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(54) **Nut socket device**

(57) A nut socket device (1), comprising an outer nut socket (4) having a longitudinal through-hole (11) with a front section (12) that is formed as a recess for accommodating a larger nut in a rotationally locked fashion, the outer nut socket (4) comprising at least one magnet (7) for creating an attractive magnetic field in the front section (12), and comprising an inner nut socket (5) having a frontal recess (19) in its front face for accommodating a smaller nut, the inner nut socket (5) being arranged in a longitudinally displaceable and rotationally locked fashion within the through-hole (11) of the outer nut socket (4) with the front section (12) of the outer nut socket (4) and the frontal recess (19) of the inner nut socket (5) pointing in the same direction, and comprising a base member (2) fixed to a rear end of the inner nut socket (5) in a longitudinally and rotationally locked fashion, and comprising an elastic member (3) arranged between the base member (2) and the outer nut socket (4) for pushing the outer nut socket (4) in front of the inner nut socket (5).

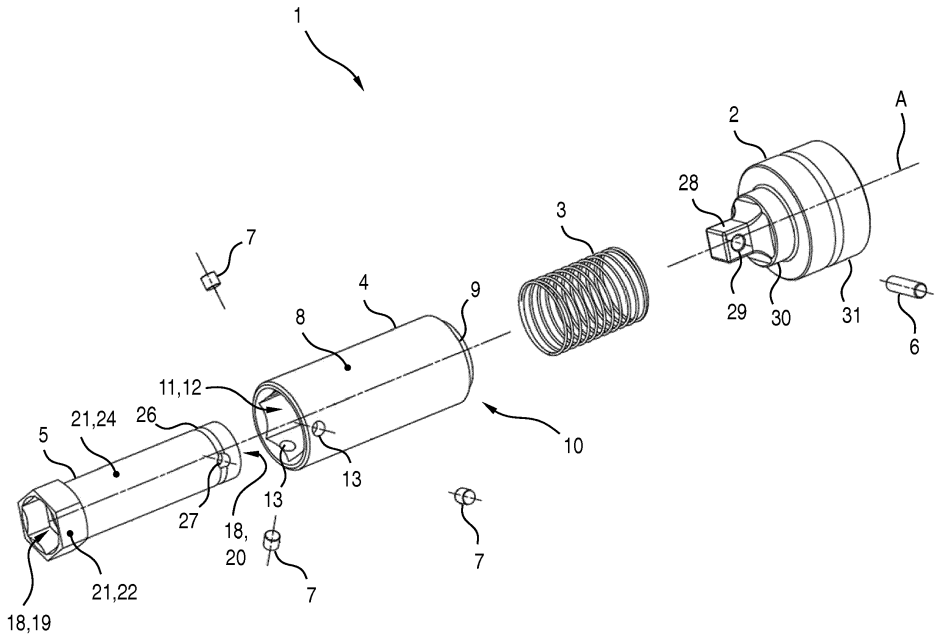

Fig.1

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Description

[0001] The invention relates to a nut socket device comprising a nut socket having a front section that is formed as a frontal recess for accommodating a nut.

[0002] It is known to screw a nut of a first size (e.g. M6) to a respective screw using an electric screwdriver by attaching a fitting nut socket to a drive of a screwdriver and inserting the nut into the nut socket. To screw on a nut of a different size using the same screwdriver, the nut socket needs to be exchanged. Disadvantageously, changing the nut sockets is time consuming. Also, mishandling of a nut socket, e.g. by dropping it, may lead to further delays.

[0003] It is the **object** of the present invention to at least partially overcome some or all of the disadvantages of the prior art. It is a particular object of the present invention to provide a means for faster screwing on nuts of different sizes.

[0004] The object is achieved according to the features of the independent claims. Advantageous embodiments can in particular be derived from the dependent claims.

[0005] The object is achieved by a nut socket device, comprising a first nut socket having a longitudinal through-hole with a first end section that is formed as a recess for accommodating a first nut in a rotationally locked fashion, the first nut socket comprising at least one magnet for creating an attractive magnetic field in the first end section, and comprising a second nut socket having a frontal recess in its front face for accommodating a second nut, the second nut socket being arranged in a longitudinally displaceable and rotationally (inter)locked fashion within the through-hole with the first end section of the first nut socket and the frontal recess of the second nut socket pointing in the same direction, and comprising a base member fixed to a rear end of the second nut socket in a longitudinally and rotationally locked fashion, and comprising an elastic member arranged between the base member and the first nut socket for pushing the first nut socket in front of the second nut socket.

[0006] This nut socket device has the advantage that it can be used to screw on nuts of two different sizes without being handled manually in between. Thus, a time consuming exchange of nut sockets can be avoided. The possibility of mishandling is eliminated.

[0007] Without loss of generality, in the following the base member is supposed to be positioned at a rear or back of the nut socket device. In analogy, faces of the nut sockets facing the base member are referred to as rear faces while faces of the nut sockets facing away from the base member are referred to as front faces. Without loss of generality, in the following a first end section will be referred to as a 'front section', the first nut socket will be referred to as an 'outer nut socket', and the second nut socket will be referred to as an 'inner nut socket'. Also, without loss of generality, the first nut will be referred to as a 'larger nut' and the second nut will be described as a 'smaller nut'.

[0008] It should be understood that the nut socket device can equally be used to unscrew or screw off a nut from a screw.

[0009] The through-hole may in particular be a linear hole that has a longitudinal axis. It has at least two sections including the front section. Since the front section of the through-hole is formed as a recess, a nut may be inserted through a front face into the recess. The larger nut (e.g. an M8 nut) can be inserted into the recess through the front face of the outer nut socket. The through-hole may also be referred to as a bore or channel.

[0010] The attractive magnetic field enables a magnetic hold of a metallic nut in the front section of the through-hole.

