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(54) **DOOR SCREEN SYSTEM COMPRISING TWO RETRACTABLE DOOR SCREENS**

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SYSTÈME D'ÉCRANS DE PORTE COMPRENANT DEUX ÉCRANS DE PORTE RÉTRACTABLES

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Description

[0001] The present invention relates to a door screen system comprising two retractable door screens, provided for mounting in a doorway.

[0002] A retractable door screen system for example is known from WO-A-2006/133556 and comprises a retractable door screen, a retracting mechanism for rolling up the door screen and a handle for sliding out the door screen. The retracting mechanism comprises a drum rotatably mounted in a chamber on one of the vertical door posts. A first end of the retractable door screen is attached to the drum. The retracting mechanism comprises drive means acting on the drum to hold the retractable screen stretched, when it is extended and to roll it onto the drum when it is retracted. A second end of the retractable door screen is attached to the handle, extending between two guides at the bottom and top of the doorway and being slidably suspended therein.

[0003] A door screen according to the preamble of claim 1 is known from WO 2007/068037 A1.

[0004] It is an object of the present invention to provide a user-friendly door screen system with two retractable door screens on either side of the doorway.

[0005] This object is achieved according to the invention by the door screen system comprising the technical features of the first claim.

[0006] The door screen system according to the invention comprises a first retractable door screen having a first side attached to a first retracting mechanism, provided for rolling up the first door screen, and a second side attached to a first handle, provided for sliding the first retractable door screen in/out. The door screen system further comprises a second retractable door screen having a third side attached to a second retracting mechanism provided for rolling up the second door screen, and a fourth side attached to a second handle, provided for sliding the second retractable door screen in/out, wherein the first and second retractable door screens are mounted on opposite sides of a doorway. The door screen system further comprises coupling means interconnecting the first and second retractable door screens such that a displacement of the first retractable door screen brings about a similar displacement of the second retractable door screen, and vice versa.

[0007] Through the mutual interconnection of the first and second door screen, a user can operate both screens at once to open or close by moving one of the handles. This makes the door screen system according to the invention user-friendly. Additional advantages of the system of the invention are derived from the fact that, when closed, two screens with an interstitial space or an air gap are present. This dual arrangement promotes privacy, the acoustics and the thermal qualities of the closure.

[0008] The door screen system is provided as a pre-assembled cartridge provided for screwless mounting in the doorway using resilient mounting parts, which are equipped to be attached in the doorway beforehand.

[0009] In a preferred embodiment, the coupling means comprise a first guide profile mounted below the doorway and a second guide profile mounted above the doorway, wherein the first and second handles are slidably mounted in the first and second guide profiles and are interconnected by means of guide wires, included in the guide profiles. This construction is very simple and can be executed with a limited height, such that at the top and bottom of the doorway barely any space is removed by the coupling of the two door screens.

[0010] The invention will be further illustrated through the following description of a preferred embodiment and the accompanying figures.

Figure 1 shows a horizontal section of a preferred embodiment of a door screen system according to the invention in retracted position (top) and extended position (below).

Figures 2 and 3 show details of Figure 1.

Figures 4 and 5 show respectively a front view and a perspective view from above of the door screen system of Figure 1.

Figure 6 shows a detail of Figure 5.

Figure 7 shows a perspective view of a mounting portion of the door system shown in Figure 1.

Figure 8-10 shows a coupling means of the door screen system of Figure 1.

[0011] The preferred embodiment of the door screen system shown in Figure 1-10 comprises a first retractable door screen 10 with a first side 11 attached to a first retracting mechanism 12, provided for rolling up the first door screen, and a second side 13 attached to a first handle 14, provided for sliding the first retractable door screen in/out. The door screen system further includes a second retractable door screen 30 having a third side 31 attached to a second retracting mechanism 32, provided for rolling up the second door screen, and a fourth side 33 attached to a second handle 34, for sliding the second retractable door screen in/out, wherein the first and second retractable door screens are mounted on opposite sides of a doorway. The door screen system further comprises coupling means 40 (see Figure 8-10) which interconnect the first and second retractable door screens 10, 30 such that a displacement of the first retractable door screen brings about a similar displacement of the second retractable door screen, and vice versa. Through the mutual interconnection of the first and second door screen, a user can operate both screens at once to open or close by moving one of the handles 14, 34.

