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(54) **Wallpaper removing steamers**

Dampfapparat zur Entfernung von Tapeten

Appareil à vapeur pour arracher le papier-peint

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Description

[0001] The present invention relates to wallpaper removing steamers and is concerned with inventive modifications and improvements to the steamer described in my patent specifications no. GB 2336423A and US 6072940.

[0002] The wallpaper remover described in the foregoing patent specifications comprises a base, a steam applicator assembly mounted on the base for dispensing steam upon the receipt thereof, and mounting means coupled to the base for releasably securing the same to a recipient surface. The mounting means includes at least one suction cup, and it was preferred to employ four suction cups at the respective corners of an oblong rectangular base. The suction cups are arranged to be mechanically operated by rotatable levers connected to a common actuator arm.

[0003] Such mechanically operated suction cups seal efficiently with smooth planar surfaces. They are commonly employed with panes of glass, for example. However, local areas of wall are often by no means flat, and an effective suction action with all four cups has been found not always to be achieved with the mechanically operated cups.

[0004] According to the present invention a wallpaper remover comprises a base, a steam applicator assembly mounted on the base for dispensing steam on receipt thereof, characterised in that at least one suction cup of concertina form is coupled to the base and adapted to secure the base to a wallpapered surface to help pull the steam applicator in use towards the wallpapered surface through collapsing of the suction cups, each suction cup being connected to a vacuum supply.

[0005] The use of a vacuum supply enables suction cups of a less rigid construction to be employed than those which are mechanically operated.

[0006] The use of more compliant cups can facilitate self-adjustment of the cups to an uneven wall surface.

[0007] The suction cups are preferably each provided with an annular flexible closed-cell foam pad around their mouths to assist in sealing against an irregular surface.

[0008] The vacuum conduits connected to the respective cups are preferably connected to a common vacuum control valve which is preferably mounted on the base.

[0009] The suction cups are preferably linked to a manifold block to distribute and substantially equalise the incoming vacuum thereby ensuring each suction cup has a substantially equal vacuum available to it. The manifold block may be a separate unit or formed as part of the base.

[0010] The supply conduits to the vacuum cups may be respective passages formed in the base, or they may be respective vacuum tubes mounted on the base and connecting the respective cups with the vacuum control valve. Each conduit may be provided with a filter means to restrict the inward flow of air and debris.

[0011] The vacuum control valve preferably comprises

a thumb-operable valve actuator mounted on a handle fast with the base, whereby the user whilst holding the handle can operate the valve with his or her thumb.

[0012] The housing of the vacuum control valve may be a self-contained housing which is mounted on the base, or it may be an integral part of the base.

[0013] A pump, generator or any suitable device generates the vacuum to the unit. The vacuum-generating device may be powered electrically or by air or by any other means. The vacuum-generating device is preferably a separate unit but may be mounted on, in or as part of the base or steam applicator.

[0014] Two wallpaper steamers in accordance with the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 is a plan view of a first wallpaper steamer in accordance with the invention shown connected to a remote vacuum pump unit;

Figure 2 is an underplan view of the steamer of Figure 1;

Figure 3 is a side elevation of the steamer of Figure 1;

Figures 4 and 5 are a side elevation and vertical cross-section respectively of a vacuum sucker used with the steamer of Figure 1; the sucker being shown in a relaxed, unloaded condition;

Figure 6 is a plan view of a second wallpaper steamer in accordance with the invention; and

Figures 7 and 8 are front and side views respectively of the steamer of Figure 6 in operation secured by suction to a wallpapered surface.

[0015] With reference to Figures 1 to 3, a wallpaper removing steamer 1 comprises an oblong-rectangular base plate 2 to the upper surface of which is secured a handle 3. The underside of the base plate 2 is provided with a shallow recess 5 of uniform depth to define a peripheral skirt 4, and four suction cups 6 are mounted on the underside adjacent to the respective corners of the base plate 2.

[0016] A steam applicator assembly takes the form of a metal steam pipe 7 closed at one end 8 and provided with five longitudinally spaced-apart, downwardly directed steam outlet ports 9, the free end 10 of pipe 7 extending through skirt 4 and being coupled at 11 to a flexible steam supply pipe 12.

