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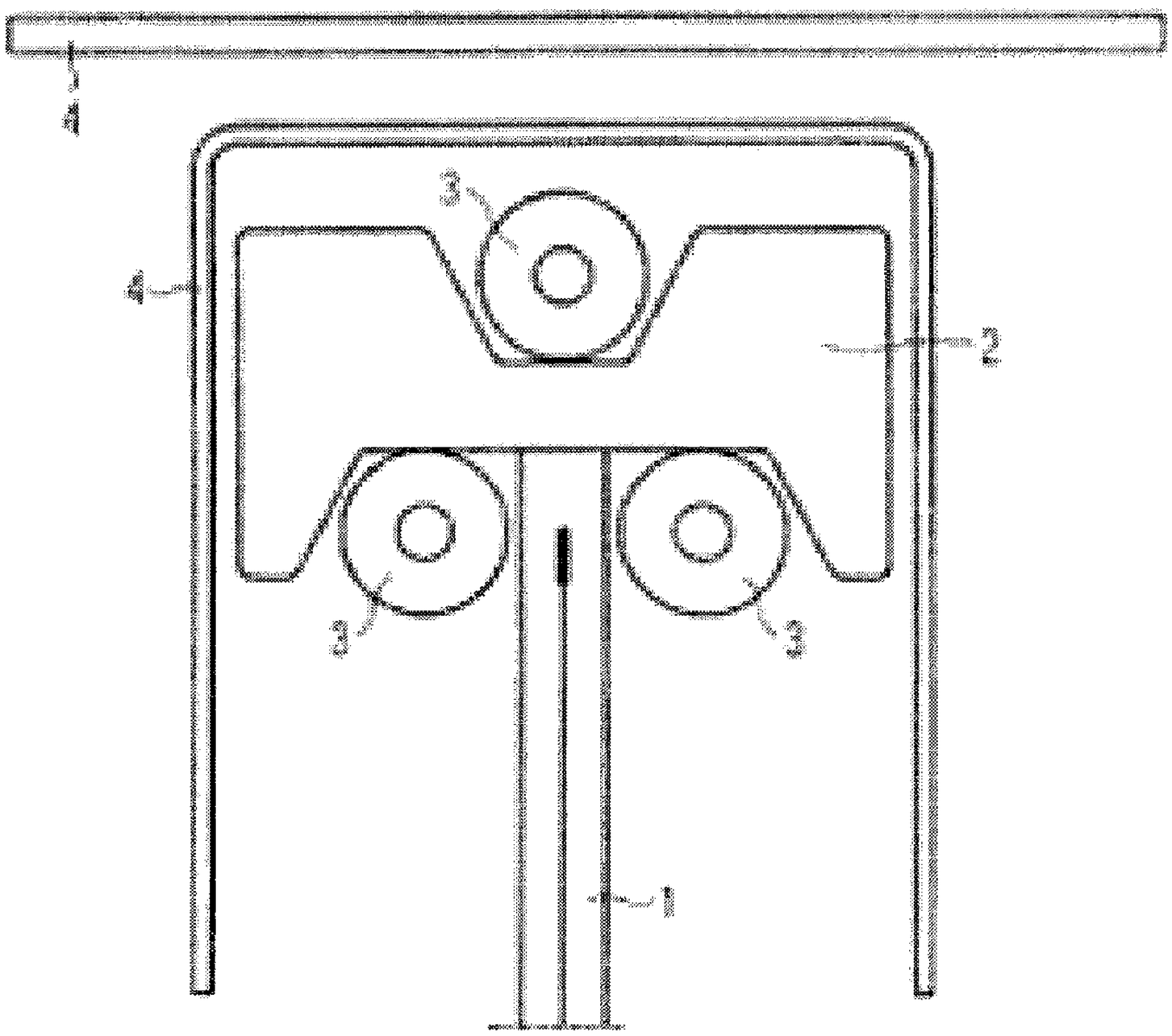
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(54) Titre : DISPOSITIF POUR REDUIRE L'INTENSITE DE CHAMP SUR UNE ELECTRODE
(54) Title: ARRANGEMENT FOR REDUCING THE FIELD STRENGTH ON AN ELECTRODE