[0012] The coupling means 40 comprise a first guide profile mounted below the doorway and a second guide profile mounted above the doorway. Figure 8-10 show the first guide profile 40 at the bottom. The second guide profile is identical to the one at the bottom. The first and second handle 14, 34 are slidably mounted on the first and second guide profile 40. The handles are intercon-

nected by means of guide wires (not shown) included in the guide profiles 40. The guide profiles 40 have thereto an oblong shape with rounded ends and an outward guide slot 41 along the circumference for receiving the guide wires. The handles 14, 34 extend through slits 42, 43 in the top of the guide profiles 40 leading out onto the guide slot 41 inside the guide profiles 40, and connected to the guide wires. Optionally, a wheel or a bearing may be provided at the rounded ends of the guide profile 40 to ease the guidance of the guide wires. As shown, this construction is very simple and takes only a limited height, such that at the top and bottom of the doorway, hardly any space is removed by the coupling of the two door screens.

[0013] The door screens 10, 30 may be provided at their upper and lower edges, i.e. edges contained in the slits 42, 43 of the guide profiles 40, with a thickening or "zipper" (not shown), which can prevent these edges from being released from the guide profiles 40. This thickening strengthens the guidance, substantially closing off the gaps and keeps the door screen tight and in shape, in case of drafts.

[0014] The first and second retracting mechanism 12, 32 each include a rotatably mounted drum 15, to which the respective door screen is attached. This can for example, be implemented as a bar 16 at the end 11 of the door screen 10 which is contained in a complementary slot 17 in drum 15, as shown. The attachment of the extremities 13, 33 of the door screens 10, 30 to the respective handles 14, 34, as shown in Figure 3, is preferably carried out in a similar way, in particular with a bar 36 which is included in a complementary slot 37 in the handle 14, 34.

[0015] The retracting mechanisms further include a driving mechanism (not shown), for example a torsion spring mechanism in the drum, which acts on the drum in a direction for rolling up the respective door screen on the drum.

[0016] The first and second retracting mechanisms 12, 34 are each contained in a chamber 18, each with an opening 19 through which the door screen can be retracted and extended. On the other side, the chamber 18 comprises a slot 20 for receiving the handle 34 of the opposite the door screen in its fully extended position. The groove 20 and handle 34 are preferably combined with a magnetic strip and metallic elements or the like for holding the handle 34 in slot 20.

[0017] The door screen system can be conceived such that there are only two predefined positions for the door screens, namely the fully retracted position (screen is completely rolled up) and the fully extended position (screen fully unwound), wherein the screens are held in the fully extended position by the retaining means in the slot 20, but wherein the screens are rolled up in any intermediate position under the influence of the driving mechanism 15 on the drum and return to the retracted position. Alternatively, the door screen system can also be conceived such that the screens 10, 30 remain in any

intermediate position. This can be achieved by working with a predetermined frictional force in the guide profiles 40 at the bottom and/or top and can also be facilitated because both screens 10, 30 keep each other in balance through the top and bottom guide wires, or through an equilibrium system similar to that known from WO-A-2006/133556.

[0018] The door system shown in Figures 1-10 is conceived as a preassembled cartridge, provided for screwless mounting in the doorway using resilient mounting parts 50 (see Figure 7), which are equipped to be attached in the doorway beforehand. These mounting parts 50 comprise two projecting parts 51, 52, which are elastically compressible and click in a complementary cavity 21 in the back of the chambers 18 of the retracting mechanisms 12, 32. These mounting parts 50 and complementary cavities 21 can have any shape the skilled person considers to be appropriate.

[0019] The door screens 10, 30 can be made of a mesh, a cloth or a perforated plastic or any other flexible material known in the art.

Claims

1. Door screen system comprising:

a first retractable door screen (10) having a first side attached to a first retracting mechanism (12), provided for rolling up the first door screen and a second side attached to a first handle (14), provided for sliding the first retractable door screen in/out,

a second retractable door screen (30) having a third side attached to a second retracting mechanism (32), provided for rolling up the second door screen, and a fourth side attached to a second handle (34) provided for sliding the second retractable door screen in/out, wherein the first and second retractable door screens (10, 30) are mounted on opposite sides of a doorway, and

coupling means (40) which interconnect the first and second retractable door screens such that a displacement of the first retractable door screen (10) brings about a similar displacement of the second retractable door screen (30) and vice versa,

characterized in that the door system is carried out as a pre-assembled cartridge provided for screwless installation in the doorway using resilient mounting parts (50), which are equipped to be attached in the doorway beforehand.

