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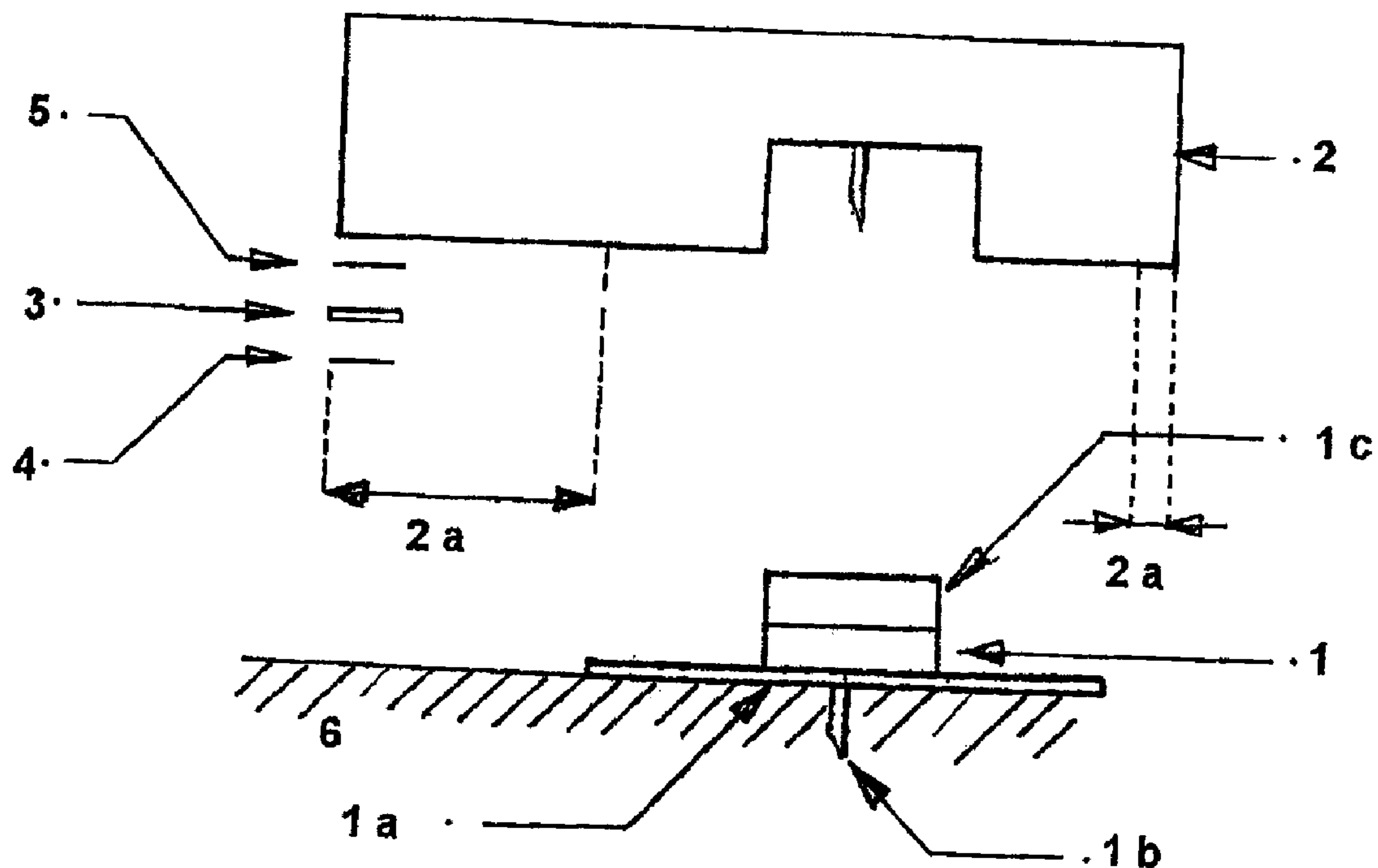
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(54) Titre : MOYENS DE FIXATION D'UN DISPOSITIF DE PERFUSION SUR LE CORPS  
(54) Title: SECURING MEANS FOR AN INFUSION DEVICE WORN ON THE BODY



