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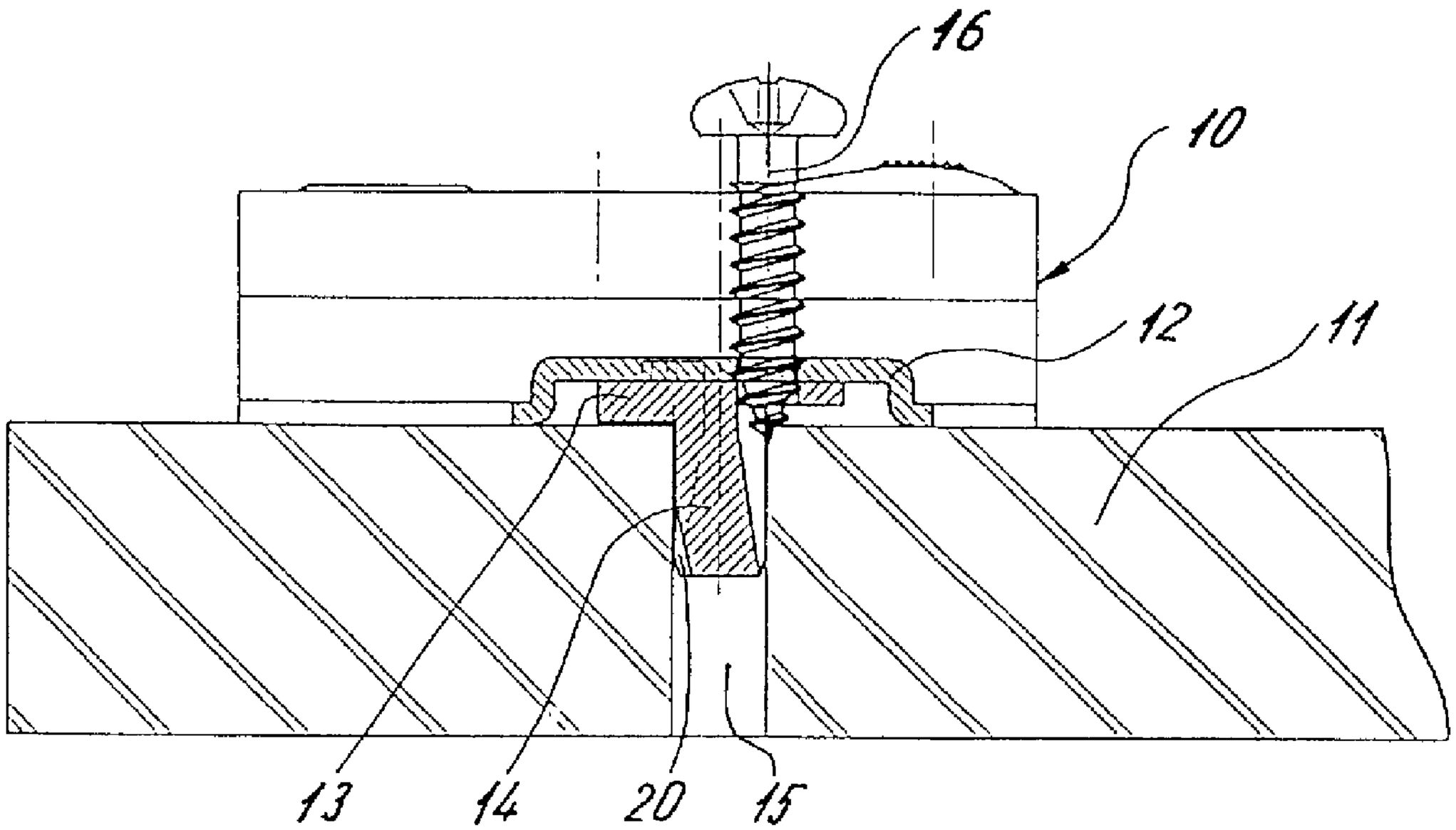

