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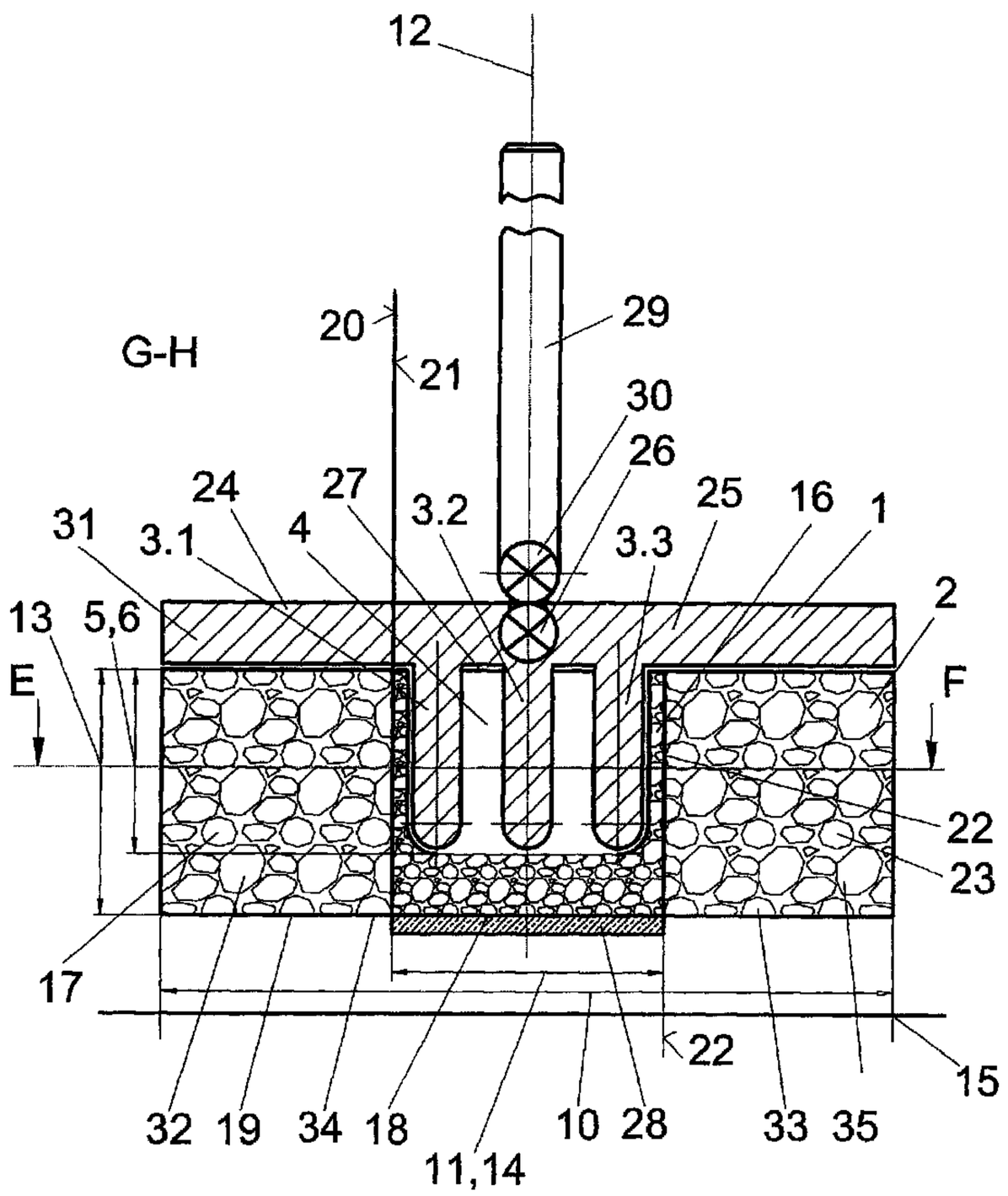
(54) Title: CLEANING APPLIANCE WITH A CLEANING SPONGE FOR FLOORS, WALLS AND/OR WINDOWS



(57) Abrégé/Abstract:
A cleaning appliance comprises a supporting element (1) linked to a cleaning sponge (2). The supporting element (1) has on its side facing the cleaning sponge (2) at least two stamp-shaped projections (3.1, 3.2, ... , 3.n) arranged in a single common recess (4) of the cleaning sponge (2).

ABSTRACT

A cleaning appliance comprises a supporting element (1) linked to a cleaning sponge (2). The supporting element (1) has on its side facing the cleaning sponge (2) at least two stamp-shaped projections (3.1, 3.2, ...3.n) arranged in a single common recess (4) of the cleaning sponge (2).

CLEANING DEVICE

Field of the Invention

The invention relates to a cleaning device.

Cleaning devices are generally known and include, for example, a support body which is connected with a cleaning sponge. The cleaning sponge consists, for example, of a polyurethane film with constant thickness and is in the form of a rectangular prism.

The contact pressure exerted by the user onto the cleaning device is essentially the same over the whole cleaning surface of the cleaning sponge because of the constant thickness within the whole cleaning sponge and the construction in the shape of a rectangular prism.

More strongly adhered dirt on the surface to be cleaned must be removed by repeatedly back and forth wiping and by exertion of a highly increased force onto the cleaning sponge by the user.

Summary of the Invention

It is an object of the invention to further develop a cleaning device of the above mentioned type in such a way that strongly adhered dirt on the surface to be cleaned can be more easily removed in part faster and/or with less effort by the user, and that the cleaning device can be easily and cost effectively manufactured.

This object is achieved in accordance with the invention with the features of claim 1. Preferred embodiments are defined in the dependent claims.

A cleaning device is provided for the achievement of this object which includes a support body which is connected with a cleaning sponge, whereby the support body has at least two stamp-shaped projections on the side facing the cleaning sponge which are positioned in a single common recess of the cleaning sponge. It is hereby advantageous that the projections oriented towards the surface to be cleaned have a smaller spacing from the surface to be cleaned than the adjacent portions of the support body; in other words: the cleaning sponge has a height between the surface to be cleaned and the projection which is smaller than the height of the cleaning sponge in the regions adjacent the projection.

If strongly adhered dirt is to be removed from the surface to be cleaned with the cleaning device in accordance with the invention, this is achieved comparatively

easily in that pressure is exerted with only slightly increased effort by the user onto the surface to be cleaned through the supporting body and the cleaning sponge. Since the height of the cleaning sponge between the surface to be cleaned and the front end of the projections facing the surface to be cleaned is smaller than the total height of the cleaning sponge, an only slightly increased force is sufficient to exert in the region of the projections/the recess a specifically increased contact pressure onto the surface to be cleaned, whereby the specifically higher surface pressure in the region of the projections/the recess has the effect that even strongly adhered dirt can be removed without problem from the surface to be cleaned.

Preferably, all projections have a corresponding height or are of corresponding construction. With respect to manufacturing technology, this makes the cleaning device easy and cost efficient to manufacture.