(57) Abrégé/Abstract:
The invention relates to an arrangement for reducing the electric field strength on the face of an electrode (1), wherein the face of the electrode (1) is surrounded by at least one electric barrier (4) and a shielding electrode (3) having a defined voltage potential is arranged in the vicinity of the face of the electrode (1). By using a retaining element (2) that can be connected directly to the face of the electrode (1), the shielding wires (3) can be quickly and easily positioned and fixed relative to the face of the electrode (1) and the shielding electrode (3) relative to the face.

Abstract

The invention relates to an arrangement for reducing the electric field strength on the face of an electrode (1), wherein the face of the electrode (1) is surrounded by at least one electric barrier (4) and a shielding electrode (3) having a defined voltage potential is arranged in the vicinity of the face of the electrode (1). By using a retaining element (2) that can be connected directly to the face of the electrode (1), the shielding wires (3) can be quickly and easily positioned and fixed relative to the face of the electrode (1) and the shielding electrode (3) relative to the face.

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Arrangement for reducing the field strength on an electrode

The invention relates to an arrangement for reducing the electric field strength on an end face of an electrode, wherein the end face of the electrode is surrounded by at least one electrical barrier and a shielding electrode having a defined electrical voltage potential is arranged in the vicinity of the end electrode.

For shielding from high electric field strengths, at narrow electrical edges on account of the high electric field strengths use is made of so-called shielding wires for reducing the electric field strength. These shielding wires usually arranged singly or doubly reduce the field strength on a particular narrow electrode. For this purpose, the shielding wire is usually connected to an electrically effective barrier that runs parallel to the shield and likewise serves for fixing the exact position of the shielding wire relative to the electrode.

What is disadvantageous in this case is that high field strengths can nevertheless arise and a connection element between the barrier and the shielding wire is necessary, in which case the connection must be an electrical insulator.

It is an object of the present invention, therefore, to provide a possibility of enabling the shielding electrode to be positioned simply and rapidly relative to the electrode.
The invention provides for a holding element to be fitted to the electrode and for the shielding electrode to be positioned and fixed relative to the electrode

by the holding element. The use of a holding element that is in mechanical contact directly with the electrode enables a substantially simple and faster positioning of the shielding electrode relative to the end face of the electrode. Advantageously, the holding element is mechanically connected directly to the electrode.

One advantageous configuration of the invention provides for the holding element to be suitable for receiving a plurality of shielding electrodes. In particular by means of predetermined cutouts within the holding element or by means of corresponding shapings in the form of depressions on the outer side of the holding element, a simple positioning of the shielding electrodes relative to one another and relative to the electrode is possible by means of the holding element.

Advantageously, the holding element is arranged between the electrode and the barrier. Furthermore, it is advantageously provided that the barrier can be fixed to the holding element. The measure ensures that the barrier and the shielding electrodes can be positioned rapidly and simply relative to the end face of the electrode. In order to avoid electrical flashovers and short circuits, the holding element is at least partly produced from an electrical insulation material, in particular a pressboard.

It is advantageously provided that the barrier and/or the shielding electrodes can be inserted into the holding element. By means of this modular construction, the individual segments such as the holding element, the barrier and the shielding electrodes can be produced separately and be inserted one into another by means of a corresponding plug-in mechanism system and thus be positioned relative to one another. As an alternative, it is provided that the barrier and the shielding electrode are fixedly

connected to the holding element, such that here the entire unit comprising holding element, shielding electrodes and barriers can be placed as a whole onto the end face of the electrode.

The shielding electrode advantageously has a round or a polygonal cross section, wherein the holding element has a cutout accordingly corresponding to the cross section of the shielding electrode. Furthermore, in order to effectively reduce the field strengths on the end face of the electrode, the shielding electrodes can be arranged symmetrically or asymmetrically relative to the end face of the electrode.

