.

2. A presentation arrangement according to claim 1,
wherein the outer wall of the receiver is formed by a rear wall of the packaging.

3. A presentation arrangement according to claim 1 or 2,
wherein the stabilizing device comprises an outer wall reinforcement for the outer wall.

4. A presentation arrangement according to claim 3,
wherein the outer wall reinforcement is formed at an inner side of the receiver, said inner side facing the inserted door cylinder.

5. A presentation arrangement according to claim 3 or 4,
wherein the outer wall is formed by a first layer of packaging material, said first layer having the fastening opening, wherein the stabilizing device comprises, as the outer wall reinforcement, a second layer of packaging material, said second layer contacting the inner side of the outer wall,
wherein the second layer has a further fastening opening that is oriented in

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alignment with the fastening opening of the first layer, wherein the fastening device can be guided through the fastening opening and the further fastening opening in order to fix the door cylinder.

6. A presentation arrangement according to claim 5, wherein the packaging is provided flat in an initial state and can be transferred into a state of use by folding, wherein the second layer of packaging material can be brought into contact with the first layer of packaging material by the folding.

7. A presentation arrangement according to claim 5 or 6, wherein the first layer forms a rear wall of the packaging and wherein the second layer is formed by a tab that can be folded up at an inner side of the receiver, said inner side facing the inserted door cylinder.

8. A presentation arrangement according to any one of claims 1 to 7, wherein the receiver has at least one lateral opening through which the inserted door cylinder projects laterally from the receiver.

9. A presentation arrangement according to any one of claims 1 to 8, wherein the receiver is bounded by a rear wall of the packaging and by a boundary section extending along an upper side and a front side of the inserted door cylinder, wherein the packaging furthermore has a base section on which the door cylinder inserted into the receiver can be supported at a lower side.

10. A presentation arrangement according to any one of claims 1 to 9, wherein a second fastening opening is provided at a front wall of the receiver that is opposite the outer wall, through which second fastening

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opening a second fastening device and/or the fastening device can be guided in order to center the door cylinder in the receiver.

11. A presentation arrangement according to any one of claims 1 to 10, wherein the packaging has at least one of a display section that is arranged below the receiver in a state of use and that has a measuring scale for measuring a length of the inserted door cylinder; or a storage box for receiving at least one of instructions for use or at least one key for the door cylinder.

12. A presentation arrangement according to any one of claims 1 to 11, wherein the receiver is arranged centrally or off-center at the packaging with respect to a longitudinal extent of the door cylinder inserted into the receiver.

13. A presentation arrangement according to any one of claims 1 to 12, wherein the stabilizing device has an insertion part into which the door cylinder can be inserted, wherein the insertion part can be inserted into the receiver of the packaging when the door cylinder is inserted, and wherein the insertion part has an insertion part fastening opening which is aligned with the fastening opening and into which the fastening device guided through the fastening opening can be introduced.

14. A presentation arrangement according to claim 13, wherein the door cylinder has a door cylinder shape having a core receiving section, which is substantially circular in cross-section, for receiving a rotatable cylinder core and having a flange section, which projects radially away from the core receiving section, for receiving at least one housing pin and at least one housing spring,

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wherein the insertion part has an insertion recess into which the flange section can be inserted substantially without play, wherein, when the door cylinder is inserted, the insertion part extends perpendicular to the flange section at least up to a portion of the core receiving section that is disposed the furthest outwardly perpendicular to the flange section, and wherein the insertion part has an insertion part rear wall which is formed as straight and with which the insertion part inserted into the receiver is supported at the outer wall of the receiver.

15. A presentation arrangement according to claim 13 or 14,
wherein the insertion part has a latching nose that is configured, when the door cylinder is inserted, to engage into a closing nose recess of the door cylinder and to secure the door cylinder in the insertion part.

16. A presentation arrangement according to claim 15,
wherein a key for actuating the door cylinder is associated with the door cylinder, wherein a closing nose of the door cylinder is deflected out of the closing nose recess when the key is removed, wherein the latching nose is configured to engage into the closing nose recess at a side of the closing nose recess that is opposite the deflected closing nose.

17. A presentation arrangement according to claim 16,
wherein the insertion part has a passage opening opposite the latching nose for an arrangement of the deflected closing nose.

