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(54) **Portable fluorescent lighting system**

Tragbare Beleuchtungsvorrichtung mit Leuchtstofflampe

Dispositif d'éclairage portable à source fluorescente

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Description

Background of the Invention

1. Field of the Invention:

This invention relates to a portable and lightweight fluorescent lighting system suitable for use in the field of photography, television and motion pictures utilizing fluorescent lamps.

2. Description of the prior Art:

Proper lighting is of great importance with respect to photography, television and motion pictures. There are a variety of lighting systems designed for use in connection with such industries. However, most such lighting systems are heavy and bulky and not easily transportable.

Originally film and television productions were made in studios and, therefore, the weight, size and portability of lighting devices were not of concern. Recently, however, an increasing majority of films are shot on location away from studios and, therefore, need lightweight, small and portable lighting systems which are also versatile and can easily be mounted in convenient and desirable positions or locations.

There have been improved lighting systems which are lighter and more compact than the ones used in film studios. For example, in Lowell, U.S. Patent No. 3,852,582, a lighting device is disclosed comprising a luminaire, including a reflector mounting on elongated incandescent tubular lamp with mounting means to support said lighting device. However, the present invention is lighter and much more compact and, therefore, more suitable for location filming than the system taught by Lowell. Moreover, the present invention comprises a fluorescent lamp for softer and more efficient lighting as opposed to the incandescent lamps used in Lowell.

Also, in US-A-4,782,428, also to Lowell, there is disclosed a collapsible fluorescent light for photography which includes a collapsible scissor frame having pairs of spaced apart tube end supports carrying a row of sockets each socket for receiving the electrodes of one end of a fluorescent tube, the frame also carrying "barn-door panels" at the end thereof and a flexible reflector. The support frame is mounted on a boom to which is attached a remote ballast. In such arrangement for transportation the support frame may be collapsed by means of the scissor assembly thereof although such necessitates the removal of the fluorescent tubes from the sockets and rolling up of the flexible reflector to thereby provide a compact configuration that can be easily accommodated in, for example, a suitcase or occupy minimum space for storage. The arrangement also utilizes a remote ballast which may be disconnected from the collapsible frame for ease of transportation.

A disadvantage of this arrangement is that in order

to enable the frame to be collapsed, the fluorescent tubes must be removed from the frame assembly and the reflector rolled up and such also requires a relatively complicated scissor frame assembly. In contrast, the fluorescent lamp described herein is retained in position and an extremely lightweight corrugated panel is used for supporting the fluorescent lamp rather than the collapsible scissor frame.

The mounting device utilised in the preferred embodiment is highly adaptable to any desired location or position. A simple wire harness may be used to carry power from a remote ballast to the lampholder, thereby reducing the weight and bulk of the light fixture and allowing for greater flexibility. This reduction in weight and size provides for the lighting system to be hidden in a place requiring space of a little more than a diameter of a fluorescent lamp.

The corrugated panel is made of polypropylene which has good high and low temperature stability characteristics. By cutting and removing two flutes of corrugation out from the panel at four predetermined points, the panel is subdivided into five subpanels which can easily be hinged and additionally be used to control the direction or limit the output of the light as well as act as an enclosure for the lighting system for storage and transportation purposes. At each end of the panel an oval shaped channel is attached such that a deformable and a form retaining shaft may be easily inserted and removed from the oval shaped channel. This form retaining shaft allows the subpanels to flexibly remain in a desired configuration. The oval channel allows for easy removal and replacement of the form retaining shaft such that in cases of metal fatigue resulting in shaft breakage, a new shaft can be inserted without having to replace the complete hinging mechanism or the lighting system itself. In this connection, the oval shaped channel and form retaining shaft should not form a tight fit to avoid premature breakage of the shaft due to metal fatigue.

Traditional fluorescent light fixtures, in order to support the fluorescent lamp, utilise a lamp holder which has to be attached to the fixture for the needed support. By way of contrast, a locking lamp holder may be used in one embodiment which is supported by the fluorescent lamp itself and is not dependent on any fixture. Furthermore, traditional lamp holders hold the pins of a fluorescent lamp by means of a friction fit which is not a firm hold and the lamp frequently disengages from the holder during handling. In contrast, in the preferred embodiment of the present system a spring loaded locking lamp holder is used which firmly holds the fluorescent lamp without the support of a fixture while providing for electrical contact with the lamp.

The lighting system utilizes a mounting device which comprises a holding plate working on a ball and socket principle as opposed to the traditional yoke used to pivot and direct the position of the system. The holding plate is removably coupled, via a pair of "Nylatch"

(RTM) push-pin fasteners, to a mating plate which is attached to the rear of the corrugated panel. The holding plate is removably connected to a conventional motion picture stand called a "Century Stand" designed to hold flags and cutters.

SUMMARY OF THE INVENTION

According to the present invention there is provided a portable lighting system as set forth in claim 1 appended hereto.

A portable fluorescent lighting system is described which is compact, lightweight and flexible for use on location in the field of photography, television and motion pictures. A significant feature of the system is that the fluorescent lamp is powered via a remote ballast outside of the lighting system utilizing a spring loaded locking lamp holder for holding the fluorescent lamp without the support of a fixture while making electrical contact with said lamp. Another salient aspect of one preferred embodiment is the lightweight corrugated panel that is utilized for supporting the fluorescent lamp and controlling the direction or limiting the output of the light. The panel is also used as an enclosure for storage purposes and convenient transportation.

The corrugated plastic panel is made into five subpanels by removing two flutes of the corrugation to provide for hinging. Removal of the two flutes at each juncture of said subpanels provides for convenient and flexible hinging of the subpanels without adding any extra weight. In order to prevent the subpanels from reverting back to their original positions after being flexed to a desired configuration, at each end of each subpanel an oval shaped channel is attached such that a deformable and a form retaining shaft having a circular cross section may be easily inserted and removed therein. Once a subpanel is manually positioned, the deformable and form retaining shafts will maintain the desired position.

At least one fluorescent lamp is placed on the center subpanels wherein the other four subpanels are used to control the direction of or limit the output of the fluorescent light as well as act as an enclosure box.

In order to easily mount or hold the lighting system in place at any desired location and allow the system to be easily oriented in different directions, the lighting system utilizes a mounting device comprising a holding plate which consists of a ball and socket swivelling device to pivot and direct the position of the system. The holding plate is removably coupled, via a pair of "Nylatch" (RTM) push-pin fasteners, to a mating plate which is attached to the rear of the center subpanel. The holding plate is mounted or held in place by a conventional motion picture stand called a "Century Stand" designed to hold flags and cutters.