[0017] As shown in Figures 4, 5 the suction cups 6 each comprise a tubular attachment boss 13 integral with a concertina bellows portion 14, the outwardly-flared mouth 15 of which is adhesively bonded to an annular pad 16 of a flexible closed-cell foam material for effecting a good airtight seal with a wallpapered surface.

[0018] Each suction cup 6 has its boss 13 secured in a respective stepped through-bore 16' in base plate 2, the smaller diameter part of the bores 16' accommodating the remote ends of respective vacuum supply pipe 17, 18, 19, 20 connected to a manifold block 21 mounted on the upper surface of the base plate 4. Pipes 17 to 20 extend across the upper surface of the base plate 2 and clear of the handle 3.

[0019] Manifold block 21 in addition to providing a manifold connection to pipes 17 to 20 incorporates a vacuum valve unit 22 which is interposed between the manifold and a vacuum supply pipe 24.

[0020] The vacuum valve is arranged in one condition to connect the manifold, and hence the interiors of the four suction cups, with the vacuum supply pipe 24, and in another condition to isolate the vacuum supply pipe 24 and to connect the manifold with atmosphere, thereby to disable the suction force of the cups 6.

[0021] The bellows portion 14 of the suction cups is made of a relatively flexible material such as a thermoplastic rubber or silicon to allow the cups 6 to fit against a relatively uneven surface. The resilience of the sealing pads 16, and the flexibility of the bellows portion 14, enable the cups to seal efficiently with a non-flat surface.

[0022] Once a sealing pad 16 has engaged with a surface, the pad 16 will be sucked against the surface, to effect a seal between the mouth of the cup and the wallpapered surface, thereby to permit a further reduction in pressure in the cavity 25 defined by the cup. The reduction in pressure in cavity 25 tends to cause the bellows portions 14 of the cups to collapse, thereby pulling the base plate 2 towards the surface. This will cause the steam pipe 7 and skirt 4 to be moved closer to the wallpapered surface, thereby helping to confine the steam to the area of wallpaper beneath base plate.

[0023] The flexibility of the suction cups 6 enables an individual cup to seat on a locally uneven surface, but moreover to accommodate different levels of surface as between one cup and another.

[0024] It will be appreciated that positioning the actuator button 30 in-line with the handle 3 facilitates thumb operation of the button 30 using the hand that is holding the handle.

[0025] In Figures 6 to 8 parts corresponding to the steamer of Figures 1 to 5 have been given corresponding reference numerals. Essentially the main differences between the unit of Figures 6 to 8 compared with that of Figures 1 to 5 are that, in the second unit, the vacuum supply pipes 17, 18, 19, 20 have been replaced by internal passageways in the base 2.

[0026] The valve actuator button 30 is positioned towards the opposite end of the base plate 2 from the steam supply pipe 12 and vacuum supply hose 24.

Claims

1. A wallpaper remover (1) comprising a base (2), a

steam applicator assembly mounted on the base (2) for dispensing steam on receipt thereof, **characterised in that** at least one suction cup (6) of concertina form is coupled to the base (2) and adapted to secure the base (2) to a wallpapered surface to help pull the steam applicator in use towards the wallpapered surface through collapsing of the suction cup (6), each suction cup (6) being connected to a vacuum supply.

2. A wallpaper remover (1) as claimed in claim 1 in which there is a plurality of the suction cups (6).

3. A wallpaper remover (1) as claimed in claim 2 in which the suction cups (6) are each provided with an annular flexible closed-cell foam pad (16) around their mouths (15).

4. A wallpaper remover (1) as claimed in any of the preceding claims having vacuum conduits (17, 18, 19, 20) connected to the respective cups (6), the vacuum conduits (17, 18, 19, 20) being connected to a common vacuum control valve (22).

5. A wallpaper remover (1) as claimed in claim 4 in which the vacuum control valve (22) is mounted on the base (2).

6. A wallpaper remover (1) as claimed in claim 4 or claim 5 in which the suction cups (6) are linked to a manifold block (21) to distribute and substantially equalise the incoming vacuum to each suction cup (6).