(57) Abrégé/Abstract:
A furniture hinge that comprises a hinge part that can be secured to a movable element of the furniture, a hinge arm that is articulated on to the hinge part, and a mounting plate that can be secured to the case of the furniture by means of attachment screws, and which has an appropriate number of supporting pegs that fit into blind holes in the furniture case, is to be configured so as to provide a durable connection that can withstand extremely high loads between the mounting plate and the furniture case. In the furniture hinge according to the present intention, the flanks of the attachment screws are so positioned that their flanks are cut into the associated outside area of the solid supporting pegs (14). The attachment screws (16) are arranged on opposite sides of the supporting pegs. Each supporting peg (14) has an inclined surface (20) at its free end area. The furniture hinge is particularly suitable for household furniture.

Abstract

A furniture hinge that comprises a hinge part that can be secured to a movable element of the furniture, a hinge arm that is articulated on to the hinge part, and a mounting plate that can be secured to the case of the furniture by means of attachment screws, and which has an appropriate number of supporting pegs that fit into blind holes in the furniture case, is to be configured so as to provide a durable connection that can withstand extremely high loads between the mounting plate and the furniture case. In the furniture hinge according to the present intention, the flanks of the attachment screws are so positioned that their flanks are cut into the associated outside area of the solid supporting pegs (14). The attachment screws (16) are arranged on opposite sides of the supporting pegs. Each supporting peg (14) has an inclined surface (20) at its free end area. The furniture hinge is particularly suitable for household furniture.

Furniture Hinge

The present intention relates to a furniture hinge that comprises a hinge part that can be secured to a movable element of the furniture, a hinge arm that is articulated on to the hinge part, and a mounting plate that can be secured to the case of the furniture by means of attachment screws, said mounting plate having an appropriate number of supporting pegs that fit into blind holes in the furniture case.

Many versions of furniture hinges are known. Usually, the hinge element is secured to a pivoting door, a flap, or the like, whereas the mounting plate is secured to one wall of the furniture case.

In a preferred embodiment, the supporting pegs are in the form of expanding sleeves into which the attachment screws are screwed. Whereas the mounting plate is essentially of metal, the expanding sleeves are of plastic and are joined to the metallic part. It is unavoidable that the expanding sleeves become damaged or break. In this case, additional screws will be required in order to secure the mounting plate to the furniture case. The mounting plate is usually connected directly or indirectly to the hinge arm.

There are also furniture hinges in which attachment of the mounting plate is effected by an attachment screw that is located in the middle area between the supporting pegs.

It is the task of the present intention to configure a furniture hinge of the type described in detail in the introduction hereto so as to provide a durable connection that can withstand extremely high loads between the mounting plate

and the furniture case.

This task has been solved in that the attachment screws are arranged in the area directly adjacent to the supporting pegs.

In the arrangement according to the present invention, the mounting plate is secured by supporting pegs that close off the blind holes and under normal circumstances are installed in the blind holes by the application of force, and by the attachment screws. Since these are located directly adjacent to the area of the supporting pegs, but are not screwed into these, the danger of the supporting pegs being destroyed or damaged is largely precluded, with the result that an extremely durable connection that can withstand very high loads is created. This connection can withstand even higher loads if the flanks of the attachment screws that are associated with the supporting pegs, relative to the installed state of the attachment screws, are cut into the associated outside area of the supporting pegs.

Usually, the attachment screws that are used are self-tapping screws. When these are screwed into the furniture case, the threads cut into the adjacent supporting pegs, and this provides yet another additional connection between the attachment screws and the supporting pegs. In this case, it is particularly advantageous if the supporting pegs be solid, so as to preclude the chance of any possible deformation.

In another embodiment, provision is made such that the attachment screws are arranged on opposite sides of the

supporting pegs. This creates a symmetrical arrangement, with the imaginary connecting lines between the supporting pegs forming the axis of symmetry. This arrangement is also extremely favourable for dispersing forces.

