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DEVICE FOR DETACHABLY FIXING A BRACELET TO A WATCH-CASE

The current fashion requires the wearer of a watch, particularly if it is a woman, to match the bracelet with her (or his) clothes. Various solutions have been developed and marketed to allow bracelets to be changed quickly.

The most common solutions involve the manufacture of a special bracelet, which is often complicated; others allow conventional bracelets to be used but at the cost of a specially constructed watch-case; still others require both. This invention belongs to the second category and therefore aims at providing a device for detachably fixing a bracelet to a watch-case, which allows the use of a conventional bracelet.

In this category, German patent DE 41 36 496A1 offers a device in which the holes provided in the horns of the watch-case to contain the ends of the spring lugs to which the bracelet is attached are open underneath. This allows the two ends of the spring lug to be easily introduced into their respective holes. To secure the spring lug in these holes, there is a pivoting plate which covers the lateral openings of the holes. To change the bracelet, one only needs to pivot the plate in the other direction, and to extract laterally the spring lug solid with the bracelet. The main inconvenience of this solution lies in the fact that the spring lug remains with the bracelet, and could be lost if handled carelessly.

Patent CH 681 762, and patent FR 86 106 14 Vassort, propose a device in which the lug is rigidly attached to the watch-case at one end, in such a way that only the bracelet is removed during changing. A pivoting locking device makes it possible to lock the bracelet at the other end of the spring lug. The locking device clicks into a notch on the end of the lug. Although such a device allows the use of

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conventional bracelets, it still has some inconveniences.

First of all, the notched locking system has the usual shortcoming of this sort of closures - it wears out quickly, even if the parts of the locking device which are subject to wear are made of steel, as suggested by patent CH 681 762. Moreover, the lug, held by one end only, is subject to strain, which can affect the strength of the closure. The closing device also has a protruding catch which can easily catch on something and open when the wearer makes any movement. Finally, the space which exists between the body of the watch-case and the lug must necessarily be narrow, which makes the introduction of the bracelet difficult, particularly if it is thicker than usual; and such variations in thickness are relatively frequent in bracelets made of leather, which is a natural material whose thickness is not necessarily standard.

Patent FR 92 098 71 shows a system in which the spring lug, also fixed by one end to the watch-case, contains an obtuse angle. The part which penetrates the horn of the watch-case constitutes one of the segments of the lug, and that which is outside, the other segment, each segment forming one side of the angle. The first segment is fixed in the horn in such a way as to allow it to pivot. As the second segment forms an angle with the pivot axis of the first segment, the free end of the lug makes a circular arc when pivoting. The hole in the other horn of the watch-case for this free end is open laterally. As such, the lug only needs to be pivoted in order to pull it out of or put it back into its hole. A closing device allows the lug to be locked in the closed position once the free end is fitted in its hole. The main advantage of the system lies in the fact that it offers the user a greater space between the watch-case body and the lug than the system contained in patent CH 681 762. However, it has the inconvenience of having an unusual construction and is therefore not easy to

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manage - fixing the lug in the watch-case, to enable it to be rotated, is not easy, and the assembly hole must be bored on an angle.

The invention presented here aims at providing a device for detachably fixing a bracelet to a watch-case, which avoids the above mentioned inconveniences.

The diagrams represent, by way of example, one form of embodiment of the invention.

Figure 1 is a bottom view of a part of the watch-case fitted with the device contained in this invention, with the bracelet attaching rod in the closed position, and the dotted line representing the open position.

Figure 2 is a view of B, that is, a side view, of the part of the watch-case represented in Figure 1, but fitted with a version of a push-piece making it possible to free the bracelet in which the head of the push-piece is almost flush with the external surface of the watch-case.

Figure 3 is a view of A, that is a side view taken on a side of the watch-case adjacent and perpendicular to side B, and showing a variation in which may be seen the head of the rod, which is screwed in.

Figure 4 is a partial side view showing the screwed assembly of the rod, as in the version represented in Figure 3.

Figure 5 is a sectional drawing of another version of a push-piece allowing the bracelet to be freed, in which the push-piece is fitted with a catch protruding laterally.

The device according to the invention comprises at least one rod 1 designed to receive the end of the bracelet.