It is therefore an object of the present invention to provide a portable lighting system for use on location in connection with photography, television and motion pictures.

It is another object of the present invention to provide a lighting system wherein the direction and degree of light illumination is flexibly and manually controlled.

Still another object of the present invention is to provide a locking lamp holder to firmly hold a fluorescent lamp without the support of a fixture.

It is a further object of the present invention to provide a fluorescent lighting system which is extremely light and is powered through a remote ballast outside the system.

It is still yet another object of the present invention to provide a lighting system which can be fully enclosed upon its lighting source for easy storage and transportation.

It is yet another object of the present invention to provide a lighting system which may be easily mounted or held in place at any desired location and can easily be oriented in several different directions.

An additional object of the present invention is to provide a lighting system which is inexpensive and simple to fabricate.

Further objects and novel features of the invention will become apparent from a reading of the following detailed descriptions, taken in conjunction with the drawings, in which a presently preferred embodiment of the invention is illustrated by way of example, forming a material part of this disclosure. It is to be understood, however, that the drawings are for the purpose of illustration and description only and are not intended as a definition of the limits of the invention.

BRIEF DESCRIPTION OF THE INVENTION

Figure 1 is a perspective view of a fluorescent lighting system in accordance with the invention.

Figure 2 is an exploded view of one end of the lighting system, showing the subpanels, the oval channel, the lamp bracket, and the locking lamp holder.

Figure 3 is an elevational view of a cross section of a corrugated panel constituting the fixture, with two flutes removed for hinging purposes.

Figure 4 is a partial perspective view of the corrugated panel, the oval channel and the form retaining shaft, shown in the disassembled form.

Figure 5 is partial perspective view of the corrugated panel with the subpanels in angular position, and the oval channel and the form retaining shaft as attached to the subpanels.

Figure 6 is a side elevational view of the lighting system in the folded configuration.

Figure 7 is an exploded view of a disassembled locking lamp holder used to firmly hold a fluorescent tube as well as provide electrical power.

Figure 8 is a sectional view of the locking lamp holder, taken along line 8-8 of Figure 7.

Figure 9 is a sectional view of the locking lamp holder, taken along line 9-9 of Figure 8.

Figure 10 is a sectional view of the locking lamp

holder, taken along line 10-10 of Figure 8.

Figure 11 is a rear perspective view of the lighting system showing the mounting device as attached to the rear of the lighting panel.

Figure 12 is a top elevational view of the holding plate showing the ball and socket swivel device and the "Nylatch" fasteners.

Figure 13 is a sectional view of the holding plate showing the ball and socket swiveling device, taken along line 13-13 of Figure 12.

Figure 14 is a sectional view of the "Nylatch" (RTM) expandable fasteners, taken along line 14-14 of Figure 12.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the figures in detail, Figure 1 is a perspective view of the system. The system comprises an elongate corrugated plastic panel 24, wherein said panel is made into five subpanels by removing two flutes 17 of the corrugation out to provide for hinging. The panel 24 includes center panel 12 at the center of said panel, a pair of inner subpanels 11 and 13 each on one side of center subpanel 12, outer subpanel 10 positioned on the outer side of inner subpanel 11, and outer subpanel 14 positioned on outer side of inner subpanel 13. All subpanels 10, 11, 13 and 14 are symmetrically positioned and longitudinally extending in parallel to center subpanel 12. Removal of two flutes 17 at each juncture of said subpanels provided for convenient and flexible hinging of subpanels without adding extra weight. In order to prevent the subpanels to revert back to their original positions after being flexed to a desired configuration, at each end of each subpanel a channel 15 in the shape of an oval is attached therein so that a deformable and form retaining shaft 16 having a substantially circular cross section may be easily inserted. Since shaft 16 is deformable, each subpanel can be manually positioned and held by the shaft in said position. Oval channel 15 allows for easy removal and replacement of shaft 16 such that in cases of metal fatigue, resulting in the shaft breakage, a new shaft can be inserted without having to replace the complete hinging mechanism or the lighting system itself.

In the preferred embodiment, center subpanel 12 is always twice the width of the outer subpanels 10 and 14. The fluorescent lighting source 22 is placed on the center subpanel 12. Inner subpanels 11 and 13 and outer subpanels 10 and 14 are used to control the direction of and limit the output of the fluorescent lighting source 22. Additionally, center subpanel 12 and inner subpanels 11 and 13 act as a reflective surface. A premolded aluminum reflective panel 21 could also optionally be added to act as a reflector panel.

Referring now to Figure 2, one end of the lighting system is shown. The lamp bracket 25, which is attached to the center subpanel 15, comprises a base and arcuate arm members made of resilient material to firmly

hold each end of a fluorescent light in place. The pins 23 of the fluorescent light 22 are inserted into the spring loaded locking lamp holder 20, wherein the locking lamp holder 20 holds firmly onto the pins 22 and conducts electrical power to fluorescent light 22. Thereafter, the locking lamp holder 20 is inserted into the lamp bracket 25 which firmly holds the fluorescent light 22 in place.

In Figure 3, the corrugated panel 24 is shown with two flutes 17 of corrugation removed for dividing the panel 24 into five subpanels as well as providing a hinge means for the subpanels.

As shown in Figures 4-5, the oval channels 15 are attached to the end of each subpanel providing for the form retaining and deformable shaft 16 to be easily inserted and removed for replacement purposes, wherein the deformable shaft 16 flexibly allows for the manual positioning of the subpanels in a desired position and prevents them from reverting back to a different configuration.

As shown in Figure 6, all subpanels could be adjusted to completely enclose the lighting source in the form of a box for storage purposes and convenient transportation. A spring loaded locking lamp holder 20 firmly holds onto the pins 23 of the fluorescent light 22 and conducts electrical power to said fluorescent light. The spring loaded locking lamp holder 20 is described in more detail below.