The projections can have a height which corresponds to the height of the recess. With such a construction, the end surface of the projections opposite the cleaning sponge rests directly on the floor of the recess of the cleaning sponge, for example with a small elastic preload. During cleaning of a soiled surface, the increase of the contact pressure by the user is thereby directly and immediately transferred to the surface to be cleaned. Different heights of the projections and the recess are also possible, depending on the respective parameters of the application.

In top view of the cleaning sponge, the recess can be essentially square. A good size of the recess for many of the applications is about 4 x 4 inch. Different therefrom , the recess can also be rectangular or round when seen in plan view of the cleaning sponge. The size of the recess is respectively selected such that the specific surface pressure with which the projections and the cleaning sponge are forced onto the surface to be cleaned in this region is sufficiently large for a removal of even more strongly adhered from the surface to be cleaned without problem and with normal force input. Recesses which in plan view have a different shape, for example rectangular or round, can be advantageous for special applications.

The recess can be surrounded by an outer peripheral, circumferential and continuous edge. It is thereby advantageous that the projections are also surrounded at their circumference by the edge. The projections thereby do not come into direct contact with surfaces to be cleaned and/or with sensitive baseboards during the intended use.

The recess can be tub shaped when viewed in the longitudinal section of the cleaning sponge. The manufacturer of a tub shaped recess can be cost efficiently carried out, since more expensively manufactured sharp corners of the recess which are however unnecessary for the function can be avoided.

In contrast to the above described outer peripheral, circumferentially and continuous edge of the recess, the recess when viewed in cross-section of the cleaning sponge, can be open at the longitudinal sides of the cleaning sponge. This further simplifies the manufacture. A sponge type, plate shaped semifinished product can be processed by a rotor or planar tool in such a way that it subsequently has one recess over the whole length which is open in the direction of working. Subsequent to the manufacture of the recess, the semifinished product is tailored. This is achieved in that cleaning sponges ready for use are cut out of the semifinished product; the semifinished product is cut to length, for example, transverse to the direction of working, so that a cleaning sponge ready for use is created. It is not disadvantageous for most applications when the recess is open in the region of the longitudinal sides of the cleaning sponge; the manufacture is however significantly simplified and clearly more cost efficient with such a construction.

The ratio of the length of the cleaning sponge to the length of the recess is preferably 3:1. Such a ratio is advantageous for the handling and function of a cleaning device. If the ratio were smaller, the cleaning surface of the cleaning sponge under the recess relative to the total cleaning surface of the cleaning sponge would be too large and the user could only insufficiently exert a contact pressure onto the cleaning surface with normal force input. In contrast, if the ratio would be larger, one would have to wipe back and forth many times for the cleaning of strongly soiled areas, because of the only small cleaning surface in the region of the recess, which would be disadvantageous with respect to a good, efficient cleaning of the surface to be cleaned.

The cleaning sponge and the recess are preferably symmetric to an imaginary plane transversely dissecting the cleaning sponge at half the length. The symmetry supports a simple handling of the cleaning device, since the properties of use of the cleaning device can be well predicted by the user because of its symmetry.

The ratio of the height of the recess to the height of the cleaning sponge is preferably 0.3 to 0.95.

When the ratio of the height of the recess to the height of the cleaning sponge is close to 1, this means that the remaining height of the cleaning sponge between the cleaning surface of the cleaning sponge and the front end of the projections is only very small. Although it is advantageous that the force of the user can thereby be exerted almost directly onto the surface to be cleaned and without loss, it is however a disadvantage that the cleaning sponge in the region of its only small height is exposed to a high mechanical load and is thereby used up relatively fast and that the danger of damage to the surface to be cleaned exists in the case of damage to the cleaning sponge in the region of the projections.

For example, if the ratio is 1, the cleaning sponge has a cleaning cloth on the surface facing the surface to be cleaned, preferably made of micro-fibers, whereby the projection upon pressure onto the cleaning sponge then directly act on the cleaning cloth.

It has proven advantageous for most applications when the ratio of the height of the recess to the height of the cleaning sponge is 0.5 to 0.75. In such an embodiment, a very good compromise is achieved between the increased cleaning performance in the region of the projections on the one hand and the durability of the cleaning sponge in this region on the other hand.

The recess is positioned in only a section of the cleaning sponge and that section forms a power zone with higher cleaning power, relative to the regions of the cleaning sponge adjacent to this section. It is thereby advantageous that the force exerted by the user, relative to the total cleaning surface, is exerted in a smaller section so that a specifically higher force acts onto the surface to be cleaned. Most strongly adhered dirt can thereby be removed well with the same force input. Furthermore, such an embodiment has the advantage that in the regions adjacent to this section the full height of the cleaning sponge is available and therefore a large volume which serves as a reservoir for the cleaning liquid.

The cleaning sponge can be made of polyurethane (PU). It is thereby advantageous that the cleaning sponge has a good durability even under strong mechanical load.

According to another embodiment, it is possible that the cleaning sponge is made of polyvinylalchol (PVA). Instead, the cleaning sponge can be made, for example, of cellulose.

PVA as well as cellulose have the advantage compared to cleaning sponges made of PU that they can take up and store larger amounts of cleaning liquid and that the cleaning performance is improved compared to cleaning sponges made of PU.

The cleaning sponges consist, for example, only of cellulose or only of polyurethane. It is however a disadvantage of this uniform material construction of the sponge, especially when the cleaning sponge is used in connection with a winged mop, that the cleaning sponge of cellulose in the dry condition is not bendable without damage or only with difficulty and that sponges made of polyurethane have only a comparatively low cleaning performance and therefore cannot take up dirt very well.

To overcome the mentioned disadvantages, the cleaning sponge includes at least two partial cleaning sponges with a respective cleaning surface, whereby the partial cleaning sponges are made of mutually different materials and are positioned side by side as well as connected to one another, whereby the first partial cleaning sponge has a higher pliability than the second, respectively in the dry condition.

It is an advantage of such a construction that the cleaning sponge can be well adapted to the respective parameters of the application and can be easily handled in connection with a winged mop. The winged mop is then easily handled even when the cleaning body is dry or substantially dry without damaging or destroying the cleaning sponge.

By functionally individualizing the cleaning sponge, the partial cleaning sponges are constructed such that they are respectively suited for the achievement of the partial tasks. The cleaning sponge is pliable especially well in the region of the first partial cleaning sponge, so that it can be used even in connection with a winged mop and the winged mop can be operated without problem even in the dry condition of the cleaning sponge, without destruction of or damage to the cleaning sponge.

The material of the second partial cleaning sponge can be adapted for an especially good cleaning performance, without having to take into consideration whether or not it is pliable in the dry condition.

An excellent function of the folding mechanism of a winged mop in the dry condition is ensured with the first partial cleaning sponge, even when the cleaning sponge is dry or only slightly damp.

