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(54) **A DEVICE FOR COUPLING A LAMP TO A MUSIC STAND AND A SET OF DEVICES**

VORRICHTUNG ZUM ANSCHLIESSEN EINER LAMPE AUF EINEM NOTENSTÄNDER UND EINER SATZ VON SOLCHEN VORRICHTUNGEN

DISPOSITIF DE COUPLAGE D'UNE LAMPE SUR UN PUPITRE DE MUSIQUE ET ENSEMBLE DE TELS DISPOSITIFS

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Description

[0001] The present invention relates to a device for coupling a lamp to a foldable music stand according to the preamble of claim 1. The invention also relates to a set of such devices according to claim 10.

[0002] A device like this is known in the art. For example, lamps are known that can be connected to a base part of a music stand, commonly by means of a pinch clip. Examples are clamps according to US2003/0193795 and US2003/0016532. A disadvantage of such clip can be found in the positioning of the clip, hindering a user to position his sheets of music paper on the stand since part of the support surface is taken up by the clip. Another disadvantage of this known clip is that it easily moves, such that the light image on the sheet music changes, or even so that the clamp can fall off from the music stand. From GB1170922 a device is known that can be connected to a broader surface portion of the music stand. However, such known device still occupies a lot of space at the back side of the sheets of music paper with the consequence that the sheets can easily fall off from the music stand. Furthermore, such known device is only applicable with music stands with a solid back plane, not with foldable music stands. Finally, US2010/0207003 and US6086228 both relate to lamps with a clamping portion that is embodied to be connected to a relatively large flat surface, for example a base part of a music stand. Hence, these lamps provide a disadvantage when used in combination with a music stand, since it hinders positioning of sheets of music paper on said base part.

[0003] These known devices therefore require improvement. More in particular, the connection of the device to a music stand should be improved such that the lamp has a stable position and that the light image to the sheets of music paper is continuous.

[0004] In the art, it is known to directly clamp a lamp to sheets of music paper. However, such is possible only when the sheets consist of a rigid book or where the sheets are incorporated in a rigid folder.

[0005] Another disadvantage of known devices according to the preamble is the power supply. When batteries are used it may occur that the battery run out of power during a rehearsal or a performance. When using a mains power supply each lamp has its own power supply resulting in a tangle of electrical cords, especially when a complete orchestra must be provided with lamps.

[0006] Within the present invention, the term "lamp" relates to a complete device comprising a part that can be connected to a music stand as well as the lighting element that actually emits photons to produce the light. The lighting element is preferably comprised of a number of LEDs but may also be a light bulb, a fluorescent lamp or the like.

[0007] The invention aims at providing an improved device of the kind mentioned in the preamble.

[0008] The invention especially aims at providing a device of the kind mentioned in the preamble and that provides a stable coupling with a music stand.

[0009] The invention especially aims at providing a device that projects a continuous light image on a sheet of music paper.

[0010] The invention also aims at providing an improved device wherein the power supply is simplified.

[0011] So as to obtain at least one of the above aims, according to a first embodiment the invention provides a device comprising the features of claim 1. This device has the advantage that the coupling with the music stand is very stable. An unintended displacement or shifting of the device is virtually impossible. Furthermore, one obtains the additional advantage that a regular light image is obtained since the lighting element is positioned in the center of the music stand due to receiving the ornament in the device's opening. For, the ornament is at all times positioned in the center top side of a music stand.

[0012] According to the present invention, the through opening is embodied for keeping therein at least part of the ornament protruding at a top side of the music stand. Most foldable music stands are provided with a protruding ornament at a top side, usually in the shape of a so-called "harp" or a simplified representation thereof, that can suitably be slit into (and through) the through opening of the device according to the present invention. The through opening in the device according to the present invention thus yields a very stable positioning of the device on the music stand with the consequence that falling over or sliding away is impossible.

[0013] So as to be able to clampingly couple the device to the music stand, the device comprises near a first side of the recess a first abutment surface and at an opposite side comprises a displaceable clamping element in a parallel second abutment surface, wherein the device is embodied for holding at least part of the ornament of the music stand in the through opening and for clampingly holding a part of the music stand between said both abutment surfaces. Thus, the through opening for at least partly receiving therein the ornament is positioned between the parallel abutment surfaces. An advantage of such embodiment is that a very rigid and sturdy part of the music stand is clamped by the device according to the invention. For, the ornament is provided at the center top side of the music stand, which comprises the central continuous spine portion which should provide strength and stability to the music stand. The positioning of the present device to the ornament and as a consequence to the central portion of the music stand thus provides optimum stability and sturdiness.