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This rod is fixed by its first end to the watch-case 2 by way of a pivoting part 14 into which the rod is pushed, according to the version in Figures 1 and 2, or screwed, according to the version in Figures 3 and 4. The pivoting part 14 is itself fixed to the watch-case by means of a pivot or pin 3 which here takes the form of a simple screw. The length of the rod is variable - the rod, on the side opposite to that which is solid with the pivoting part 14, has a cylindrical hollow at the bottom of which is set a helical spring 8. On the spring rests a cylinder 15, solid with another cylinder of a smaller diameter, which protrudes from the cylindrical hollow, and which forms the other end 5 of the rod. In the closed position, this other end fixes into a hole 4 in the watch-case. The bottom of the hole is closed by a push-piece 9. In the form of embodiment represented in Figure 1, the head 10 of the push-piece extends beyond the watch-case over a distance equal to the length of the course traversed by the other end of the rod until its complete retraction. In the version in Figure 2, the head of the push-piece is almost flush with the surface of the watch-case. This configuration has the advantage of being discrete and avoids the risk of catching the push-pin. However, it requires the use of a pointed object, for example, a ball-point pen, to press in the push-pin. In the version represented in Figure 5, the push-pin 9 is fitted with a lateral catch 12; a longitudinal opening 13, parallel to the axis of the push-piece, is arranged in the wall of the passage and allows the catch to protrude on the outside in such a way as to afford a hold for the user's finger. This solution also offers the advantage of discretion and may be preferred in certain cases for primarily aesthetic reasons. The horn in which the hole 4 is housed, contains a slanting surface 7 between the outside and the edge 6 of the hole, situated at the point of contact between the horn and the other end 5 of the rod when closing. When the device is in the open position, as depicted by the dotted

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line in Figure 1, the user threads the bracelet on to the rod 1, and then pushes back the rod towards the watch-case. The rod pivots around the pin 3, which is perpendicular to the plane in which the rod moves. The end 5 of the rod touches the slanting surface 7. The pivoting movement continues, the end 5 slides along the slanting surface 7, and, as the distance narrows, the rod shortens, compressing the spring 8. Having passed over the edge 6, the spring 8 releases and the end 5 inserts into the hole 4.

Taking off the bracelet is performed in the opposite manner, by pushing in the end 5 by means of the push-piece and by pulling on the rod in such a way as to make it pivot in the other direction.

In a form of embodiment not represented here, the slanting surface 7 is arranged at the tip of the end 5. It is also possible to provide such slanting surfaces equally well on the edge 6 as on the tip of the end 5.

In the form of embodiment represented in Figures 3 and 4, the rod crosses the pivoting connecting part 14, and its end, visible through the opening on the outside, contains a slot for the use of a screwdriver, which facilitates the assembly of the rod. Of course, the slot may take a different form where appropriate, such as a cross-shape.

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CLAIMS

1. Device for detachably fixing a bracelet to a watch-case, comprising at least one rod (1) fixed by one end to the watch-case (2) so as to be able to pivot, at least one hole (4) situated in a part which is solid with the watch-case and capable of receiving the other end (5) of the said rod, characterized in that the pivoting pin (3) is perpendicular to the plane of rotation of the said rod, the length of the said rod may be shortened by a sideways pressure exercising pressure on the elastic element (8), the said hole having an edge (6) which obstructs the introduction of the said other end of the rod into the said hole, at least one slanting surface (7) situated at the point of contact between the watch-case and the said other end, either on the said watch-case adjacent to the said edge (6), or on the other end (5), or on the two, the said slanting surface being shaped in such a way that the continuation of the pivoting movement of the rod through to its end causes a retraction of the said rod by causing it to slide along the said slanting surface, up to the point where the said rod passes over the said edge (6) and that the release of the elastic elements (8) with which the rod is fitted cause its elongation and insertion of the said other end (5) into the said hole (4).
2. Device for detachable fixation according to Claim 1, characterized in that it comprises a push-piece (9) placed in the bottom of the hole (4) and capable of being pushed in from the outside in such a way as to push the rod (1) and decrease its length until it can pivot around the pin (3).
3. Device according to Claim 2, characterized in that the

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push-piece, on the outside, is fitted with a head (10) whose diameter is smaller than that of a passage (11) in which the said head is placed, the said head thus being able to slide in the said passage.