The first partial cleaning sponge preferably consists of polyurethane (PU). It is thereby advantageous that the first partial cleaning sponge, irrespective whether it is dry or wet is always well pliable/foldable and therefore even in the dry or substantially dry condition does not negatively influence the function of the winged mop to which the cleaning sponge is connected, preferably for removal without damage. The durability of such a cleaning sponge is good, since polyurethane has a comparatively high resistance against mechanical loads, even when an increased contact force is exerted by the user onto the first partial cleaning sponge.

The second partial cleaning sponge preferably consists of cellulose in a first preferred embodiment. It is thereby advantageous that the second partial cleaning sponge has good use properties with respect to its cleaning performance, since cellulose takes up soiling especially well. Although partial cleaning sponges made of cellulose have only a small pliability in the dry condition this is not disadvantageous in the cleaning sponge in accordance with the invention and during its application in a winged mop, since the significantly more flexible first partial cleaning sponge in the region of the joint before the wings is provided for the pliability.

According to a second preferred embodiment, the second partial cleaning sponge is made of a polyvinyl alcohol. In contrast to a second partial cleaning sponge made of cellulose, the second partial cleaning sponge consisting of PVA has the advantage that the pore size of the second partial cleaning sponge can be adjusted very well to the respective parameters of the application. The water absorption of PVA is furthermore often somewhat higher than the water absorption of cellulose.

The partial cleaning sponges are respectively made in one piece and of the one material. Such a construction is of significant importance for the first partial cleaning sponge, since this ensures that each section of the first partial cleaning sponge has the same advantageous pliabiity; the disadvantages with respect to the flexibility which would result, for example, from a material mix in the first partial cleaning sponge are thereby avoided, for example, if the latter were constructed in layers from the surface to be cleaned towards the support body of the winged mop.

The respective cleaning sponges can be essentially shaped as a rectangular prism and connected with one another on their respectively opposite face surfaces. The cleaning

sponge is thereby divided into functional zones, whereby each functional zone corresponds to a partial cleaning sponge.

According to an especially advantageous embodiment, it is provided that a third partial cleaning sponge is positioned on the end face of the first partial cleaning sponge directed away from the second partial cleaning sponge and connected with the first partial cleaning sponge. More preferably, the second and third partial cleaning sponge are constructed of corresponding shape and/or material. The handling is simplified through the symmetry of the cleaning sponge with respect to the first partial cleaning sponge. For different applications, it can be provided that the second and third cleaning sponges are of corresponding shape but are different from one another with respect to the material. The second partial cleaning sponge can thereby for example, have a more abrasive cleaning action than the third, whereby the third partial cleaning sponge, for example, has larger flexibility than the second partial cleaning sponge. The cleaning sponge is thereby, adapted to the respective parameters of the application. It is however also possible to make the second and third partial cleaning sponges of the same material, whereby the shape is different. For example, the second partial cleaning sponge could be rounded on the end face directed away from the first partial cleaning sponge, while the third partial cleaning sponge has corners on the end face directed away from the first partial cleaning sponge.

Only the cleaning surface of the first cleaning sponge portion can have a micro-fiber wiping cover on the side directed away from the corresponding surface. The wiping cover is advantageous, since especially when the first cleaning sponge portion is made of PU, it has only a comparatively small cleaning power relative to cellulose. In order to combine the excellent flexibility of the PU material of the first cleaning sponge portion on the one hand with a good cleaning power on the other hand, the micro-fiber wiping cover is advantageous. The micro-fiber wiping cover is in the form of a cloth and has a negligibly small thickness compared to the thickness of the first cleaning sponge portion, so that the flexibility of the first cleaning sponge portion is not negatively affected by the use of the micro-fiber cleaning cover.

The cleaning cover can, for example, also be made of a material other than micro-fiber. When it is necessary to use a material which is more abrasive, a wiping cover can be used which is made of one part micro-fiber and one part viscose.

According to another embodiment, the cleaning sponge can be constructed in layers and include at least two layers which extend extensionally parallel to the supporting

body. Such a layer construction is simply and cost efficiently manufactured. Furthermore, a comparatively large cleaning surfaces made available which because of its unitary material provides overall corresponding cleaning properties.

One of the layers can be made of PU and one of the layers of cellulose. Generally different therefrom, layers of other materials are also possible, depending on the application.

Preferably, the layer directed towards the supporting body is made of PU; as a result, the layer directed towards the surface to be cleaned would be made of cellulose.

Cellulose has the advantage that it can take up and store larger amounts of cleaning fluid and that it has an improved cleaning performance, relative to a cleaning surface made of PU.

The cleaning sponge can consist, for example, of 50% PU and 50 of cellulose. Such a cleaning sponge has good all around properties.

A differing percentage-wise distribution can be provided for special applications.

The recess is preferably positioned only in the layer directed towards the supporting body and further preferably formed as a cutout. It is hereby advantageous that such a cleaning sponge can be easily and cost efficiently manufactured. The recess formed as cutout is, for example, cost efficiently and easily stamped out of the upper layer of the cleaning sponge.

The lower layer in contrast remains without recess/cutout.

The layers can be adhered to one another on their respectively opposing sides. Such an adhesion is easily and cost efficiently carried out.

The supporting body has at least two wings which are foldably connected with one another by a hinge-type joint, whereby the joint is positioned exclusively in the region of the surface of the first cleaning sponge portion. A winged mop with such a cleaning sponge has the advantage that the folding mechanism of the winged mop functions well even when the cleaning sponge is dry or only slightly dampened. This is achieved in that the first cleaning sponge portion of the cleaning mop has a good pliability which is at least substantially consistent, irrespective of whether the first cleaning sponge portion is dry, damp or wet.

In such a construction, the material PU is especially advantageous for the first cleaning sponge portion, since PU has a significantly higher tear strength than cellulose

which results in a higher durability for the cleaning sponge even under high mechanical load by the projections.

The support body is preferably made of a polymeric material. It is thereby advantageous that such a support body has only a small mass and is resistant to a plurality of cleaning liquids.

The projections can be a unitary component of and made of the same material as the support body. Such a construction is of noticeable advantage with respect to a simple and cost effective manufacture of the surface cleaning device, since the whole support body including its projections can be made in one process step.

When the projections are made of an elastomeric material, their elastic flexibility is achieved by the elastomeric material itself. In contrast, when the projections are made in one piece with and of the same material as the support body, the projections can, for example, in a portion of their axial extent be bellows-shaped and can take up forces which are too high and disadvantageously high for the surface to be cleaned by elastic deformation.

The support body and the cleaning sponge are preferably connected to be disconnected without damage. It is hereby advantageous that the support body and the cleaning sponge can be respectively recycled true to type. The cleaning sponge, which is subject to a higher wear than the support body, can also be exchanged without problem by way of the above described construction. The connection between support body and cleaning sponge can be force and/or form fitting. One possible fastening arrangement is a hook and loop closure with which the cleaning sponge is fastened to the support body.

On the side directed away from the cleaning sponge, the support body can be provided with a handle. The surface cleaning device thereby has the shape of a mop or broom and can be used by the user for the effortless cleaning of floors.