[0014] According to the invention, the recess comprises a supply side for introducing the music stand into the recess and further comprises a top surface that is directed away from the supply side and wherein the through opening is provided in the top surface, allowing obtaining a simple and quick coupling. The through opening provides for a quick centering of the device on the music stand.

[0015] This new way of connection provides the ability to use an improved power supply for feeding the lighting element. According to a second embodiment, the power supply forms part of the invention as well. Due to the sturdy and stable coupling to the music stand an external power supply for feeding the lighting element may be used, instead of batteries that are provided in the device itself. Such embodiment will be described hereafter. It is even possible to use a couple of devices each connected to its own music stand and mutually electrically connected though power cords, wherein a central power supply is used for feeding a first device, and wherein power cords provide for an electrical interconnection with a second device, and wherein said second device is electrically connected with a third device, and so on. Such embodiment is only possible due to the sturdy and stable coupling of the device according to the present invention. In a device according to the state of the art, when coupling same to a music stand, the weight of the power cords would certainly exert so much power to the devices that these would slide away or be displaced.

[0016] None of the devices according to the state of the art teach to receive an ornament in a through hole of the device so as to have an optimum stabilized positioning of the device on a music stand. The device according to the present invention therefore at all times provides an optimum lighting of sheets of paper music, due to the stabile positioning of the device on the music stand.

[0017] The power supply of the lamp, actually of the lighting element that forms part of the lamp, may be obtained in a variety of ways. According to a first embodiment, it is preferred that the device comprises an electrical connection for feeding the lighting element and a switch for switching the lighting element on or off. Therefore, in the present description, the term "switch" relates to an on / off switch and a dimmer switch. The switch provides the user the opportunity to switch the lighting element on or off or to dim the light, whereas the device is still connected to the power supply. A power cord may be connected to the power supply. For example, this may be a 220V connection, but dependent on the lighting elements used it may also be a 6V, 12V, 24V or any other connection that would be required.

[0018] According to another variant, the electrical connection may comprise a battery for feeding the lighting element. An advantage thereof is that a user is not dependent on the availability of a central power supply. In this case also, it is preferred for the device to comprise a switch for switching the lighting element on or off.

[0019] Due to limited heat development and long lifetime, a led element is preferred as a lighting element. When using a battery as a power supply a led element has the advantage that it has a relatively low energy consumption allowing a longer use than when using a light bulb. A led element also provides the advantage that a low current is obtained when a large number of these lighting elements are incorporated in a parallel arrangement in the current circuit. Especially when applying a low voltage, for example 6V, 12V, 24V, such advantage is huge. When using a voltage of 24V and a parallel arrangement of 6W led elements in the current circuit, every additional lighting element will increase the total current by 0.25A.

[0020] It will be explained hereafter that it is preferred for the device to comprises an input for connecting thereto a power supply for the lighting element, said input being passed to an output of the power supply, said output being provided in the device, and wherein the device further comprises a parallel circuit that is coupled to the lighting element for feeding same from the input. A power supply to be connected to the input provides for power to the lighting element and the output. The interconnection from the input to the output provides the possibility of using a power cord that is connected to the output of a first device as a power supply for another such device according to the present invention. Such provides the possibility of mutually connecting a plurality of devices according to the invention such that all devices are supplied by said one power supply. By providing each device with its own switch, each lamp can be switched on or off or may be dimmed, as may be required. It is also possible to not provide each device with its own switch, such that all lamps are switched on when the power supply is engaged. The combination of a direct connection between the input and output and parallel arrangements of the lamps provides the advantage that a broken lamp does not switch off all other lamps.

[0021] Therefore, it is preferred according to the embodiment as mentioned above that the parallel circuit comprises a switch for switching the lighting element on and off.

[0022] According to another variant, it is preferred that the output of the device is embodied for providing a connection with an input of another device.

[0023] Furthermore, the invention relates to a set of devices according to the invention, wherein each device comprises an input and an output that is interconnected with said input.

[0024] It is especially preferred, that the set further comprising a power supply and power cords for connecting the power supply with a device and for mutually connecting the devices. The power supply may be a transformer for adapting the voltage of 230V to another required voltage of 6V, 12V, 24V or any other required voltage.