(57) Abrégé/Abstract:

Infusion device for administering a liquid medical substance into human or animal body tissue, said device comprising: a) a catheter head (1) with an underside (1a) for securing to the body tissue; b) a cannula (1b) which is mounted on the catheter head (1), protrudes from the underside thereof and is inserted into the body tissue; c) a guide element and connector (1c) arranged on the top face of the catheter head and designed to establish a releasable plug-in connection and fluidic connection to an administration device (2) provided for this purpose; d) an administration device (2) which is mounted so as to be able to rotate about the guide element and which establishes a releasable connection to the catheter head; characterized in that e) the administration device is prepared, on the peripheral areas (2a), with at least one adhesive (3) that is suitable for fixing the administration device onto the body such that the latter can be suitably worn on the body.

**Abstract**

Infusion device for administering a liquid medical substance into human or animal body tissue, said device comprising: a) a catheter head (1) with an underside (1a) for securing to the body tissue; b) a cannula (1b) which is mounted on the catheter head (1), protrudes from the underside thereof and is inserted into the body tissue; c) a guide element and connector (1c) arranged on the top face of the catheter head and designed to establish a releasable plug-in connection and fluidic connection to an administration device (2) provided for this purpose; d) an administration device (2) which is mounted so as to be able to rotate about the guide element and which establishes a releasable connection to the catheter head; characterized in that e) the administration device is prepared, on the peripheral areas (2a), with at least one adhesive (3) that is suitable for fixing the administration device onto the body such that the latter can be suitably worn on the body.

**Securing means for an infusion device worn on the body**

The invention relates to securing means for an infusion device that is applied to the skin, said securing means  
5 allowing the infusion device to be reliably secured on the body in a suitable position.

Miniaturized infusion devices that are applied directly to the surface of the skin and permit discrete and  
10 comfortable wearing are used, for example, for outpatient treatment of diabetes patients. After such an infusion device has been secured to the surface of the skin, it adheres to the body generally for 4-5 days and is then completely or partially disposed of. The  
15 application of the administration device to the surface of the skin and the insertion of the administration cannula into the body tissue are carried out by the patients themselves.

20 In daily use by the patient, it is desirable that the infusion device, or at least part of it, can be temporarily removed, for example to allow the patient to freely pursue a sporting activity, or so as not to expose the precision parts or electronic components of  
25 the metering device to undesired contact with water during bathing or showering.

To allow the infusion device to be temporarily removed without thereafter requiring the cannula to be pushed  
30 through the skin again, infusion devices are known in which the catheter head can be detached from the pump or administration device. The catheter head and the cannula form an indwelling fixture and, being provided with suitable sealing means, remain in or on the body  
35 tissue during the disconnection phase.

Patent specification DE 199 12 459 C2 describes an indwelling fixture in the form of an adapter which can be applied to the surface of the skin by means of an

adhesive skin plaster and which permits connection of a metering device for continuous administration of a medical liquid, or connection of an injection pen, or fluidic connection to a syringe needle.

5

If an administration device or metering device is mechanically coupled by means of such an indwelling fixture, the static imbalance of the administration device, which cannot be entirely eliminated because of its construction, results in forces or tilting moments that are dependent on the orientation of the administration device and that limit the wearing comfort experienced by the person wearing the pump. For the person wearing the pump, it is desirable to permit individual orientation of the pump such that it can be worn in a suitable position on the body.

The object of the invention is to ensure that an infusion device that is coupled to an indwelling fixture via a releasable plug-in connection and fluidic connection can be fixed comfortably and in a suitable position to the surface of the skin and, after disconnection, can be safely secured again. The object is achieved by the subject matter of Claim 1.

25

The invention starts out from an infusion device which is worn on the surface of the skin and administers a medical liquid, the administration device being mounted rotatably about a guide element and establishing a releasable connection to the catheter head. The catheter head is secured to the surface of the skin by means of adhesives, such as are known in the prior art for infusion sets.