[0011] That the inner nut socket is arranged in a longitudinally displaceable and rotationally (inter)locked fashion within the through-hole comprises the fact that the inner nut socket can be displaced in a longitudinal direction (along the longitudinal axis of the through-hole). The displacement distance may be limited in one or in both longitudinal directions by respective end stops. It also comprises the fact that the inner nut socket is rotationally (inter)locked with the outer nut socket such that a rotation of the inner nut socket is transferred in a rotation of the outer nut socket, or vice versa. The outer nut socket and the inner nut socket may have a rotational play. The rotational interlocking may be achieved e.g. by overlapping a not perfectly round (e.g. hexagonal) section of the inner nut socket and a complementary shaped (e.g. hexagonal) front section of the through-hole of the outer nut socket.

[0012] The front section may e.g. have a four-point (e.g. square), six-point or twelve-point gripping shape but is not so restricted. The six-point gripping shape may in particular have the shape of a hex socket or a torx socket. Alternatively, the front section may e.g. have a hexalobular, TTAP, double square, double hex, pentalobe, spline, TA, triple square etc. gripping shape.

[0013] That the front ends of the nut sockets are pointing in the same direction enables an insertion of nut of different size through the same end of the nut socket device.

[0014] The base member may in particular be used to rotate or drive one of the nut sockets.

[0015] The elastic member may comprise a metallic spring or a rubber body (e.g. a hollow cylinder made of rubber) but is not so restricted.

[0016] That the outer nut socket can be pushed in front of the inner nut socket may comprise the fact that the front section of the through-hole of the outer nut socket may at least partially protrude from the inner nut socket and there provides a seat for a respective (larger) nut.

[0017] One or more of the nut sockets and the base member may be made of metal.

[0018] It is an embodiment that the outer nut socket is of a hollow cylindrical shape.

[0019] It is an embodiment that in an idle or rest position, the outer nut socket is maximally pushed in front of the inner nut socket. In this position, the elastic member is maximally relaxed. The first end position may be achieved by the inner nut socket acting as an end stop for the outer nut socket. With the nut socket device in the rest position, the front section of the through-hole is big enough (e.g. having sufficient height along the longitudinal axis) to accommodate the respective (larger) nut.

[0020] It is an embodiment that, in particular to accommodate the smaller nut (e.g. an M6 nut) in the frontal recess of the second nut socket, the outer nut socket can be pushed back against the base member. This push back causes the frontal recess to become more accessible. Pushing the outer nut socket back against the base member may result in a shortening of the nut socket device. The pushing back motion may be accomplished e.g. by placing the front face of the outer nut socket onto a support or substrate and pressing the base member into the direction of the substrate. In particular, the outer nut socket may be pushed back to be at least approximately flush with the inner nut socket. This enables screwing on a smaller nut right down to the level of the substrate.

[0021] It is an embodiment that a front section of an outer contour of the inner nut socket is accommodated within the front section of the through-hole of the outer nut socket and has a cross-sectional shape that is rotationally interlocking with the front section of the through-hole. This enables rotary interlocking of the nut sockets without the need to provide respectively shaped sections outside the front sections. This embodiment may in particular include the fact that the longitudinal position of the front section of the outer contour of the inner nut socket coincides with the longitudinal position of the frontal recess of the inner nut socket. In other words, this embodiment enables the front sections to provide rotary interlocking as well as receiving respective nuts which in turn enables a particularly simple and compact design. It is a particular embodiment that the front section of the outer contour of the inner nut socket has the same cross section as the outer surface of the larger nut (e.g. shaped according to the dimensions of an M8 nut).

[0022] It is an embodiment that the front section of the through-hole of the outer nut socket is followed by a rear section that has a smaller cross section than that of the front section. It is thus ensued that the larger nut and/or the front section of the outer contour of the inner nut socket cannot enter this rear section. Thus, a transition, in particular step, is created between the front section and the rear section of the outer nut socket that can be used as an end stop.

[0023] It is an embodiment that the front section of the outer contour of the inner nut socket is followed by a rear section that fits into the rear section of the through-hole of the outer nut socket. The front section, however, does not fit into the rear section of the outer nut socket. Therefore, the front section of the inner nut socket can also be used as a stop element to contact the end stop of the outer nut socket created at the transition between its front section and its rear section.

[0024] The front section(s) and the rear section(s) of the through-hole of the outer nut socket and/or of the outer contour of the inner nut socket may be directly abutting or may have a transitional middle section between them.

[0025] It is an embodiment that the front section of the outer contour of the second nut socket has a hexagonal cross section and that the rear section has a right circular cross section. Such an embodiment is particularly easy to manufacture.

[0026] It is an embodiment that a rear section of the through-hole of the outer nut socket also has a right circular cross section. Thus the rear section of the outer contour of the second nut socket and the rear section of the through-hole may be separated only by a small annular gap which holds friction forces low.

[0027] It is an embodiment that the at least one magnet is located at a longitudinal position of the front section of the outer nut socket that accommodates the larger nut in the rest position. This enables a strong magnetic attachment of the larger nut within the front section with the nut socket device in the rest position. It also enables easy removal of a nut from the nut socket device, e.g. if by accident a wrong (e.g. too small) nut had been inserted, e.g. an M6 nut instead of an M8 nut. With prior art nut sockets such a removal is practically impossible to perform by hand because a very strong magnet is located at a bottom of a seat for the nut. In this case, an operator must release the prior art nut socket from the screwdriver and then manually remove the nut with the help of a tool. With the present nut socket device, however, it is sufficient to push back the outer nut socket. This results in the magnet(s) to be distanced from the vicinity of larger nut thus greatly reducing the magnetic attraction. Also, the larger nut is exposed for an easy grasp by hand. This can be done without releasing the nut socket device from the screwdriver.

[0028] It is an embodiment that the at least one magnet is located in a side wall of the front section. In particular, several magnets may be located in a ring-like manner around a longitudinal axis or circumference of the front section.