[0025] A simple mutual connection of devices and a device with a power supply is obtained when the inputs and outputs comprise at least two electrical poles, and optionally a ground connection, and wherein each cable is a two-wire or three-wire power cord connection. Optionally, each device may comprise a fuse in the parallel connection to the lighting element.

[0026] So as to have a targeted illumination at all times, the device may be embodied such that the clamping member and the lighting element are mutually connected by means of a flexible arm.

[0027] Hereinafter, the invention will be described with reference to a drawing. The drawing shows in:

Fig. 1 a perspective view of a device according to the invention,
Fig. 2 a sectional side view of the device according to the invention,
Fig. 3 a schematic view of the positioning of the device on a music stand, and
Fig. 4 a schematic electronic circuit.

[0028] In the figures the same and analogous parts are denoted by the same reference numerals. However, for ease of understanding the invention, not all parts that are required for a practical embodiment, are shown in the figures.

[0029] Fig. 1 shows a perspective view of a device 1 according to the invention. The device 1 comprises a coupling part 2 that is embodied to be coupled to an ornament 3 of a music stand 4 (shown in Fig. 3 as well as schematically shown by means of a dotted line in Fig. 2). The coupling part 2 has a recess 27 for receiving therein part of the music stand. The recess is accessible for the music stand from a supply side 26. The recess 27 extends to the top surface 15 that constitutes an abutment surface for part of the music stand that is received in the recess. In that top surface 15 a through opening 13 is provided in which an ornament of the music stand can be received. Part of the music stand and the ornament that is received in the through opening are identified by dotted lines in Fig. 2.

[0030] The device 1 comprises a lighting element 6 that is coupled to the coupling part 2 by means of a flexible shaft 5. In the embodiment shown, the arm 5 or shaft 5 is bent, such that the lighting element 6 will illuminate sheet music (not shown) that is placed on the music stand 4. A flexible arm 5 (or shaft 5) is preferred since then the light can be directed in any desired direction.

[0031] The width of the lighting element 6 is preferably as wide as the width of the music stand or as the width of the sheet music. Such may provide optimal illumination of the sheet music. In the figure, the lighting element is embodied relatively narrow. Such shape will only provide sufficient illumination when a reflector ensures sufficient spread of light across the sheet music. A reflector is not required so much when the width of the lighting element is about as wide as the sheet music.

[0032] The coupling part 2 comprises a clamping device 7, as shown in Fig. 2. The clamping device 7 has a clamping element 10 that is connected to a rotary device 9 provided with thread 8 for translating the clamping element 10 towards an abutment surface 11. The clamping element 10 thus provides for a second abutment surface ate the side directed towards the abutment surface 11, said second abutment surface being positioned parallelly with respect of the abutment surface 11. By introducing a part, for example an ornament 3 only, of the music stand 4 in the through opening 13 of the device 1 and by positioning a contiguous part 12 of the music stand 4 between the clamping element 10 and the abutment surface 11 and subsequently positioning the clamping element 10 in a clamping fashion against said part 12 of the music stand 4, the device 1 is rigidly connected to the music stand 4.

[0033] As shown in Fig. 2 it may be advantageous to position the through opening 13 close to the abutment surface 11. Then, the music stand 4 is forced into a position against a side of the device 1 such that the position of sheet music that is placed on the music stand 4 is substantially not influenced by the device 1.

[0034] In Fig. 3 a schematic view of the device 1 is shown, comprising a through opening 13 in which an ornament 12 can be introduced. An edge 14 of the music stand 4 will then abut a top surface 15 of the device 1, and will be positioned contiguous with the abutment surface 11, ensuring a stable positioning of the device 1 at the music stand 4. Then, part 12 of the vertical base portion 16 of the music stand 4 is clamped between the clamping device 7 and the abutment surface 11.

[0035] Finally, Fig. 4 shows a schematic electrical circuit of two mutually coupled devices 1, 1' according to the invention. A power supply 16 is connected to an input 17 of the device 1. The input 17 is directly connected with an output 18 of the device 1. An input 17' of a second device 1' is connected to an output 18 of said first device 1. Input 17' is also connected with an output 18' of the second device 1', such that a third device may be analogously connected to the second device 1'. All devices are thus fed by power supply 16.

[0036] In Fig. 4 the inputs 17, 17' and outputs 18, 18' are only shown schematically, wherein both electrical poles are identified separately. Optionally, a separate ground may be provided, in which case there will be three connections at each input and output.