2. Door screen system according to claim 1, **characterized in that** the coupling means comprise a first guide profile (40) mounted below the doorway and

a second guide profiles (40) mounted above the doorway, wherein the first and second handles (14, 34) are slidably mounted in the first and second guide profile and are interconnected by means of guide wires, included in the guide profiles.

3. Door screen system according to claim 1 or 2, **characterized in that** the resilient mounting parts (50) comprise projecting parts (51, 52) which are elastically compressible, and **in that** the retracting mechanisms (12, 32) each comprise a complementary cavity (21) for receiving this projecting part (51, 52).
4. Door screen system according to any one of claims 1-3, **characterized in that** the first and second retracting mechanism each one comprise a rotatably mounted drum (15), to which the respective door screen is attached, and a drive acting on the drum in a direction for rolling up the respective door screen on the drum.
5. Door screen system according to any one of claims 1-4, **characterized in that** the first and second retracting mechanisms are each contained in a chamber (18) with each time a slot (20) for receiving the handle (14, 34) of the opposite door screen.
6. Door screen system according to claim 5, **characterized in that** the slot (20) and handle (14, 34) are jointly provided with holding means for holding the handle (14, 34) in the slot (20).

Patentansprüche

1. Türschirmsystem, welche Folgendes umfasst:

einen ersten einziehbaren Türschirm (10) mit einer ersten Seite befestigt an einem ersten Einziehmechanismus (12), bereitgestellt, um den ersten Türschirm aufzurollen, und mit einer zweiten Seite befestigt an einem ersten Griff (14), bereitgestellt, um den ersten einziehbaren Türschirm ein-/auszuschieben,
einen zweiten einziehbaren Türschirm (30) mit einer dritten Seite befestigt an einem zweiten Einziehmechanismus (32), bereitgestellt, um den zweiten Türschirm aufzurollen, und mit einer vierten Seite befestigt an einem zweiten Griff (34), bereitgestellt, um den zweiten einziehbaren Türschirm ein-/auszuschieben, wobei der erste und der zweite einziehbare Türschirm (10, 30) an gegenüberliegenden Seite einer Türöffnung montiert sind, und
Verbindungsmittel (40), welche den ersten und den zweiten einziehbaren Türschirm so miteinander verbinden, dass eine Verschiebung dem ersten einziehbaren Türschirm (10) eine ähnli-

che Verschiebung dem zweiten einziehbaren Türschirm (30) bewirkt und umgekehrt,

dadurch gekennzeichnet, dass das Türsystem als ein vormontierter Einsatz ausgeführt ist, bereitgestellt für die schraubenlose Installation in der Türöffnung unter Verwendung federnder Montageteile (50), welche eingerichtet sind, um vorab in der Türöffnung befestigt zu werden.

2. Türschirmsystem nach Anspruch 1, **dadurch gekennzeichnet, dass** die Verbindungsmittel ein erstes Führungsprofil (40) umfassen, montiert unter der Türöffnung, und ein zweites Führungsprofil (40), montiert über der Türöffnung, wobei der erste und der zweite Griff (14, 34) verschiebbar im ersten und im zweiten Führungsprofil montiert sind und mittels Führungsdrähten, in den Führungsprofilen inbegriffen, miteinander verbunden sind.
3. Türschirmsystem nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die federnden Montageteile (50) überragende Teile (51, 52) umfassen, welche elastisch komprimierbar sind, und dadurch, dass die Einziehmechanismen (12, 32) jeweils einen komplementären Hohlraum (21) umfassen, um dieses überragende Teil (51, 52) aufzunehmen.
4. Türschirmsystem nach irgendeinem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** der erste und der zweite Einziehmechanismus jeweils eine drehbar montierte Walze (15) umfassen, an der der zugehörige Türschirm befestigt ist, und einen Antrieb einwirkend auf die Walze in eine Richtung, um den zugehörigen Türschirm auf die Walze aufzurollen.
5. Türschirmsystem nach irgendeinem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** der erste und der zweite Einziehmechanismus jeweils in einer Kammer (18) mit jeweils einem Schlitz (20), um den Griff (14, 34) dem gegenüberliegenden Türschirm aufzunehmen, enthalten sind.
6. Türschirmsystem nach Anspruch 5, **dadurch gekennzeichnet, dass** der Schlitz (20) und der Griff (14, 34) gemeinsam mit Haltemitteln zum Halten des Griffes (14, 34) im Schlitz (20) ausgestattet sind.