A further improved handling of the surface cleaning device can be achieved in that the support body and the handle are movably connected with one another by way of a joint. The support body and the handle can thereby be moved cardanically in relation to one another, for example.

Brief Description of the Drawings

Exemplary embodiments of the cleaning device in accordance with the invention

are further described in the following by way of the Figures 1 and 2, 3 and 4 as well as 5. In schematic illustration,

Fig. 1 shows a cross-section C-D through the cleaning device according to Figure 2,

Fig. 2 shows a cross-section A-B through the cleaning device of Figure 1,

Fig. 3 shows a section G-H through the cleaning device according to Figure 4,

Fig. 4 shows a cross-section E-F through the cleaning device according to Figure 3,

Fig. 5 shows a cross-section through a further cleaning device.

Detailed Description of the Invention

An exemplary embodiment of a cleaning device as shown in Figures 1 and 2. In both exemplary embodiments, seven stamp-shaped projections 3.1, 3.2, … 3.7 are provided which are positioned in a single, common recess 4 in the cleaning sponge 2. The projections 3.1, 3.2, … 3.7 are of corresponding construction and height. The height of the projections 3.1, 3.2, …3.7 corresponds to the height of the recess 4, whereby the recess 4 in the two illustrated exemplary embodiments is rectangular as illustrated in Fig. 2 or square as illustrated in Fig. 4. In both exemplary embodiments, the recess 4, viewed in longitudinal section of the cleaning sponge 2, is tub shaped, whereby the ratio of the length 10 of the cleaning sponge 2 to the length 11 of the recess 4 is about 3:1 in both exemplary embodiments. Furthermore, the cleaning sponge 2 and the recess 4 are constructed symmetrical to an imaginary plane 12 transversely cross-sectioning the cleaning sponge 2 at half the length 10, whereby the portion 14 of the cleaning device is constructed as a power zone with increasing cleaning performance.

In the illustrated exemplary embodiment, the recess 4 is constructed tub shaped when viewed in the illustrated longitudinal section of the cleaning sponge 2. This provides an especially good compressibility of the cleaning sponge 2 in the sub-area 14 between the front end of the projections 3.1, 3.2 …3.7, in order to guarantee a thorough cleaning of the surface 15 to be cleaned.

The recess in this exemplary embodiment is surrounded by an outer peripheral, continuous edge 7, but can also be open, as shown in Fig. 4, in the region of the longitudinal sides 8, 9.

In the illustrated exemplary embodiment, the support body 1 is connected with the handle 29 by a cardanic joint 30 and is therefore useable as a floor cleaning device.

In the sub-area 14 in which the projections 3.1, 3.2, ... 3.7 are placed within the recess 4, the cleaning surface 34 of the cleaning sponge 2 is provided with a micro-fiber wiping cover 28.

Figure 2 illustrates the cross-section A-B from Figure 1. The seven projections 3.1, 3.2 ... 3.7 are shown in cross-section within the recess 4.

The exemplary embodiment of Figures 3 and 4 is distinguished from the exemplary embodiment of Figures 1 and 2 in that the cleaning sponge 2 includes 3 partial cleaning sponges 16, 17, 23, which respectively have cleaning surfaces 18, 19, 35, whereby the partial cleaning sponges 16, 17, 23 are made of respectively different materials and are positioned side-by-side and connected with one another. The first partial cleaning sponge 16 consists of PU and has a higher flexibility than the second 17 and the third partial cleaning sponge 23, respectively in the dry condition. The second and third partial cleaning sponges 17, 23 respectively consist of cellulose and are correspondingly constructed with respect to shape and material.

The first partial cleaning sponge 16 has the above mentioned sub-area 14, whereby only the cleaning surface 18 of the first partial cleaning sponge 16 has a micro-fiber cleaning cover 28 on the side directed away from the surface 27. The cleaning device of Figures 3 and 4 is constructed as a winged mop, whereby the support body 1 has two wings 24, 25 which are foldably connected with one another by a first hinge-type joint 26. The first joint 26 is exclusively positioned in the region of the surface 27 of the first partial cleaning sponge 16.

In this exemplary embodiment, the recess 4 is open in the region of the longitudinal sides 8, 9 of the cleaning sponge, but can also be surrounded by an outer peripheral, continuous edge 7, as shown in Fig. 2.

The construction of the cleaning sponge in accordance with the invention can be used not only for support bodies which are foldable about an axis transverse to the longitudinal axis of the support body (as illustrated). Support bodies which have a joint

that extends parallel to the longitudinal axis or corresponds to the longitudinal axis can also be provided with the cleaning sponge; the three partial cleaning sponges then extend, for example, parallel to the longitudinal axis of the support body.

A further exemplary embodiment is illustrated in Fig. 5 wherein the cleaning sponge 2 is constructed in layers and has at least two layers 36, 37. The layers 36, 37 extend parallel to the supporting body 1.

The layer 36 directed towards the supporting body consists of PU and the layer 37 directed away from the supporting body of cellulose.

In the exemplary embodiment illustrated here, the cleaning sponge 2 consists of 50% PU and 50% cellulose, whereby the recess 4 is positioned only in the layer 36 directed towards the supporting body 1. The recess 4 is constructed as a cutout so that it can be cost efficiently produced, for example by stamping out.

The layers 36, 37 are adhered with one another on their respectively opposing sides.

The illustrated cleaning device can be used, for example, as floor, wall and/or window cleaning device.

CLAIMS:

1. Cleaning device, comprising a support body (1) which is connected with a cleaning sponge (2), whereby the support body (1) on the side directed towards the cleaning sponge (2) is provided with at least two stamp-shaped projections (3) which are positioned in a single common recess (4) of the cleaning sponge (2).

2. Cleaning device according to claim 1, characterized in that all projections (3.1, 3.2, ...3.n) have a corresponding height (5) or are of corresponding construction.

3. Cleaning device according to one of claims 1 or 2, characterized in that projections (3.1, 3.2 ...3.n) have a height (5) which corresponds to the height (6) of the recess (4).

4. Cleaning device according to any one of claims 1 to 3, characterized in that the recess (4) when viewed in plan view of the cleaning sponge (2) is essentially square.

5. Cleaning device according to any one of claims 1 to 4, characterized in that the recess (4) is surrounded by a continuous edge (7) extending around the outer periphery.

6. Cleaning device according to any one of claims 1 to 5, characterized in that the recess (4) is constructed tub shaped when viewed in longitudinal section of the cleaning sponge (2).

7. Cleaning device according to any one of claims 1 to 6, characterized in that the recess (4) when viewed in cross-section of the cleaning sponge (2) is open at the longitudinal sides (8, 9) of the cleaning sponge (2).

8. Cleaning device according to any one of claims 1 to 8, characterized in that the ratio of the length (10) of the cleaning sponge (2) to the length (11) of the recess (4) is 3:1.

9. Cleaning device according to any one of claims 1 to 8, characterized in that the cleaning sponge (2) and the recess (4) are symmetric to an imaginary plane (12) transversely dissecting the cleaning sponge (2) at half the length (10).