The object is likewise achieved by means of a holding element for retaining a shielding electrode relative to an end face of an electrode, wherein according to the invention it is provided that the holding element can be connected to the electrode and the shielding electrode can thus be positioned and fixed relative to the end face of the electrode.

Advantageously, the shielding electrode can be inserted into the holding element with respect to predeterminable positions. As a result of this, the relative position of the shielding electrodes with respect to one another or relative to the end face of the electrode can already be defined during the production process. Furthermore, the holding element is advantageously composed of an electrical insulation material.

In accordance with this invention, there is provided an arrangement for reducing the electric field strength on an end face of an electrode, wherein the end face of the electrode is surrounded by at least one electrical barrier and a shielding electrode having a defined electrical voltage potential is arranged in the vicinity of the end face of the electrode, wherein a holding element is fitted to the electrode and the shielding electrode is positioned and fixed relative to the electrode by the holding element, and wherein the holding element comprises an electrical insulation material.

Further advantageous configurations of the invention are described in the dependent claims. The invention is explained in more detail with reference to the following drawings, in which:

figure 1 shows the prior art with regard to previous arrangements for reducing the electric field strength on the end face of an electrode;

figure 2 shows an arrangement according to the invention with three shielding electrode arranged asymmetrically with respect to the end face of an electrode.

figure 3 shows an arrangement according to the invention with a modular construction of the holding element for three shielding electrodes arranged asymmetrically with respect to the end face of an electrode.

Figure 1 shows, as a sectional drawing, the prior art for an arrangement for reducing the field strength on the end face of an electrode 1 with a doubly embodied shielding wire 3, wherein the shielding wire 3 is fixed above the end face of the electrode 1 on the barriers 4.

In contrast thereto, figure 2 shows, as a sectional drawing, a holding element 2 according to the invention, wherein, relative to the end face of the electrode 1, three shielding electrodes 3 are connected to the holding element 2. Furthermore, the holding element 2 serves for retaining the barriers 4, wherein the barrier 4 is now no longer only arranged exclusively on the end face of the electrode 1, but rather can also be arranged along the longitudinal side of the electrode 1. This is possible since the holding element 2 on the end face of the electrode 1 ensures sufficient mechanical stability for a corresponding barrier construction along, at least the upper part of, the electrode 1.

Figure 3 shows an arrangement according to the invention with a modular construction of the holding element 2 for three shielding electrodes 3 arranged asymmetrically with respect to the end face of an electrode 1, as a sectional drawing. The holding element 2 in accordance with

figure 3 comprises three partial elements 5a to 5c, which can be modularly connected to one another by means of suitable fixing elements such as, for example, screws or adhesives. By means of the modular construction of the holding element 2, not only is it possible for the shielding wires 3 to be connected to the holding element 2 more easily, but it is possible for the partial elements 5a to 5c to be produced separately and not to be assembled until at the installation location of the arrangement.

In accordance with the exemplary embodiment in figure 3, the holding element 2 comprises two partial elements 5b and 5c embodied as insulation bodies and one tubular partial element 5a as part of an outer wall 6 around the electrode 1. The partial elements 5b and 5c can either be connected by means of suitable fixing elements, for example by means of screws, or can be plugged together and thus connected to one another by means of suitable surface shapings, for example a tongue-and-groove joint. The same applies to the further tubular partial element 5a shown in the sectional drawing in figure 3, which can be connected to the rest of the partial elements 5b and 5c by means of suitable fixing elements and thus forms the holding element 2.

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CLAIMS:

1. An arrangement for reducing the electric field strength on an end face of an electrode, wherein the end face of the electrode is surrounded by at least one electrical barrier and a shielding electrode having a defined electrical voltage potential is arranged in the vicinity of the end face of the electrode, wherein a holding element is fitted to the electrode and the shielding electrode is positioned and fixed relative to the electrode by the holding element, and wherein the holding element comprises an electrical insulation material.