4. Device according to Claim 2, characterized in that the push-piece comprises a lateral catch (12), a longitudinal opening (13) parallel to the axis of the push-piece being made in the wall of the passage of the push-piece, the lateral catch protruding towards the outside through the said longitudinal opening, the length of which is at least equal to that of the travel of the push-piece.
5. Device according to one of the Claims 1 to 4, characterized in that the rod (1) is screwed into the watch-case by way of a rotating part (14) assembled on the pin (3).
6. Device according to Claim 5, characterized in that the rod (1) crosses the connecting rotating part (14) and on its outside has an end shaped such as to afford a grip to a screwdriver.

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ABSTRACT

This device for detachably fixing a bracelet to a watch-case has a rod (1) fixed to one end of the watch-case by means of a pin (3) which allows it to pivot in the plane of the watch-case. The other end (5) of the rod is retractible. In the open position, the bracelet is threaded on to the rod, which is then rotated. The end (5) touches a slanting surface (7) at the edge (6) of the hole (4) contained in the horn of the watch-case. The end (5) retracts beneath the force of the thrust by sliding over the slanting surface (7), passes over the edge and inserts into the hole under the effect of a spring (8) release. A push-piece (9) allows the end (5) to be pushed in and the device to be opened to change the bracelet.

(Fig. 1)

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DEVICE FOR DETACHABLY FIXING A BRACELET TO A WATCH-CASE

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The most common solutions involve the manufacture of a special bracelet, which is often complicated; others allow conventional bracelets to be used but at the cost of a specially constructed watch-case; still others require both. This invention belongs to the second category and therefore aims at providing a device for detachably fixing a bracelet to a watch-case, which allows the use of a conventional bracelet.

In this category, German patent DE 41 36 496A1 offers a device in which the holes provided in the horns of the watch-case to contain the ends of the spring lugs to which the bracelet is attached are open underneath. This allows the two ends of the spring lug to be easily introduced into their respective holes. To secure the spring lug in these holes, there is a pivoting plate which covers the lateral openings of the holes. To change the bracelet, one only needs to pivot the plate in the other direction, and to extract laterally the spring lug solid with the bracelet. The main inconvenience of this solution lies in the fact that the spring lug remains with the bracelet, and could be lost if handled carelessly.

Patent CH 681 762, and patent FR 86 106 14 Vassort, propose a device in which the lug is rigidly attached to the watch-case at one end, in such a way that only the bracelet is removed during changing. A pivoting locking device makes it possible to lock the bracelet at the end of the spring lug. The locking device clicks into a notch on the end of the lug. Although such a device allows the use of

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conventional bracelets, it still has some inconveniences. First of all, the notched locking system has the usual shortcoming of this sort of closures - it wears out quickly, even if the parts of the locking device which are subject to wear are made of steel, as suggested by patent CH 681 762. Moreover, the lug, held by one end only, is subject to strain, which can affect the strength of the closure. The closing device also has a protruding catch which can easily catch on something and open when the wearer makes any movement. Finally, the space which exists between the body of the watch-case and the lug must necessarily be narrow, which makes the introduction of the bracelet difficult, particularly if it is thicker than usual; and such variations in thickness are relatively frequent in bracelets made of leather, which is a natural material whose thickness is not necessarily standard.

Patent FR 92 098 71 shows a system in which the spring lug, also fixed by one end to the watch-case, contains an obtuse angle. The part which penetrates the horn of the watch-case constitutes one of the segments of the lug, and that which is outside, the other segment, each segment forming one side of the angle. The first segment is fixed in the horn in such a way as to allow it to pivot. As the second segment forms an angle with the pivot axis of the first segment, the free end of the lug makes a circular arc when pivoting. The hole in the other horn of the watch-case for this free end is open laterally. As such, the lug only needs to be pivoted in order to pull it out of or put it back into its hole. A closing device allows the lug to be locked in the closed position once the free end is fitted in its hole. The main advantage of the system lies in the fact that it offers the user a greater space between the watch-case body and the lug than the system contained in patent CH 681 762. However, it has the inconvenience of having an unusual construction and is therefore not easy to

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manage - fixing the lug in the watch-case, to enable it to be rotated, is not easy, and the assembly hole must be bored on an angle.

