

(51) International Patent Classification:  
A61H 19/00 (2006.01)

(21) International Application Number:

PCT/GB2015/054144

(22) International Filing Date:

23 December 2015 (23.12.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

1500534.1 14 January 2015 (14.01.2015) GB

(71) Applicant: MYSTERYVIBE LIMITED [GB/GB]; 68  
Whalley Drive, Bletchley, Milton Keynes Buckingham-  
shire MK3 6HS (GB).(72) Inventors: RAKSHIT, Soumyadip; Flat 7, 1 Murphy  
Street, London Greater London SE1 7FP (GB). XU, Shan-  
shan; Flat 7, 1 Murphy Street, London Greater London  
SE1 7FP (GB). WEEKLY, Robert Paul; Hunters End,  
Grove Road, Hindhead Surrey GU26 6PH (GB). EVANS,  
James Alexander; Flat 13 Anchor Terrace, 3-13 South-  
wark Bridge Road, London Greater London SE1 9HQ  
(GB). MISTRY, Ketan; Flat 15, Greer House, Braddock,  
Isleworth Greater London TW7 6SQ (GB). ALLUM, Joe  
James; Wildings Farm, Beales Lane, Northiam Sussex  
TN31 6LW (GB). ZOTOVA, Alexandra; 41, Marius  
Road, London Greater London SW17 7QU (GB).(74) Agent: ARROWSMITH, Peter; Gill Jennings & Every  
LLP, The Broadgate Tower, 20 Primrose Street, London,  
EC2A 2ES (GB).(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,  
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,  
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,  
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,  
KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,  
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,  
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,  
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,  
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,  
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU,  
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,  
DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,  
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,  
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: SEXUAL STIMULATOR

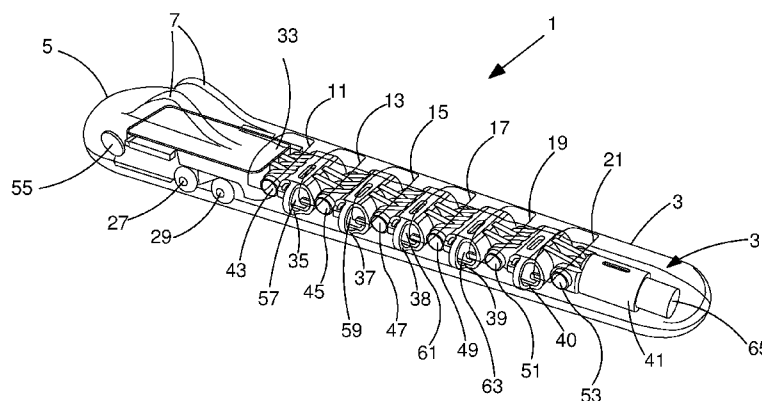


FIG. 4

(57) Abstract: A sexual stimulator (1) is disclosed comprising a shaft (3) and a base (5). The shaft (3) comprises a plurality of flex-  
ible sections (11, 13, 15, 17, 19, 21) positioned along its length. Each of the flexible sections is arranged to bend about an axis  
which extends in the same direction; these axes are aligned along the length of the shaft and extend in the same direction. A friction  
joint is provided between flexible sections so that the sections are flexible enough to be bent by hand, and yet are stiff enough to res-  
ist bending out of shape when the sexual stimulator is in use. A plurality of vibration motors (57, 59, 61, 63, 65) are provided along  
the length of the shaft (3), and a control module (102) can control the amplitude and frequency of their vibration.

## Sexual Stimulator

The present invention relates to sexual stimulators.

- 5 There are many different types of sexual stimulation device. One type, commonly known as the “vibrator”, has a shaft and a vibration motor which vibrates the shaft. In use, the shaft is inserted into an orifice of the user, such as the vagina or the anus, and vibration of the motor enhances any sexual stimulation provided by the shaft. Some vibrators also include a branch off the shaft which can be used to stimulate the  
10 user’s clitoris whilst the shaft is inside the user’s vagina.

- It is reported that a user will experience particularly intense sexual stimulation when the shaft comes into contact with that user’s Gräfenberg spot, or “G-spot”. In general, the position of the “G-spot” is unique to an individual person, and is often difficult to  
15 locate.

- One problem with known sexual stimulation devices, in particular vibrators, is that they cannot be adapted to suit a particular user. It will be appreciated that individual users’ bodies may be very different from one another. For example, the location of  
20 one person’s “G-spot” may be vastly different to the location of another person’s “G-spot”. Thus, one type of vibrator may suit one particular user very well but that type of vibrator may fail to stimulate a different user. Thus, it would be desirable to provide a sexual stimulator that can be adapted to suit any individual user.

- 25 According to an aspect of the invention there is provided a sexual stimulator, for interaction with a user’s body, comprising: a shaft, comprising a first flexible section, bendable in a first rotational direction, and a second flexible section, bendable in a second rotational direction, such that the shaft can be bent from a first configuration to a second configuration; wherein a component of the second rotational direction is  
30 opposite to the first rotational direction; and the flexible sections resist bending such that the shaft resists bending from the first configuration to the second configuration. Thus, the shaft can be bent into different complex shapes and maintain its shape whilst in use. This allows a user to adapt the shape of the sexual stimulator to suit their body and maximise the effectiveness of the device. For example, the user may  
35 adapt the shape of the shaft to maximise contact with the “G-spot”.

In one example, initially the shaft is substantially straight. Then, the first flexible section is bent clockwise and the second flexible section is bent anti-clockwise. Now, the shaft forms a sinuous or "S" shape which may stimulate an individual user more effectively than if it were curved or simply straight. In this example, the flexible sections resist bending such that the shaft will maintain its sinuous shape whilst in use. The user may decide to revert back to the straight shape at a later point. To do this the user bends the first flexible section anti-clockwise and the second flexible section clockwise until the shaft is substantially straight.

Preferably, the shaft of the sexual stimulator is arranged for insertion into an orifice of the user, and, preferably, the flexible sections are positioned along the length of the part of the shaft that is arranged for insertion. Thus, the shape of the part of the shaft that interacts with the inside of the user can be altered which may enhance sexual stimulation.

Preferably, the flexible sections are bendable independently of one another. This gives the user greater control over the shape of the stimulator.

Preferably, each respective flexible section does not bend when subject to a magnitude of torque below a selected threshold and bends when subject to a magnitude of torque above the selected threshold. Preferably, the threshold is selected so that the flexible section does not bend when the sexual stimulator is used for sexual stimulation, for example, when the shaft is inserted into and removed from an orifice of the user. Thus, the sexual stimulator is able to maintain its shape whilst in use. Preferably, the threshold is selected so that the flexible section can be bent by hand.

Each flexible section may be described as being "non-resilient" such that each flexible section can be bent from a straight position to a bent position without returning to the straight position and vice versa.

Preferably, each flexible section can be bent to define any one of a plurality of angles. For example, a respective flexible section may be bent to define an angle between 0° and 90°.

Preferably, the second flexible section is bendable in the first rotational direction as well as the second rotational direction. In this way the shaft is able to be bent into a curved shape or a sinuous shape. Preferably, the first flexible section is bendable in the second rotational direction as well as the first rotational direction. Preferably, the second rotational direction is opposite the first rotational direction. Preferably, each one of the flexible sections is arranged to be bent in only the first or the second rotational directions.

Preferably, the flexible sections are bendable in a first plane and resist bending outside the first plane. Preferably, a length axis of the shaft is contained within the first plane. Preferably, the flexible sections are bendable in the first plane but resist bending in all other planes.

Each one of the flexible sections may be arranged to be bent about an axis. Each axis may be arranged substantially perpendicularly to the length of the shaft. These axes may extend in substantially the same direction as one another.

The shaft may comprise a plurality of flexible sections. Preferably, the shaft comprises six flexible sections. This allows the shaft to be bent into a variety of complex shapes whilst maintaining a simple design.