[0037] A circuit 19, 19' that is connected in parallel, is connected with lines 23, 23'; 24, 24' between the input 17, 17' and the output 18, 18'. This circuit 19, 19' is embodied for feeding a lighting element 20, 20'. A switch 21, 21' is provided for switching lighting element 20, 20' on or off by closing or opening, respectively, said circuit. A fuse 22, 22' is provided for preventing short circuiting as the case may be. In case of a dimmer, the switch 21, 21' will be a dimmer.

[0038] In the figures the housing 25 containing the inputs 17, 17", outputs 18, 18' as well as the switch 21, 21' (or dimmer) and the connection for the shaft 5, is positioned behind the coupling part 2. Such position is not limiting. It may be positioned on or at the coupling part 2, or even besides same.

[0039] The invention is not limited to the embodiments as described above or as shown in the drawing. The invention is limited only by the appending claims.

Claims

1. A device (1) for coupling a lamp to a foldable music stand comprising an ornament, said device (1) comprising a clamping member (7) to be clamped to a top side of the music stand and further being embodied for holding a lighting element (6), wherein the device (1) comprises a recess (27) for receiving therein a part of the music stand and wherein the clamping member (7) is embodied for clampingly coupling in the recess (27) said part of the music stand;
wherein the device comprises near a first side of the recess (27) a first abutment surface (11) and at an opposite side comprises a displaceable clamping element (10) in a parallel second abutment surface, **characterized in that** the device (1) further comprises a through opening (13) for receiving therein at least part of an ornament protruding at a top side of the music stand, wherein the device is embodied for holding at least part of the ornament of the music stand in the through opening (13) and for clampingly holding a part of the music stand between said both abutment surfaces, and wherein the recess (27) comprises a supply side (26) for introducing the music stand into the recess (27) and further comprises a top surface (15) that is directed away from the supply side (26) and wherein the through opening (13) is provided in the top surface (15).

2. A device (1) according to claim 1, wherein the through opening (13) for at least partly receiving therein the ornament is positioned between the parallel abutment surfaces.

3. A device (1) according to claim 1 or 2, wherein the device comprises an electrical connection (17) for feeding the lighting element (6) and a switch (21) for switching the lighting element (6) in or off.

4. A device (1) according to claim 3, wherein the electrical connection (17) comprises a battery for feeding the lighting element (6) .

5. A device (1) according to any of the preceding claims, wherein the lighting element (6) comprises a LED-element.

6. A device (1) according to one of claims 3 - 5, wherein the device (1) comprises an input (17) for connecting thereto a power supply for the lighting element, said input (17) being passed to an output (18) of the power supply, said output (18) being provided in the device, and wherein the device (1) further comprises a parallel circuit that is coupled to the lighting element (6) for feeding same from the input (17).

7. A device (1) according to claim 6, wherein the parallel circuit comprises a switch (21) for switching the lighting element (6) on and off.

8. A device (1) according to any of claims 6 - 7, wherein the output (18) of the device (1) is embodied for providing a connection with an input (17') of another device.

9. A device (1) according to claim 1, wherein the clamping member (7) and the lighting element (6) are mutually connected by means of a flexible arm (5).

10. A set of at least two devices (1; 1') according to any of claims 6 - 8, wherein each device (1; 1') comprises an input (17) and an output (18) that is interconnected with said input (17).

11. A set according to claim 10, further comprising a power supply and power cords for connecting the power supply with a device (1) and for mutually connecting the devices (1; 1').