[0029] If the nut socket device is in a position where the outer nut socket has been pushed back such that they abut the front section of the second nut socket, the magnet(s) may be strong enough to hold the smaller nut in the frontal recess of the inner nut socket. Alternatively, with the outer nut socket having been pushed back, the magnet(s) may be not be strong enough to hold the smaller nut.

[0030] It is an embodiment that the elastic member is a helical spring. Such a spring is very robust and cost effective. Also, the inner nut socket can easily be lead through the helical spring.

[0031] It is an embodiment that the inner nut socket has a longitudinal through-hole. This reduces its weight

and material costs. The cross sectional shape of through-hole is not restricted. The cross sectional shape of the through-hole may vary along its length. It may have several sections of different cross sectional shape. The frontal recess for accommodating the smaller nut may represent a front section of this through-hole.

[0032] For easy manufacture, the inner nut socket may be of a hollow cylindrical shape.

[0033] It is an embodiment that the base member is an adapter to attach the nut socket device to e.g. a screwdriver, wrench, spanner etc. This avoids the use of a separate adapter. A rear side of the base member may be formed to fit into a drive of the screwdriver etc. To this effect, the rear side may e.g. comprise a recess. The screwdriver etc. may e.g. be electrically driven or be driven by compressed air.

[0034] It is an embodiment that the base member comprises a drive inserted into and secured in a rear recess, in particular square recess, at a rear end of the inner nut socket. This allows easy attachment of the inner nut socket to the base member and guarantees safe rotational interlocking between the base member and the inner nut socket. However, the cross-sectional form of the recess is not limited to a square shaped but may be of any other suitable form, e.g. blade-like, cross-like, hexagonal etc.

[0035] It is an embodiment that the rear recess corresponds to a rear section of the through-hole of the inner nut socket.

[0036] It is an embodiment that the drive is secured in the recess by a pin inserted through a rear section of the inner nut socket and the drive. This enables a particularly safe connection. The pin may be a Dowell pin.

[0037] One possible method for screwing the larger nut to a respective screw using the nut socket device as described above may comprise the following steps: putting the front section of the through-hole of the outer nut socket over the larger nut and rotating the base member when the nut socket device is in its rest position. This is made easy by the fact that in the rest position this front section is free to accommodate the larger nut by simply inserting it through the front face in analogy to traditional handling. For example, an operator may put a larger nut into the front section where it is held by the magnet(s). He may then position the larger nut at a respective screw and activate the screwdriver etc. One possible method for screwing the smaller nut to a respective screw using the nut socket device as described above may comprise the following steps: putting the front section of the nut socket device - which is in its rest position - over the second nut which had been slightly screwed on the respective screw by hand before. This is performed until the smaller nut rests within the frontal recess of the inner nut socket. It follows activating the screwdriver etc. and simultaneously pressing the base member into the direction of the smaller nut. While the screwdriver rotates, the nut is displaced along the screw, and the frontal recess follows the nut because the pressing of the base member causes the inner nut socket to also be pressed into the direction of the smaller nut.

[0038] The nut socket device does not need to be exchanged or in any other way manipulated to perform both methods.

[0039] Now follows a description of a schematic embodiment of the invention in combination with respective figures.

Fig.1 shows an exploded view of one possible embodiment of a nut socket device;

Fig.2 shows a full cross-sectional side view of an outer nut socket of the nut socket device of fig.1;

Fig.3 shows a side view of an inner nut socket of the nut socket device of fig.1;

Fig.4 shows an oblique view of the assembled nut socket device of fig.1;

Fig.5 shows a side view of the inner nut socket inserted into the outer nut socket in a first position; and

Fig.6 shows a side view of the inner nut socket inserted into the outer nut socket in a second position.

[0040] **Fig.1** shows a nut socket device 1, comprising a base member 2, a helical spring 3, an outer nut socket 4, an inner nut socket 5, a Dowell pin 6, and three disc-shaped permanent magnets 7.

[0041] The outer nut socket 4 is of a generally hollow cylindrical shape, as further shown in **fig.2.** It has a cylindrical outer contour 8 that comprises an annular step 9 at its rear end 10. The outer nut socket 4 has a longitudinal through-hole 11 that is centered along a longitudinal axis A. The through-hole 11 comprises a front section 12 where it is formed for accommodating a larger nut (not shown, e.g. an M8 nut) in a rotationally interlocked fashion. In other words, the front section 12 of the through-hole 11 is formed as a female recessed opening, in this case having a six-point torx gripping shape.

[0042] The wall of the outer nut socket 4 at the front section 12 comprises three reception holes 13 that are equidistantly arranged in a ring-like manner around the longitudinal axis A. The reception holes 13 each hold a respective permanent magnet 7. The wall of the front section 12 comprises the magnets 7 for magnetically holding the larger nut.

[0043] A rear section 14 of the through-hole 11 has a right circular cylindrical shape. Its cross section (e.g. diameter) is smaller than a cross section of the front section 12. Therefore, the front section 12 comprises a rim-sided bottom or ground 15. Between the front section 12 and the rear section 14 is a small transitional middle section 16.

[0044] The inner nut socket 5 is also of a generally hollow cylindrical shape, as further shown in **fig.3.** It comprises a longitudinal through-hole 18 that is centered along the longitudinal axis A. The through-hole 18 is subdivided in sections. In particular, the through-hole 18 comprises a front section 19 and a rear section 20 with a small transitional middle section (not shown) in between.

[0045] The front section 19 is formed for accommodating a smaller nut (not shown, e.g. an M6 nut) in a rotationally interlocked fashion. It is thus formed as a female recessed opening, in this case having a six-point torx gripping shape. The front section 19 thus acts as a frontal recess. The rear section 20 is formed and acts as a (rear) recess having a square shape.