Preferably, the shaft comprises an internal chassis comprising the first and second flexible sections. Preferably, the shaft comprises an outer moulding covering the internal chassis.

Preferably, each flexible section is articulated. For example, each flexible section may comprise a hinge. Preferably, each hinge is arranged to resist bending such that the shaft resists bending from the first configuration to the second configuration. Preferably, the hinge is a "friction-hinge", otherwise known as a "constant torque hinge".

Preferably, each hinge does not bend when subject to a magnitude of torque below a selected threshold and bends when subject to a magnitude of torque above the selected threshold. Preferably, the threshold is selected so that the hinge does not bend when the sexual stimulator is used for sexual stimulation, for example, when the shaft is inserted into and removed from an orifice of the user. Thus, the sexual

stimulator is able to maintain its shape whilst in use. Preferably, the threshold is selected so that the hinge can be bent by hand.

5 Preferably, the sexual stimulator further comprises a tip vibration motor positioned towards the tip of the shaft. The tip motor may be used to stimulate the users' G-spot. Preferably, this motor is positioned inside the tip of the shaft.

10 Preferably, the sexual stimulator further comprises at least one shaft vibration motor positioned along the length of the shaft. The shaft vibration motor enhances the sexual stimulation provided by the shaft. Preferably, the sexual stimulator comprises a plurality of shaft vibration motors positioned along the length of the shaft. By positioning a plurality of vibration motors along the length of the shaft their effect can be spread out, maximising their effectiveness. Preferably, the sexual stimulator comprises four shaft vibration motors positioned along the length of the shaft.

15 Preferably, the sexual stimulator further comprises a base portion arranged to support the shaft. Thus, the base may be used as a handle for controlling the position of the shaft inside the user. In use, typically the base will not be inserted into the user.

20 Preferably, the sexual stimulator comprises a base vibration motor positioned in the base portion. Thus, the base portion may be held against an outside part of the user body, such as the clitoris, for sexual stimulation.

25 Preferably, the base portion comprises at least one flexible protrusion arranged to interact with the user's clitoris. Preferably, the at least one flexible protrusion is arranged to be vibrated by the base vibration motor. Thus, sexual stimulation can be enhanced.

30 Preferably, the at least one flexible protrusion comprises an elongate fin the length of which is attached to the base portion. Preferably, the base portion comprises at least two flexible protrusions arranged to receive at least a portion of the user's clitoris between them.

35 Preferably, the tip vibration motor is arranged to vibrate with a greater amplitude than the at least one shaft vibration motor. It is advantageous that the vibrations provided

by the tip vibration motor are more intense than those of the shaft vibration motor because the tip vibration motor is arranged to stimulate the G-spot.

5 Preferably, each one of the plurality of shaft vibration motors is positioned with its longest axis substantially perpendicular to the length axis of the shaft. This enables a plurality of motors to be provided within a shaft of a particular length.

10 Preferably, the tip vibration motor is positioned with its longest axis substantially parallel with the length axis of the shaft. In this way, the tip motor may point towards the users' G-spot which may help to enhance sexual stimulation.

15 Preferably, each one of the plurality of shaft vibration motors is positioned between a pair of adjacent flexible sections or hinges. Arranging the shaft vibration motors in this way helps to allow the vibrations provided by each motor to be felt individually by the user. Preferably, only one motor is positioned between a pair of adjacent flexible sections or hinges.

20 Preferably, the sexual stimulator further comprises a housing provided between each pair of adjacent flexible sections or hinges; and the housing is arranged to receive a shaft vibration motor. In this way, shaft vibrator motors may be held securely.

25 Preferably, at least one vibration motor is at least partially encased by a protective cladding. This helps to prevent any of the motors being damaged in use. In addition, this helps to isolate the vibrations of the motors from one another so that they may be felt individually.

30 Preferably, the cladding comprises a flexible material such as rubber material, preferably silicon rubber. Silicon rubber is particularly effective at reducing noise from the motors whilst not reducing the intensity of the vibrations.

The sexual stimulator may further comprise a control module arranged to control the vibration motors independently from one another. The control module may be arranged to control the amplitude at which each one of the vibration motors vibrates. Preferably, the controller is arranged to control the amplitude at which the vibration  
35 motors vibrate independently from one another. The control module may be arranged to control the frequency at which each one of the vibration motors vibrates.

Preferably, the controller is arranged to control the frequency at which the vibration motors vibrate independently from one another.

5 The sexual stimulator may further comprise a storage module arranged to store at least one set of instructions arranged to be used by the control module to control the motors independently from one another. Preferably, the storage module is arranged to store a plurality of sets of instructions. Preferably, the storage module is re-writable. The storage module may be a removable storage medium such as a non-volatile memory card.

10

The sexual stimulator may further comprise at least one communication module arranged to provide the storage module with sets of instructions. The communication module may use a physical connection, such as a USB connection, or a wireless connection, such as a Bluetooth connection.

15

According to another aspect of the invention there is provided a sexual stimulator, for interaction with a user's body, comprising: a shaft; a plurality of vibration motors; and a control module arranged to control the vibration motors independently from one another. Any of the features described above may be provided in combination with this aspect of the invention.

20

Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

25

Figure 1 shows a perspective view of a sexual stimulator;

Figure 2 shows a schematic view of the sexual stimulator in a straight position;

Figure 3 shows a schematic view of the sexual stimulator in a bent position;

30

Figure 4 shows a perspective view of an upper side of the sexual stimulator;

Figure 5 shows an enlarged view of a section of the shaft of the sexual stimulator;

35

Figure 6 shows a perspective view of a lower side of the sexual stimulator;

Figure 7 shows an internal chassis for the sexual stimulator in a straight position;

Figure 8 shows the internal chassis in a multi-curved position;

Figure 9 shows the internal chassis in a single-curved position; and

- 5 Figure 10 shows a schematic diagram of a control system for a sexual stimulator.

Referring to Figure 1, there is provided a sexual stimulator 1 comprising a shaft 3 and a base 5. Typically, a user grips the base 5 of the stimulator 1 with one hand and inserts the shaft 3 into their vagina for sexual stimulation. The base 5 comprises a pair of fins 7 which can be used to stimulate the user's clitoris whilst the shaft 5 is inside the user's vagina. The base 5 further comprises a pair of buttons 9, 10 for the controlling the sexual stimulator 1.

The shaft 3 comprises six flexible sections 11, 13, 15, 17, 19, 21 positioned along the length of the shaft 3. These flexible sections can be used to bend the shaft 3 into a variety of different shapes. Thus, the shaft 3 can be adapted to suit any individual user.

Figure 2 shows a schematic representation of the sexual stimulator 1 with the shaft 3 in a straight position. In this position each one of the flexible sections 11, 13, 15, 17, 19, 21 is straight. Each flexible section can be bent in either a first rotational direction 23 or a second rotational direction 25. The first rotational direction 23 and the second rotational direction 25 directly oppose one another. The first rotational direction 23 may be described as 'clockwise' whilst the second rotational direction 25 may be described as 'anti-clockwise'.

The first rotational direction 23 and the second rotational direction 25 are both in the x-y plane. Neither the first rotational direction 23 nor the second rotational direction 25 has a component which acts in the y-z plane. Thus, the shaft 3 will bend in the y-x plane. The shaft 3 does not bend in the y-z plane. This provides a simple design that enables the shaft 3 to adapt to a particular user.

Each one of the flexible sections 11, 13, 15, 17, 19, 21 bends about an axis which extends in the direction of the z-axis, which is perpendicular to the length of the shaft 3. In the position shown, these axes are aligned along the length of the shaft 3 and extend in the same direction. It would be possible to arrange the flexible sections such that the axes do not all extend in the same direction. In this arrangement each



axis extends in a direction that has a component in the z-axis and the x-axis. In this example, each flexible section is able to bend in a clockwise and in an anti-clockwise direction; however, each rotational direction would have a component which acts in the y-z plane as well as the x-y plane. This allows the shaft to bend in a plurality of  
5 planes as opposed to a single plane.