Revendications

1. Système d'écran de porte comprenant :

un premier écran de porte rétractable (10) présentant un premier côté attaché à un premier mécanisme de rétraction (12), prévu pour l'enroulement du premier écran de porte et un

deuxième côté attaché à un premier manche (14), prévu pour le coulisement du premier écran de porte rétractable dedans et dehors, un second écran de porte rétractable (30) présentant un troisième côté attaché à un second mécanisme de rétractation (32) prévu pour l'enroulement du second écran de porte, et un quatrième côté attaché au second manche (34) prévu pour le coulisement du second écran de porte rétractable dedans et dehors, dans lequel les premier et second écrans de porte rétractables (10, 30) sont montés sur des côtés opposés d'une embrasure de porte et des moyens de couplage (40) qui relient entre eux les premier et second écrans de porte rétractables de sorte qu'un déplacement du premier écran de porte rétractable (10) entraîne un déplacement similaire du second écran de porte rétractable (30) et vice versa,

caractérisé en ce que le système de porte est réalisé comme une cartouche préassemblée prévue pour l'installation sans vis dans l'embrasure de porte en utilisant des parties de montage résilientes (50) qui sont équipées pour être attachées dans l'embrasure de porte au préalable.

2. Système d'écran de porte selon la revendication 1, **caractérisé en ce que** les moyens de couplage comprennent un premier profilé de guidage (40) monté sous l'embrasure de porte et un second profilé de guidage (40) monté au-dessus de l'embrasure de porte, dans lequel les premier et second manches (14, 34) sont montés de manière coulissante dans les premier et second profilés de guidage et sont reliés entre eux à l'aide de fils de guidage, inclus dans les profilés de guidage.
3. Système d'écran de porte selon la revendication 1 ou 2, **caractérisé en ce que** les parties de montage résilientes (50) comprennent des parties en saillie (51, 52) qui sont compressibles élastiquement et **en ce que** les mécanismes de rétractation (12, 32) comprennent chacun une cavité complémentaire (21) pour la réception de cette partie en saillie (51, 52).
4. Système d'écran de porte selon l'une quelconque des revendications 1 à 3, **caractérisé en ce que** les premier et second mécanismes de rétractation comprennent chacun un tambour monté de manière rotative (15), auquel est attaché l'écran de porte respectif, et un entraînement agissant sur le tambour dans une direction pour l'enroulement de l'écran de porte respectif sur le tambour.
5. Système d'écran de porte selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** les premier et second mécanismes de rétractation sont

chacun contenus dans une chambre (18) chaque fois avec une fente (20) pour recevoir le manche (14, 34) de l'écran de porte opposé.

6. Système d'écran de porte selon la revendication 5, **caractérisé en ce que** la fente (20) et le manche (14, 34) sont dotés conjointement de moyens de maintien pour maintenir le manche (14, 34) dans la fente (20).