[0046] An outer contour 21 of the inner nut socket 5 is not uniform but also subdivided in sections. Around the front section 19 of the through-hole 18, the outer contour 21 has a front section 22 with a hexagonal cross-sectional shape. The front section 22 transitions via a transitional section 23 to a rear section 24 of the outer contour 21. The rear section 24 has a right circular cylindrical shape. A longitudinal position of the transitional section 23 corresponds to the longitudinal position of the transitional middle section of the through-hole 18 while the rear section 24 of the outer contour 21 corresponds to the rear section 20 of the through-hole 18. A small distance away from a rear face 25 of the inner nut socket 5, the rear section 24 of the outer contour 21 has a circumferential groove 26 comprising two holes 27 on opposite sides.

[0047] The holes 27 are used to accommodate the Dowell pin 6 after a front side drive 28 of the base member 2 has been inserted into the rear section 20 of the through-hole 18. The drive 28 has a complementary cross-sectional shape with respect to the rear section 20, i.e. of a square peg or fastener head, such that a rotary interlocking is achieved. The front side drive 28 has an elongated hole 29 that is aligns perpendicular to the longitudinal axis A. The Dowell pin 6 leads through the holes 27 as well as through elongated hole 29 thus creating a longitudinally and rotary interlocking connection of the base member 2 and the inner nut socket 5. Therefore, a rotation of the base member 2 causes a rotation of the inner nut socket 5.

[0048] The base member 2 also comprises a disc-shaped protrusion 30 between the drive 28 and a cylindrical base 31. The protrusion 30 acts as a guide for the spring 2, in particular to prevent a lateral displacement of the spring 2. The spring 2 is at one end supported by the base 31 and the other end by the outer nut socket 4. At the outer nut socket 4, the spring 3 is seated in the annular step 9 which acts a as a guide and a support for the spring 2, as seen in **fig.4.**

[0049] Fig. 4 also shows that the base member 2 has a recess 32 at its rear side 33. This recess may be used e.g. to insert a drive (not shown) of a rotation means, e.g. a screwdriver. The base member 2 may thus also act as an adapter between the rotation means and the nut sockets 4 and 5.

[0050] **Fig.5** shows the outer nut socket 4 and the inner nut socket 5 in a rest position. The outer nut socket 4 is shown in a sectional side view in analogy to fig.2 while the inner nut socket 5 is shown in a side view in analogy to fig.3. The inner nut socket 5 is inserted into the through-hole 11 of the outer nut socket 4. In more detail, the rear section 24 of the outer contour 21 of the inner nut socket 5 is inserted into the complementary formed rear section 14 of the through-hole 11 of the outer nut socket 4. Also, the hex shaped front section 22 of the outer contour 21 of the inner nut socket 5 is inserted in the torx shaped front section 12 of the through-hole 11 of the outer nut socket 4 in a rotary interlocked fashion. A rotation of the inner nut socket 5 (e.g. caused by a rotation of the base member 2) is thus translated in a rotation of the outer nut socket 4.

[0051] The front section 12 points into the same direction as the front section 19, i.e. away from the base member 2.

[0052] At its rear, the inner nut socket 5 protrudes from the rear end 10 of the outer nut socket 4. In the rest position, the circumferential groove 26 with the two holes 27 is located outside of the rear end 10, e.g. for an easy assembly.

[0053] The outer nut socket 4 is longitudinally displaceable along the longitudinal axis A. In the rest position, the front section 22 of the inner nut socket 5 is pressed onto the ground 15 of the front section 12 of the outer nut socket 4 by means of an elastic force F exerted onto the annular step 9 by the spring 3 while the inner nut socket 5 is held by the base member 2. The ground 15 thus acts as an end stop that limits the longitudinal displacement of the outer nut socket 4 in the direction away from base member 2 (i.e., in the forward direction).

[0054] Since a height (measured along the longitudinal axis A) of the front section 22 of the outer contour 21 of the inner nut socket 5 is smaller than a height of the front section 12 of the through-hole 11 of the outer nut socket 4, there remains an empty volume at the front section 12 that acts as a seat 34 for the larger nut. The magnets 7 are arranged at a longitudinal position that coincides within the position of the seat 34. Thus, the front section 12 of the through-hole 11 can accommodate and hold the larger nut.

[0055] Therefore, to screw the larger nut on a screw (not shown), the larger nut may be manually inserted into the seat 34, then the larger nut may be positioned at the respective screw, and then the base member 2 is rotated, e.g. by a screwdriver. Rotating the base member 2 causes the inner nut socket 5 to rotate which in turn causes the outer nut socket 5 and the larger nut to rotate. Alternatively, the larger nut may be slightly screwed on a screw by hand, and then the front section 12 of the through-hole 11 is put over the larger nut such that the larger nut is inserted into the seat 34. Then the base member 2 is rotated. Alternatively, the nut socket device 1 is put over the nut that had been slightly screwed on the screw by hand before such that the nut is inserted into the seat 34.

[0056] **Fig.6** shows the outer nut socket 4 and the inner nut socket 5 in a second position away from the rest position. The second position is achieved by pushing the outer nut socket 4 back in the direction of the base member 2. This can be achieved e.g. by placing a front face 35 of the outer nut socket 4 on a substrate (not shown)

and pushing the base member 2 in the direction of the substrate. Thus, the inner nut socket 5 is displaced in the front direction. This can be done until the inner nut socket 5 contacts the substrate.

[0057] In the second position, the front section 19 of the through-hole 18 of the inner nut socket 5 acts as a recess or seat for the smaller nut. In one method to tightly screw the smaller nut on a screw (not shown), the nut may firstly be slightly screwed on the screw by hand. Then, the front of the nut socket device 1 - which is yet in its rest position - is put over the smaller nut. This is performed until the smaller nut rests within the front section 19 that acts as a frontal recess of the inner nut socket 5. It follows activating the screwdriver and simultaneously pressing the base member 2 in the direction of the smaller nut. While the screwdriver rotates, the nut is displaced along the screw, and the front section 19 follows the nut along the longitudinal axis A because the pressing of the base member 2 causes the inner nut socket 5 to also be pressed into the direction of the nut.