12. A set according to any of claims 10 and 11, wherein each cable is a two-wire or three-wire power cord connection.

Patentansprüche

1. Gerät (1) zum Kuppeln einer Lampe an einen faltbaren Notenständer, welches ein Ornament umfasst, worin das Gerät (1) ein Klemmelement (7) umfasst, das an eine Oberseite des Notenständers geklemmt wird und weiter zum Halten eines Beleuchtungselement (6) ausgeführt ist, worin das Gerät (1) eine Aussparung (27) zum Aufnehmen eines Teils des Notenständers darin umfasst, und worin das Klemmelement (7) ausgeführt ist, in der Aussparung (27) des Teils des Notenständers klemmend gekuppelt zu werden;
worin das Gerät in der Nähe einer ersten Seite der Aussparung (27) eine erste Anstoßoberfläche (11) und an einer gegenüberliegenden Seite in einer parallelen zweiten Anstoßoberfläche ein versetzbares Klemmelement (10) umfasst, **dadurch gekennzeichnet, dass** das Gerät (1) weiter eine Durchgangsöffnung (13) zum Aufnehmen mindestens eines Teils eines an einer Oberseite des Notenständers vorstehenden Ornamentes darin umfasst, worin das Gerät ausgeführt ist, um mindestens ein Teil eines Ornamentes des Notenständers in der Durchgangsöffnung (13) zu halten und um ein Teil des Notenständers zwischen den beiden Anstoßoberflächen klemmend zu halten, und worin die Aussparung (27) eine Beschickungsseite (26) zum Einführen des Notenständers in die Aussparung (27) umfasst und weiter eine obere Oberfläche (15) umfasst, die von der Beschickungsseite (26) weg zeigt und worin die

Durchgangsöffnung (13) in der oberen Oberfläche (15) vorgesehen ist.

2. Gerät (1) nach Anspruch 1, worin die Durchgangsöffnung (13) angeordnet ist, das Ornament mindestens teilweise zwischen den parallelen Anstoßoberflächen darin aufzunehmen.

3. Gerät (1) nach Anspruch 1 oder 2, worin das Gerät umfasst, eine elektrische Verbindung (17) zum Versorgen des Beleuchtungselementes (6) und einen Schalter (21) zum An- oder Aus-Schalten des Beleuchtungselementes (6).

4. Gerät (1) nach Anspruch 3, worin die elektrische Verbindung (17) eine Batterie zum Versorgen des Beleuchtungselementes (6) umfasst.

5. Gerät (1) nach einem der vorstehenden Ansprüche, worin das Beleuchtungselement (6) ein LED-Element umfasst.

6. Gerät (1) nach einem der Ansprüche 3 - 5, worin das Gerät (1) einen Eingang (17) umfasst, um eine Stromversorgung für das Beleuchtungselement damit zu verbinden, worin der Eingang (17) an einen Ausgang (18) der Stromversorgung angepasst ist, worin der Ausgang (18) in dem Gerät vorgesehen ist, und worin das Gerät (1) weiter einen parallelen Schaltkreis umfasst, der mit dem Beleuchtungselement (6) gekoppelt ist, um dieses von dem Eingang (17) zu versorgen.

7. Gerät (1) nach Anspruch 6, worin der parallele Schaltkreis einen Schalter (21) umfasst, um das Beleuchtungselement (6) an und aus zu schalten.

8. Gerät (1) nach einem der Ansprüche 6 - 7, worin der Ausgang (18) des Gerätes (1) ausgeführt ist, um eine Verbindung mit einem Eingang (17') eines anderen Gerätes bereitzustellen.

9. Gerät (1) nach Anspruch 1, worin das Klemmelement (7) und das Beleuchtungselement (6) mittels eines flexiblen Armes (5) miteinander verbunden sind.

10. Satz mindestens zweier Geräte (1; 1') nach einem der Ansprüche 6 - 8, worin jedes Gerät (1; 1') einen Eingang (17) und einen Ausgang (18) umfasst, der mit dem Eingang (17) verbunden ist.

11. Satz nach Anspruch 10, welcher weiter eine Stromversorgung und Stromversorgungskabel umfasst, um die Stromversorgung mit einem Gerät (1) zu verbinden und um die Geräte (1; 1') miteinander zu verbinden.

12. Satz nach einem der Ansprüche 10 und 11, worin jedes Kabel eine zwei-Draht- oder drei-Draht-Stromversorgungskabel-Verbindung ist.

Revendications

1. Dispositif (1) pour coupler une lampe à un pupitre de musique pliable comprenant un ornement, ledit dispositif (1) comprenant un élément de serrage (7) à serrer sur un côté supérieur du pupitre de musique et étant en outre destiné à tenir un élément d'éclairage (6), le dispositif (1) comprenant un évidement (27) pour recevoir, à l'intérieur de celui-ci, une partie du pupitre de musique, et l'élément de serrage (7) étant destiné à coupler par serrage dans l'évidement (27) ladite partie du pupitre de musique ;
le dispositif comprenant, près d'un premier côté de l'évidement (27), une première surface de butée (11) et, sur un côté opposé, comprenant un élément de serrage mobile (10) dans une seconde surface de butée parallèle, **caractérisé par le fait que** le dispositif (1) comprend en outre une ouverture traversante (13) pour recevoir, à l'intérieur de celle-ci, au moins une partie d'un ornement faisant saillie sur un côté supérieur du pupitre de musique, le dispositif étant destiné à tenir au moins une partie de l'ornement du pupitre de musique dans l'ouverture traversante (13) et à tenir par serrage une partie du pupitre de musique entre lesdites deux surfaces de butée, et l'évidement (27) comprenant un côté d'introduction (26) pour introduire le pupitre de musique dans l'évidement (27) et comprenant en outre une surface supérieure (15) qui est orientée à l'opposé du côté d'introduction (26) et l'ouverture traversante (13) étant prévue dans la surface supérieure (15).