In many applications, furniture hinges are attached, for example, on both sides of a partition within a cupboard; in such cases, the mounting plates lie in an identical arrangement relative to each other. The shaft of each attachment screw may only be of such a length that if screws are driven in from both sides, they do not touch each other, which is to say that the shaft of the attachment screws may be no longer than half the thickness of the panel-like part of the furniture.

Since, in the case of the furniture hinge according to the present invention, the attachment screws of two mounting plates that are attached to one part of the furniture are offset relative to each other, they can be longer than the half thickness of the furniture part in question, so that the end areas can overlap. This increases the load carrying capacity to a very great extent. In order to ensure that the end area of the attachment screw that is driven in from the opposite side of the furniture part does not damage the supporting peg, provision is made such that at its free end area, on its side that is remote from the associated attachment screws, the supporting peg has an inclined surface. In addition, this prevents the application of excessive torque when the attachment screw is being driven in from the opposite side.

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In a further embodiment, provision is also made such that the supporting pin on the adjacent attachment screw on the same side also has an inclined surface. This enhances the way in which the threads cut into the supporting peg. In this case, the mid-line axis runs in the wall of the blind hole. However, it could just as well be slightly offset from it. The inclined surfaces could be curved so as to match the shape of the shaft of the attachment screw.

The invention may be summarized as a furniture hinge comprising a hinge part securable to a moveable furniture part; a hinge arm articulated onto the hinge part; a mounting plate connected to the hinge arm; and at least one attachment screw for securing the mounting plate to a furniture case, said mounting plate incorporating at least one supporting peg that fits into a blind hole or bore in the furniture case, wherein the attachment screw is arranged at a location immediately adjacent to but offset from the supporting peg.

The present invention will be described in greater detail below on the basis of the drawings appended hereto. These drawings show the following:

Figure 1: the mounting plate that is installed on one part of the furniture, with the attachment screw not driven in;

Figure 2: a view as in Figure 1, but with the attachment screws driven in;

Figure 3: a view as in Figure 2, although in an embodiment with mounting plates arranged on both sides of one part of the furniture;

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Figure 4: the mounting plate for the arrangement shown in Figures 1 to 3, in plan view;

Figure 5: the mounting plate for the arrangements shown in Figure 1 to Figure 3, as viewed from below.

In the arrangements shown in Figure 1 and Figure 2, a mounting plate 10 is attached to a furniture case 11, for example, a side wall of a piece of furniture. The mounting plate 10 incorporates two attachments flanges 12, the angled edge areas of which lie against the furniture case. The hinge

arm of the furniture hinge is articulated directly or indirectly to the installation plate 10, in a manner not shown herein.

In the embodiment shown, the mounting plate 10 that is manufactured from metal also incorporates a moulded plastic part 13 that has two supporting pegs 14 that fit into bores 15 in the furniture case 11. Depending on the type of furniture case 11, these bores 15 can also be configured as blind holes.

In the embodiment shown in Figure 1 and Figure 2, two attachment screws 16 have been used to secure the mounting plates 10 to the furniture case 11; when they are inserted as shown in Figure 2, the shafts of these screws are adjacent to the sides of the two supporting pegs 14. In the embodiment shown in the drawing, the mid-line axis of each attachment screw 16 is aligned with the wall of the bore 15 when the attachment screw is not yet driven in. When it is driven in, the mid-line axis of each attachment screw 16 forms an acute angle with the bore 15, as is shown in Figure 2. To this end, each supporting peg 14 has an inclined surface on the side that is associated with the attachment screw 16, and this surface is so configured that the end area of each supporting peg 14 keeps its circular basic shape. When the attachment screw 16 is driven in, this inclined surface ensures that the thread of the attachment screw 16 screws into the inclined surface of the supporting peg 14 and that, in addition, according to Figure 2, the mid-line axis of the attachment screw 16 is at an acute angle to the mid-line axis of the bore 15 or of the supporting peg 14. This inclined position of the

attachment screws 16 creates a connection that can withstand extremely high loads.