Referring now to Figures 7-10, the spring loaded locker lamp holder 20 comprises a cylindrical enclosure 27 made of plastic material which on the flat surface 36 has two round holes 26 corresponding to the size of the pins 23 of a fluorescent lamp 22; a pin holder 34 which is inserted in the enclosure 27 having a flat top and bottom and round edges so that it could move back and forth within the confines of the enclosure 27; the side 37 of the pin holder 34 is also flat with a protrusion 38 for placing a spring 33 between the pin holder side 37 and the round surface 39 of the enclosure as shown in Figures 8 and 9; the opposite side of the pin holder 29 is extended in the shape of a square or rectangular which protrudes from a slot 40 on the round surface of the enclosure 27. Pin holder 34 contains two rectangular holes 41, wherein pin holding elements 28 are inserted. Pin holding element 28 is a piece of conductive metal with a flat top and a V shape bottom. On the flat top of the pin holder element 28 is a slot, wherein at one end there is a large circle, corresponding to the size of the holes 26 on the enclosure box 27, which gradually decreases to a smaller circle at the other end; a circular switching element 30 is thereafter inserted into the enclosure 27. Switching element 30 has two electrical elements 31 which are connected to the electrical power cord 18; and cap 32 is inserted to completely cover the enclosure box 27.

The fluorescent light pins 23 are each inserted through the round holes 26 and at the same time by pressing the extended side 29 of the pin holder 34 allowing the large circles of the pin holding elements 28

to correspond to holes 26, thereby letting the pins 23 pass through and press down the V shape bottom of the pin holding element 28 and make contact with the electrical elements 31. After releasing the extended side 29 of the pin holder 34, the spring 33 will push the pin holder 34 back to its original place, providing for the small circles of the pin holding elements 28 to enclose the circumference of the pins 23 and to hold them firmly in place. The electrical power cord 18 is connected to a remote ballast located outside the lighting system.

Figure 11 is a rear perspective view of the lighting system showing the mounting device used to mount or hold the lighting system in place. The mounting device comprises holding plate 42 which has a triangular plate 49 including socket 45 wherein a ball 44 is rotatably coupled with the socket 45. The ball 44 is welded into a stand rod 19 which in return is removably connected to a conventional motion picture stand 48 (not shown in full) called a "Century Stand" designed to hold flags and cutters. When a screw knob 47 on the triangular plate 49 is loose, the ball 44 can freely be swiveled about in the socket 45. Once the desired position of the ball 44 has been decided, the screw knob 47 is tightened to keep the ball 44 and the rod stand 19 firmly in place. The holder plate 42 is a modified "foam core holder plate" manufactured by American Studio Equipment of Sun Valley, California, part number ME96. The holder plate 42 is modified to accept a pair of "Nylatch (RTM) expandable fasteners" 46, model numbers HN5P-53-1 and HN5G-53-1. The holding plate 42 is removably attached via the Nylatch (RTM) fasteners 46 to the mating plate 43 which is made of aluminium and is riveted to the rear of the center subpanel 12 using rivets only one of which is shown. Preferably, a safety loop 50 is permanently attached to the mating plate with the rivet, into which a safety cable may be inserted to prevent the fixture from falling in the event any of the fixture supporting elements fail for any reason.

Figure 12 is a top elevational view of the holding plate 42 showing the triangular plate 49 and the socket 45 wherein the ball 44 is rotatably coupled with the socket 45 and may be rotated freely within the socket 45 as described above.

Figure 13 is a sectional view of the holding plate 42 taken along the line 13-13 of Figure 12 as the holding plate 42 is attached to the mating plate 43. Tightening the screw knob 47 forces the triangular plate 49 to push against the ball 44 so as to keep the ball 44 firmly in the desired position.

In Figure 14, the Nylatch (RTM) dependable fastener 46 is shown connection the holding plate 42 to the mating plate 43.

Claims

1. A portable lighting system comprising at least one fluorescent light source and a remote ballast means

for illuminating said light source electrically connected to said light source through an electrical wire (18) having a predetermined length; characterised by:

a panel (24) substantially rectangular having first and second ends, said panel (24) having five subpanels (10, 11, 12, 13, 14) including a center subpanel (12);

hinge means for pivoting each of said subpanels with respect to adjacent subpanels thereof such that said subpanels are capable of being folded to form an enclosure including said at least one elongated fluorescent light source (22) for transportation and storage purposes; said at least one elongated fluorescent light (22) source being positioned on said center subpanel (12); and

bracket means (25) attached to said first and second ends of said center subpanel (12) for holding said fluorescent light source (22) in place.

2. A portable lighting system according to claim 1, including a pair of inner subpanels (11, 13) symmetrically positioned on either side of and extending parallel to said center subpanel (12), and a pair of outer subpanels (10, 14) symmetrically positioned on either side of and extending parallel to said inner subpanels (11, 13).
3. A portable lighting system according to claim 1 or 2, wherein said bracket means (25) comprises a base, having first and second ends, said first and second ends extending upwardly inward in relation to said base, further extending arcuately outward for encircling a substantial portion of said fluorescent light source (22) and further flared outwardly for guiding said fluorescent light source (22) into said bracket means (25).
4. A portable lighting system according to claim 1, further comprising a locking lamp holder (20) for use in holding said fluorescent light source (22) without the support of a fixture and providing electrical current to said fluorescent light source (22) having:

a cylindrical enclosure (27) having first (36) and second (32) flat ends, said first flat end (36) having two holes (26) on its surface corresponding to the shape and the size of pins (23), forming an integral part of said fluorescent light source (22);

pin holder means (34) within said cylindrical enclosure (27) for holding onto said fluorescent light source pins (23); and

a switching element (30) within said cylindrical enclosure (27) for making electrical contact

with said fluorescent light source pins (23).

5. A portable lighting system according to claim 1 further comprising a locking lamp holder (20) for use in holding said at least one fluorescent source (22) without the support of a fixture and providing electrical current to said fluorescent light source (22) comprising:

a cylindrical enclosure (27) having first (36) and second (32) flat ends, said first flat (36) end having two holes (26) on its surface corresponding to the shape and size of fluorescent lamp pins (23);
pin holder means (34) within said cylindrical enclosure (27) for holding onto said fluorescent lamp pins (23); and
a switching element (30) within said cylindrical enclosure (27) for making electrical contact with said fluorescent lamp pins (23), said pin holder means (34) disposed between said cylindrical enclosure (27) and said contact means (30), said pin holder means (34) having holes into which first and second pin holding elements (28) are inserted, each of said pin holding elements (28) having a slot with first and second ends, with a first width formed at said first end and a second width formed at said second end such that said first width is smaller than said second width, each said slot being adapted to hold one of the fluorescent lamp pins (23) within said first width of said first end, wherein the size of said first width is adapted to firmly hold one of said fluorescent lamp pins (23).