2. Dispositif (1) selon la revendication 1, dans lequel l'ouverture traversante (13) pour recevoir au moins partiellement l'ornement à l'intérieur de celle-ci est positionnée entre les surfaces de butée parallèles.

3. Dispositif (1) selon la revendication 1 ou 2, dans lequel le dispositif comprend une connexion électrique (17) pour alimenter l'élément d'éclairage (6) et un interrupteur (21) pour allumer ou éteindre l'élément d'éclairage (6).

4. Dispositif (1) selon la revendication 3, dans lequel la connexion électrique (17) comprend une batterie pour alimenter l'élément d'éclairage (6).

5. Dispositif (1) selon l'une quelconque des revendications précédentes, dans lequel l'élément d'éclairage (6) comprend un élément à DEL.

6. Dispositif (1) selon l'une des revendications 3 à 5, le dispositif (1) comprenant une entrée (17) pour relier

à celle-ci une alimentation électrique pour l'élément d'éclairage, ladite entrée (17) étant reliée à une sortie (18) de l'alimentation électrique, ladite sortie (18) étant prévue dans le dispositif, et le dispositif (1) comprenant en outre un circuit parallèle qui est couplé à l'élément d'éclairage (6) pour l'alimenter depuis l'entrée (17) .

7. Dispositif (1) selon la revendication 6, dans lequel le circuit parallèle comprend un interrupteur (21) pour allumer et éteindre l'élément d'éclairage (6).

8. Dispositif (1) selon l'une quelconque des revendications 6 et 7, dans lequel la sortie (18) du dispositif (1) est destinée à établir une connexion avec une entrée (17') d'un autre dispositif.

9. Dispositif (1) selon la revendication 1, dans lequel l'élément de serrage (7) et l'élément d'éclairage (6) sont mutuellement reliés au moyen d'un bras souple (5).

10. Ensemble d'au moins deux dispositifs (1 ; 1') selon l'une quelconque des revendications 6 à 8, dans lequel chaque dispositif (1 ; 1') comprend une entrée (17) et une sortie (18) qui est interconnectée avec ladite entrée (17).

11. Ensemble selon la revendication 10, comprenant en outre une alimentation électrique et des cordons d'alimentation pour relier l'alimentation électrique à un dispositif (1) et pour relier mutuellement les dispositifs (1 ; 1').

12. Ensemble selon l'une quelconque des revendications 10 et 11, chaque câble est une connexion à cordon d'alimentation à deux fils ou à trois fils.