Figure 3 shows a schematic view of the sexual stimulator 1 with the shaft 3 in a bent position. To change the shape of the shaft 3 from the straight shape shown in Figure 2 to the bent shape shown in Figure 3 the user bends the bottom three flexible  
10 sections 11, 13, 15 in the first rotational direction 23; then, the user bends the top three flexible sections 17, 19, 21 in the second rotational direction 25. This positions the shaft 3 in the multi-curved shape shown in Figure 3. This shape may be described as sinuous or 'S' shaped. The user may experience greater sexual stimulation with the shaft 3 in the bent position than in the straight position because  
15 this position may maximise the shaft's contact with the user's G-spot.

The flexible sections are flexible enough to be bent by hand. However, they are stiff enough to resist bending out of shape when the sexual stimulator is in use. The flexible sections should not bend when the inserted and removed from an orifice of  
20 the user.

Referring to Figure 4, the sexual stimulator 1 comprises an internal chassis 31 inside the shaft 3. The shaft 3 is moulded over the internal chassis 31 and protects it from fluids. The base 5 comprises a further pair of buttons 27, 29 for controlling the sexual  
25 stimulator 1.

The internal chassis 31 comprises a base section 33 which connects to a first shaft section 35, which connects to a second shaft section 37, which connects to a third shaft section 38, which connects to a fourth shaft section 39, which connects to a fifth  
30 shaft section 40, which connects to a tip section 41.

The base section 33 is connected to the first shaft section 35 by a first friction hinge 43 which forms part of the first flexible section 11. The first shaft section 35 is connected to the second shaft section 37 by a second friction hinge 45 which forms  
35 part of the second flexible section 13. The second shaft section 37 is connected to the third shaft section 38 by a third friction hinge 47 which forms part of the third flexible section 15. The third shaft section 38 is connected to the fourth shaft section

39 by a fourth friction hinge 49 which forms part of the fourth flexible section 17. The fourth shaft section 39 is connected to the fifth shaft section 40 by a fifth friction hinge 51 which forms part of the fifth flexible section 19. The fifth shaft section 40 is connected to the tip section 41 by a sixth friction hinge 53 which forms part of the sixth flexible section 21.

The sexual stimulator 1 comprises six vibration motors which vibrate in order to provide and/or enhance sexual stimulation. Each vibration motor provides vibrations by using an electric motor to rotate an off-centre weight. Each vibration motor is protected by a silicon rubber cladding which helps to reduce noise without significantly dampening the vibrations of the motors. The cladding also helps to separate the vibrations of the motors from one another so that they can be felt individually.

The base section 33 comprises a battery and a control module for controlling the vibration motors. The user is able to send instructions to the control module using the buttons 9, 10, 27, 29. The base 5 further comprises a base vibration motor 55 which is used to vibrate the pair of fins 7. There are four shaft vibration motors 57, 59, 61, 63 positioned along the length of the shaft 3. There is a tip vibration motor 65 at the end of the shaft 3.

The first shaft vibration motor 57 is housed within the first shaft section 35 between the first hinge 43 and the second hinge 45. The second shaft vibration motor 59 is housed within the second shaft section 37 between the second hinge 45 and the third hinge 47. The third shaft vibration motor 61 is housed within the third shaft section 38 between the third hinge 47 and the fourth hinge 49. The fourth shaft vibration motor 63 is housed within the fourth shaft section 39 between the fourth hinge 49 and the fifth hinge 51. There is no shaft vibration motor housed within the fifth shaft section 40. The tip vibration motor is housed within the tip section 41. The shaft vibration motors are separated from one another in their individual housings in order to separate the vibrations of the motors from one another so that they can be felt individually. The off-centre weight of each shaft vibration motor is exposed outside of the cladding so that the vibrations can be felt more easily.

The base vibration motor 55 and the tip vibration motor 65 are both the same size. The shaft vibration motors 57, 59, 61, 63 are the same size as one another. Each one of the base vibration motor 55 and the tip vibration motor 65 is larger than each

one of the shaft vibration motors 57, 59, 61, 63. Each one of the base vibration motor 55 and the tip vibration motor 65 is able to vibrate at a greater amplitude than each one of the shaft vibration motors 57, 59, 61, 63.

- 5 The tip vibration motor 65 is positioned so that its longest axis extends in the same direction as the length of the shaft 3. Thus, the tip vibration motor 65 can point towards the user's G-spot when the shaft is inside the user. The base vibration motor 55 and the shaft vibration motors 57, 59, 61, 63 are positioned so that their longest axes extend perpendicularly to the length of the shaft 3. This prevents the sexual  
10 stimulation device 1 from being too long to use.

Figure 5 shows an enlarged view of a portion of the shaft 3 which details the components of the friction hinge. The first shaft section 57 is connected to the second shaft section 59 by the second friction hinge 45. The second friction hinge 45  
15 comprises a first pair of protrusions 67, 69 attached to the first shaft section 57 and the three protrusions 71, 72, 73 attached to the second shaft section 59. Each of the first pair of protrusions 67, 69 fits inside slots formed between the three protrusions 71, 72, 73 attached to the second shaft section 59.

- 20 Each protrusion has a hole through it which is arranged to receive a bolt 75. The bolt 75 extends through each of the holes which holds the first shaft section 57 and the second shaft section 59 together. This forms the second friction hinge 45. The bolt 75 can be tightened or loosened in order to select the hinge's stiffness. The hinge's stiffness is selected so that the hinge can be bent by hand but so that it does not  
25 bend when inserted into an orifice of the user.

Referring to Figure 6, the sexual stimulator comprises an induction coil 75 within the base. The induction coil 75 allows the battery to be charged wirelessly which avoids the need for an external physical electrical connection to be provided. An external  
30 physical electrical connection would make the sexual stimulator 1 more susceptible to fluid damage.

Figure 7 shows the internal chassis 31 which in this example comprises the base section 33, the first shaft section 35, the second shaft section 37, the third shaft section 38, the fourth shaft section 39 and the tip section 41. The internal chassis 31  
35 may also be provided with the fifth shaft section 40; however, in this example, the fifth shaft section 40 has been omitted.

In Figure 7 the internal chassis 31 is in the straight position. In this position, the base section 33, the shaft sections 35, 37, 38, 39 and the tip section 41 are positioned in a straight line. The friction hinges resist bending such that the shaft 3 remains straight whilst in use.

5

In Figure 8 the internal chassis 31 is in a bent position, defining a sinuous path. In this position, the first shaft section 35 is bent clockwise relative to the base section 33; the second shaft section 37 is bent clockwise relative to the first shaft section 35; the third shaft section 38 is bent anti-clockwise relative to the second shaft section 37; the fourth shaft section 39 is bent anti-clockwise relative to the third shaft section 38; and the tip section 41 is bent anti-clockwise relative to the fourth shaft section 39. Thus, the internal chassis is bent in two different directions which defines an "S" shape. A user may find the "S" shaped shaft more sexually stimulating than the straight shaft because it may increase contact with the user's G-spot.

10  
15

In Figure 9 the internal chassis 31 is in a bent position, defining a single-curved path. In this position, base section 33, shaft sections 35, 37, 38, 39 and tip section 41 are bent anti-clockwise relative to one another. Thus, the internal chassis bends in a single direction defining a "C" shape. A different user may find the "C" shaped shaft more sexually stimulating than the straight or "S" shaped shaft because it may increase contact with that user's G-spot.

20

Figure 10 shows a schematic diagram of a control system 100 for a sexual stimulator which may be used to control the sexual stimulator 1 described above. The control system 100 comprises a control module 102 which is used to control a plurality of vibration motors. In this example, the control module 102 is used to control a tip vibration motor 104, four shaft motors 106, 108, 110, 112 and a base motor 114. These vibration motors correspond with the vibration motors of the sexual stimulation device 1 described above; however, the control module 102 may be used to control a different number and arrangement of vibration motors.

25  
30

The control system 100 includes a battery 116 which provides electrical power to the vibration motors and the modules within the control system 100.