Figures 1 to 3 show that the length of a shaft of an attachment screw 16 is greater than half the thickness of the panel-like furniture case 11. In the embodiment that is shown in Figure 3, there is a mounting plate 10 on both sides of the furniture case 11. These two mounting plates 10 are positioned symmetrically to the centre line of the furniture case 11.

Now, because of the configuration of the mounting plates 10 according to the present invention, it is possible for the end areas of the shafts of the attachment screws 16 to overlap, since the two attachment screws 16 that are associated with the supporting pegs 14, which are aligned with each other, are offset relative to each other. In order to create a free space for the end area of each shaft of an attachment screw 16, there is an additional inclined surface on the opposite side of the end area of the supporting peg that is associated with the attachment screw 16.

Figure 4 shows the mounting plates 10 as viewed from above. On its under side, which is to say the side that is proximate to the furniture case 11, the mounting plates 10 are provided with a moulded plastic part 17 that incorporates the supporting pegs 14, which are arranged so as to be spaced apart from each other; these supporting pegs 14 are introduced into the bores 15 by the application of a specific amount of force.

Figure 4 and Figure 5 show that the two attachment

screws 16 are arranged on opposite sides of the supporting pegs 14, which is to say they are opposite each other and offset relative to the imaginary connection between the two carrier pins 14.

Viewed in conjunction with Figure 4 and Figure 5, Figure 1 to Figure 3 show that the area of the mounting plate 10 that lies between the attachments flanges 12 is U-shaped. This U-shaped centre area is provided with an additional threaded bore 18 and a countersunk bore 19 in order to accommodate additional screws so that, for example, the hinge arm or the quick-mounting plate can be accommodated. In addition, these parts can then be oriented relative to the mounting plates 10 by turning a screw.

Figure 5 shows clearly that the attachment screws 16 are so offset relative to the mid-line axis of each particular supporting peg 14 that the threads of the attachment screws 16 are driven into the supporting peg 14. In addition, it can be seen that the sides of the supporting pegs 14 have beveled surfaces 20 opposite the attachment screws 16. It can also be seen that the mounting plates 10 are provided with the moulded plastic part 13 that lies on the contact surface of the furniture case 11 and incorporates the supporting pegs 14.

The present invention is not confined to the embodiment shown herein. The essential feature is that the attachment screws 16 are offset relative to the supporting pegs 14 that fit into the bores 15.

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CLAIMS:

1. A furniture hinge comprising a hinge part securable to a moveable furniture part; a hinge arm articulated onto the hinge part; a mounting plate connected to the hinge arm; and at least one attachment screw for securing the mounting plate to a furniture case, said mounting plate incorporating at least one supporting peg that fits into a blind hole or bore in the furniture case, wherein the attachment screw is arranged at a location immediately adjacent to but offset from the supporting peg.

2. A furniture hinge as defined in claim 1, wherein there is a plurality of attachment screws and a plurality of respective supporting pegs.

3. A furniture hinge as defined in claim 2, wherein sides of the attachment screws cut into associated outside surfaces of the respective supporting pegs when the attachment screws are driven in.

4. A furniture hinge as defined in claim 2 or 3, wherein the supporting pegs are solid.

5. A furniture hinge as defined in any one of claims 2 to 4, wherein the attachment screws are arranged on opposite sides of the supporting pegs.

6. A furniture hinge as defined in any one of claims 2 to 5, wherein the length of a shaft of each attachment screw is greater than half the thickness of the furniture case.

7. A furniture hinge as defined in any one of claims 2 to 6, wherein each supporting peg has an inclined

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surface at its free end area on a side that is remote from the associated attachment screw.

8. A furniture hinge as defined in any one of claims 2 to 7, wherein each supporting peg has an inclined surface on a side that is in proximity to the associated attachment screw.