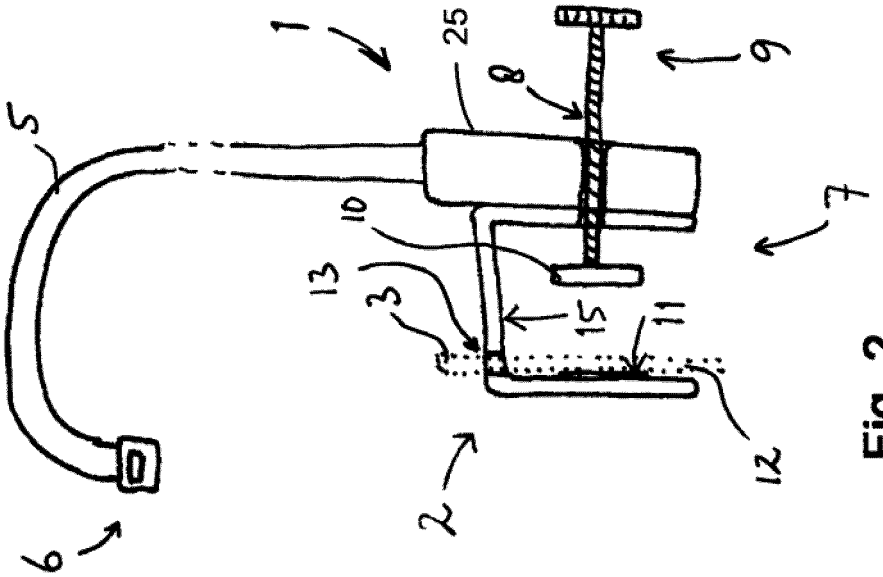


Fig. 2

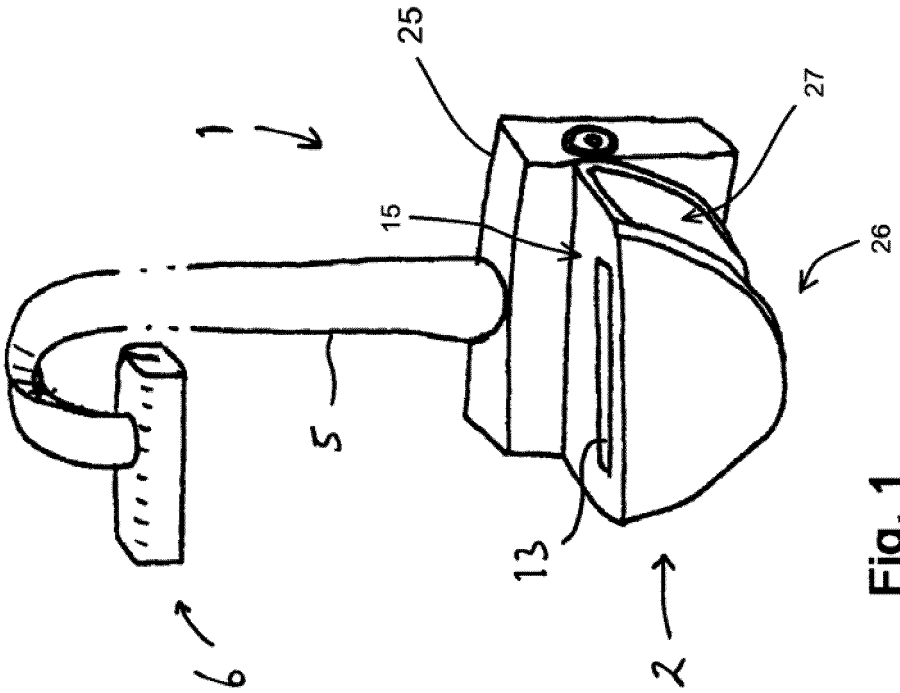


Fig. 1

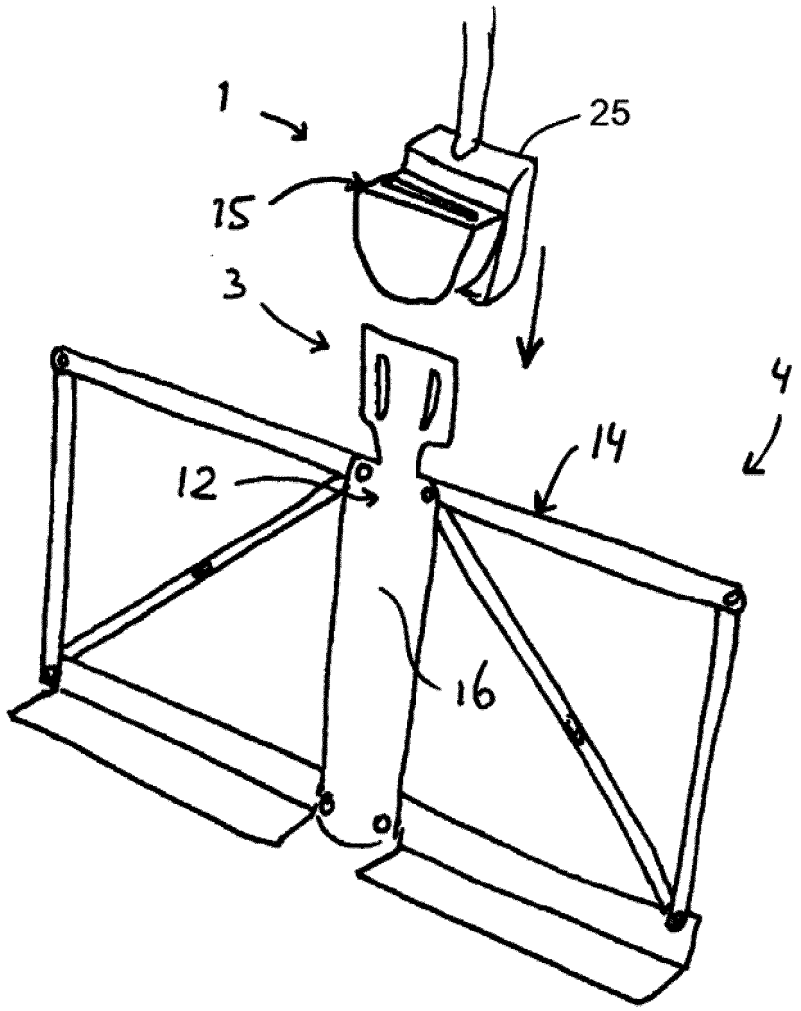


Fig. 3