18. A presentation arrangement according to claim any one of claims 13 to 17,
wherein the insertion part is a 3D printed component.

19. A presentation arrangement according to any one of claims 1 to 18,

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wherein the packaging is provided flat in an initial state and can be transferred by folding into a state of use in which the receiver is formed.

20. A presentation arrangement according to claim 19,
wherein the packaging can be transferred from the state of use into a flat transport state in which an upper side section of the receiver that extends above the inserted door cylinder in the state of use and a base section of the receiver that supports the inserted door cylinder at a lower side in the state of use extend in parallel with a rear wall of the packaging.

21. A presentation arrangement according to any one of claims 1 to 20, further comprising at least one of the door cylinder or the fastening device.

22. An insertion part for receiving a door cylinder, which insertion part can be inserted into a receiver of a packaging of a presentation arrangement according to any one of claims 1 to 21, wherein the insertion part has an insertion part fastening opening into which a fastening device can be introduced in order to fasten the door cylinder in the insertion part.

23. An insertion part according to claim 22,
wherein the door cylinder has a door cylinder shape having a core receiving section, which is substantially circular in cross-section, for receiving a rotatable cylinder core and having a flange section, which projects radially away from the core receiving section, for receiving at least one housing pin and at least one housing spring,
wherein the insertion part has an insertion recess into which the flange section can be inserted substantially without play, wherein, when the door cylinder is inserted, the insertion part extends perpendicular to the flange section at least up to a portion of the core receiving section that is disposed the furthest outwardly perpendicular to the flange section, and wherein the

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insertion part has an insertion part rear wall that is formed as straight and that is configured, when the insertion part is inserted into the receiver of the packaging, to be supported at the outer wall of the receiver.

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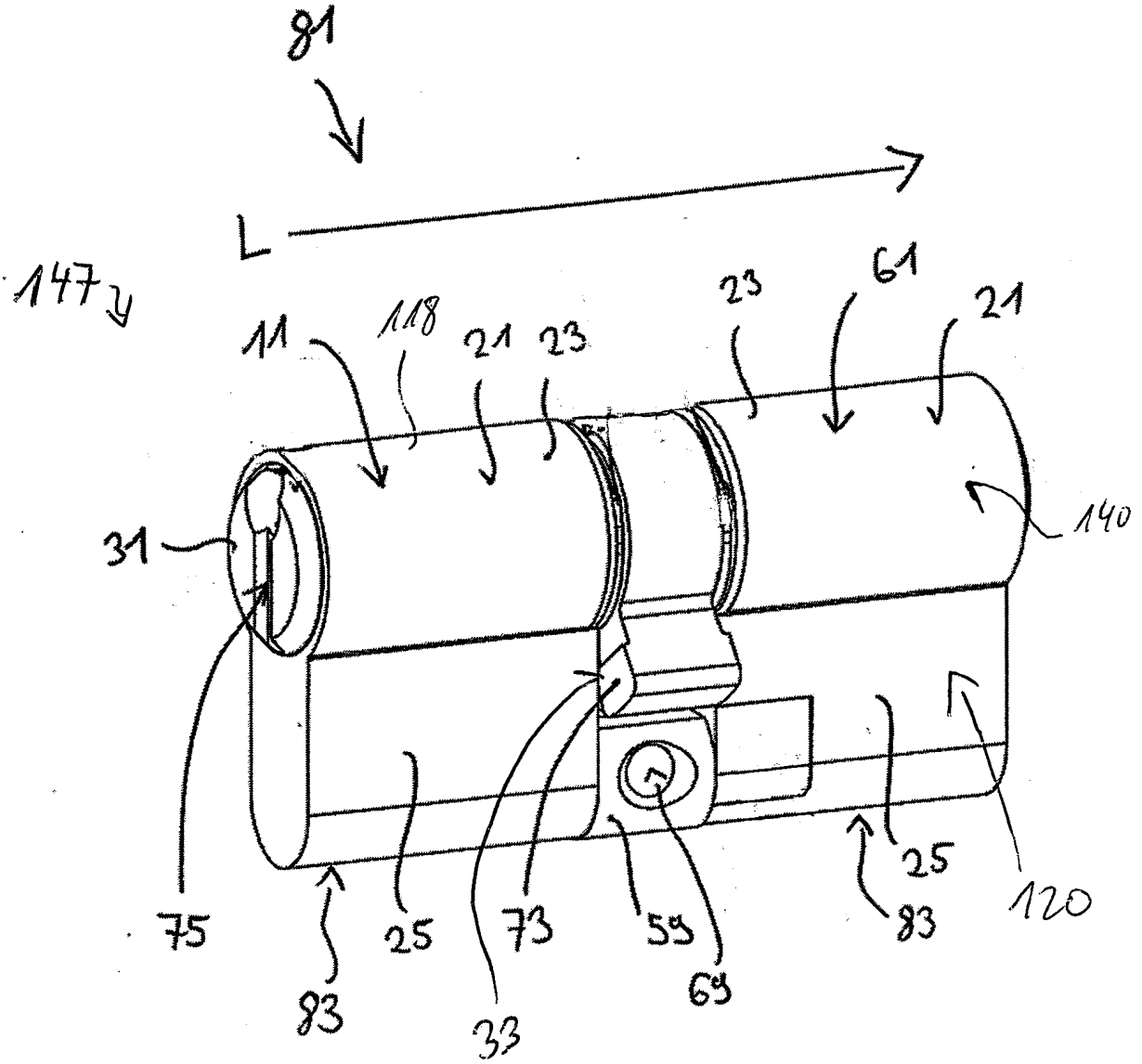