7. A wallpaper remover (1) as claimed in claim 5 in which the vacuum control valve (22) comprises a thumb-operable valve actuator (30) mounted on a handle (3) fast with the base (2), the arrangement being such that the user whilst holding the handle (3) can operate the valve (24) with his or her thumb.

Revendications

1. Décolleuse à papier peint (1) comportant une base (2), un ensemble applicateur de vapeur monté sur la base (2) pour distribuer de la vapeur à la réception de celle-ci, **caractérisés en ce qu'**au moins une ventouse (6) en forme d'accordéon est couplée à la base (2) et adaptée pour fixer la base (2) à une surface recouverte de papier peint pour aider à tirer l'applicateur de vapeur en utilisation vers la surface recouverte de papier peint par aplatissement de la ventouse (6), chaque ventouse (6) étant connectée à une source de vide.

2. Décolleuse à papier peint (1) selon la revendication 1, dans laquelle il y a une pluralité des ventouses (6).

3. Décolleuse à papier peint (1) selon la revendication 2, dans laquelle les ventouses (6) sont munies chacune d'un patin en mousse à cellules fermées flexible annulaire (16) autour de leurs embouchures (15). 18, 19, 20) an ein gemeinsames Unterdrucksteuerventil (22) angeschlossen sind.
4. Décolleuse à papier peint (1) selon l'une quelconque des revendications précédentes, ayant des conduits de vide (17, 18, 19, 20) connectés aux ventouses respectives (6), les conduits de vide (17, 18, 19, 20) étant connectés à une vanne de commande de vide commune (22). 5. Tapetenentferner (1) nach Anspruch 4, bei dem das Unterdrucksteuerventil (22) an dem Grundteil (2) angebracht ist.
5. Décolleuse à papier peint (1) selon la revendication 4, dans laquelle la vanne de commande de vide (22) est montée sur la base (2). 6. Tapetenentferner (1) nach Anspruch 4 oder Anspruch 5, bei dem die Saugnapfe (6) mit einem Verteilerblock (21) verbunden sind, um den hereinkommenden Unterdruck auf jeden Saugnapf (6) zu verteilen und im wesentlichen gleich zu machen.
6. Décolleuse à papier peint (1) selon la revendication 4 ou 5, dans laquelle les ventouses (6) sont reliées à un bloc collecteur (21) pour répartir et sensiblement égaliser le vide entrant vers chaque ventouse (6). 7. Tapetenentferner (1) nach Anspruch 5, bei dem das Unterdrucksteuerventil (22) ein mit dem Daumen betätigbare Ventilbetätigungsverrichtung (30) umfaßt, die an einem Griff (3) angebracht ist, der fest mit dem Grundteil (2) ist, wobei die Anordnung so getroffen ist, daß der Benutzer das Ventil (24) mit seinem oder ihrem Daumen betätigen kann, während er oder sie den Griff (3) hält.
7. Décolleuse à papier peint (1) selon la revendication 5, dans laquelle la vanne de commande de vide (22) comporte un actionneur de vanne manipulable par le pouce (30) monté sur une poignée (3) solidaire de la base (2), l'agencement étant tel que l'utilisateur, tout en tenant la poignée (3), peut manipuler la vanne (24) avec son pouce.

Patentansprüche

1. Tapetenentferner (1) mit einem Grundteil (2), einer an dem Grundteil (2) angebrachten Dampfaufbringungsbaugruppe zum Ausgeben von Dampf nach dessen Erhalt, **dadurch gekennzeichnet, daß** mindestens ein zieharmonikaförmiger Saugnapf (6) mit dem Grundteil (2) verbunden und angepaßt ist, um das Grundteil (2) an einer tapezierten Oberfläche zu halten, um zu helfen, den Dampfaufbringer im Gebrauch auf die tapezierte Oberfläche durch Zusammenfallen des Saugnapfes (6) zu ziehen, wobei jeder Saugnapf (6) mit einer Unterdruckzufuhr verbunden ist.
2. Tapetenentferner (1) nach Anspruch 1, bei dem eine Vielzahl von Saugnapfen (6) vorhanden ist.
3. Tapetenentferner (1) nach Anspruch 2, bei dem jeder der Saugnapfe (6) mit einer ringförmigen flexiblen geschlossenzelligen Schaumunterlage (16) um seinen Mund (15) herum versehen ist.
4. Tapetenentferner (1) nach irgendeinem der vorhergehenden Ansprüche, mit Unterdruckleitungen (17, 18, 19, 20), die an die jeweiligen Näpfe (6) angeschlossen sind, wobei die Unterdruckleitungen (17,