6. A portable lighting system as claimed in claim 1, wherein said hinge means comprising at least one channel (15) attached to said panel's first and second ends, said channel (15) forming an oval shape such that a deformable and form retaining shaft (16) having a substantially circular cross-section may be inserted into said channel (15) for the purpose of flexibility and manually altering and maintaining said subpanels in any desired configuration.

7. A portable lighting system according to claim 4 or claim 6, including holding means attached to a rear portion of said center subpanel (12) for mounting and holding the lighting system in place as well as allowing said panel to be oriented in different directions.

8. A portable lighting system according to claim 7, wherein said holding means comprises:

(i) a holding plate (42) having a mounting plate (49) wherein two corners of said mounting plate (49) are attached to the holding plate (42) and

one corner of said mounting plate (49) is attached to the holding plate (42) through a screw knob (47), the mounting plate (49) having a socket (45) substantially at its center;
(ii) a mating plate (43) permanently attached to the rear of said center subpanel (12);
(iii) a pair of expandable fasteners (46) for removably coupling said holding (42) and mating (43) plates; and
(iv) an elongated stand rod (19) having first and second ends, wherein said first end is in the shape of a ball (44) and is rotatably coupled into said socket (45) and said second end is removably coupled to a stand (48).

9. A portable lighting system according to claim 1, further comprising,

oval channels (15) situated so as to maintain a displacement between each other which is equal to a gap not less than the width created by the removal of a flute material to form a hinge surface;
a loose fitting formable wire (16) adapted to flex over an area between the oval channels;
said formable wire (16) is loose fitting allowing it to be easily replaced; and
a portable wire lamp harness unattached to the panels holding a locking lamp holder.

10. A portable lighting system as claimed in any preceding claim, wherein said panel (24) is a lightweight corrugated panel.

Patentansprüche

1. Tragbare Beleuchtungsvorrichtung mit wenigstens einer Leuchtstofflampe und einer entfernt angeordneten Vorschalteneinrichtung zum Erleuchten der Leuchtstofflampe, die mit der Leuchtstofflampe über ein elektrisches Kabel (18) mit einer vorgegebenen Länge elektrisch verbunden ist; **gekennzeichnet durch :**

eine im wesentlichen rechtwinklig angeordnete Konsole (24) mit einem ersten und einem zweiten Ende und mit fünf Teilkonsolen (10, 11, 12, 13, 14), die eine mittlere Teilkonsole (12) beinhalten;

Gelenkelemente zum gelenkigen Verbinden einer jeden Teilkonsole mit den jeweils benachbarten Teilkonsolen, so daß die Teilkonsolen zur Bildung einer Ummantelung gefaltet werden können, die wenigstens eine langgestreckte Leuchtstofflampe (22) für den Transport und für Lagerzwecke umschließt;

daß die langgestreckte Leuchtstofflampe (22) auf der mittleren Teilkonsole (12) angeordnet ist; und

Klammerelemente (25), die an dem ersten und zweiten Ende der mittleren Teilkonsole (12) befestigt sind, um die Leuchtstofflampe (22) an ihrem Platz zu halten.

2. Tragbare Beleuchtungsvorrichtung nach Anspruch 1, mit einem Paar von inneren Teilkonsolen (11, 13), die symmetrisch zu beiden Seiten der mittleren Teilkonsole (12) und parallel angeordnet sind, und mit einem Paar von äußeren Teilkonsolen (10, 14), die symmetrisch auf beiden Seiten und parallel zu den inneren Teilkonsolen (11, 13) angeordnet sind.

3. Tragbare Beleuchtungsvorrichtung nach einem der Ansprüche 1 oder 2, bei der die Klammerelemente (25) einen Sockel aufweisen, ein erstes und ein zweites Ende haben, das erste und zweite Ende erstreckt sich im Verhältnis zu dem Sockel aufwärts nach innen, außerdem erweitern sie sich bogenförmig nach außen, um einen wesentlichen Teil der Leuchtstofflampe (22) zu umschließen und weiten sich außerdem nach außen auf, um die Leuchtstofflampe (22) in das jeweilige Klemmelement (25) zu führen.

4. Tragbare Beleuchtungsvorrichtung nach Anspruch 1, mit einer einrastenden Lampenfassung (20) zum Halten der Leuchtstofflampe (22) ohne die Unterstützung einer Befestigung und zur Bereitstellung des elektrischen Stroms zu der Leuchtstofflampe (22), beinhaltend:

eine zylindrische Kapsel (27), die eine erste (36) und eine zweite (32) Stirnfläche besitzt, die erste Stirnfläche (36) besitzt zwei Löcher (26) auf ihrer Oberfläche, entsprechend der Form und der Größe von Stiften (23), die ein einstückiges Teil mit der Leuchtstofflampe (22) bilden;

eine Stift-Halterung (34) innerhalb der zylindrischen Kapsel (27), zum Festhalten auf den Stiften (23) der Leuchtstofflampe; und

ein Schaltelement (30) in der zylindrischen Kapsel (27), zur Herstellung eines elektrischen Kontakts zu den Stiften (23) der Leuchtstofflampe.

5. Tragbare Beleuchtungsvorrichtung nach Anspruch 1 mit einer rastenden Lampenfassung (20) zur Halterung wenigstens einer Leuchtstofflampe (22) ohne die Unterstützung einer Befestigung und zur Versorgung der Leuchtstofflampe (22) mit elektrischem Strom, beinhaltend:

eine zylindrische Kapsel (27), die eine erste Stirnfläche (36) und eine zweite Stirnfläche (32) hat, die erste Stirnfläche (36) besitzt zwei Löcher (26) auf ihrer Oberfläche, entsprechend der Form und Größe von Stiften (23) der Leuchtstofflampe;

eine Stift-Halterung (34) in der zylindrischen Kapsel (27) zur Befestigung auf den Stiften (23) der Leuchtstofflampe; und

ein Schaltelement (30) in der zylindrischen Kapsel (27) zur Herstellung des elektrischen Kontakts zu den Stiften (23) der Leuchtstofflampe, wobei die Stift-Halterung (34) zwischen der zylindrischen Kapsel (27) und der Kontakteinrichtung (30) angeordnet ist, die Stift-Halterung (34) besitzt Löcher, in die erste und zweite Stift-Haltelemente (28) eingesetzt sind, jedes der Stift-Haltelemente (28) hat einen Schlitz mit einem ersten und einem zweiten Ende, mit einer ersten Breite, die an dem ersten Ende ausgebildet ist, und einer zweiten Breite, die an dem zweiten Ende ausgebildet ist, derartig, daß die erste Breite kleiner ist als die zweite Breite, jeder der Schlitz ist so beschaffen, daß er einen der Stifte (23) innerhalb der ersten Breite des ersten Endes hält, worin die Größe der ersten Breite so beschaffen ist, daß ein Stift (23) der Leuchtstofflampe sicher gehalten wird.