Fig. 1

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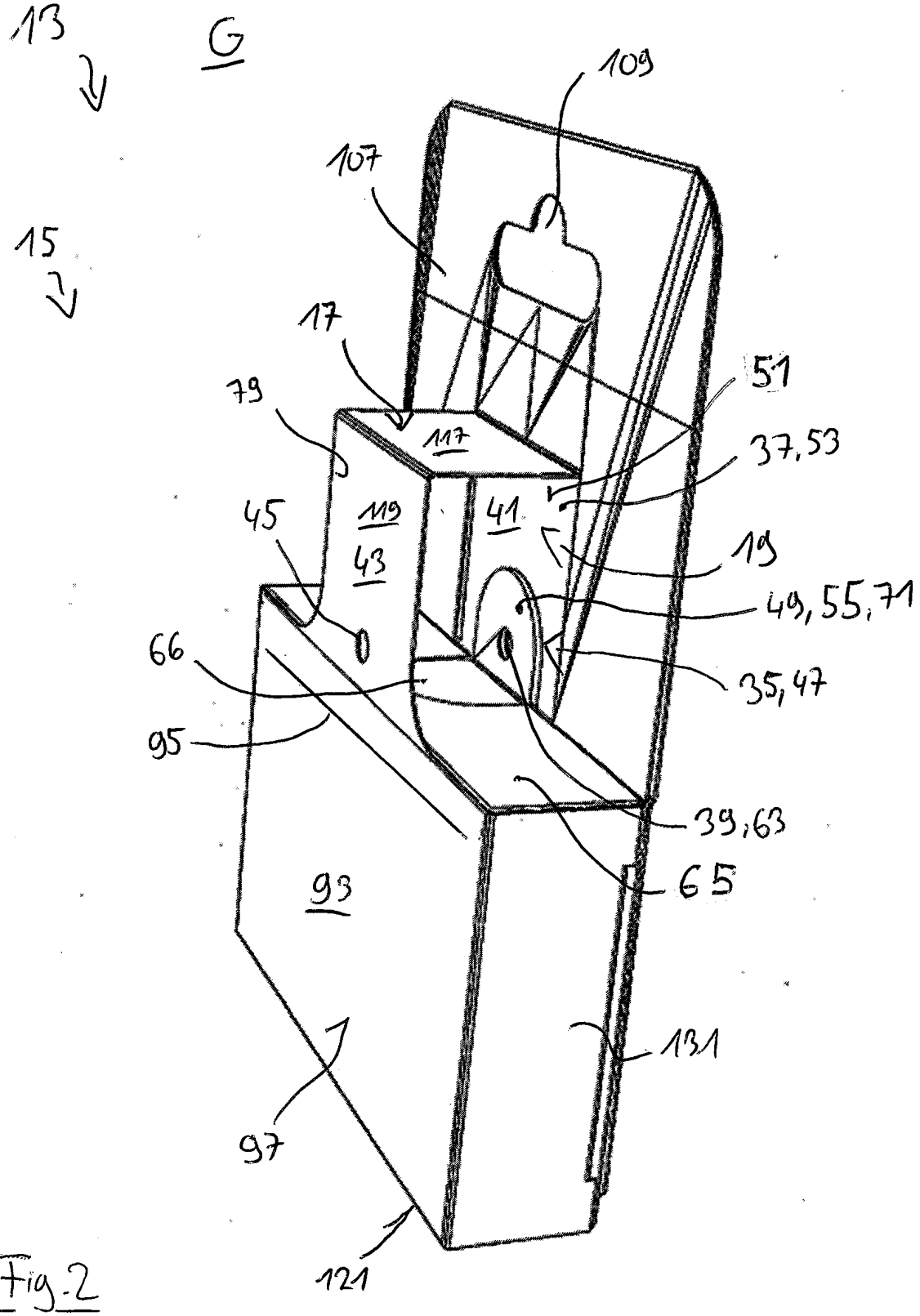