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PATENT AGENTS

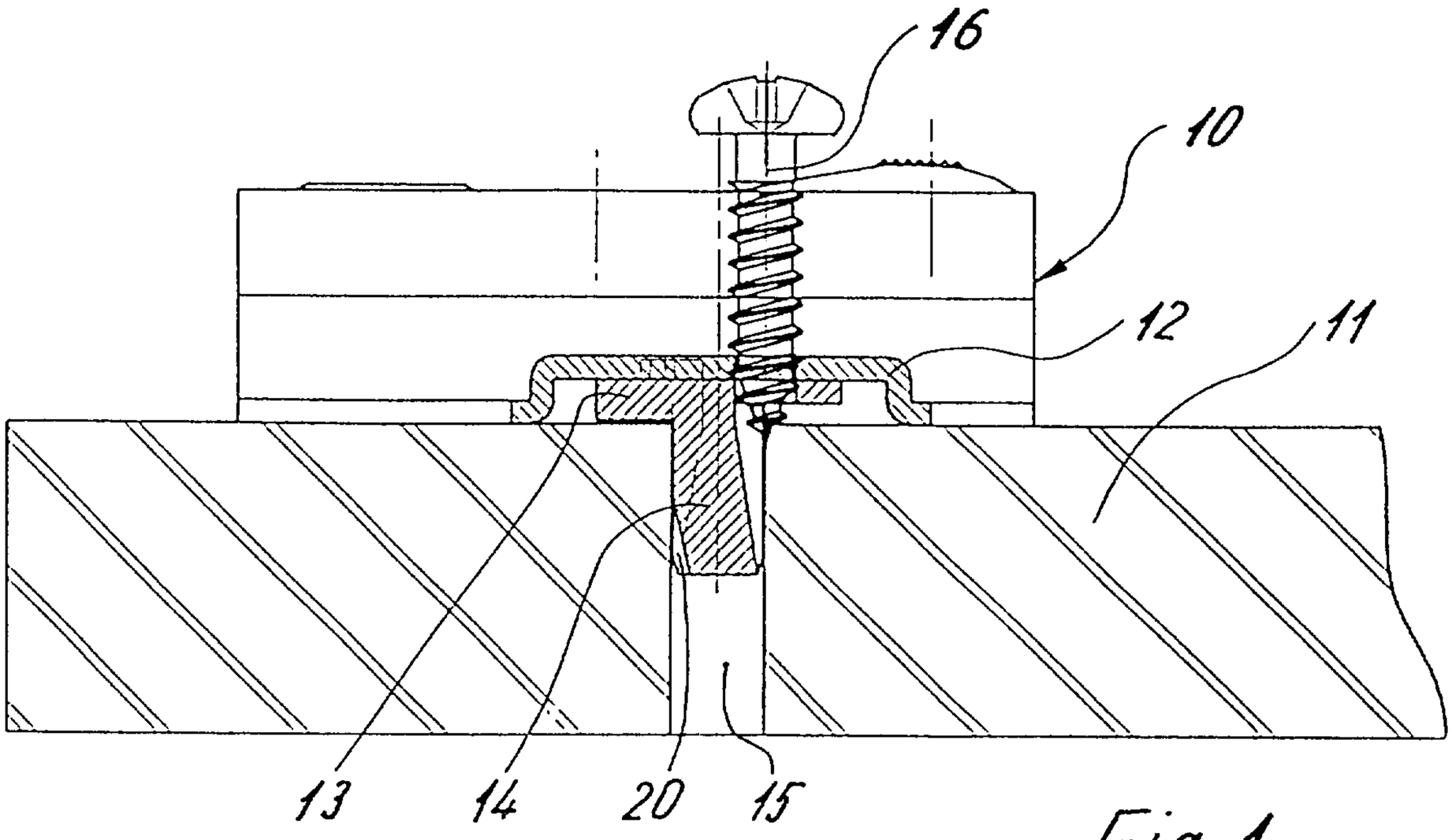