[0058] Of course, the present invention is not restricted to the exemplary embodiment.

List of reference numbers

[0059]

1 nut socket device
2 base member
3 helical spring
4 outer nut socket
5 inner nut socket
6 Dowell pin
7 permanent magnet
8 outer contour
9 annular step
10 rear end
11 through-hole of the outer nut socket
12 front section of the through-hole 11
13 reception hole
14 rear section of the through-hole 11
15 ground
16 middle section of the through-hole 11
18 through-hole of the inner nut socket
19 front section of the through-hole 18
20 rear section of the through-hole 18
21 outer contour of the inner nut socket
22 front section of the outer contour
23 transitional section of the outer contour
24 rear section of the outer contour
25 rear face of the inner nut socket
26 circumferential groove
27 hole
28 front side drive
29 elongated hole
30 protrusion
31 base
32 recess
33 rear side
34 seat
35 front face of the outer nut socket
A longitudinal axis
F elastic force

Claims

1. A nut socket device (1), comprising

- an outer nut socket (4) having a longitudinal through-hole (11) with a front section (12) that is formed as a recess for accommodating a larger nut in a rotationally locked fashion,
- the outer nut socket (4) comprising at least one magnet (7) for creating an attractive magnetic field in the front section (12), and comprising
- an inner nut socket (5) having a frontal recess (19) in its front face for accommodating a smaller nut,
- the inner nut socket (5) being arranged in a longitudinally displaceable and rotationally locked fashion within the through-hole (11) of the outer nut socket (4) with the front section (12) of the outer nut socket (4) and the frontal recess (19) of the inner nut socket (5) pointing in the same direction, and comprising
- a base member (2) fixed to a rear end of the inner nut socket (5) in a longitudinally and rotationally locked fashion, and comprising
- an elastic member (3) arranged between the base member (2) and the outer nut socket (4) for pushing the outer nut socket (4) in front of the inner nut socket (5).

2. The nut socket device (1) according to claim 1, wherein the front section (12) of the through-hole (11) of the outer nut socket (4) has a six-point gripping shape.

3. The nut socket device (1) according to any of the preceding claims, wherein, in a rest position, the outer nut socket (4) is maximally pushed in front of the inner nut socket (5) and the inner nut socket (5) acts as an end stop for the outer nut socket (4).

4. The nut socket device (1) according to any of the preceding claims, wherein, to accommodate the smaller nut in the frontal recess (19) of the inner nut socket (5), the outer nut socket (4) can be pushed back against the base member (2).

5. The nut socket device (1) according to any of the preceding claims, wherein

- a front section (22) of an outer contour (21) of the inner nut socket (5) is accommodated within

the front section (12) of the through-hole (11) of the outer nut socket (4) and has a cross-sectional shape that is rotationally interlocking with the front section (12) of this through-hole (11), wherein

- the front section (12) of the through-hole (11) of the outer nut socket (4) is followed by a rear section (14) having smaller cross section than the front section (12), and wherein
- the front section (22) of the outer contour (21) of the inner nut socket (5) is followed by a rear section (24) that fits into the rear section (14) of the through-hole (11) of the outer nut socket (4) while the front section (22) of the outer contour (21) does not fit into the rear section (14) of the outer nut socket (4).

6. The nut socket device (1) according to claim 5, wherein

- the front section (22) of the outer contour (21) of the inner nut socket (5) has a hexagonal cross section and that the rear section (24) of the outer contour (21) has a right circular cross section and wherein
- a rear section (14) of the through-hole (11) of the outer nut socket (4) has a right circular cross section.

7. The nut socket device (1) according to any of the claims 3 to 6, wherein the at least one magnet (7) is located at a longitudinal position of the front section (12) of the outer nut socket (4) that accommodates the larger nut in the rest position.

8. The nut socket device (1) according to any of the preceding claims, wherein the elastic member (3) is a helical spring.

9. The nut socket device (1) according to any of the preceding claims, wherein the inner nut socket (5) has a longitudinal though-hole (18) and the frontal recess corresponds to a front section (19) of this through-hole (18).

10. The nut socket device (1) according to any of the preceding claims, wherein the base member (2) is an adapter to attach the nut socket device (1) to a screwdriver.

11. The nut socket device (1) according to claim 10, wherein the base member (2) comprises a drive (28) inserted into and secured in a recess (20) at a rear end of the inner nut socket (5).

12. The nut socket device (1) according to claim 11, wherein the drive (28) is secured in the recess (20) by a pin (6) inserted through a rear section of the inner nut socket (5) and the drive (28).