35 When the administration device is connected on the catheter head, it initially remains free to rotate about the guide element. In this way, the person wearing the pump is able to orient his or her administration device individually with respect to

wearing comfort and discreetness. As soon as the administration device is located in the desired position, the administration device can be fixed and secured by means of adhesives that are located on the peripheral area on the underside. The second securing area formed in this way permits a double introduction of forces, with an overall better fixing to the surface of the skin. The reliability can be further improved by using several adhesives.

10

In order to disconnect the infusion device temporarily, for example in order to protect the administration device from undesired contact with water and moisture during bathing or showering, the adhesive attachment in the peripheral area of the administration device is first removed. The administration device is then released from the connector.

To ensure a satisfactory adhesive connection, new adhesives should be used on the peripheral areas after a temporary disconnection.

In a particularly preferred embodiment, plaster-like adhesives are provided on the underside of the appliance, the active adhesive surface being covered initially by a protective film. When the plaster-like adhesive is to be activated, the protective cover has to be removed. An ergonomically designed tear-off tab on the protective film allows the person wearing the pump to grip it and pull it off.

In another embodiment, separately stored adhesives provided as auxiliaries are not activated until directly before use on the infusion device, and are applied at a suitable location on the underside of the pump.

In another preferred embodiment, adhesives are secured on the underside of the appliance via one or more

independent backing films. In this way, used adhesives can be removed as and when required.

A particularly preferred illustrative embodiment of the invention is explained in more detail below with reference to the figures.

Figure 1 shows a side view of a catheter head (1) which is secured to the surface of the skin by means of adhesives (1a) applied on the underside and from which the cannula (1b) penetrates into the body tissue (6). The administration device in the form of an insulin pump is pushed on over the guide element (1c) and then connected fluidically and mechanically. The insulin pump (2) remains rotatable and is free to turn about the adapter (1c), which allows the person wearing the pump to orient the pump suitably for application to the body. Only after the person wearing the pump has fixed it in place by means of adhesive (1a) is the infusion device fully secured on the body. Reliable fastening is achieved through the additionally obtained securing or the introduction of forces.

The arrangement of the protective film (4), of an adhesive in the form of a skin-compatible plaster (3), and of the backing film (5) can be seen in an exploded view.

Figure 2 shows the underside of an infusion device with different adhesive arrangements located in the peripheral areas (2a). Adhesive arrangement (3a) consists of an adhesive plaster which is suitable for small gravitation forces and small acceleration forces. Adhesive arrangement (3b) comprises several adhesives which are able to take up greater forces and acceleration components than in adhesive arrangement (3a). To make the protective film (4) or backing film (5) easier to access, a gripping tab is formed by the film contour. The adhesive arrangements mentioned can

be present several times on the peripheral areas (2a), such that an unused adhesive is available for each renewed connecting procedure.

**Patent Claims**

1. Infusion device for administering a medical liquid  
5 into human or animal body tissue, said device  
comprising:
  - a) a catheter head (1) with an underside (1a) for  
securing to the body tissue (6);
  - b) a cannula (1b) which is mounted on the catheter  
10 head (1), protrudes from the underside thereof and  
is inserted into the body tissue;
  - c) a guide element and connector (1c) arranged on  
the top face of the catheter head and designed to  
establish a releasable plug-in connection and  
15 fluidic connection to an administration device (2)  
provided for this purpose;
  - d) an administration device (2) which is mounted  
so as to be able to rotate about the guide element  
(1c) and which establishes a releasable connection  
20 to the catheter head;  
characterized in that
  - e) the administration device is prepared, on the  
peripheral areas (2a), with at least one securing  
means (3) that is suitable for fixing the  
25 administration device onto the body.
2. Infusion device according to Claim 1,  
characterized in that the securing means (3) is a  
pressure-sensitive skin-compatible adhesive or  
30 plaster.
3. Infusion device according to Claim 2,  
characterized in that a protective film (4) with  
at least one tear-off tab (3c) is applied over the  
35 adhesive.
4. Infusion device according to Claim 3,  
characterized in that several adhesives are  
covered by a common protective film (4).