2. The arrangement as claimed in claim 1, wherein the holding element is suitable for receiving at least two shielding electrodes.

3. The arrangement as claimed in either of claims 1 and 2, wherein the holding element is arranged between the electrode and the barrier.

4. The arrangement as claimed in any of claims 1 to 3, wherein the barrier can be fixed to the holding element.

5. The arrangement as claimed in any of claims 1 to 4, wherein the shielding electrode is electrically connected to the electrode.

6. The arrangement as claimed in any of claims 1 to 5, wherein the electrical insulation material, is a pressboard.

7. The arrangement as claimed in any of claims 1 to 6, wherein the barrier and/or the shielding electrode can be inserted into the holding element.

8. The arrangement as claimed in any of claims 1 to 6, wherein the barrier and/or the shielding electrode are fixedly connected to the holding element.

9. The arrangement as claimed in any of claims 1 to 8, wherein the shielding electrode has a round or a polygonal cross section.

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10. The arrangement as claimed in any of claims 1 to 9, wherein at least two shielding electrodes are arranged symmetrically or asymmetrically relative to the end face of the electrode.

11. A holding element for retaining a shielding electrode relative to an end face of an electrode, wherein the holding element can be connected to the electrode and the shielding electrode can thus be positioned and fixed relative to the end face of the electrode.

12. The holding element as claimed in claim 11, wherein the shielding electrode can be inserted into the holding element with respect to predeterminable positions.

13. The holding element as claimed in either of claims 11 and 12, wherein the holding element comprises an electrical insulation material.

14. The holding element as claimed in any of claims 11 to 13, wherein the holding element can be composed from partial elements, wherein the partial elements can be connected to one another by means of suitable fixing elements.

FIG 1
(Prior art)