The invention presented here aims at providing a device for detachably fixing a bracelet to a watch-case, which avoids the above mentioned inconveniences.

The diagrams represent, by way of example, one form of embodiment of the invention.

Figure 1 is a bottom view of a part of the watch-case fitted with the device contained in this invention, with the bracelet attaching rod in the closed position, and the dotted line representing the open position.

Figure 2 is a view of B, that is, a side view, of the part of the watch-case represented in Figure 1, but fitted with a version of a push-piece making it possible to free the bracelet in which the head of the push-piece is almost flush with the external surface of the watch-case.

Figure 3 is a view of A, that is a side view taken on a side of the watch-case adjacent and perpendicular to side B, and showing a variation in which may be seen the head of the rod, which is screwed in.

Figure 4 is a partial side view showing the screwed assembly of the rod, as in the version represented in Figure 3.

Figure 5 is a sectional drawing of another version of a push-piece allowing the bracelet to be freed, in which the push-piece is fitted with a catch protruding laterally.

The device according to the invention comprises at least one rod 1 designed to receive the end of the bracelet.

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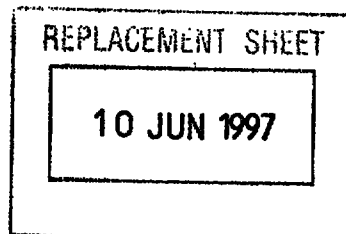
This rod is fixed by its first end to the watch-case 2 by way of a pivoting part 14 into which the rod is pushed, according to the version in Figures 1 and 2, or screwed, according to the version in Figures 3 and 4. The pivoting part 14 is itself fixed to the watch-case by means of a pivot or pin 3 which here takes the form of a simple screw. The length of the rod is variable - the rod, on the side opposite to that which is solid with the pivoting part 14, has a cylindrical hollow at the bottom of which is set a helical spring 8. On the spring rests a cylinder 15, solid with another cylinder of a smaller diameter, which protrudes from the cylindrical hollow, and which forms the other end 5 of the rod. In the closed position, this other end fixes into a hole 4 in the watch-case. The bottom of the hole is closed by a push-piece 9. In the form of embodiment represented in Figure 1, the head 10 of the push-piece extends beyond the watch-case over a distance equal to the length of the course traversed by the other end of the rod until its complete retraction. In the version in Figure 2, the head of the push-piece is almost flush with the surface of the watch-case. This configuration has the advantage of being discrete and avoids the risk of catching the push-pin. However, it requires the use of a pointed object, for example, a ball-point pen, to press in the push-pin. In the version represented in Figure 5, the push-pin 9 is fitted with a lateral catch 12; a longitudinal opening 13, parallel to the axis of the push-piece, is arranged in the wall of the passage and allows the catch to protrude on the outside in such a way as to afford a hold for the user's finger. This solution also offers the advantage of discretion and may be preferred in certain cases for primarily aesthetic reasons. The horn in which the hole 4 is housed, contains a slanting surface 7 between the outside and the edge 6 of the hole, situated at the point of contact between the horn and the other end 5 of the rod when closing. When the device is in the open position, as depicted by the dotted

line in Figure 1, the user threads the bracelet on to the rod 1, and then pushes back the rod towards the watch-case. The rod pivots around the pin 3, which is perpendicular to the plane in which the rod moves. The end 5 of the rod touches the slanting surface 7. The pivoting movement continues, the end 5 slides along the slanting surface 7, and, as the distance narrows, the rod shortens, compressing the spring 8. Having passed over the edge 6, the spring 8 releases and the end 5 inserts into the hole 4.

Taking off the bracelet is performed in the opposite manner, by pushing in the end 5 by means of the push-piece and by pulling on the rod in such a way as to make it pivot in the other direction.

In a form of embodiment not represented here, the slanting surface 7 is arranged at the tip of the end 5. It is also possible to provide such slanting surfaces equally well on the edge 6 as on the tip of the end 5.