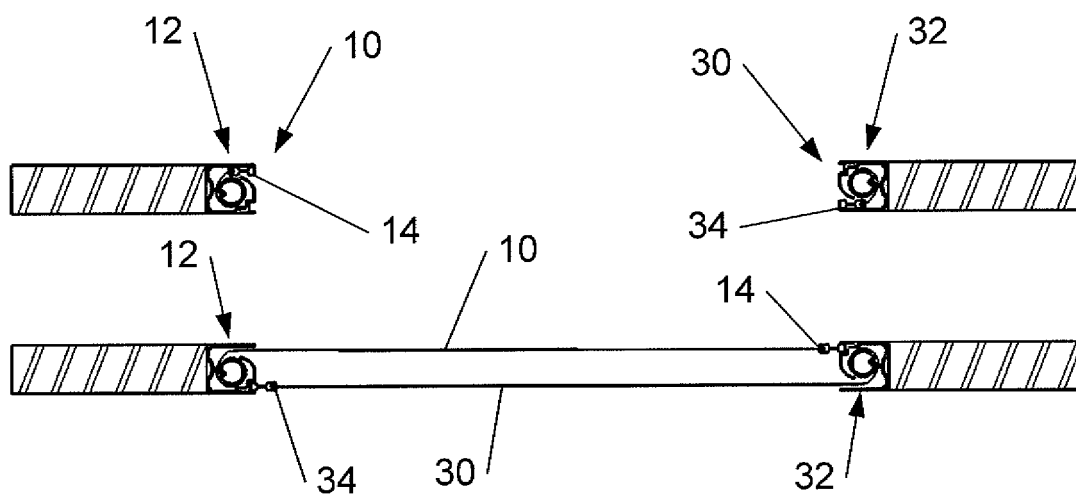


Fig. 1

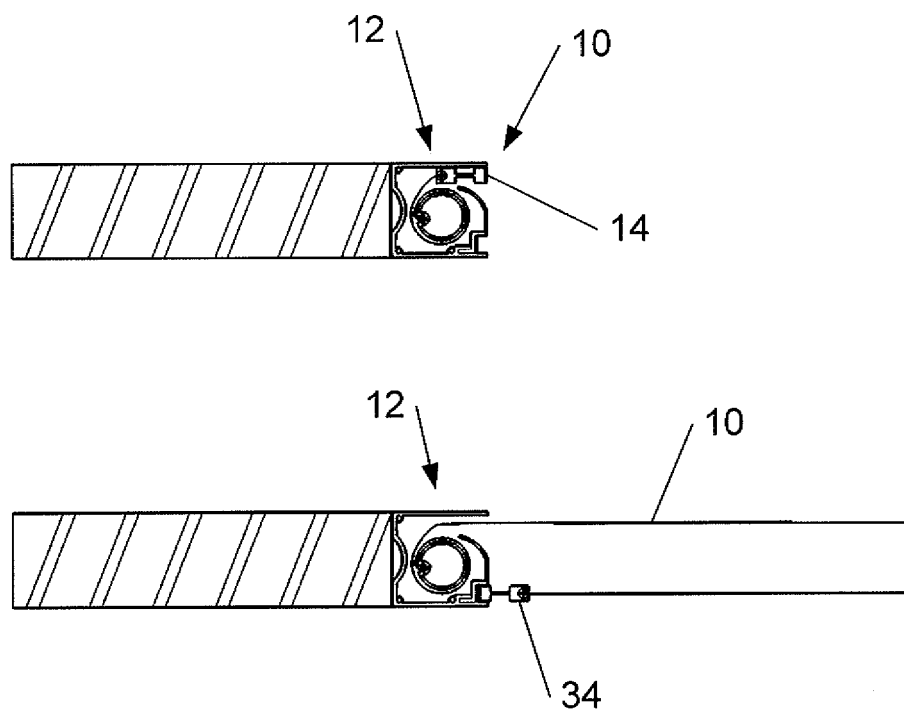


Fig. 2

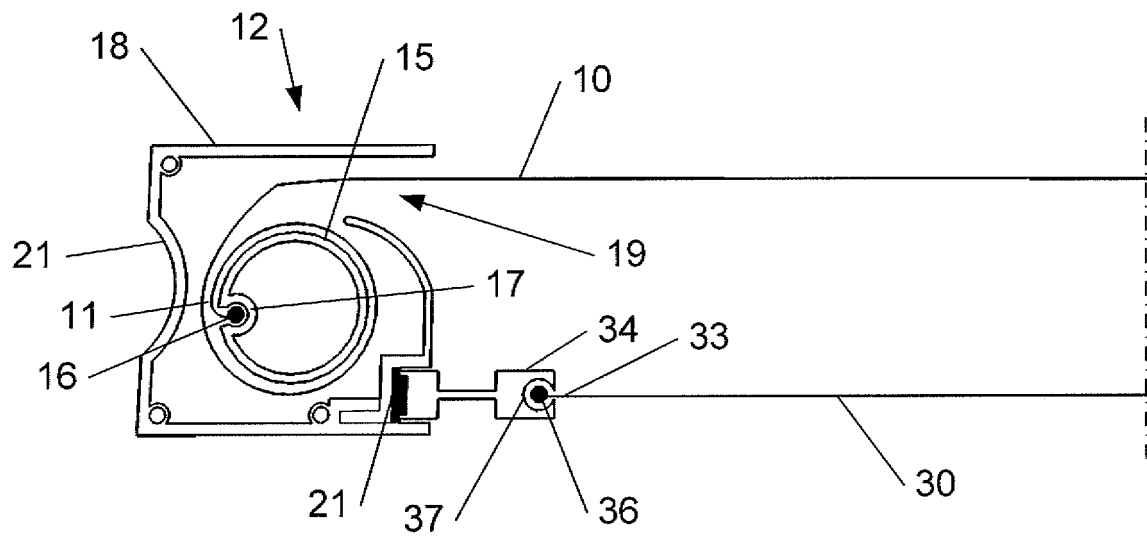


Fig. 3