35

The control module 102 can control the amplitude and frequency at which each one of vibration motors 104, 106, 108, 110, 112, 114 vibrates. Typically, the control module 102 will use a pulse-wave modulated signal to control each motor.

If the control module 102 sends a signal with high amplitude to a motor, the motor will vibrate with a high amplitude or intensity. If the control module 102 sends a signal with low amplitude to the motor, the motor will vibrate with low amplitude or intensity. If the control module 102 sends a signal with high frequency to the motor, the motor will vibrate at a high frequency. If the control module 102 sends a signal with low frequency to the motor, the motor will vibrate with low frequency. The control module 102 is able to control the vibration motors independently of one another. The control module 102 can be used to vibrate the motors in a way that provides and/or enhances any sexual stimulation provided by the sexual stimulator.

10

The control system 100 comprises a storage module 118 which is arranged to store a plurality of data files. Each data file defines a set of instructions which is used by the control module 102 to vibrate the motors. One data file may instruct the vibration motors to vibrate at a gradually increasing intensity and frequency over a pre-set period of time, for example, five minutes. Another data file may instruct the vibration motors to increase and decrease the intensity and frequency of vibrations in a rhythmic cycle. In each of these examples, the instructions may cause the motors towards the tip to vibrate more strongly than the motors towards the base or vice versa.

20

The control system 100 comprises four buttons 120, 122, 124, 126 for controlling the control module. There is "increase amplitude button" 120 which is used to increase the overall amplitude of the vibrations of the motors and a "decrease amplitude button" 122 which is used to decrease the overall amplitude of the vibrations of the motors. The user can activate these buttons to change the overall amplitude of the vibrations in an incremental fashion. However, the relative difference between the amplitudes of vibration of the motors will remain as defined by the data file in use at that time.

25

There is a "previous file button" 124 which is used to select the previous data file stored in the storage module 118. There is a "next file button" 126 which is used to select the next data file stored in the storage module 118. The "increase amplitude button" 120 and the "decrease amplitude button" 122 may correspond with the first pair of buttons 9, 10 shown in Figure 1. The "previous file button" 124 and the "next file button" 126 may correspond with the second pair of buttons 27, 29 shown in Figure 4.

35

The sexual stimulator 1 can be activated by holding down the “increase amplitude button” 120 for a predefined period of time. The sexual stimulator can be de-activated by holding down the “decrease amplitude button” 122 for a predefined period of time.

- 5 The control system 100 comprises a communication module 128 which is arranged to receive data files from external sources. The communication module 128 receives data files and stores them at the storage module 118.

- 10 The communication module 128 can connect wirelessly via Bluetooth to a client device 130. The client device 130 may be the user’s smart phone or tablet computer. Data files can be sent from the client device 130 to the communication module 128 which in turn are stored at the storage module 118. In addition, the client device 130 can be used to re-order, remove or delete data files stored at the storage module 118. Preferably, the communication module 128 connects wirelessly with the client  
15 device 130; however, a physical connection such as USB may be provided.

The control system 100 has been described in the context of the sexual stimulator 1 described above. However, the control system 100 may be used to control any sexual stimulator comprising at least two vibration motors.

**Claims**

1. A sexual stimulator, for interaction with a user's body, comprising:

5 a shaft, comprising a first flexible section, bendable in a first rotational direction, and a second flexible section, bendable in a second rotational direction, such that the shaft can be bent from a first configuration to a second configuration;

10 wherein a component of the second rotational direction is opposite to the first rotational direction;

and the flexible sections resist bending such that the shaft resists bending from the first configuration to the second configuration and maintains its  
15 shape in use.

2. A sexual stimulator, according to claim 1, wherein the second flexible section is bendable in the first rotational direction and the second rotational direction.

20

3. A sexual stimulator, according to claim 1 or claim 2, wherein the first flexible section is bendable in the second rotational direction and the first rotational direction.

25

4. A sexual stimulator, according to any of the preceding claims, wherein the second rotational direction is substantially opposite the first rotational direction.

30

5. A sexual stimulator, according to any of the preceding claims, wherein the first and second flexible sections are bendable independently of one another.

35

6. A sexual stimulator, according to any of the preceding claims, wherein each respective flexible section does not bend when subject to a magnitude of

torque below a selected threshold and bends when subject to a magnitude of torque above the selected threshold.

- 5     7.     A sexual stimulator, according to claim 6, wherein the threshold is selected so that the flexible section does not bend when the sexual stimulator is used for sexual stimulation.
- 10    8.     A sexual stimulator, according to claim 6 or claim 7, wherein, the threshold is selected so that the flexible section can be bent by hand.
- 15     9.     A sexual stimulator, according to any of the preceding claims, wherein the flexible sections are bendable in a first plane but resist bending in another plane.
- 20     10.    A sexual stimulator, according to any of the preceding claims, further comprising a tip vibration motor positioned towards the tip of the shaft.
- 25     11.    A sexual stimulator, according to any of the preceding claims, further comprising a plurality of shaft vibration motors positioned along the length of the shaft.
- 30     12.    A sexual stimulator according to claim 10 and claim 11 wherein the tip vibration motor is arranged to vibrate with greater amplitude than at least one of the shaft vibration motors.
- 35     13.    A sexual stimulator according to any of the preceding claims further comprising: a base portion arranged to support the shaft; and a base vibration motor positioned in the base portion.



14. A sexual stimulator according to any one of claims 10 to 13 wherein the tip vibration motor is positioned with its longest axis substantially parallel with the longest axis of the shaft.

5

15. A sexual stimulator according to any one of claims 11 to 14 wherein each one of the plurality of shaft vibration motors is positioned with its longest axis substantially perpendicular to the longest axis of the shaft.

10

16. A sexual stimulator according to any one of claims 11 to 15 wherein each one of the plurality of shaft vibration motors is positioned between a pair of adjacent flexible sections.

15

17. A sexual stimulator according to any one of claim 10 to 16 wherein at least one vibration motor is at least partially encased by a protective cladding wherein the protective cladding comprises a flexible material.

20

18. A sexual stimulator according to any of the preceding claims further comprising:

a plurality of vibration motors; and

25

a control module arranged to control the vibration motors independently from one another.

30

19. A sexual stimulator according to claim 18 wherein the control module is arranged to control the amplitude and/or frequency at which the vibration motors vibrate independently from one another.

35

20. A sexual stimulator according to claim 18 or claim 19 further comprising a storage module arranged to store at least one set of instructions arranged to

be used by the control module to control the motors independently from one another.

- 5    21.    A sexual stimulator according to any one of claims 18 to 20 further comprising at least one communication module arranged to provide the storage module with sets of instructions.