10. Cleaning device according to any one of claims 1 to 9, characterized in that the ratio of the height (6) of the recess (4) to the height (13) of the cleaning sponge (2).

11. Cleaning device according to any one of claims 1 to 10, characterized in that the recess (4) and the projections (3.1, 3.2, ...3.7) positioned in the recess (4) form only a sub-area (14) of the cleaning device which is constructed as a power zone with increased cleaning performance.

12. Cleaning device according to any one of claims 1 to 11, characterized in that the cleaning sponge (2) is made of polyurethane (PU).

13. Cleaning device according to any one of claims 1 to 11, characterized in that the cleaning sponge (2) is made of polyvinyl alcohol (PVA).

14. Cleaning device according to any one of claims 1 to 11, characterized in that the cleaning sponge (2) is made of cellulose.

15. Cleaning device according to any one of claims 1 to 14, characterized in that the cleaning sponge (2) includes at least two partial cleaning sponges (16, 17) with respectively one cleaning surface (18, 19), whereby the partial cleaning sponges (16, 17) are made of mutually different materials and are positioned side by side as well as connected with one another, whereby the first partial cleaning sponge (16) has a higher pliability than the second (17), respectively in the dry condition.

16 Cleaning device according to any one of claims 1 to 15, characterized in that the sub-area (8) is a part of the first partial cleaning sponge (16).

17. Cleaning device according to any one of claims 1 to 16, characterized in that only the first partial cleaning sponge (16) is made of polyurethane (PU).

18. Cleaning device according to any one of claims 1 to 17, characterized in that the second partial cleaning sponge (17) is made of cellulose.

19. Cleaning device according to any one of claims 1 to 18, characterized in that the partial cleaning sponges (16, 17) are respectively made in one piece and of the same material.

20. Cleaning device according to any one of claims 1 to 19, characterized in that the partial cleaning sponges (16, 17) are respectively essentially in the shape of a rectangular prism and are connected with one another at their respectively opposing ends (20, 21).

21. Cleaning device according to any one of claims 1 to 20, characterized in that a third partial cleaning sponge (23) is positioned at the end (22) of the first partial cleaning sponge (16) directed away from the second partial cleaning sponge (17) and connected with the first partial cleaning sponge (16).

22. Cleaning device according to any one of claims 1 to 21, characterized in that the second (17) and the third partial cleaning sponge (23) are of corresponding shape and/or material.

23. Cleaning device according to any one of claims 1 to 22, characterized in that only the cleaning surface (18) of the first partial cleaning sponge (16) is provided on the side directed towards the surface (15) to be cleaned with a micro-fiber wiping cover (28).

24. Cleaning device according to any one of claims 1 to 14, characterized in that the cleaning sponge (2) is constructed in layers and includes at least two layers (36, 37) which extend essentially parallel to the supporting body brackets (1).

25. Cleaning body according to claim 24, characterized in that one of the layers (36) is made of PU and one of the layers (37) is made of cellulose.

26. Cleaning device according to claim 25 or 25, characterized in that the layer (36) directed towards the supporting body (1) consists of PU.

27. Cleaning device according to any one of claims 24 to 26, characterized in that the cleaning sponge (2) consists of 50% PU and 50% cellulose.

28. Cleaning device according to any one of claims 24 to 27, characterized in that the recess (4) is only provided in the layer (36) directed towards the supporting body brackets (1).

29. Cleaning device according to any one of claims 24 to 28, characterized in that the recess (4) is constructed as a cutout.

30. Cleaning device according to any one of claims 24 to 29, characterized in that the layers (36, 37) are adhered to one another on their mutually opposing sides.

31. Cleaning device according to any one of claims 1 to 30, characterized in that the support body (1) includes at least two wings (24, 25) which are foldably connected with one another by a hinge-type first joint (26), whereby the first joint (26) is positioned exclusively in the area of the surface (27) of the first cleaning sponge portion (16).

32. Cleaning device according to any one of claims 1 to 31, characterized in that the support body (1) is made of a polymeric material.

33. Cleaning device according to any one of claims 1 to 32, characterized in that the projections (3, 3.1, 3.2, ...) form an integral part of and are made of the same material as the support body (1).

34. Cleaning device according to any one of claims 1 to 33, characterized in that the support body (1) and the cleaning sponge (2) are connected for disconnection without damage.

35. Cleaning device according to any one of claims 1 to 34, characterized in that the support body (1) has a handle (29) on the side directed away from the cleaning sponge (2).

36. Cleaning device according to any one of claims 1 to 35, characterized in that the support body (1) and the handle (29) are jointedly connected with one another by a second joint (30).

37. Cleaning sponge for a cleaning device according to any one of claims 1 to 36, having only a single common recess (4) for at least two stamp shaped projections (3.1, 3.2 ...3.7) of the support body (1).