In the form of embodiment represented in Figures 3 and 4, the rod crosses the pivoting connecting part 14, and its end, visible through the opening on the outside, contains a slot for the use of a screwdriver, which facilitates the assembly of the rod. Of course, the slot may take a different form where appropriate such as a cross-shape.



CLAIMS

1. Device for detachably fixing a bracelet to a watch-case, comprising at least one rod (1) fixed by one end to the watch-case (2) so as to be able to pivot, at least one hole (4) situated in a part which is solid with the watch-case and capable of receiving the other end (5) of the said rod, characterized in that the pivoting pin (3) is perpendicular to the plane of rotation of the said rod, the length of the said rod may be shortened by a sideways pressure exercising pressure on the elastic element (8), the said hole having an edge (6) which obstructs the introduction of the said other end of the rod into the said hole, at least one slanting surface (7) situated at the point of contact between the watch-case and the said other end, either on the said watch-case adjacent to the said edge (6), or on the other end (5), or on the two, the said slanting surface being shaped in such a way that the continuation of the pivoting movement of the rod through to its end causes a retraction of the said rod by causing it to slide along the said slanting surface, up to the point where the said rod passes over the said edge (6) and that the release of the elastic elements (8) with which the rod is fitted cause its elongation and insertion of the said other end (5) into the said hole (4).
2. Device for detachable fixation according to Claim 1, characterized in that it comprises a push-piece (9) placed in the bottom of the hole (4) and capable of being pushed in from the outside in such a way as to push the rod (1) and decrease its length until it can pivot around the pin (3).
3. Device according to Claim 2, characterized in that the

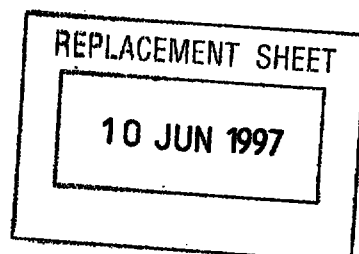
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push-piece on the outside, is fitted with a head (10) whose diameter is smaller than that of a passage (11) in which the said head is placed, the said head thus being able to slide in the said passage.

4. Device according to Claim 2, characterized in that the push-piece comprises a lateral catch (12), a longitudinal opening (13) parallel to the axis of the push-piece being made in the wall of the passage of the push-piece, the lateral catch protruding towards the outside through the said longitudinal opening, the length of which is at least equal to that of the travel of the push-piece.
5. Device according to one of the Claims 1 to 4, characterized in that the rod (1) is screwed into the watch-case by way of a rotating part (14) assembled on the pin (3).
6. Device according to Claim 5, characterized in that the rod (1) crosses the connecting rotating part (14) and on its outside has an end shaped such as to afford a grip to a screwdriver.



ABSTRACTDEVICE FOR DETACHABLY FIXING A BRACELET TO A WATCH-CASE

This device for detachably fixing a bracelet to a watch-case has a rod (1) fixed to one end of the watch-case by means of a pin (3) which allows it to pivot in the plane of the watch-case. The other end (5) of the rod is retractible. In the open position, the bracelet is threaded on to the rod, which is then rotated. The end (5) touches a slanting surface (7) at the edge (6) of the hole (4) contained in the horn of the watch-case. The end (5) retracts beneath the force of the thrust by sliding over the slanting surface (7), passes over the edge and inserts into the hole under the effect of a spring (8) release. A push-piece (9) allows the end (5) to be pushed in and the device to be opened to change the bracelet.