6. Tragbare Beleuchtungsvorrichtung nach Anspruch 1, worin die Gelenkelemente wenigstens eine Hohlleiste (15) aufweisen, die an den ersten und zweiten Enden der Teilkonsolen befestigt sind, die Hohlleiste (15) bildet eine ovale Form, derartig, daß ein deformierbarer und formbewahrender Schaft (16) mit einem im wesentlichen kreisrunden Querschnitt in die Hohlleiste (15) eingesetzt werden kann, zum Zwecke einer flexiblen, manuellen Änderung und Beibehaltung jedes gewünschten Verlaufs der Teilkonsolen.

7. Tragbare Beleuchtungsvorrichtung nach einem der Ansprüche 4 oder 6, bei der eine Halterung an einem rückwärtigen Teil der mittleren Teilkonsole (12) angebracht ist, um die Beleuchtungsvorrichtung zu befestigen und an seinem Platz zu halten, sowie daß die Konsole in unterschiedliche Richtungen ausgerichtet werden kann.

8. Tragbare Beleuchtungsvorrichtung nach Anspruch 7, bei der die Halterung umfaßt:

(i) eine Halteplatte (42) mit einer Montageplatte (49), wobei zwei Ecken der Montageplatte (49) an der Halteplatte (42) befestigt sind und eine Ecke der Montageplatte (49) mittels eines

Schraubknopfs (47) an der Halteplatte (42) befestigt ist, und die Montageplatte (49) besitzt eine Fassung (45), die im wesentlichen in deren Mitte ausgebildet ist;

(ii) eine Ausrichtplatte (43), die ständig an der Rückseite der mittleren Teilkonsole (12) befestigt ist;

(iii) ein Paar von aufweitbaren Befestigungselementen (46) zur lösbaren Verbindung der Halteplatte (42) mit der Ausrichtplatte (43); und

(iv) eine langgestreckte Ständerstange (19), die ein erstes und ein zweites Ende besitzt, wobei das erste Ende die Form einer Kugel (44) hat und drehbar in der Fassung (45) gelagert ist, und das zweite Ende ist lösbar mit einem Ständer (48) verbunden.

9. Tragbare Beleuchtungsvorrichtung nach Anspruch 1, beinhaltend:

ovale Profilleisten (15), die so angebracht sind, daß ein Versatz zwischen jeder erhalten wird, der gleich einem Spalt ist, der nicht kleiner ist als die Breite, welche durch die Entfernung von Profilmaterial gebildet ist, um eine Gelenkoberfläche zu bilden;

einen lose eingepaßten, formbaren Draht (16), der innerhalb eines Bereichs zwischen den ovalen Hohlleisten biegsam ist;

der formbare Draht (16) ist lose eingepaßt, so daß er leicht entfernbar ist; und

ein tragbarer Lampenkabelsatz, der nicht mit den Konsolen verbunden ist, die eine rastende Lampenfassung tragen.

10. Tragbare Beleuchtungsvorrichtung nach einem der vorhergehenden Ansprüche, bei der die Konsole (24) eine leichtgewichtige, geriffelte Konsole ist.

Revendications

1. Système d'éclairage portable comprenant au moins une source de lumière fluorescente et des moyens distants formant ballast servant à éclairer ladite source de lumière et connectés électriquement à ladite source de lumière par un fil électrique (18) possédant une longueur prédéterminée; caractérisé par :

un panneau sensiblement rectangulaire (24) possédant des première et seconde extrémi-

tés, ledit panneau (24) comportant cinq éléments de panneau (10, 11, 12, 13, 14) incluant un élément de panneau central (12);

des moyens d'articulation permettant le pivotement de chacun desdits panneaux secondaires par rapport à des éléments de panneau adjacents de telle sorte que lesdits éléments de panneau peuvent être repliés afin de former une enceinte contenant ladite au moins une source allongée de lumière fluorescente (22), pour le transport et le stockage;

ladite au moins une source allongée de lumière fluorescente (22) étant positionnée sur ledit élément de panneau central (12); et

des moyens formant console (25) fixés auxdites première et seconde extrémités dudit élément de panneau central (12) pour retenir en position ladite source de lumière fluorescente (22).

2. Système d'éclairage portable selon la revendication 1, comprenant un couple d'éléments de panneau intérieurs (11, 13) positionnés symétriquement de chaque côté et s'étendant parallèlement audit élément de panneau central (12), et un couple d'éléments de panneau extérieurs (10, 14) positionnés symétriquement de chaque côté desdits éléments de panneau intérieurs (11, 12) et s'étendant parallèlement à ces derniers.

3. Système d'éclairage portable selon la revendication 1 ou 2, dans lequel lesdits moyens formant console (25) comprennent une base possédant des première et seconde extrémités, lesdites première et seconde extrémités s'étendant vers le haut et intérieurement par rapport à ladite base et s'étendant en outre avec une forme cintrée vers l'extérieur pour enserrer une partie substantielle de ladite source de lumière fluorescente (22) et étant en outre évassée vers l'extérieur pour guider ladite source de lumière fluorescente (22) dans lesdits moyens formant console (25).