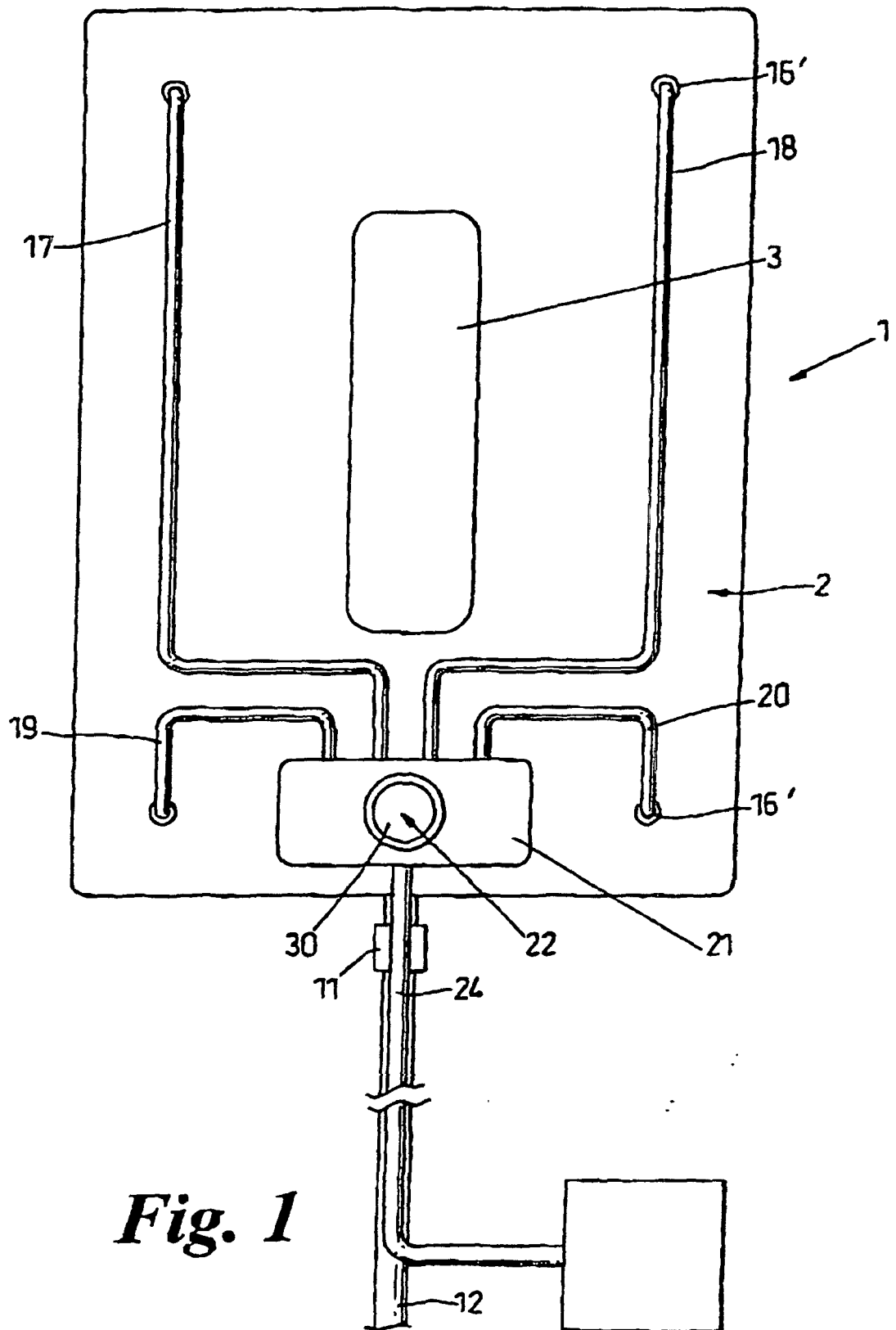


Fig. 1

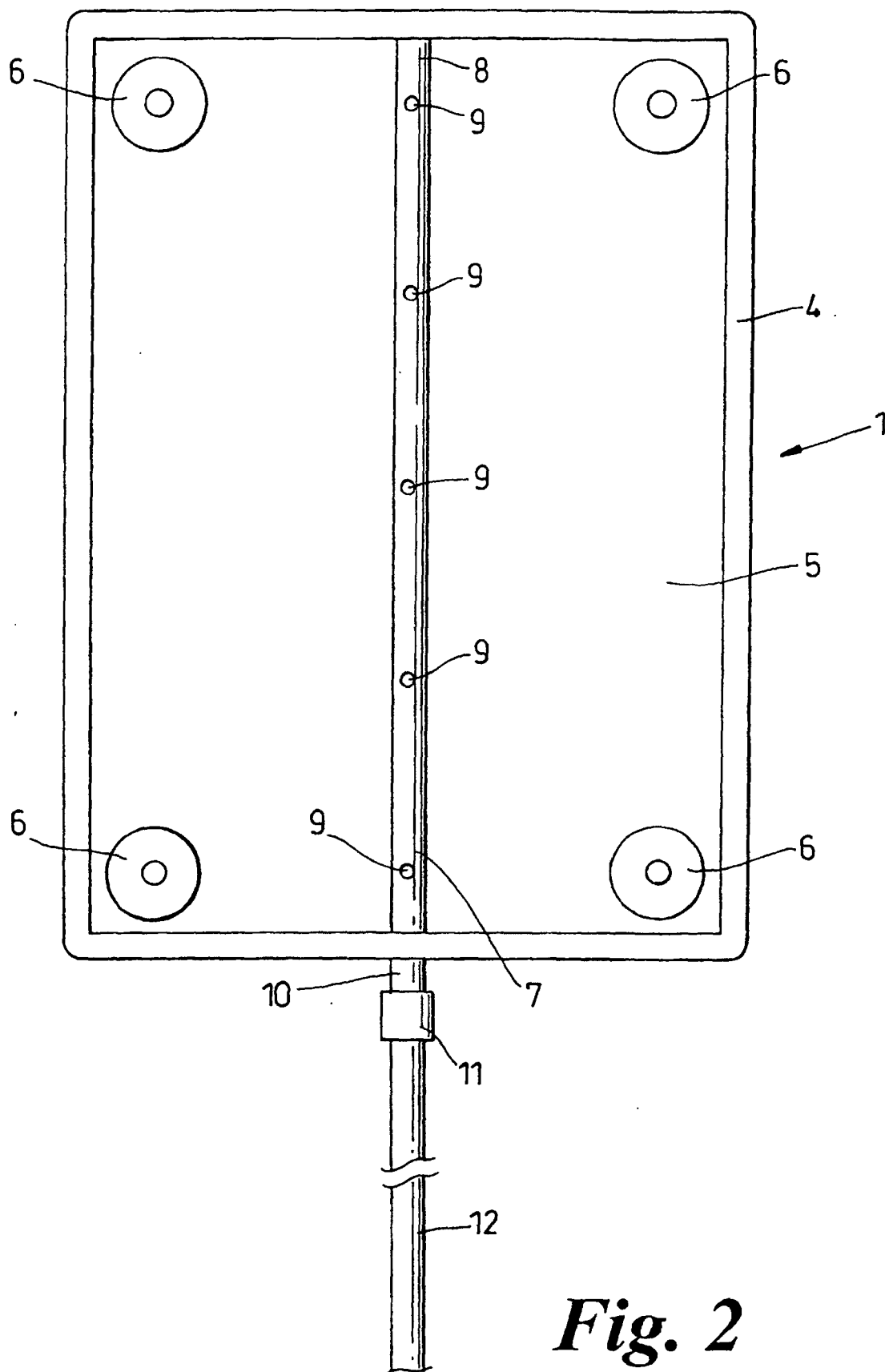