Fig. 1

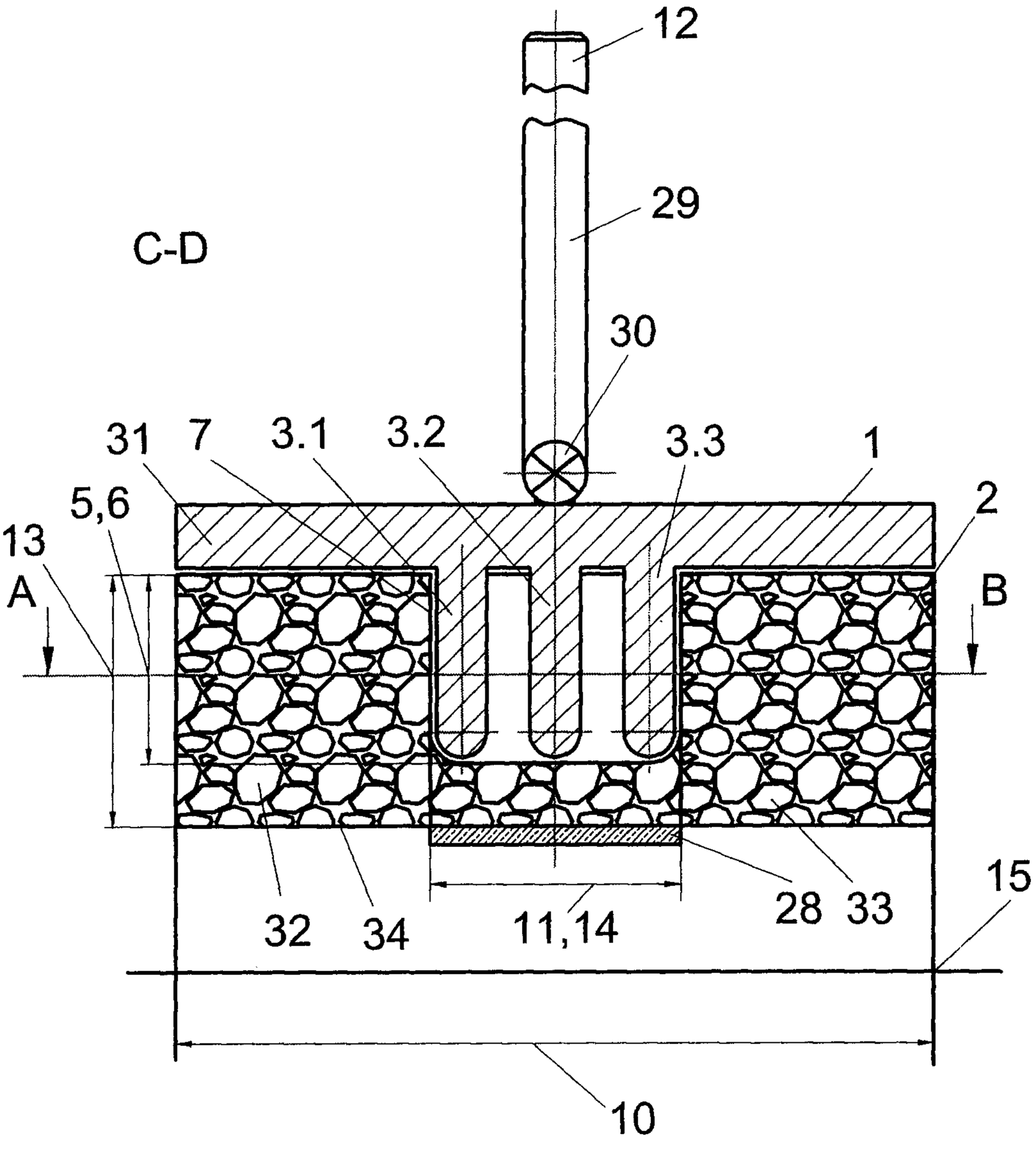


Fig. 2

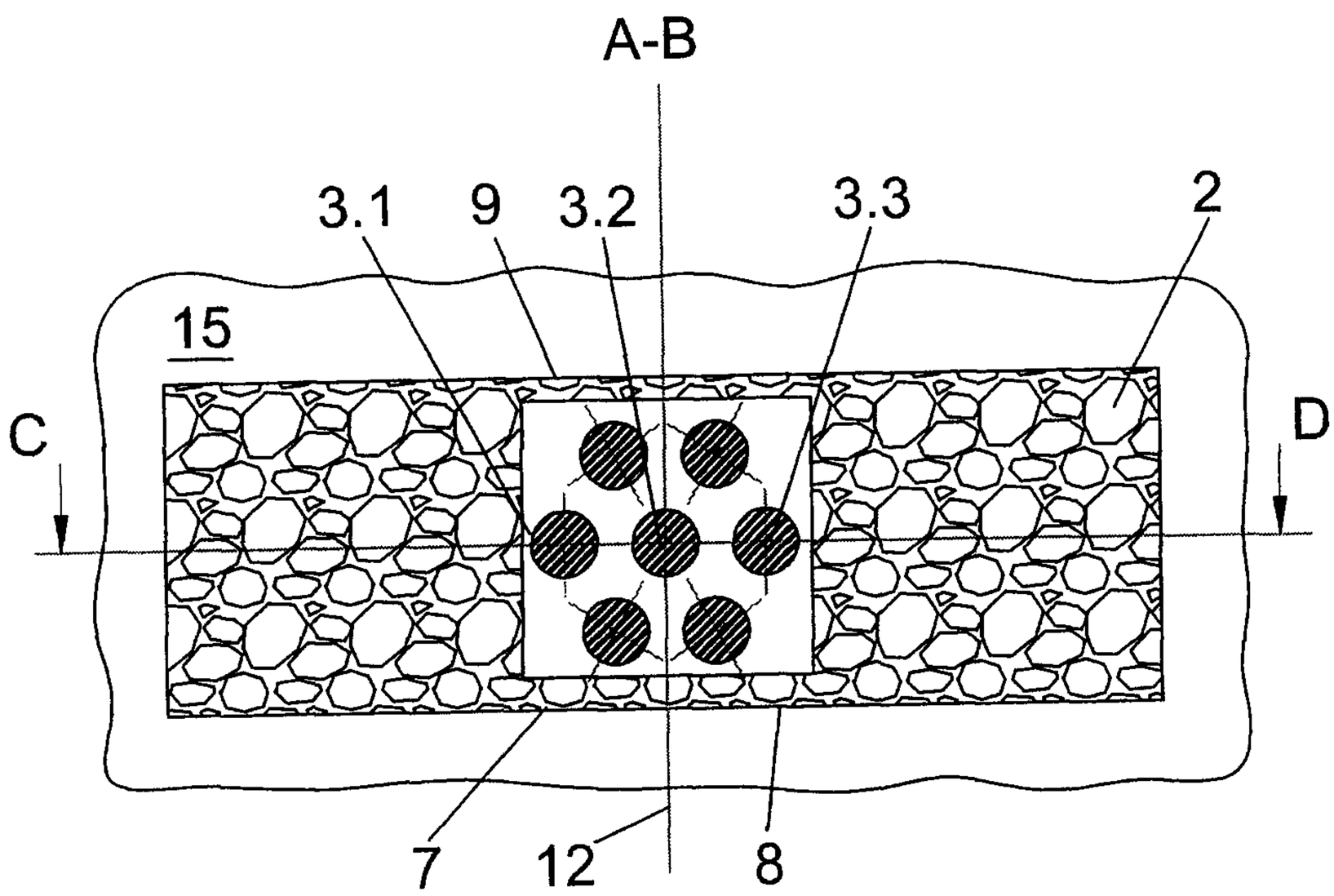


Fig. 3

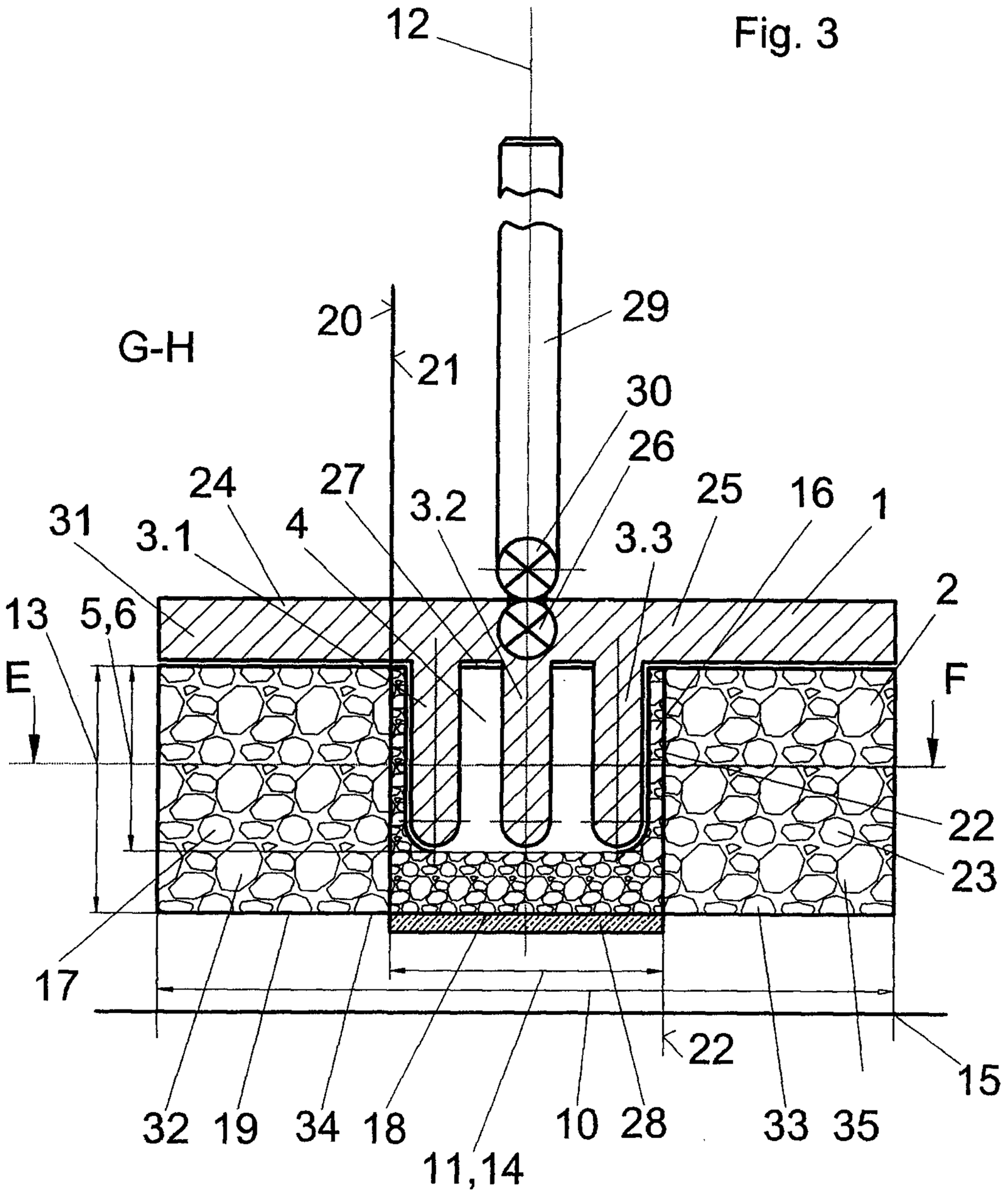