4. Système d'éclairage portable selon la revendication 1, comprenant en outre un support (20) de blocage de la lampe destiné à être utilisé pour retenir ladite source de lumière fluorescente (22) sans le soutien d'un dispositif de fixation et à délivrer un courant électrique à ladite source de lumière fluorescente (22), comportant :

une enceinte cylindrique (27) possédant une première extrémité plate (36) et une seconde extrémité plate (32), ladite première extrémité plate (36) comportant, dans sa surface, deux trous (26) correspondant à la forme et à la taille de broches (23), faisant partie intégrante de ladite source de lumière fluorescente (22);

- des moyens (34) de retenue des broches, situés à l'intérieur de ladite enceinte cylindrique (27) pour retenir les broches (23) sur ladite source de lumière fluorescente; et un élément de commutation (30) situé dans ladite enceinte cylindrique (27) pour établir un contact électrique avec lesdites broches (23) de la source de lumière fluorescente.
5. Système d'éclairage portable selon la revendication 1, comprenant en outre un support (20) de blocage de la lampe destiné à être utilisé pour retenir ladite au moins une source de lumière fluorescente (22) sans l'assistance d'un dispositif de fixation et envoyer un courant électrique à ladite source de lumière fluorescente (22), comprenant :
- une enceinte cylindrique (27) comprenant une première extrémité plate (36) et une seconde extrémité plate (32), ladite première extrémité plate (36) comportant, dans sa surface, deux trous (26) correspondant à la forme et à la taille de broches (23) de la lampe fluorescente; des moyens (34) de retenue de broches dans ladite enceinte cylindrique (25) pour retenir les broches (23) sur ladite lampe fluorescente; et un élément de commutation (30) situé dans ladite enceinte cylindrique (27) pour établir un contact électrique avec lesdites broches (23) de la lampe fluorescente, lesdits moyens (34) de retenue des broches étant disposés entre ladite enceinte cylindrique (27) et lesdits moyens de contact (30), lesdits moyens (34) de retenue des broches comportant des trous, dans lesquels sont insérés des premier et second éléments (28) de retenue des broches, chacun desdits éléments (28) de retenue des broches comportant une fente pourvue de première et seconde extrémités, avec une première largeur présente au niveau de ladite première extrémité et une seconde largeur présente au niveau de ladite seconde extrémité de telle sorte que ladite première largeur est inférieure à ladite seconde largeur, chacune desdites fentes étant adaptée pour retenir l'une des broches (23) de la lampe fluorescente sur l'étendue de ladite première largeur de ladite première extrémité, la taille de ladite première largeur étant adaptée pour retenir fermement l'une desdites broches (23) de la lampe fluorescente.
6. Système d'éclairage portable selon la revendication 1, dans lequel lesdits moyens d'articulation comprennent au moins un profilé en U (15) fixé auxdites première et seconde extrémités du panneau, ledit profilé en U (15) définissant une forme ovale de telle sorte qu'une tige déformable (16) servant à maintenir la forme et possédant une section transversale essentiellement circulaire peut être insérée dans ledit profilé en U (15) pour assurer une flexibilité et modifier et maintenir manuellement lesdits éléments de panneau dans n'importe quelle configuration désirée.
7. Système d'éclairage portable selon la revendication 4 ou la revendication 6, comprenant des moyens de retenue fixés à une partie arrière dudit élément de panneau central (12) pour monter et retenir en position le système d'éclairage et permettre une orientation dudit panneau dans des directions différentes.
8. Système d'éclairage portable selon la revendication 7, dans lequel lesdits moyens de retenue comprennent :
- (i) une plaque de retenue (42) possédant une plaque de montage (49), deux coins de ladite plaque de montage (49) étant fixés à la plaque de retenue (42), et un coin de ladite plaque de montage (49) étant fixé à la plaque de retenue (42) au moyen d'un bouton fileté (47), la plaque de montage (49) possédant une douille (45) disposée sensiblement en son centre;
- (ii) une plaque d'accouplement (43) fixée à demeure à l'arrière dudit élément de panneau central (12);
- (iii) un couple d'éléments de fixation expansibles (46) pour accoupler de façon amovible ladite plaque de retenue (42) et ladite plaque d'accouplement (43); et
- (iv) une tige de support allongée (19) possédant des première et seconde extrémités, ladite première extrémité possédant la forme d'une bille (44) et étant couplée de manière à pouvoir tourner à ladite douille (45), et ladite seconde extrémité étant couplée de façon amovible à un pied (48).
9. Système d'éclairage portable selon la revendication 1, comprenant en outre
- des profilés en U de forme ovale (15) disposés de manière à maintenir entre eux un décalage qui est égal à un intervalle non inférieur à la largeur créée par le retrait d'un matériau de nervure pour former une surface d'articulation; un fil déformable de montage lâche (16) apte à fléchir dans une zone située entre les profilés en U ovales; ledit fil déformable (16) étant installé selon un montage lâche qui permet de le remplacer aisément; et un faisceau de fils de la lampe portable, non fixé aux panneaux retenant un support de blocage de la lampe.

10. Système d'éclairage portable selon l'une quelconque des revendications précédentes, dans lequel ledit panneau (24) est un panneau cannelé léger.

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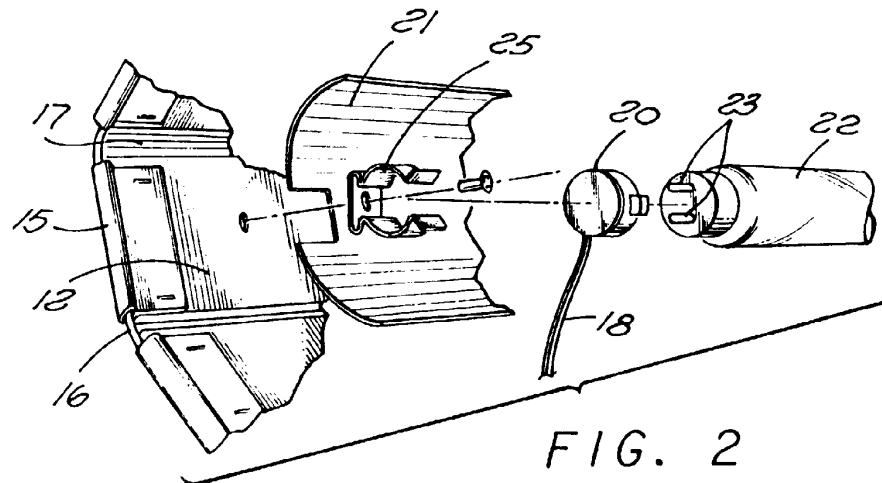
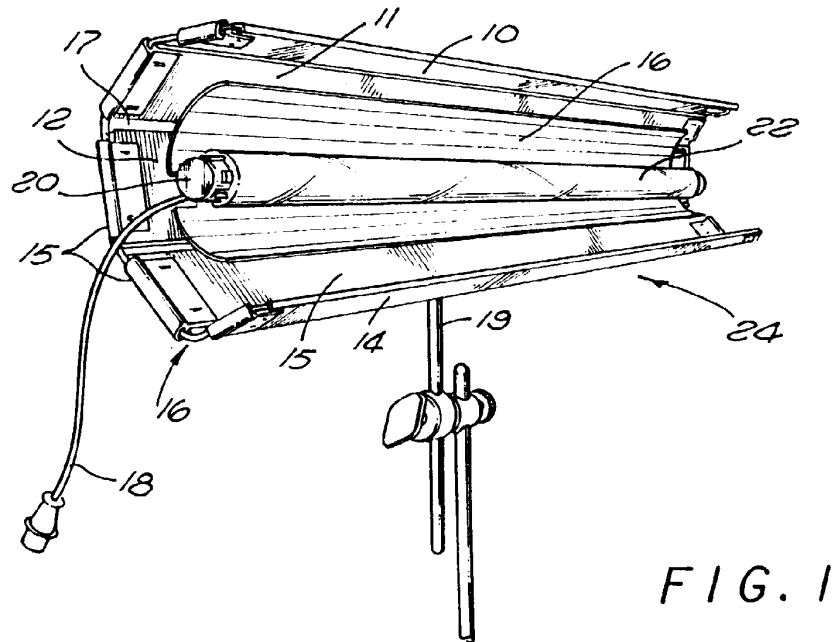
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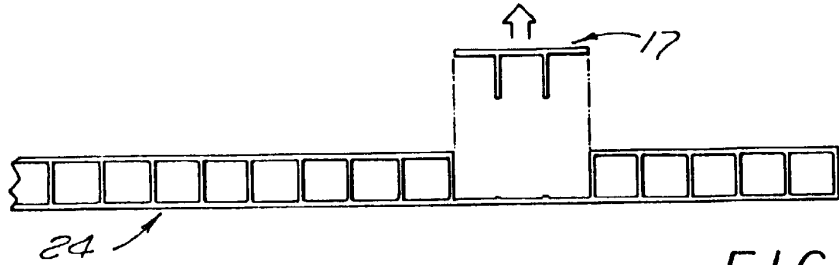