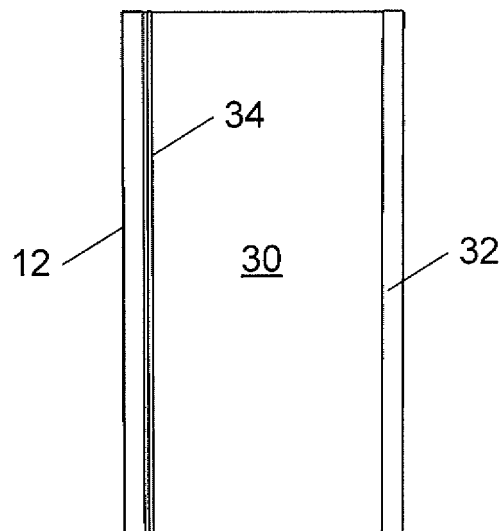


Fig. 4

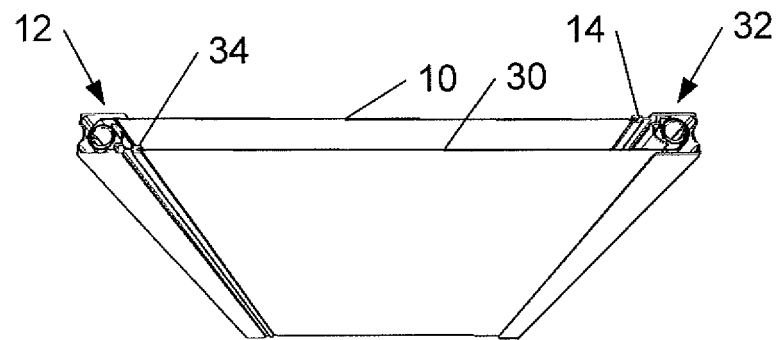


Fig. 5

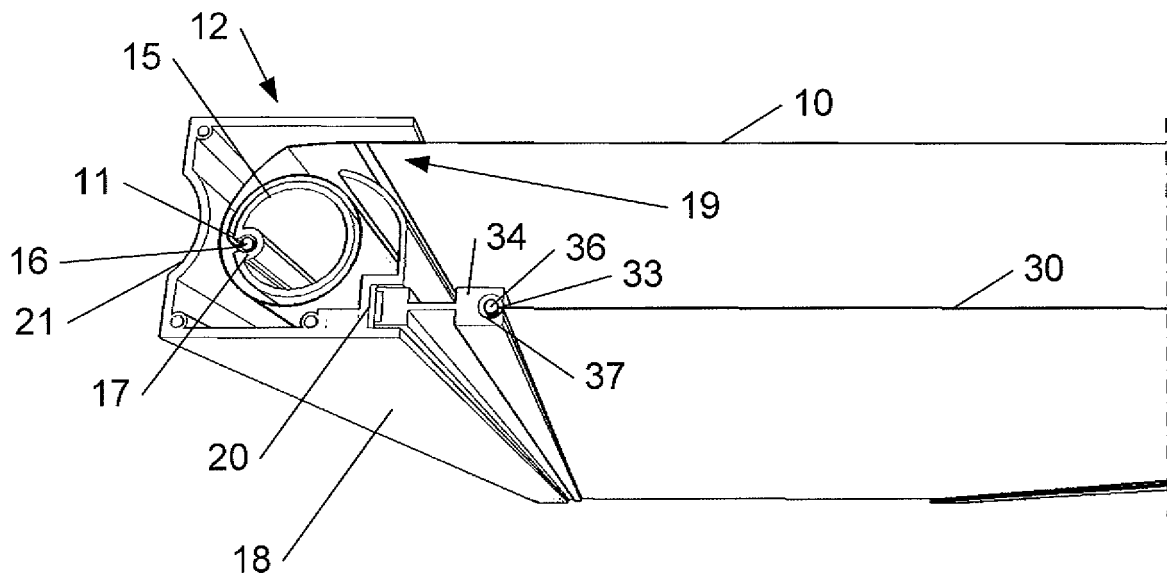