Fig. 1

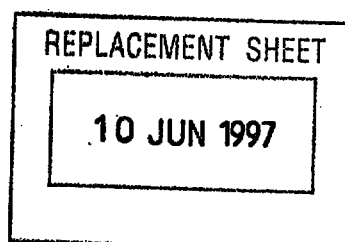


Fig. 1

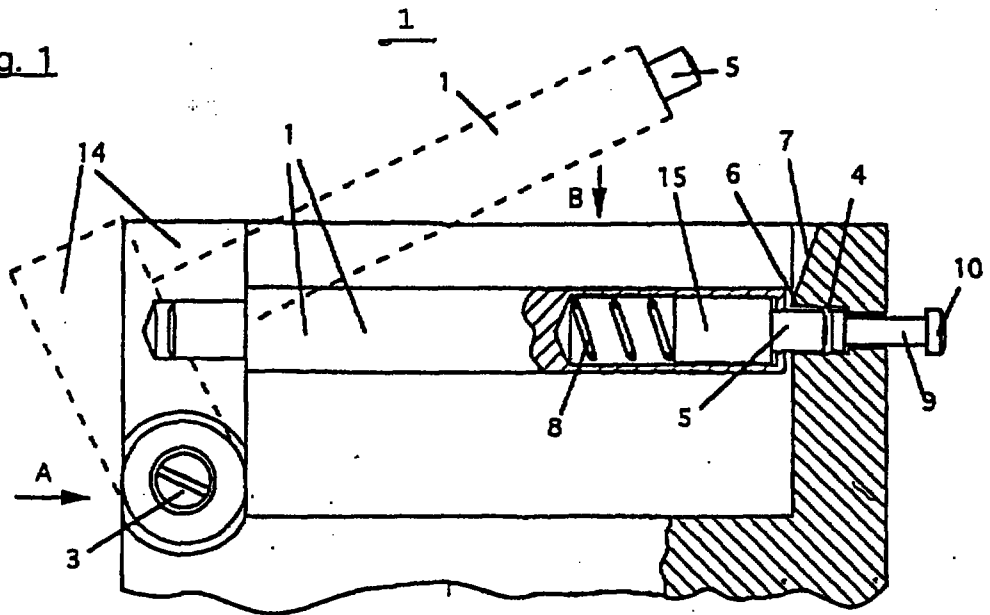


Fig. 2

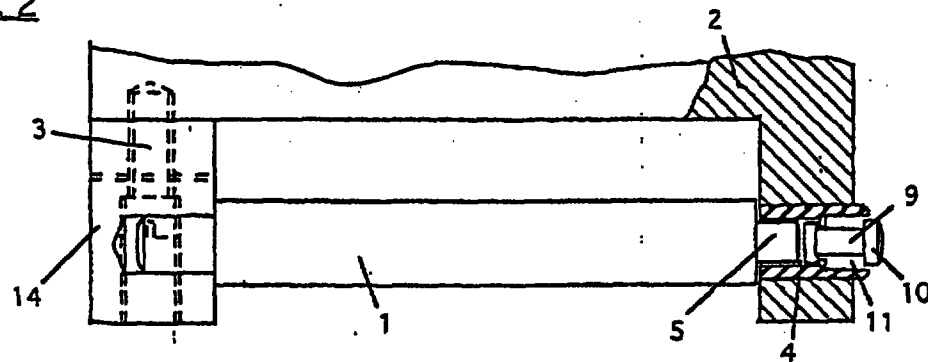


Fig. 3

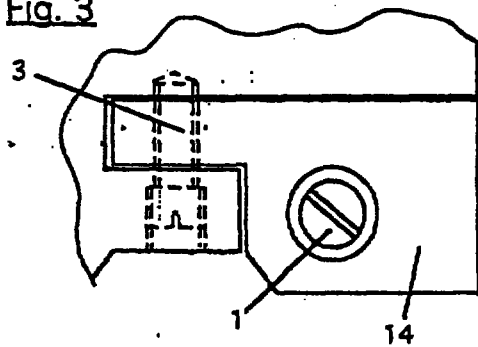


Fig. 4

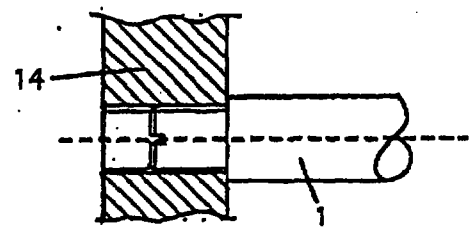
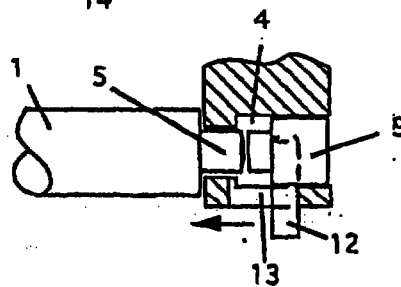


Fig. 5



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