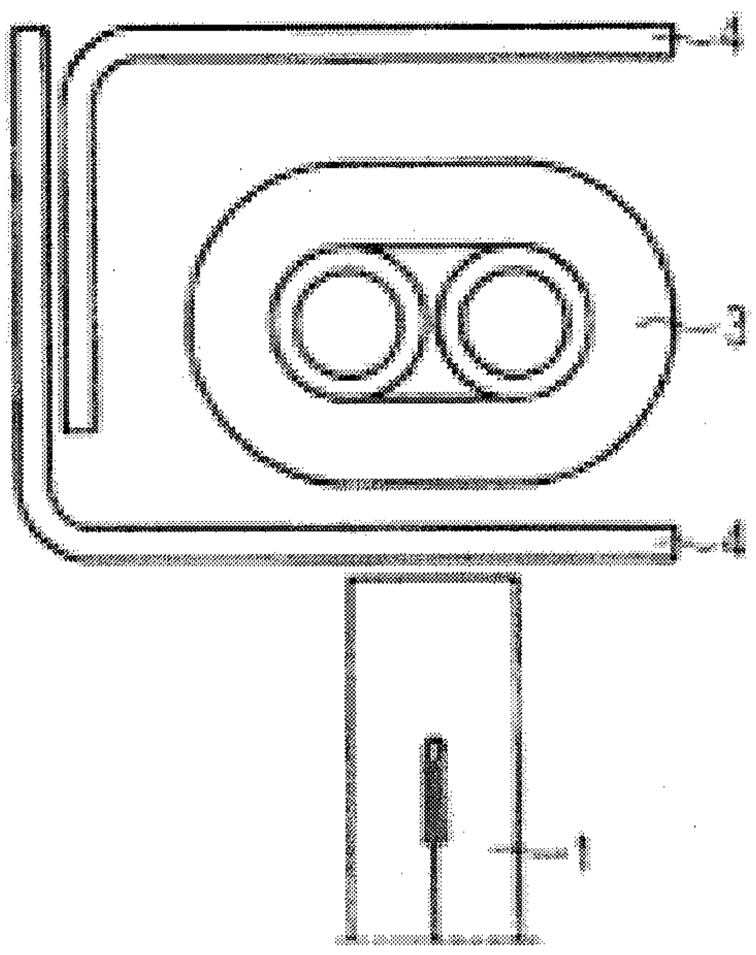


FIG 2