Fig. 2

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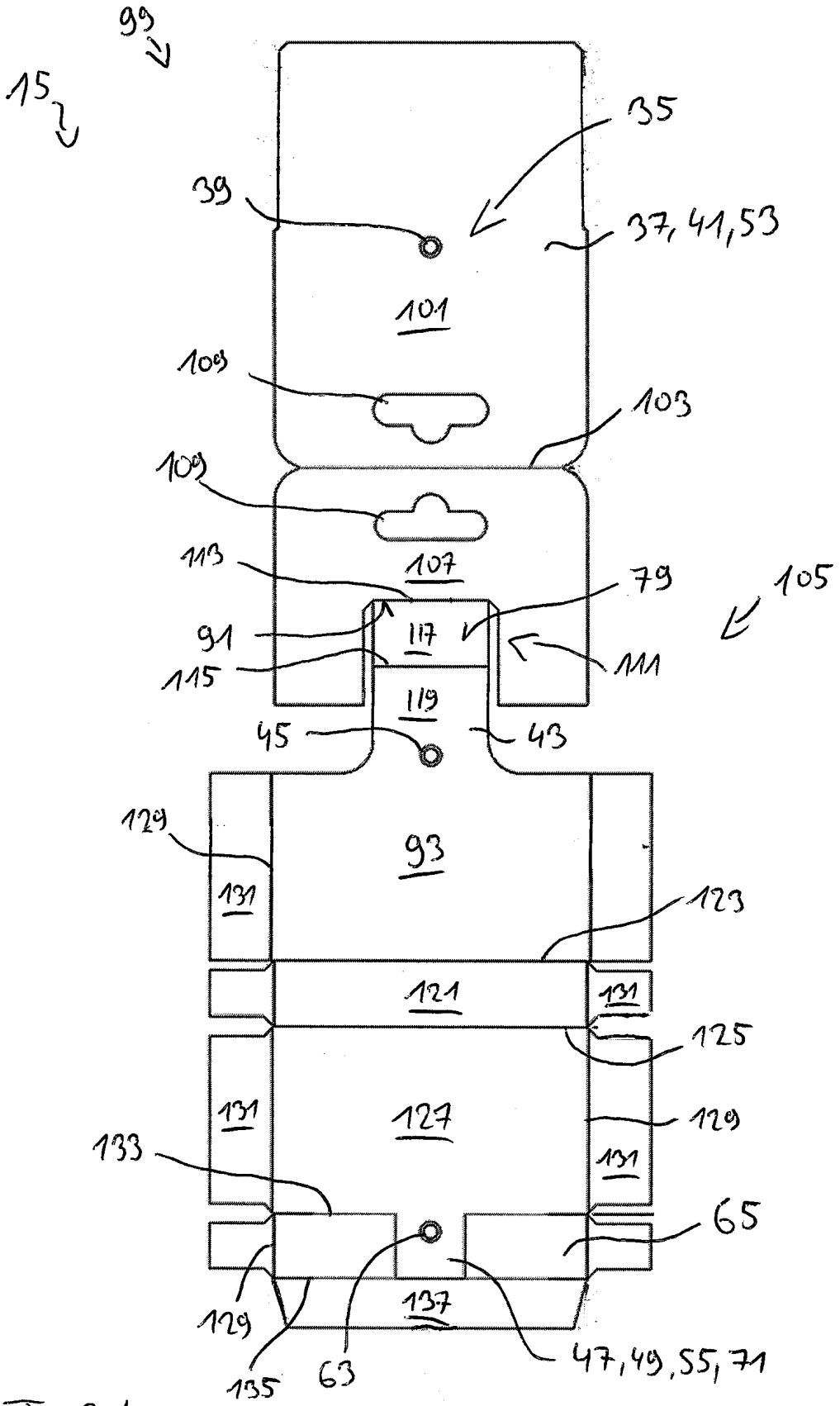