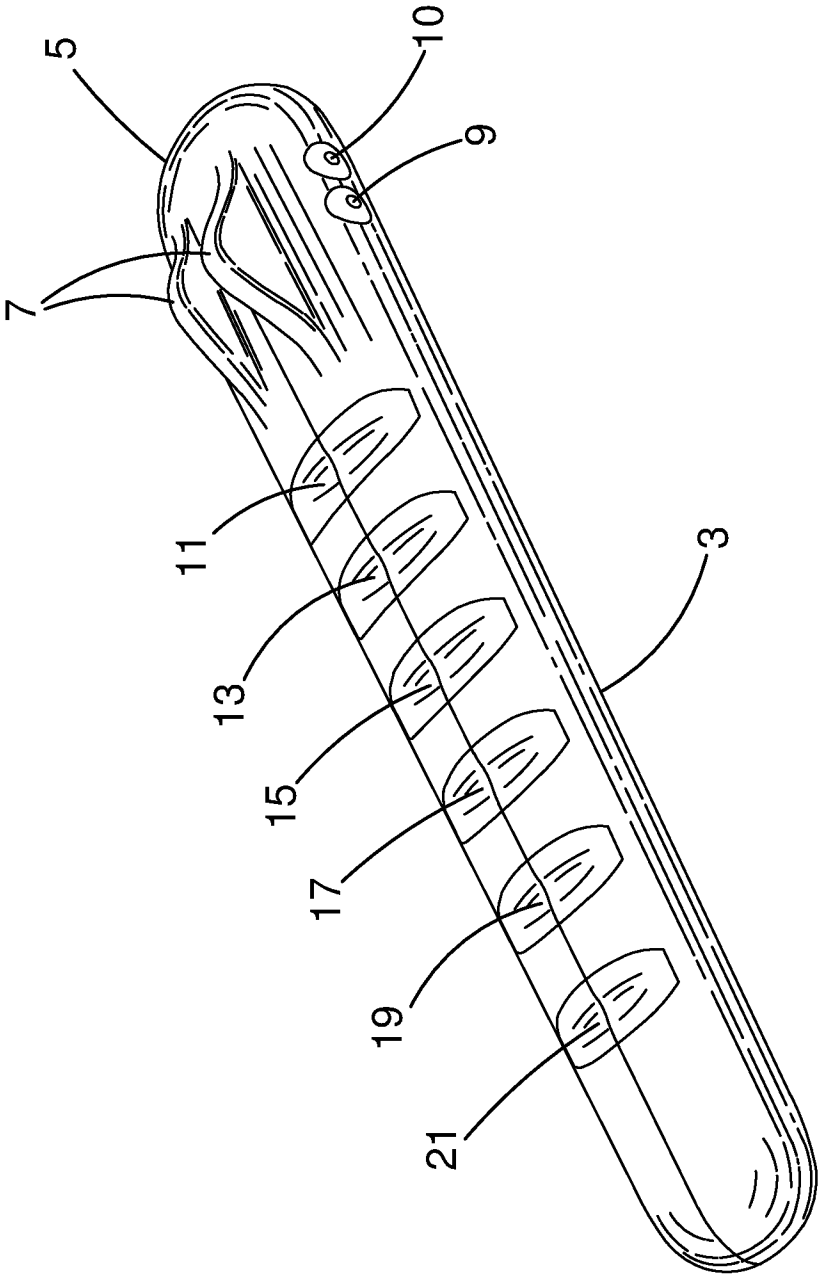


FIG.1

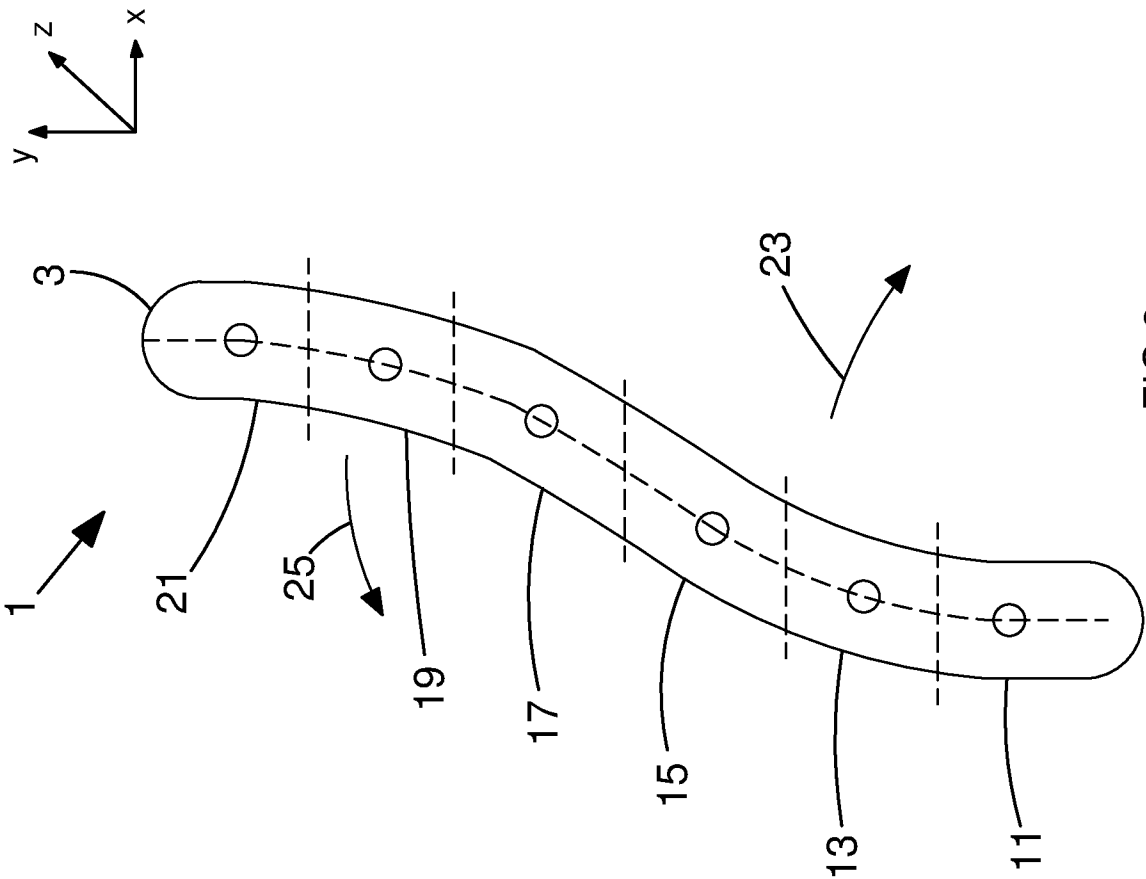


FIG.3

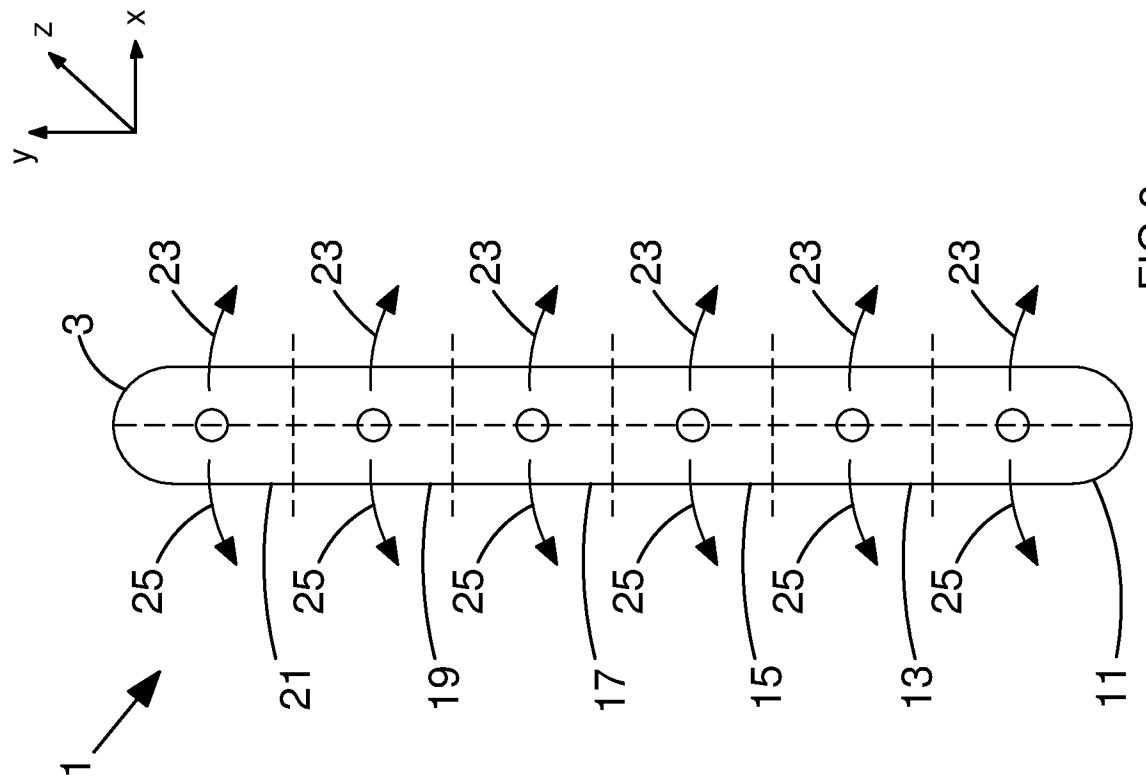


FIG.2

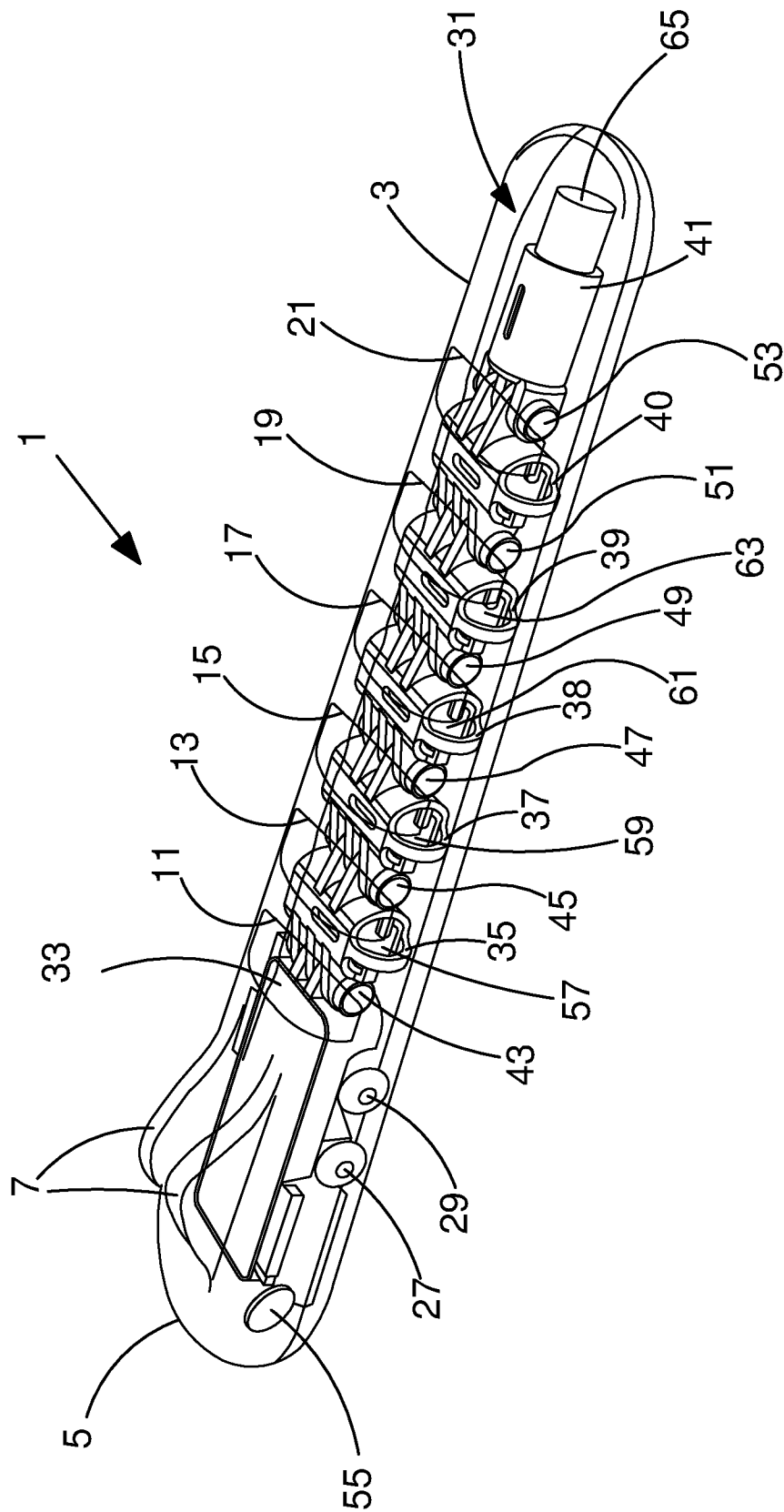


FIG.4

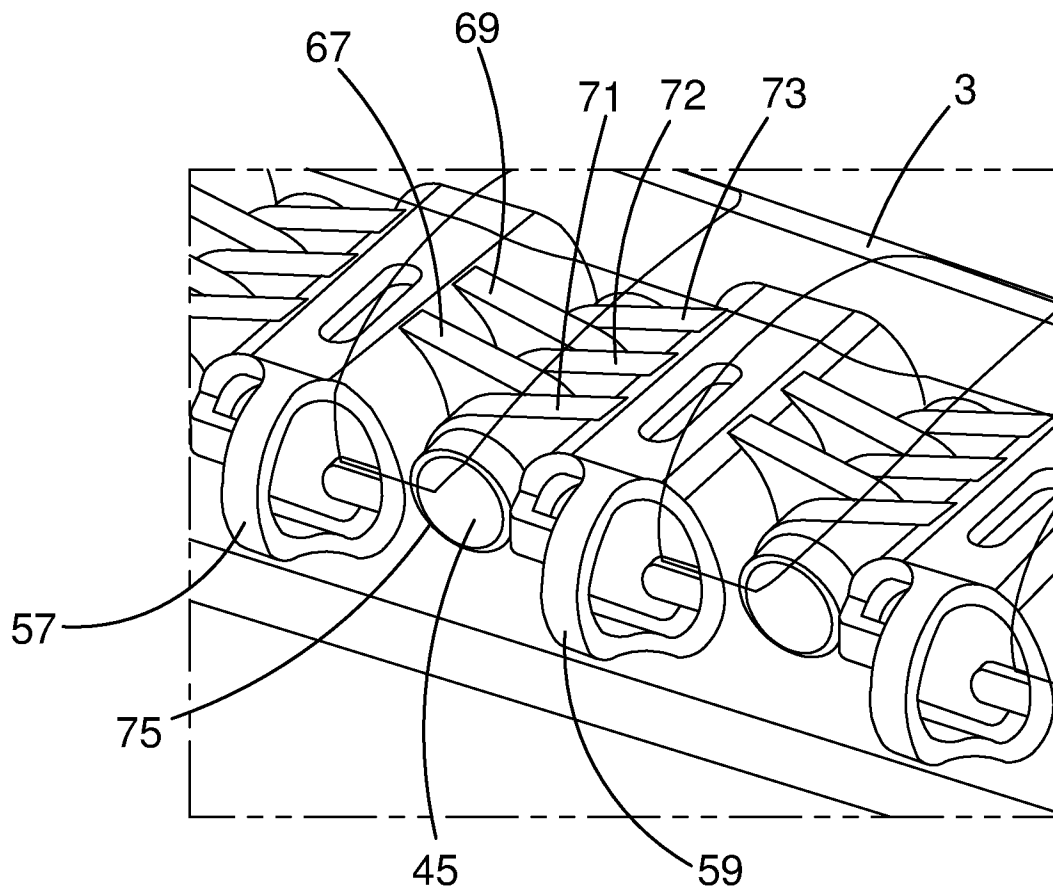


FIG.5

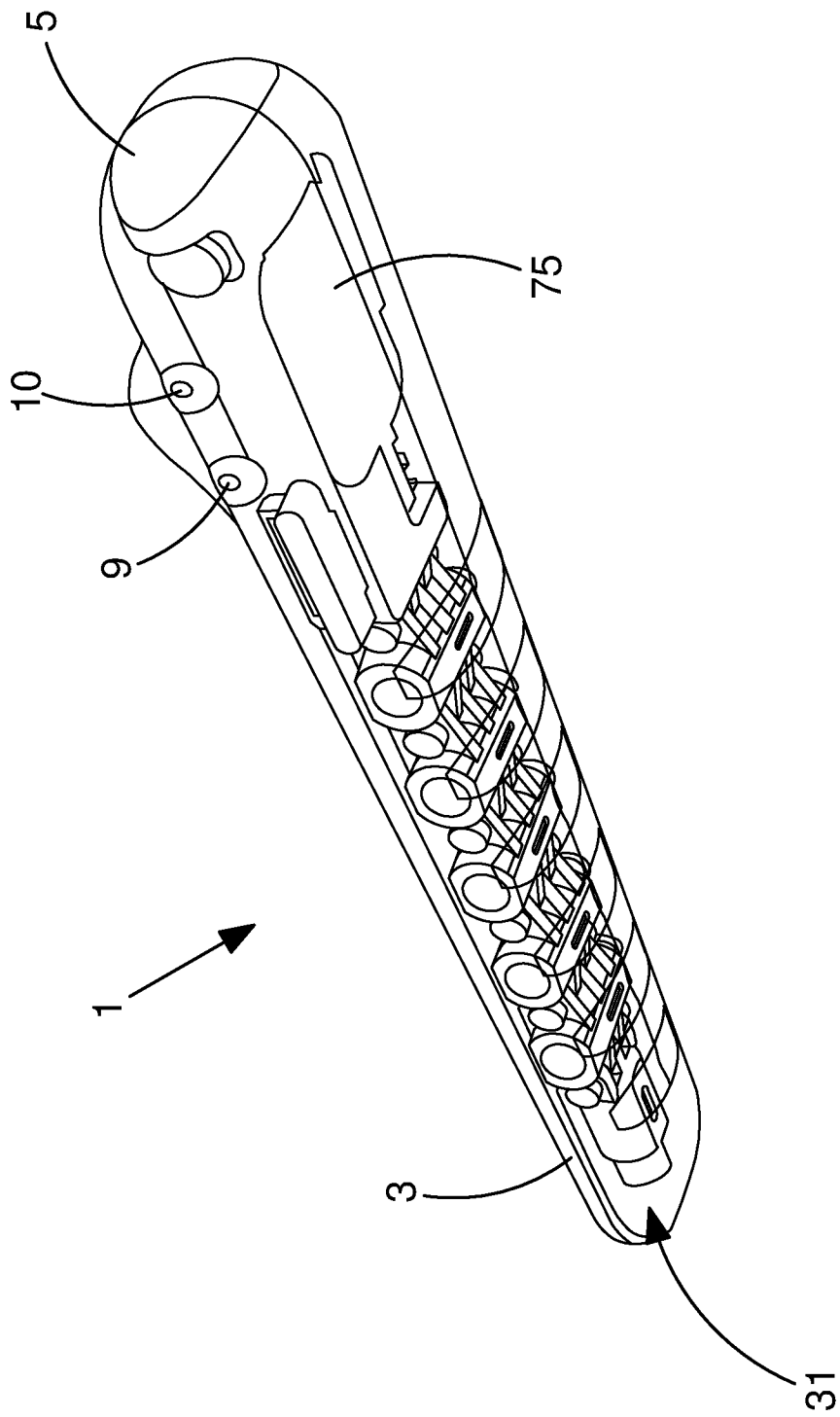


FIG. 6

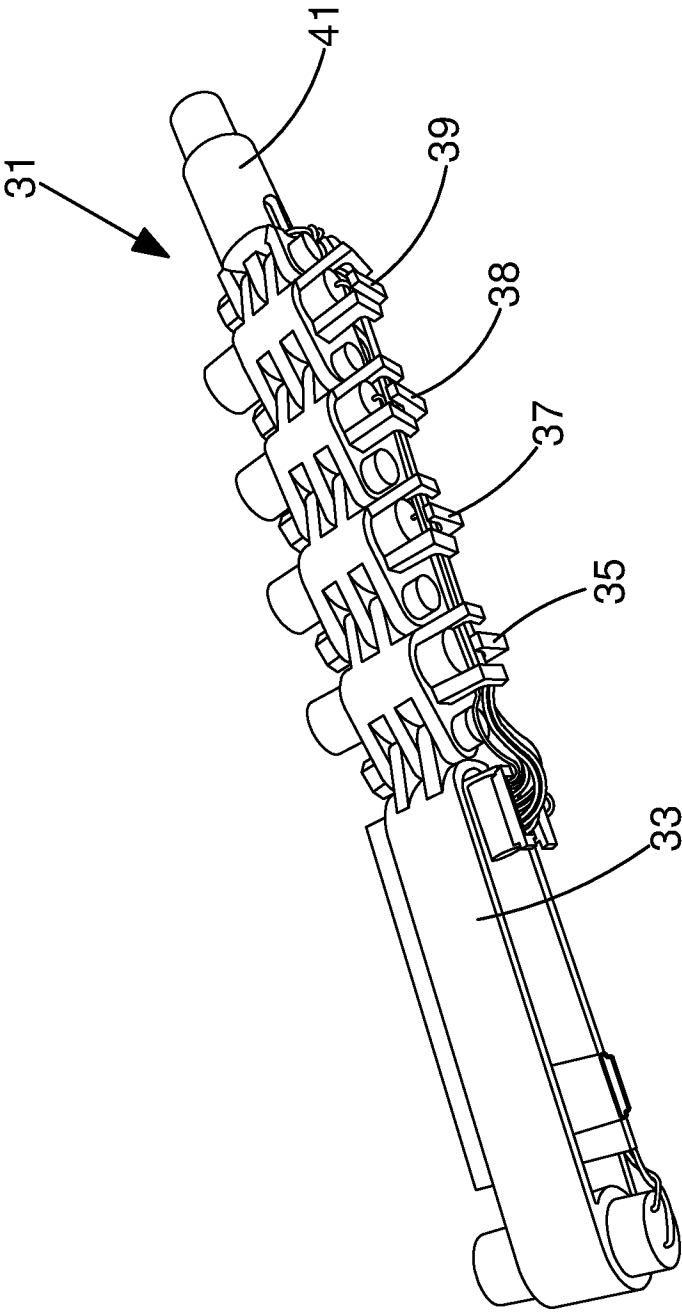


FIG.7



7/8

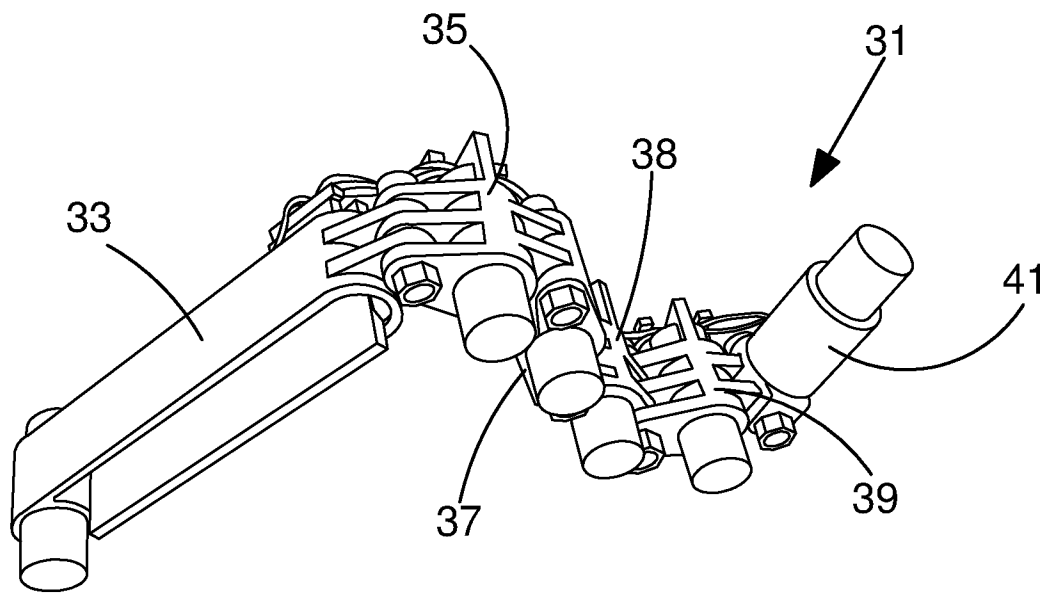


FIG. 8

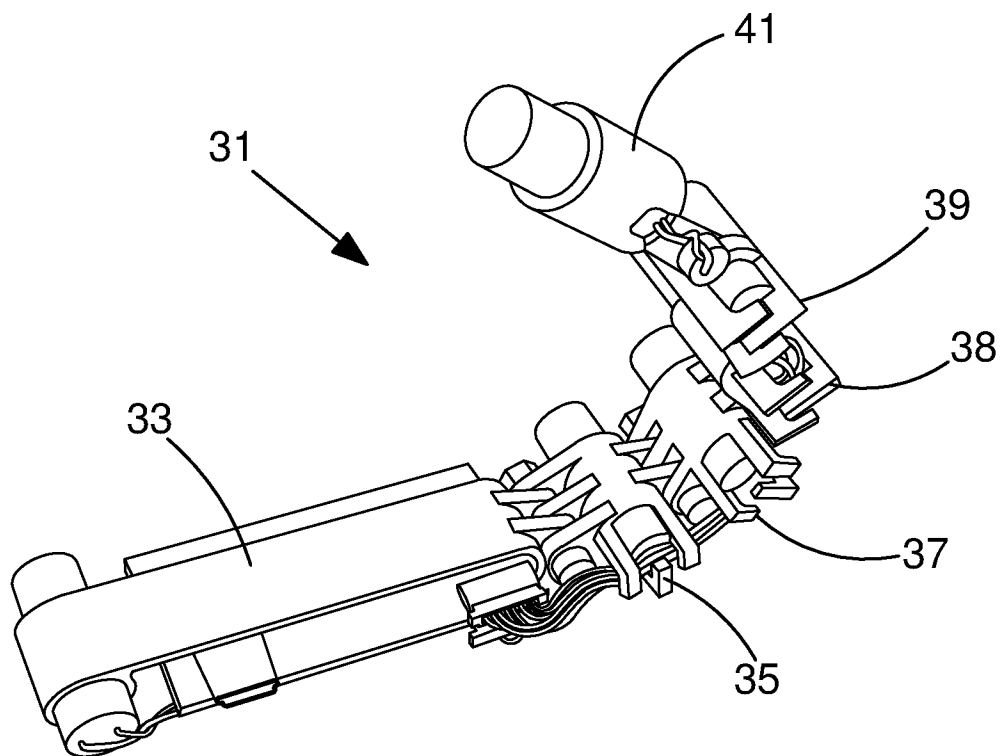


FIG. 9