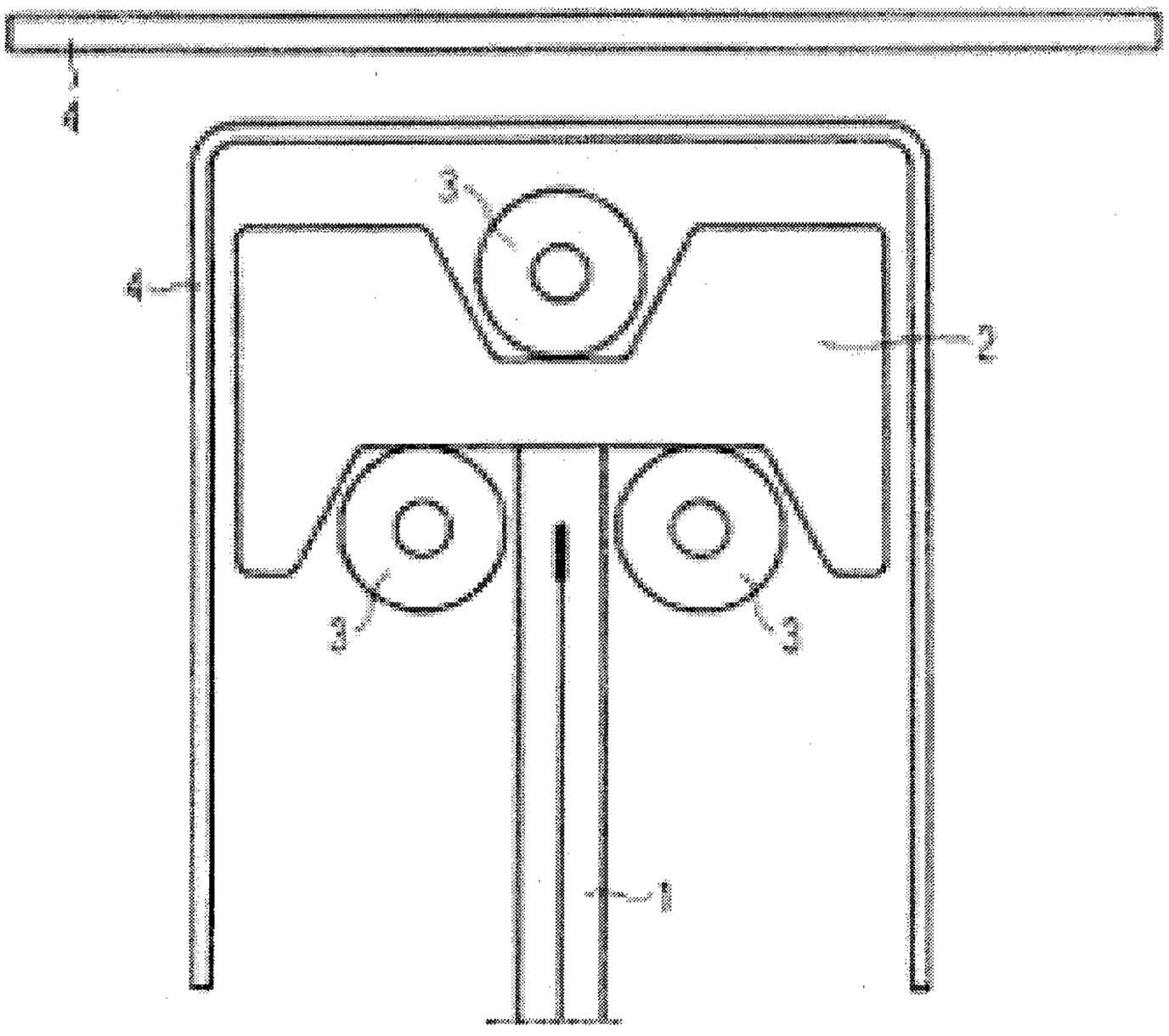
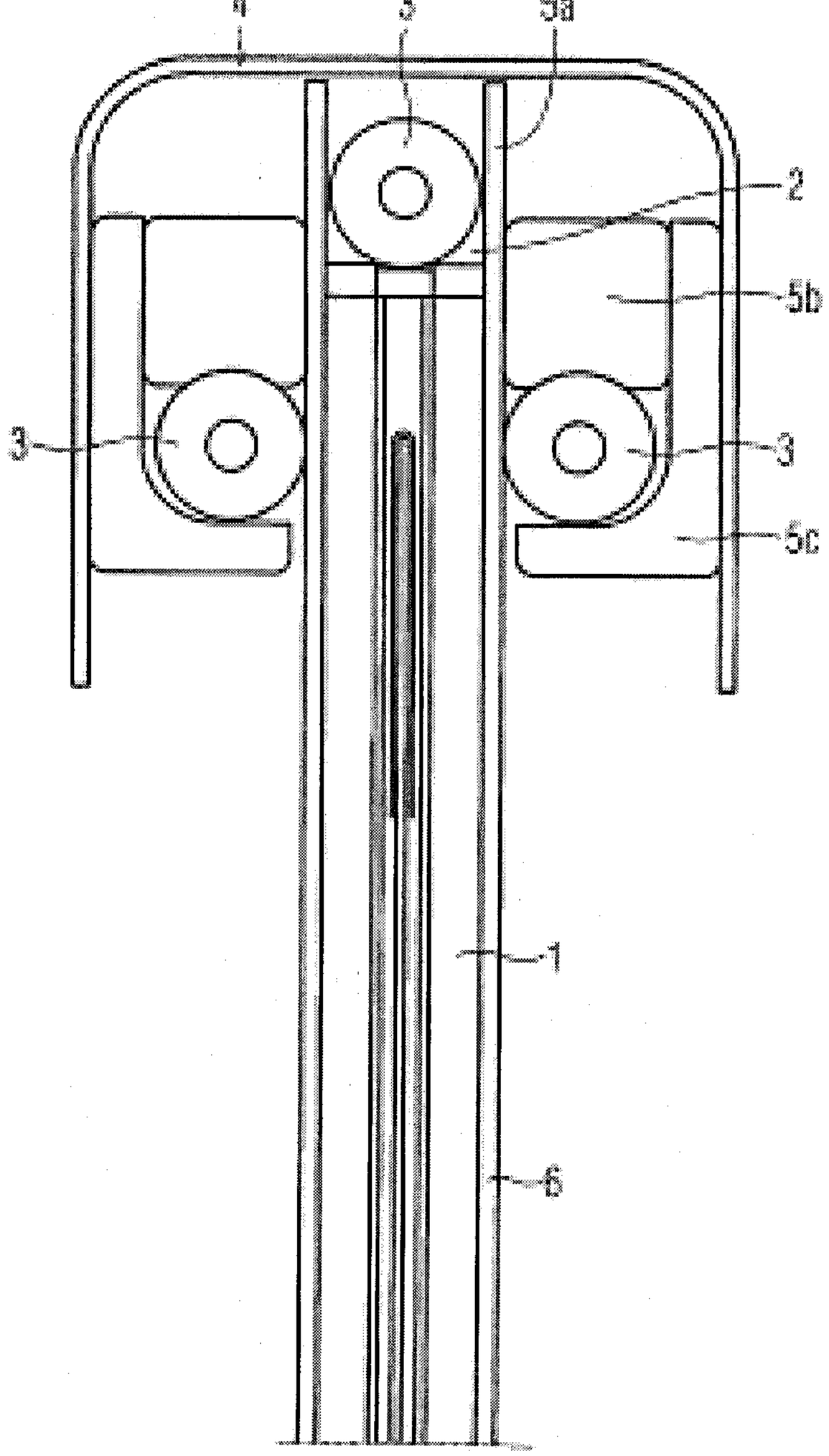