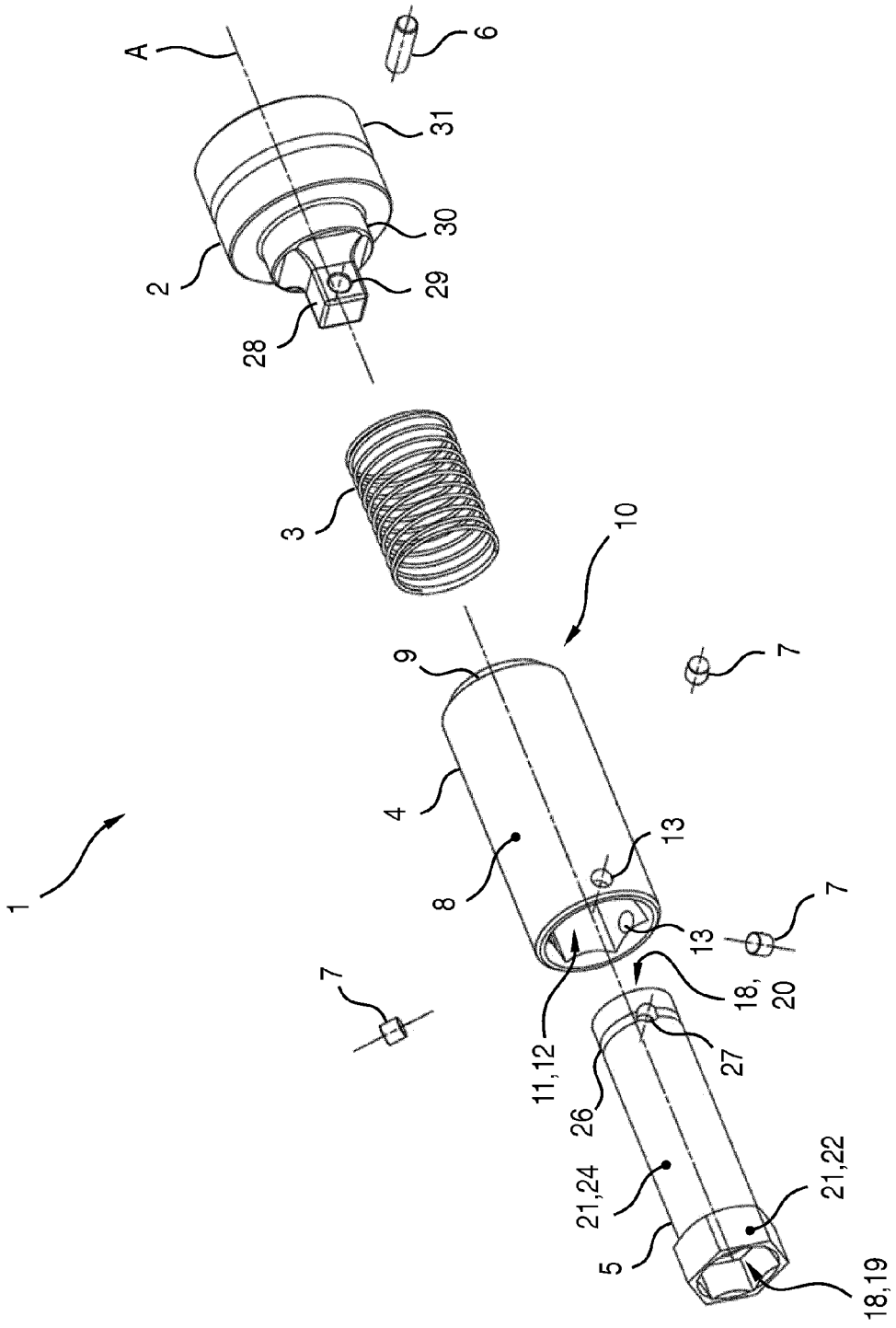

Fig.1

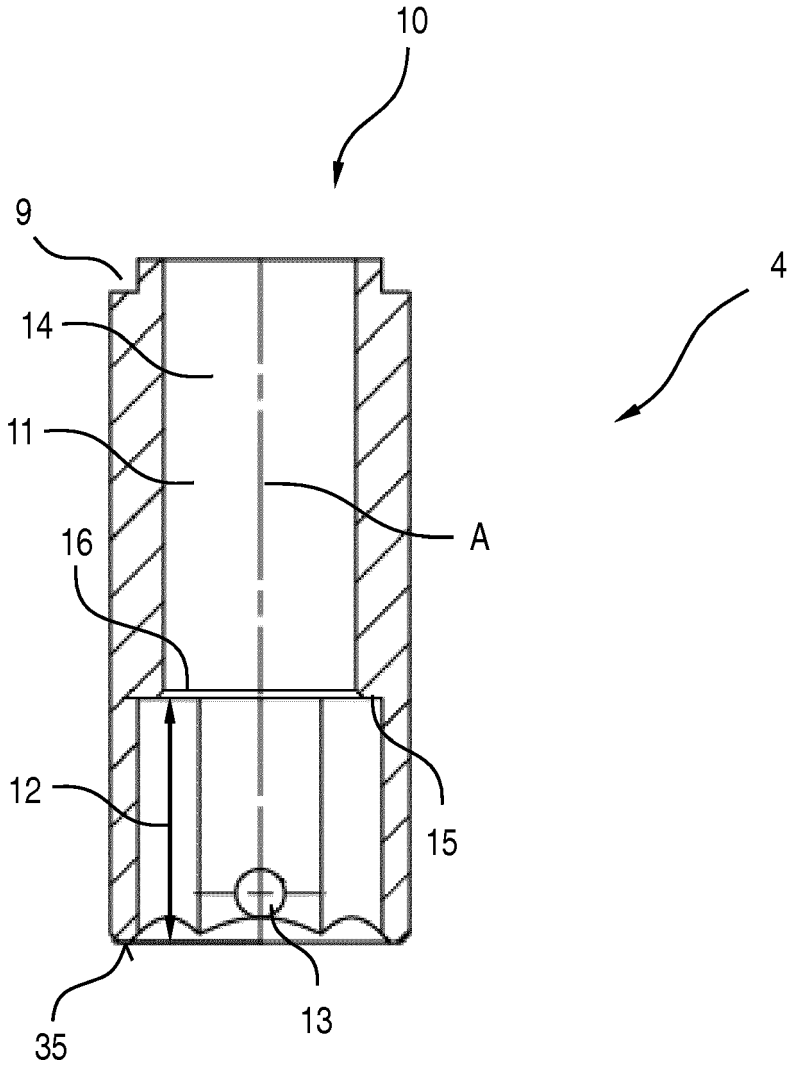

Fig.2

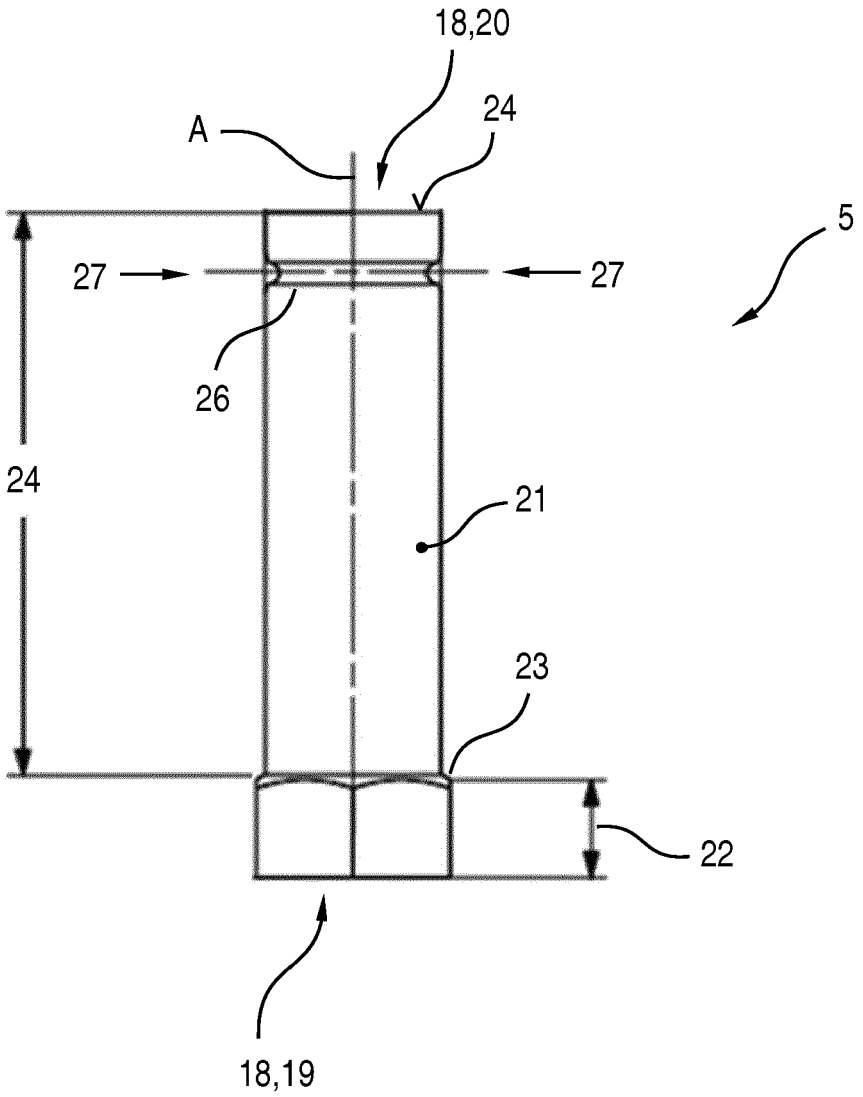

Fig.3

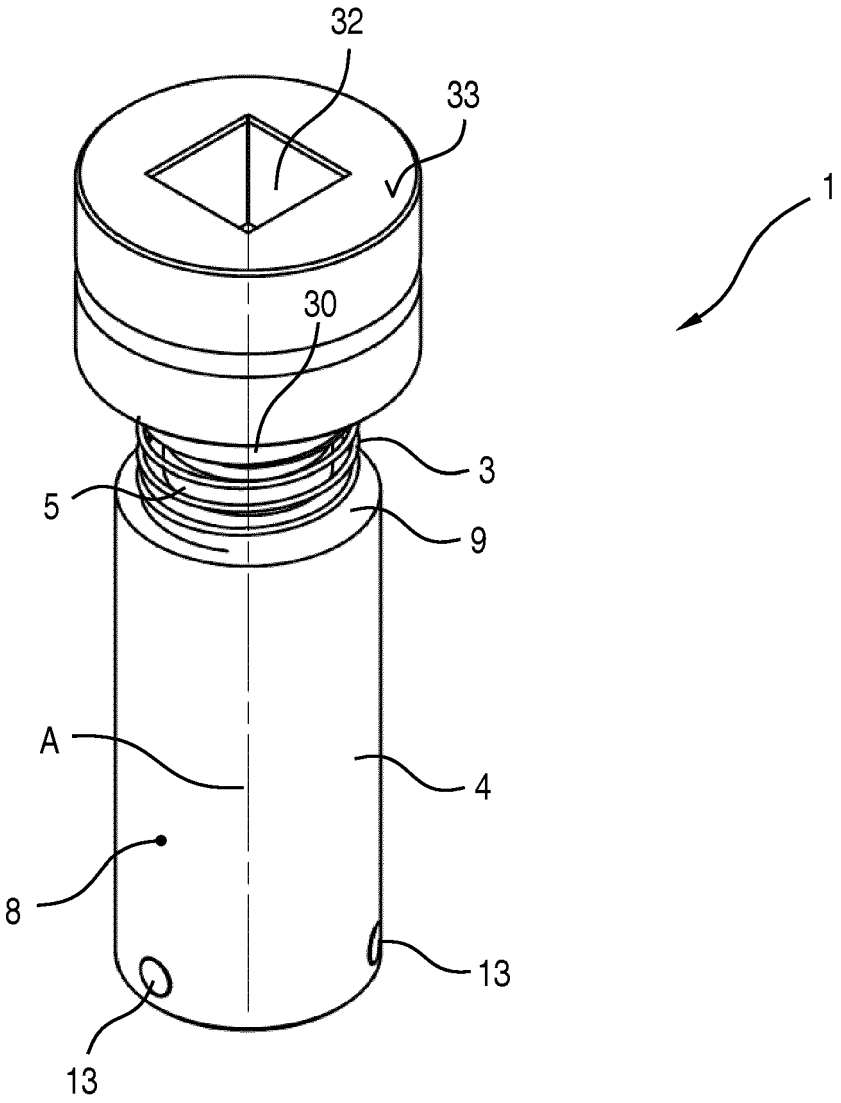

Fig.4

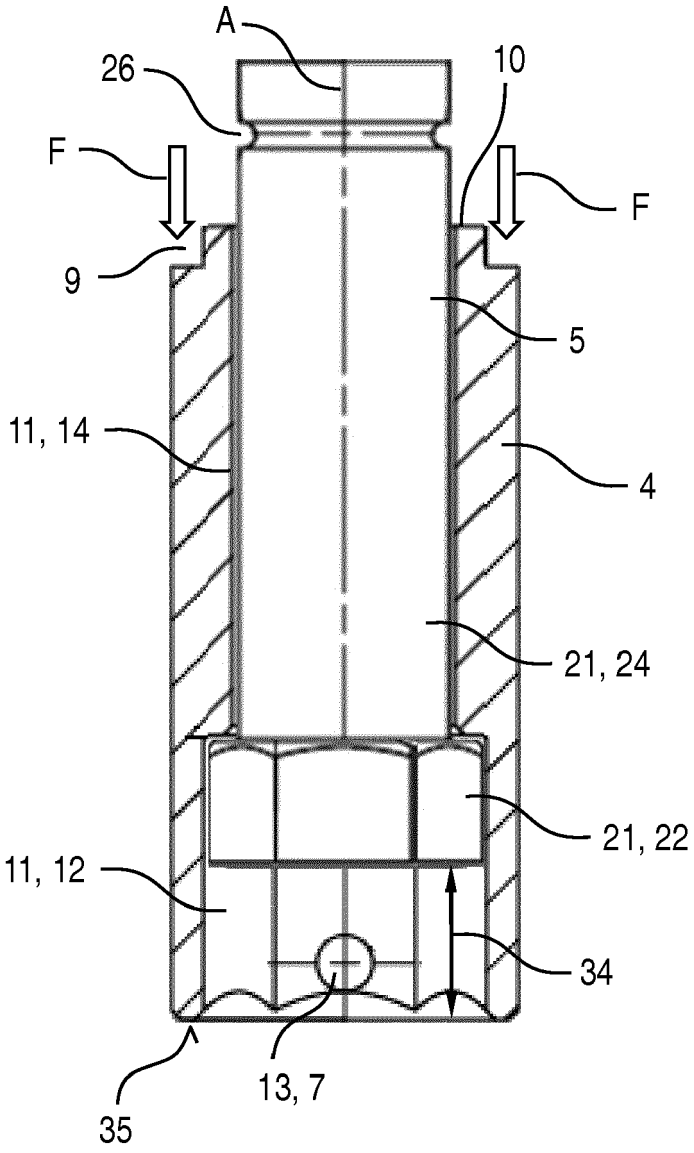

Fig.5

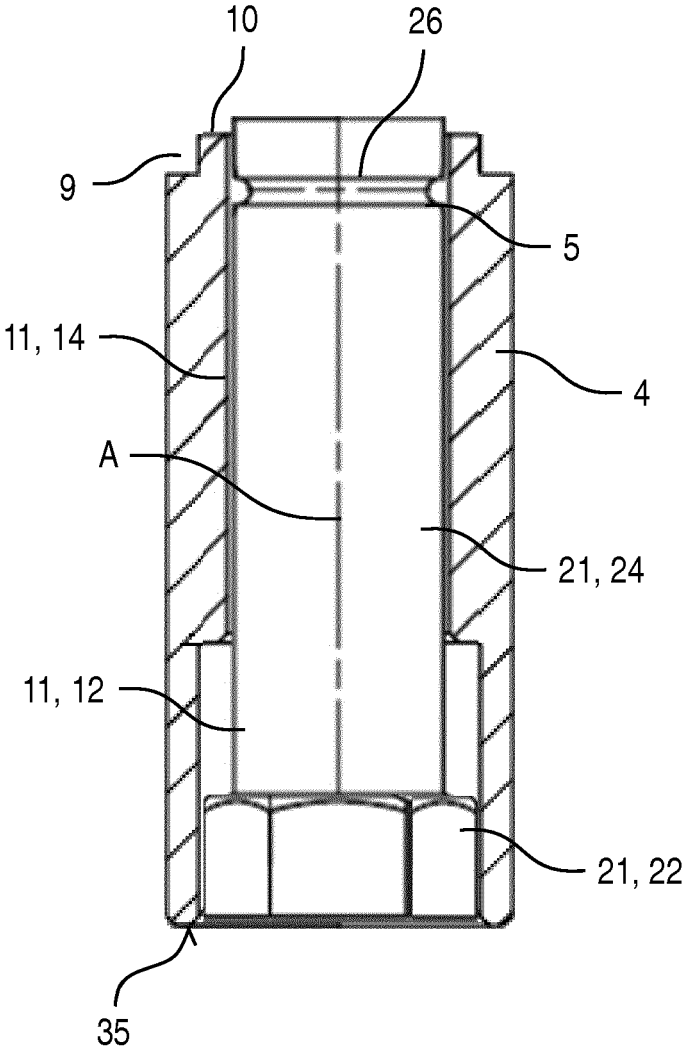

Fig.6

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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 2 669 148 A (JOSEPH FALK) 16 February 1954 (1954-02-16) * column 2, line 4 - column 3, line 61; figures *	1-12	INV. B25B13/10 B25B23/12
Y	DE 198 03 911 A1 (BAUER INGA [DE]) 5 August 1999 (1999-08-05) * column 3, line 32 - column 4, line 16; figures *	1-12	

TECHNICAL FIELDS SEARCHED (IPC)

B25B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	16 October 2014	Kühn, Thomas

CATEGORY OF CITED DOCUMENTS

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16-10-2014

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