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Fig. 4

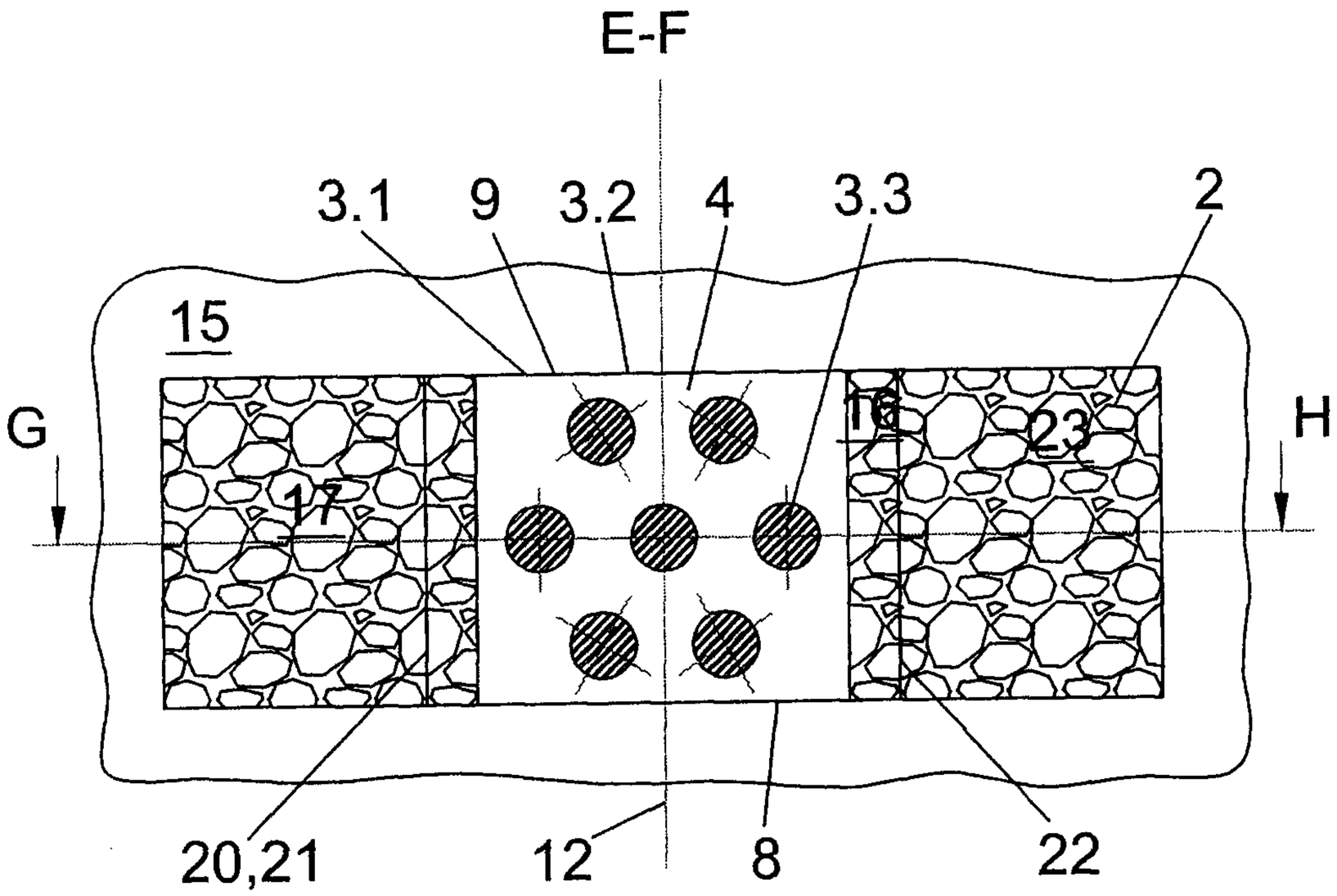
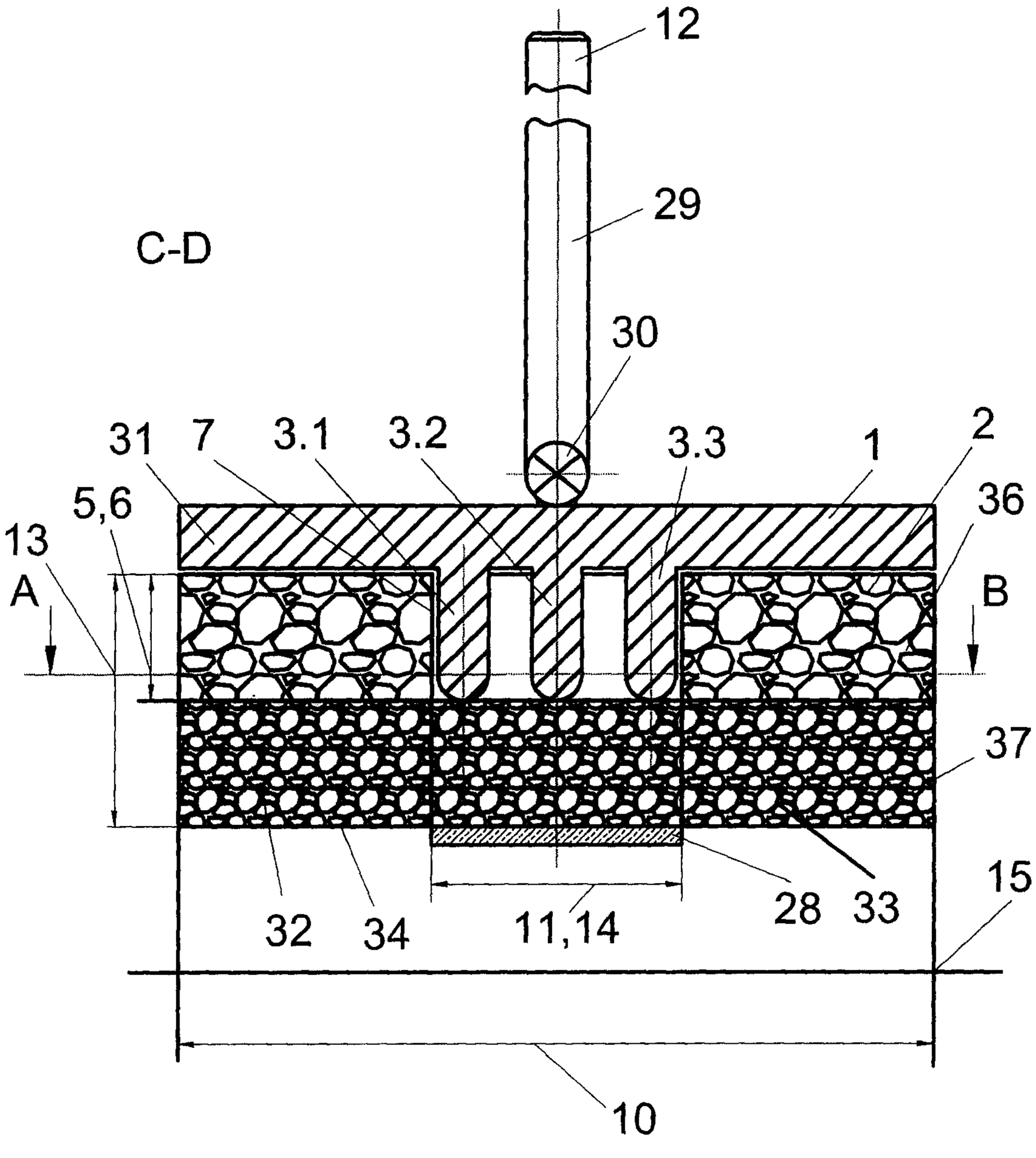