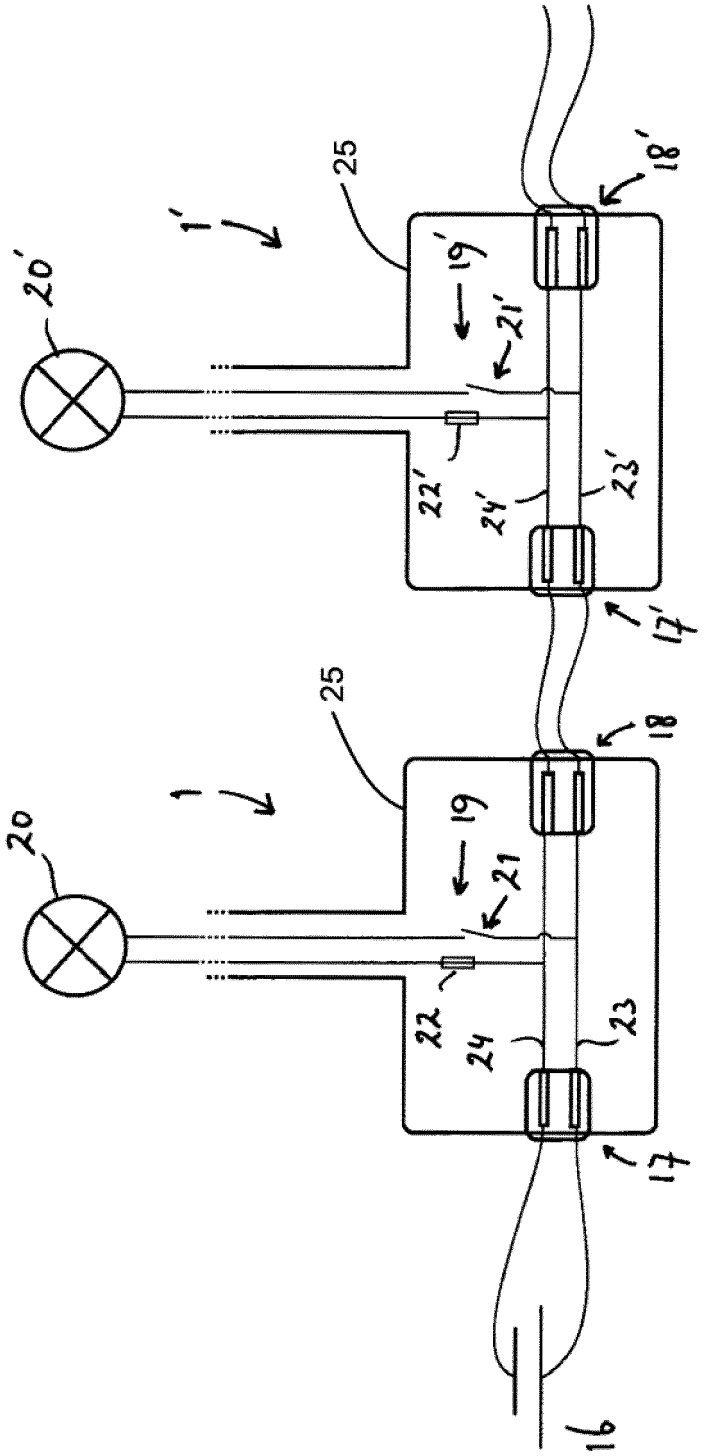


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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