FIG. 3

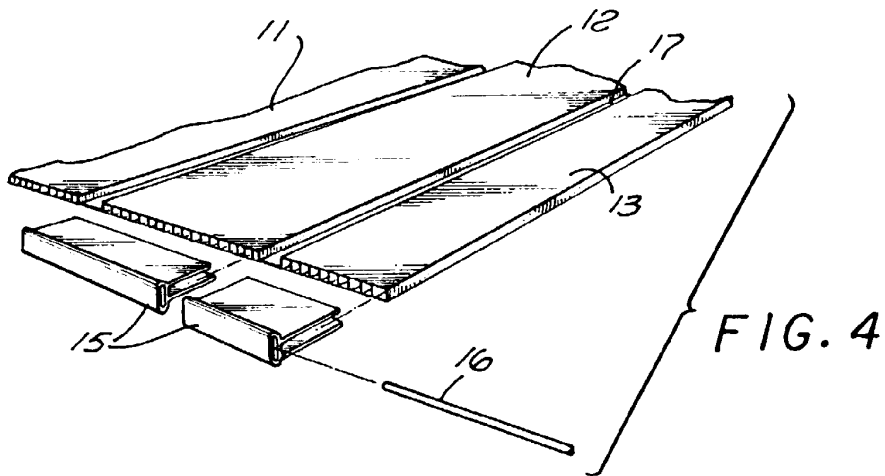


FIG. 4

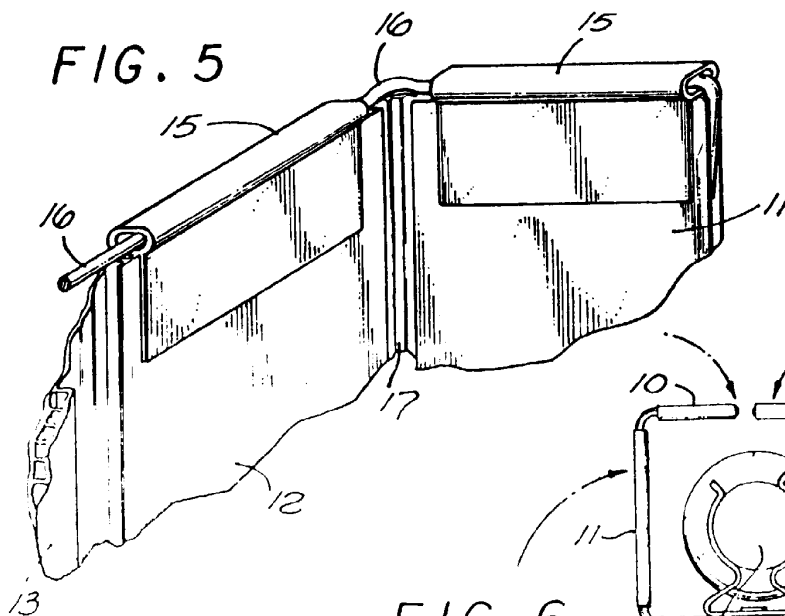


FIG. 5

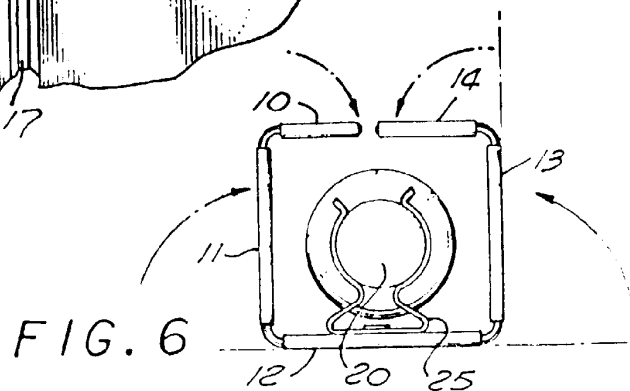


FIG. 6

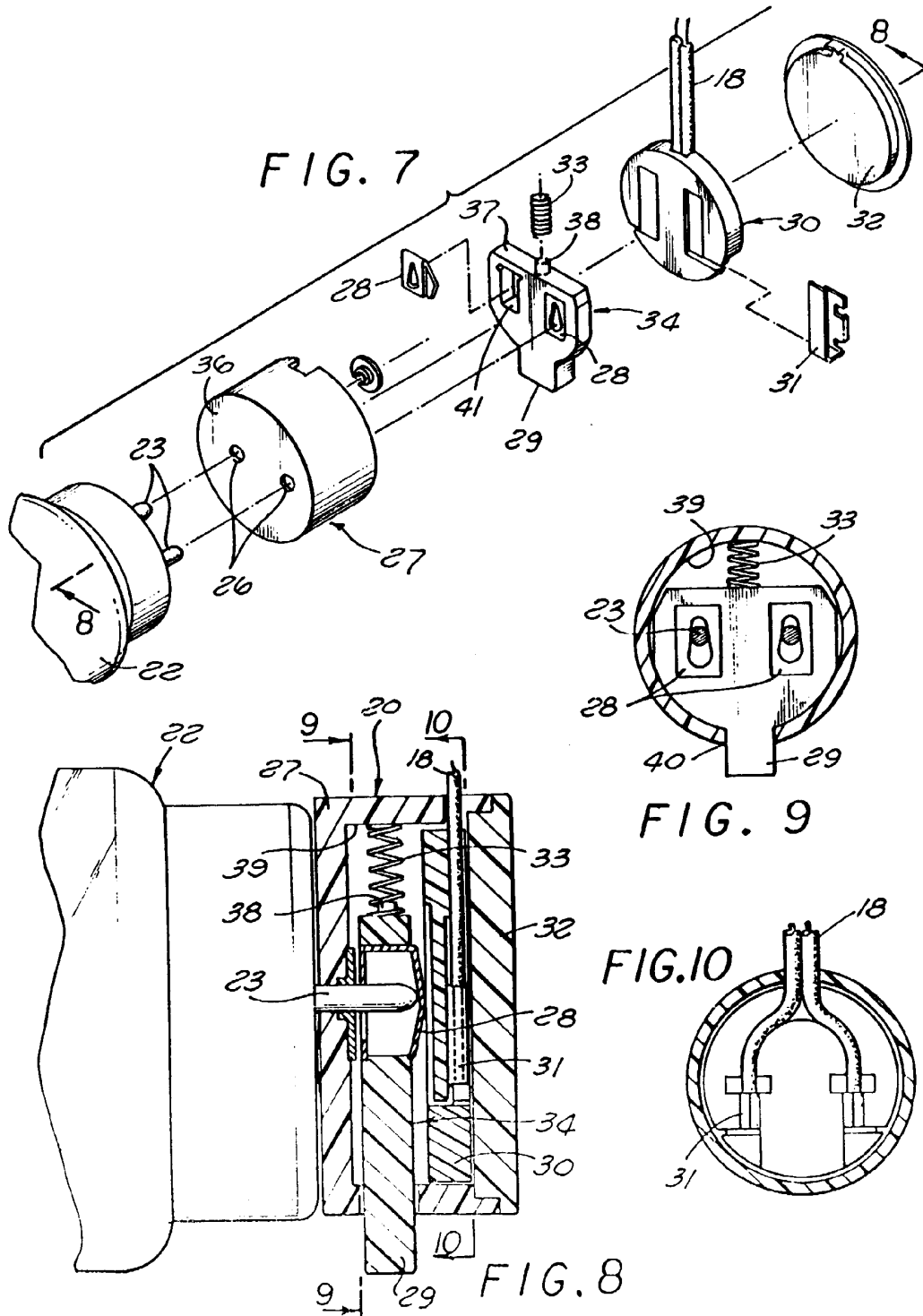