Fig. 5



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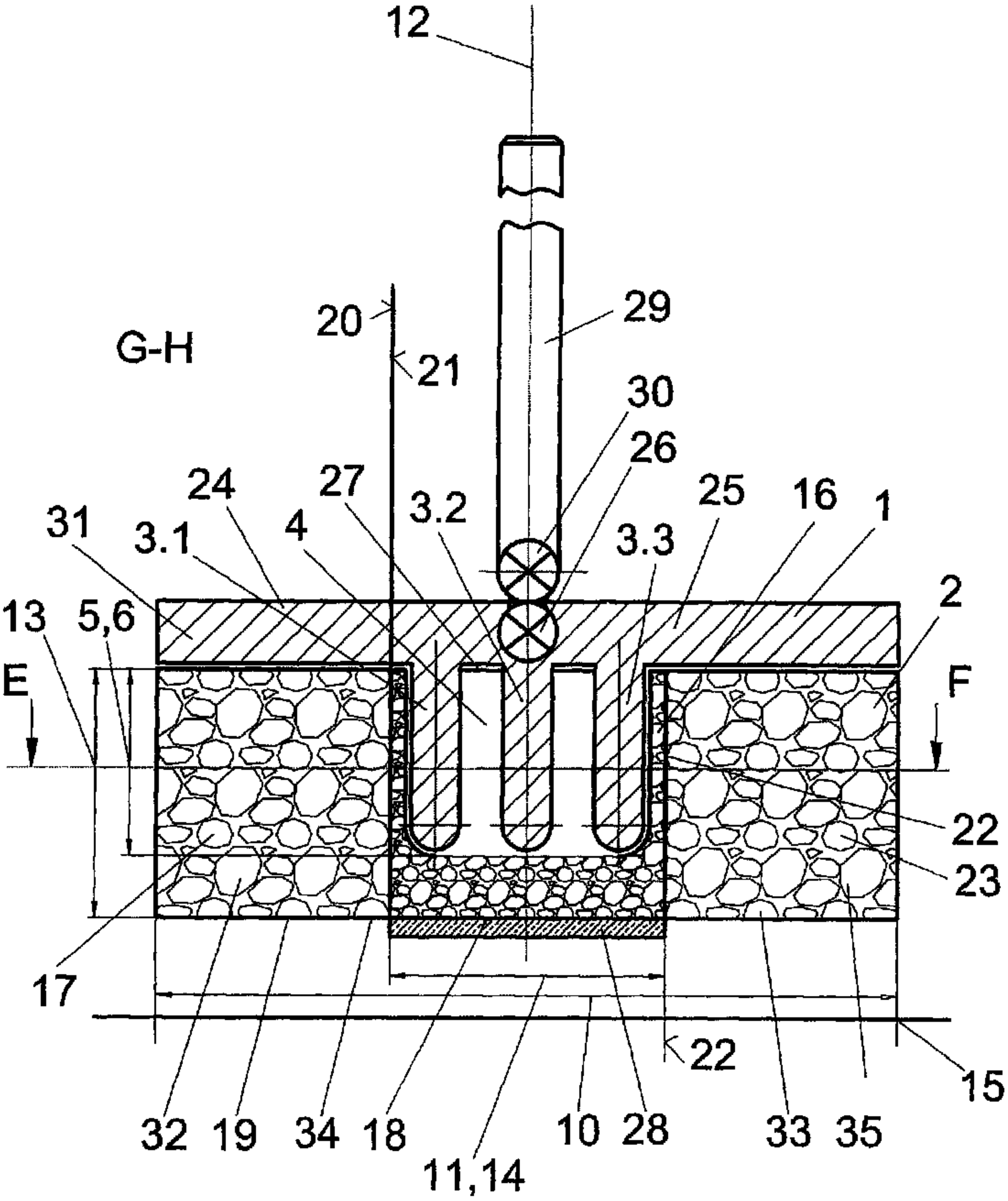
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