Fig. 6

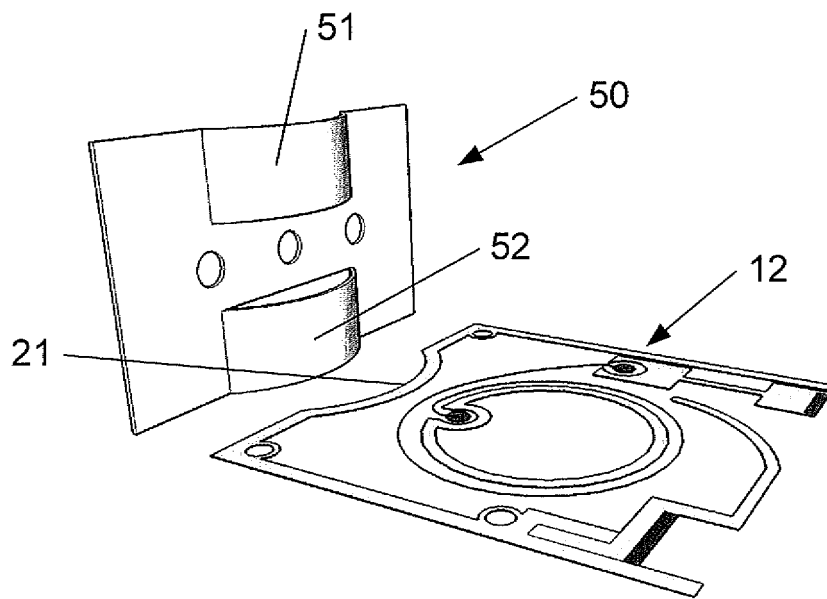


Fig. 7

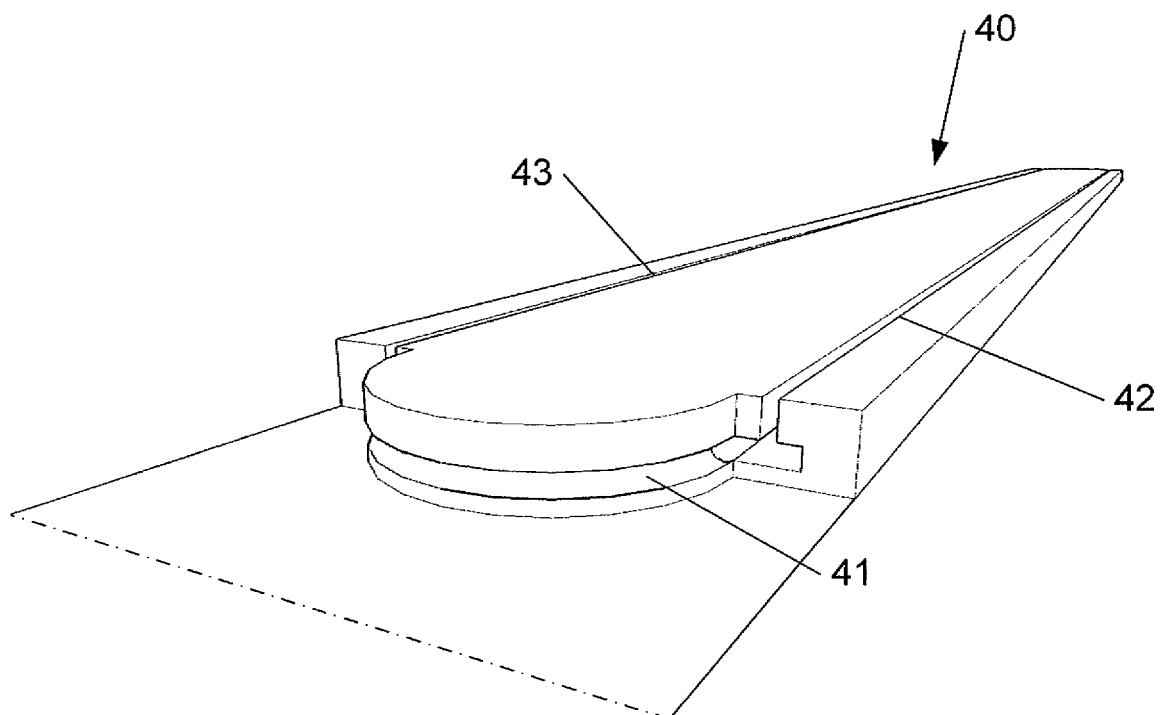


Fig. 8

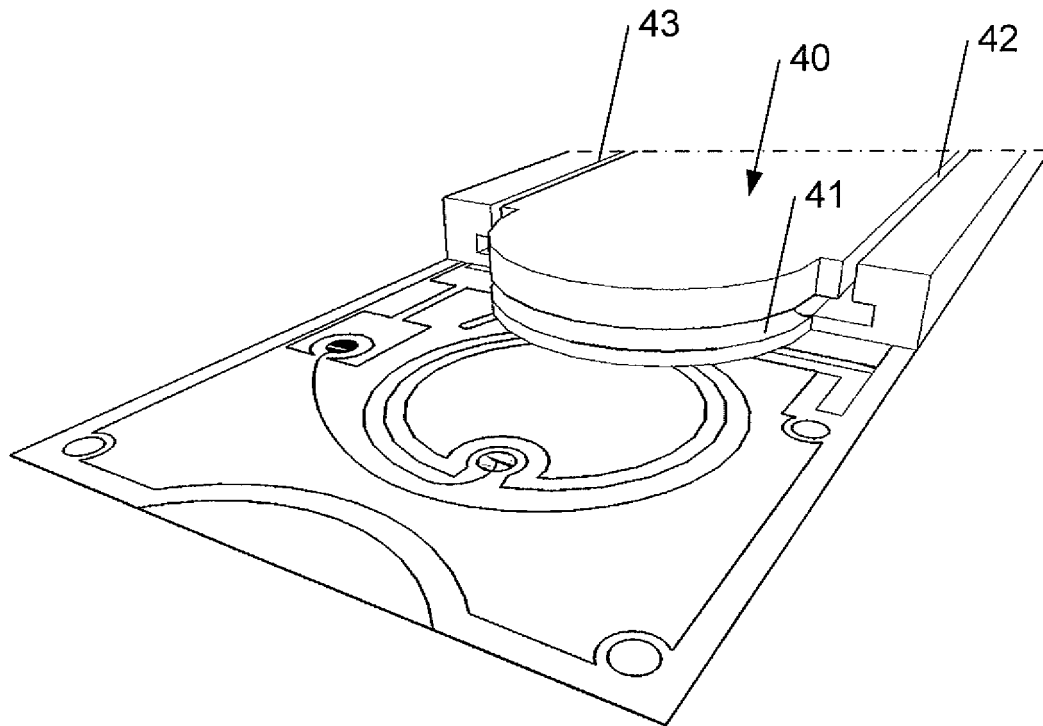