5. Infusion device according to Claims 2 to 4, characterized in that one or more adhesives are connected to the underside of the appliance via a removable backing film (5).

Fig. 1

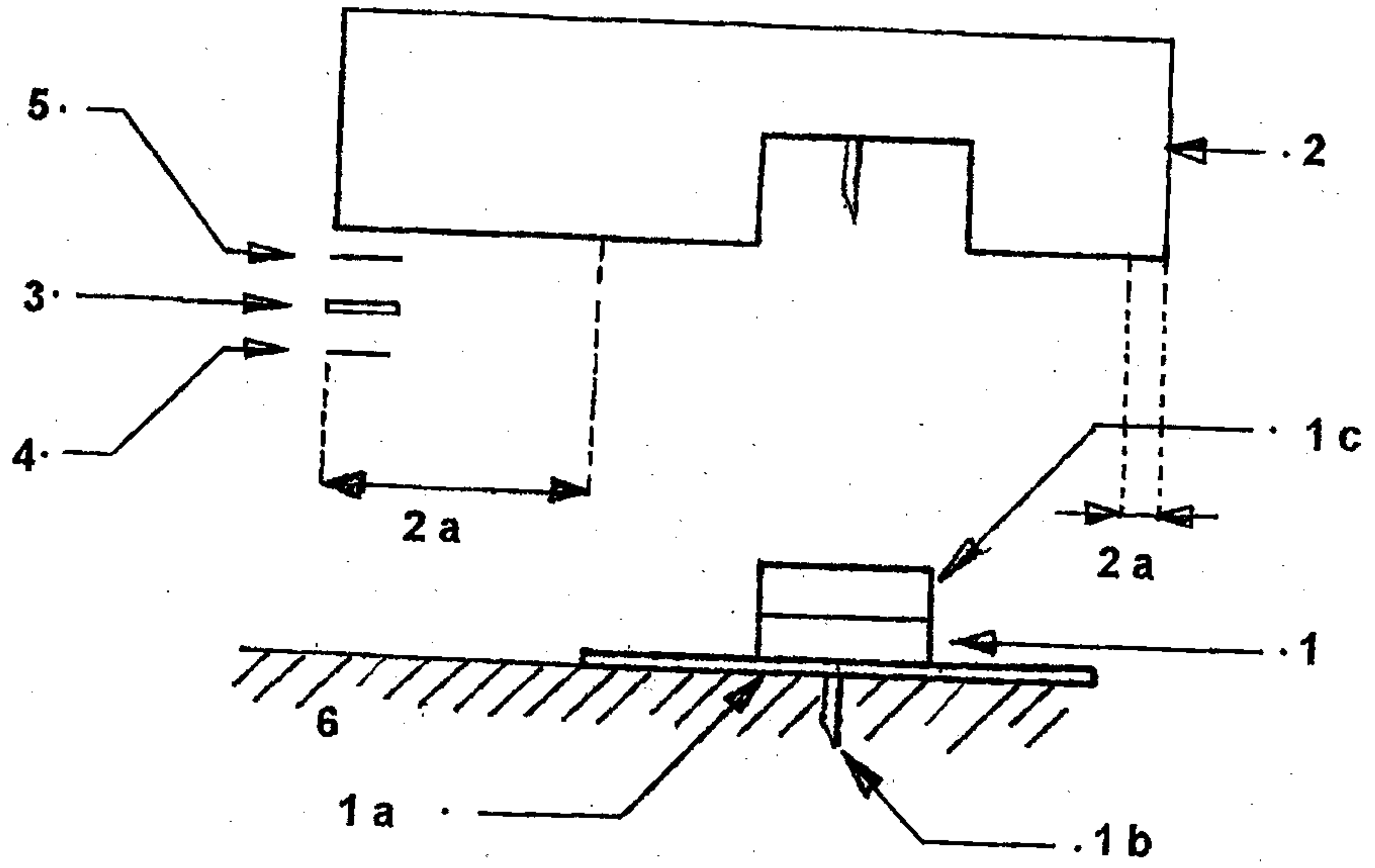


Fig. 2