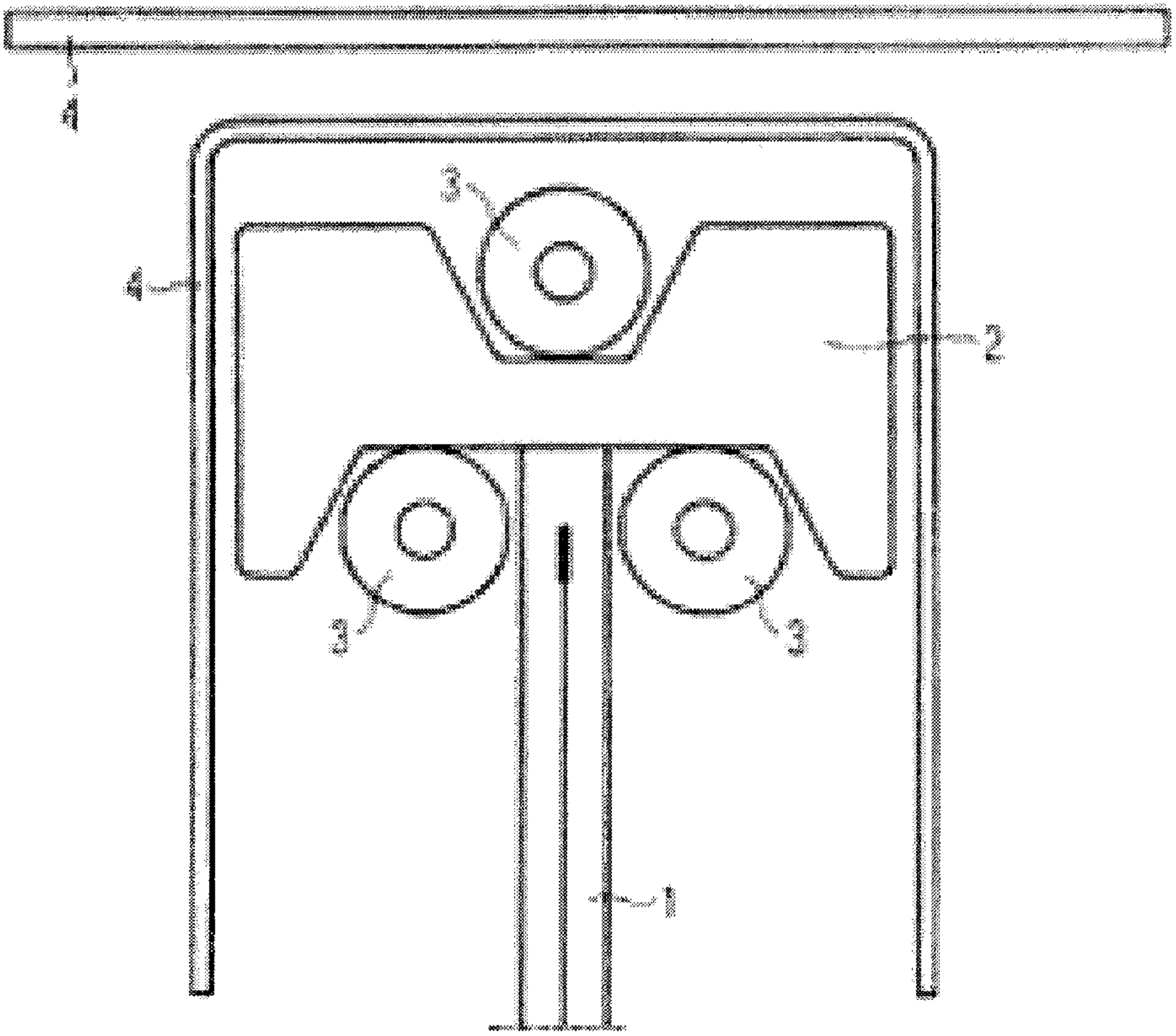


FIG 3




4
3
4
2
1