Fig. 9

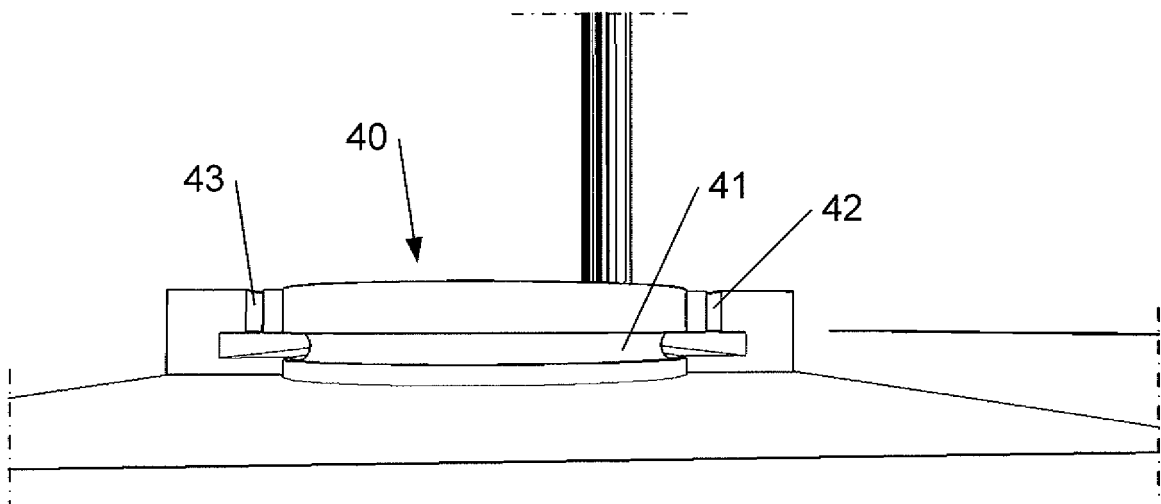


Fig. 10

REFERENCES CITED IN THE DESCRIPTION

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