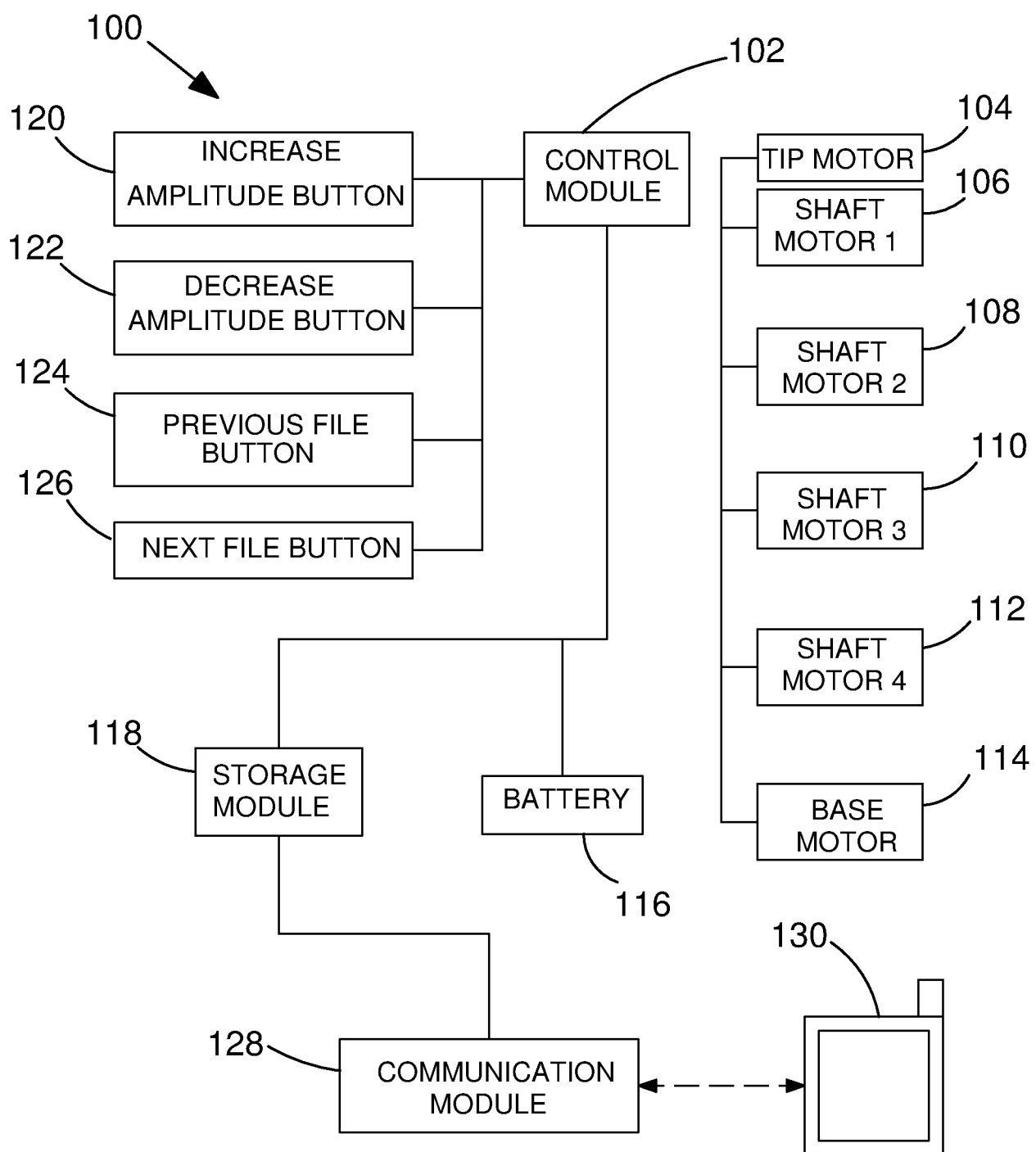


FIG.10

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/GB2015/054144

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61H19/00  
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
A61H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2011/007167 A1 (CLIQ LTD [GB]; TURNER DUNCAN [GB]; GLAISTER CHRISTOPHER [GB]) 20 January 2011 (2011-01-20) pages 3-7; figure *	1-21
X	WO 2012/071309 A1 (STANDFEST CHRISTINE [US]; STANDFEST CHRISTOPHER [US]) 31 May 2012 (2012-05-31) pages 6-14; figure *	1-10, 14, 17-19
X	DE 296 05 288 U1 (STEIN ROLF [DE]) 13 June 1996 (1996-06-13) figure *	1-9
X	BE 1 002 883 A6 (BLITOG AG) 16 July 1991 (1991-07-16) the whole document	1-9



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

17 February 2016

Date of mailing of the international search report

24/02/2016

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040,  
Fax: (+31-70) 340-3016

Authorized officer

Haller, E

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2015/054144

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2011007167	A1	20-01-2011	CA 2768103 A1 20-01-2011
			CN 102711707 A 03-10-2012
			EP 2453866 A1 23-05-2012
			JP 2012532724 A 20-12-2012
			US 2012330201 A1 27-12-2012
			WO 2011007167 A1 20-01-2011
WO 2012071309	A1	31-05-2012	US 2013289346 A1 31-10-2013
			WO 2012071309 A1 31-05-2012
DE 29605288	U1	13-06-1996	NONE
BE 1002883	A6	16-07-1991	NONE