Fig. 3A

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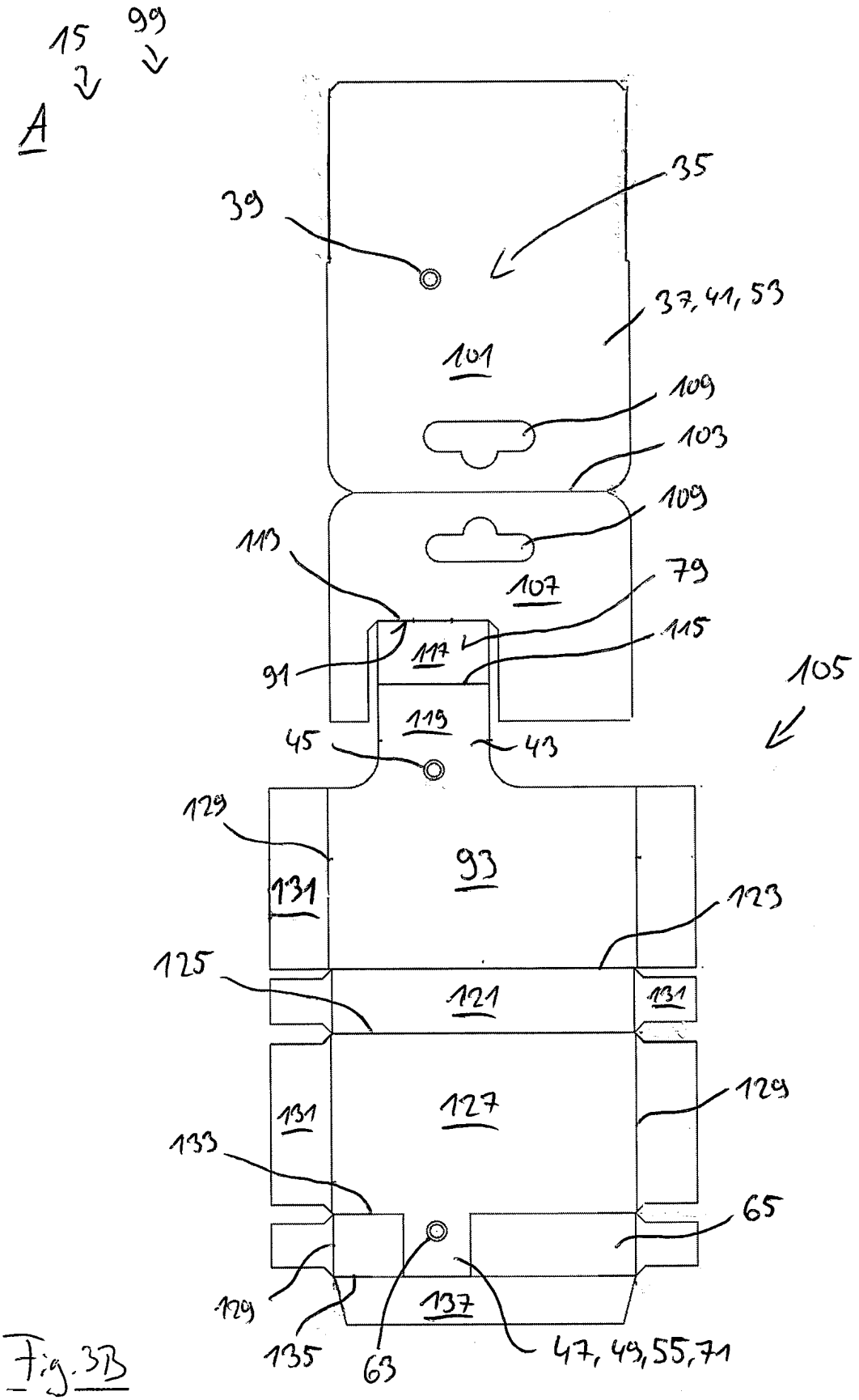