FIG. 11

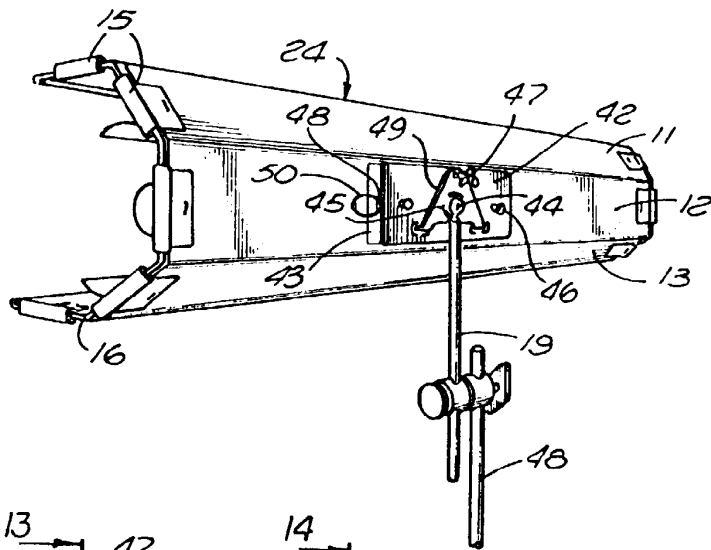


FIG. 12

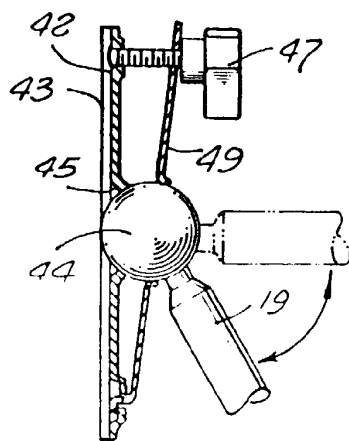
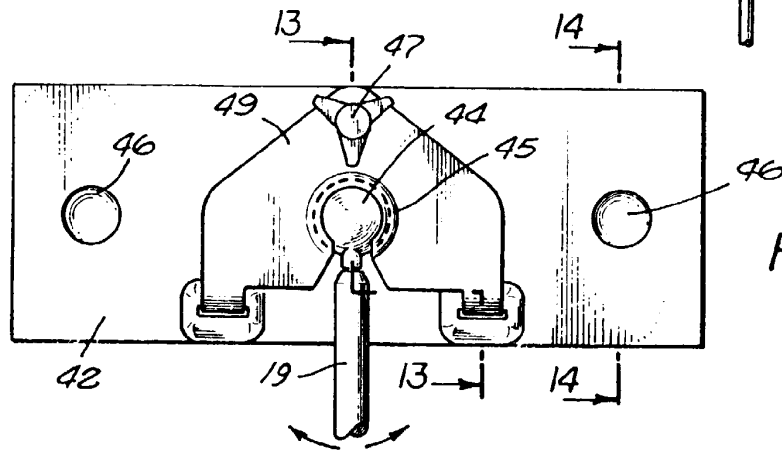


FIG. 13

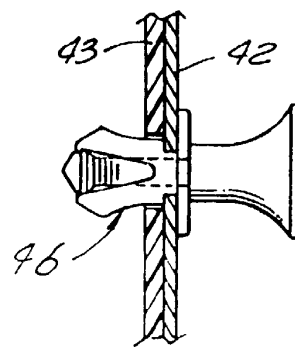


FIG. 14