Fig. 2

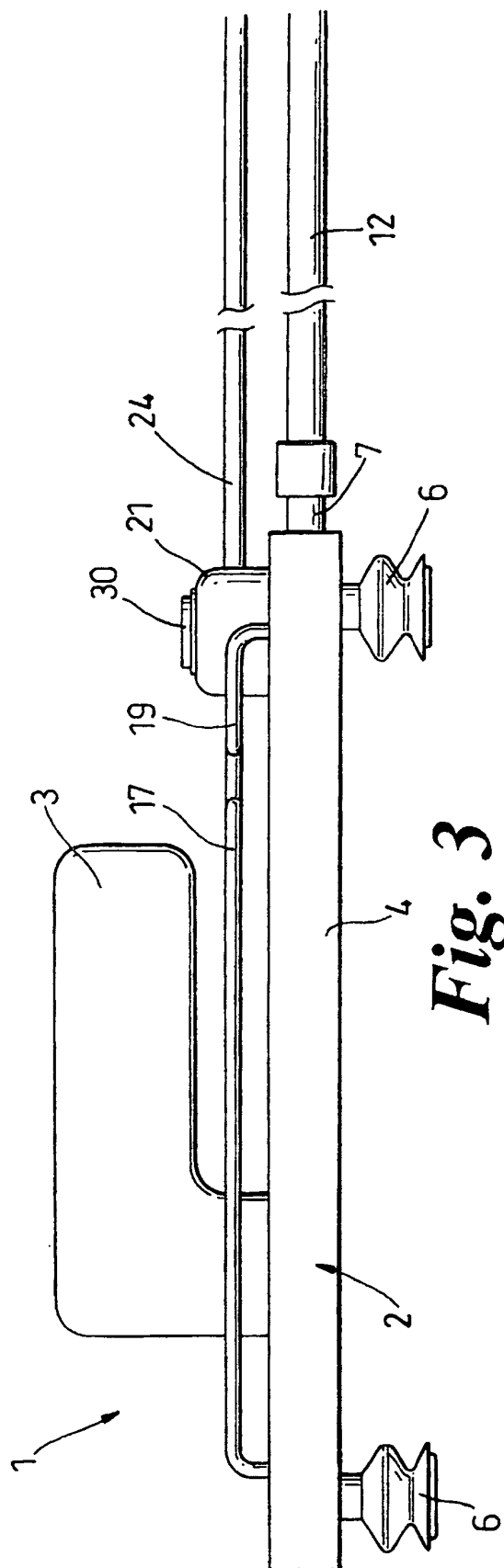


Fig. 3

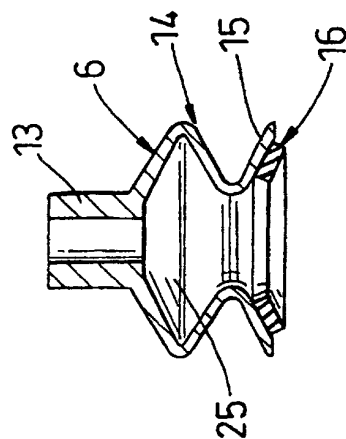


Fig. 5

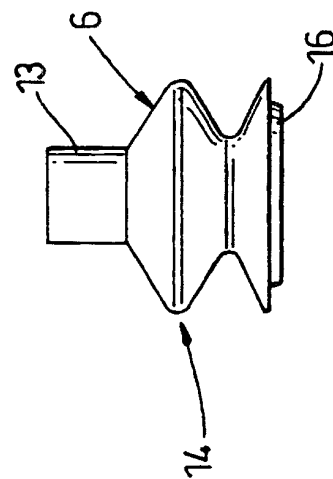


Fig. 4