Fig. 3B

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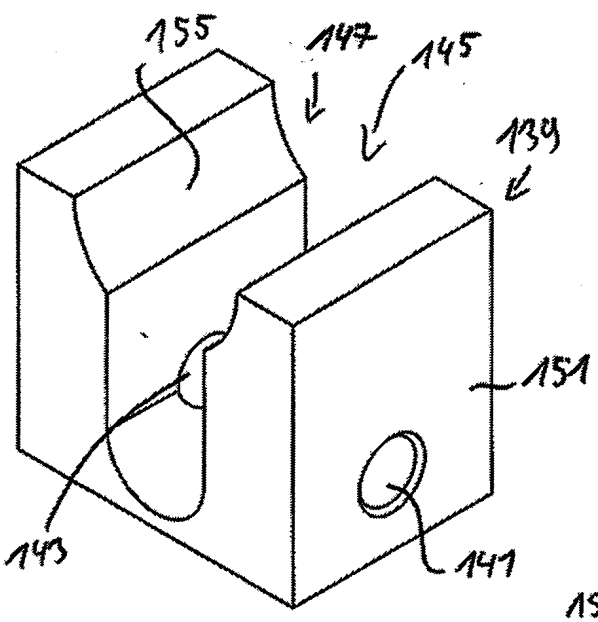

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Fig. 4A

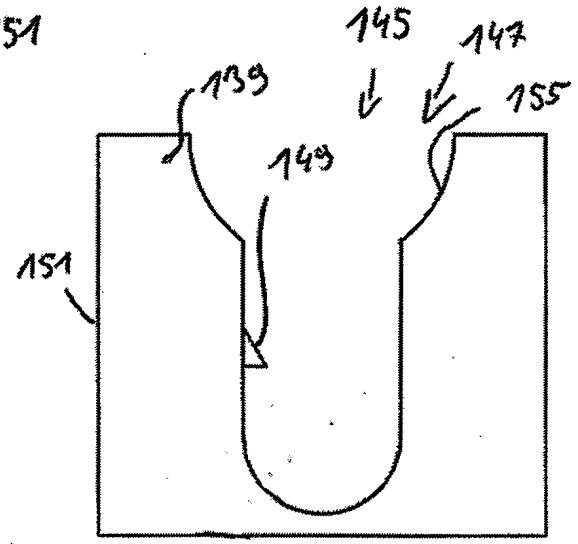

Fig. 4B

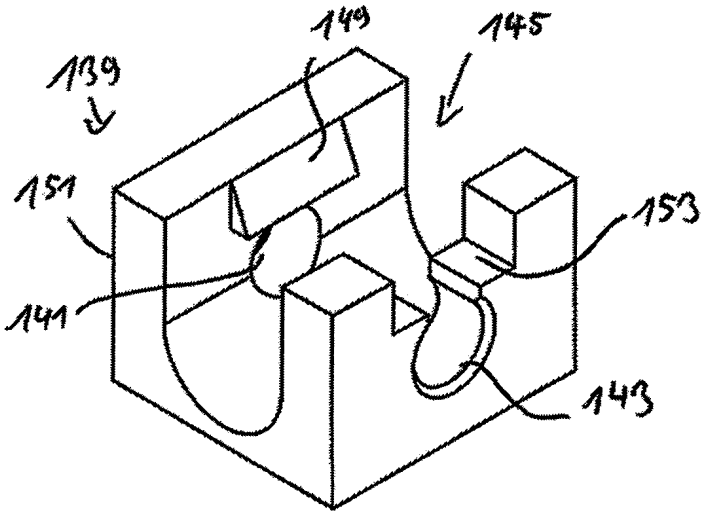

Fig. 5