Fig. 1

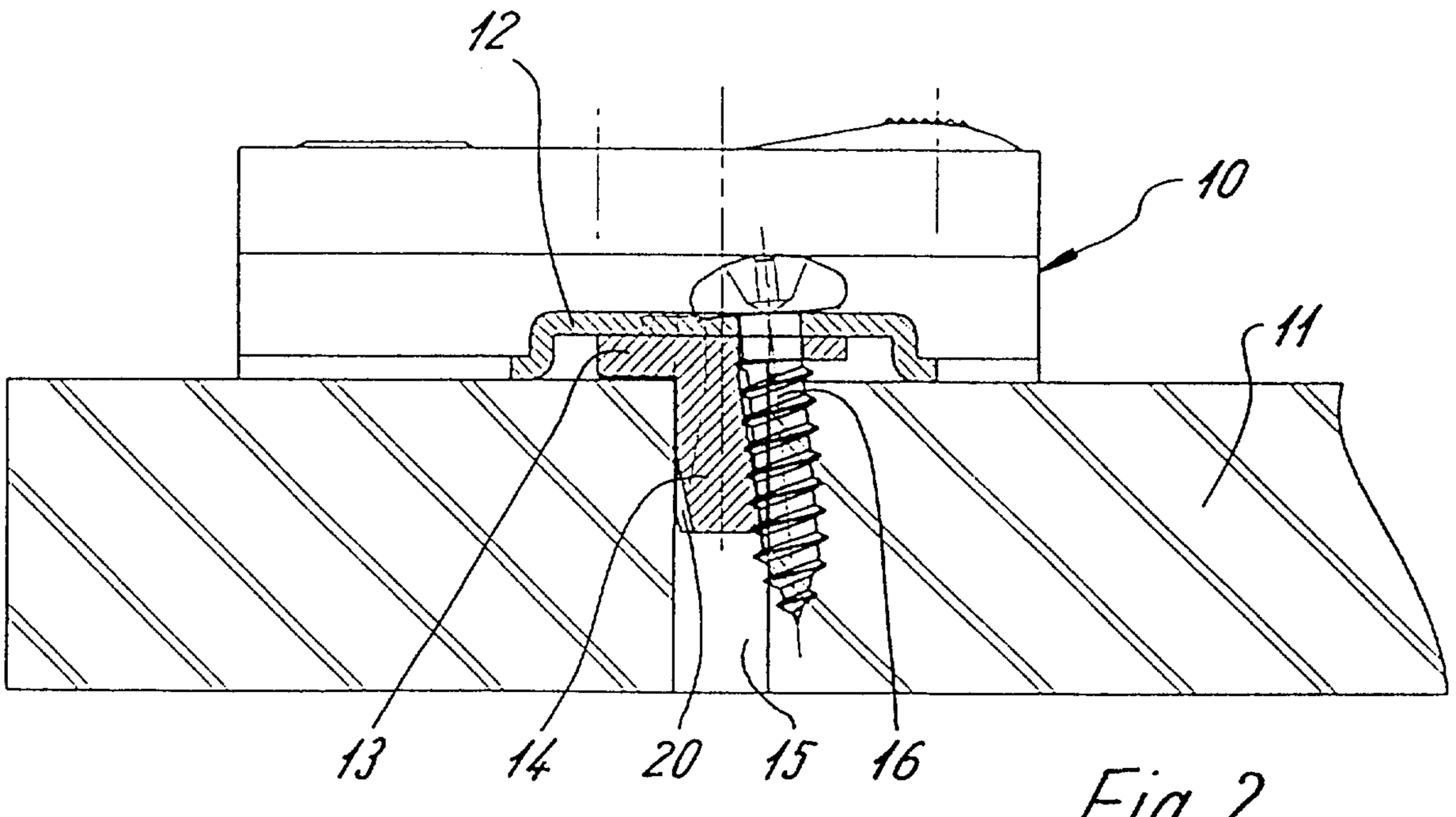

Fig. 2

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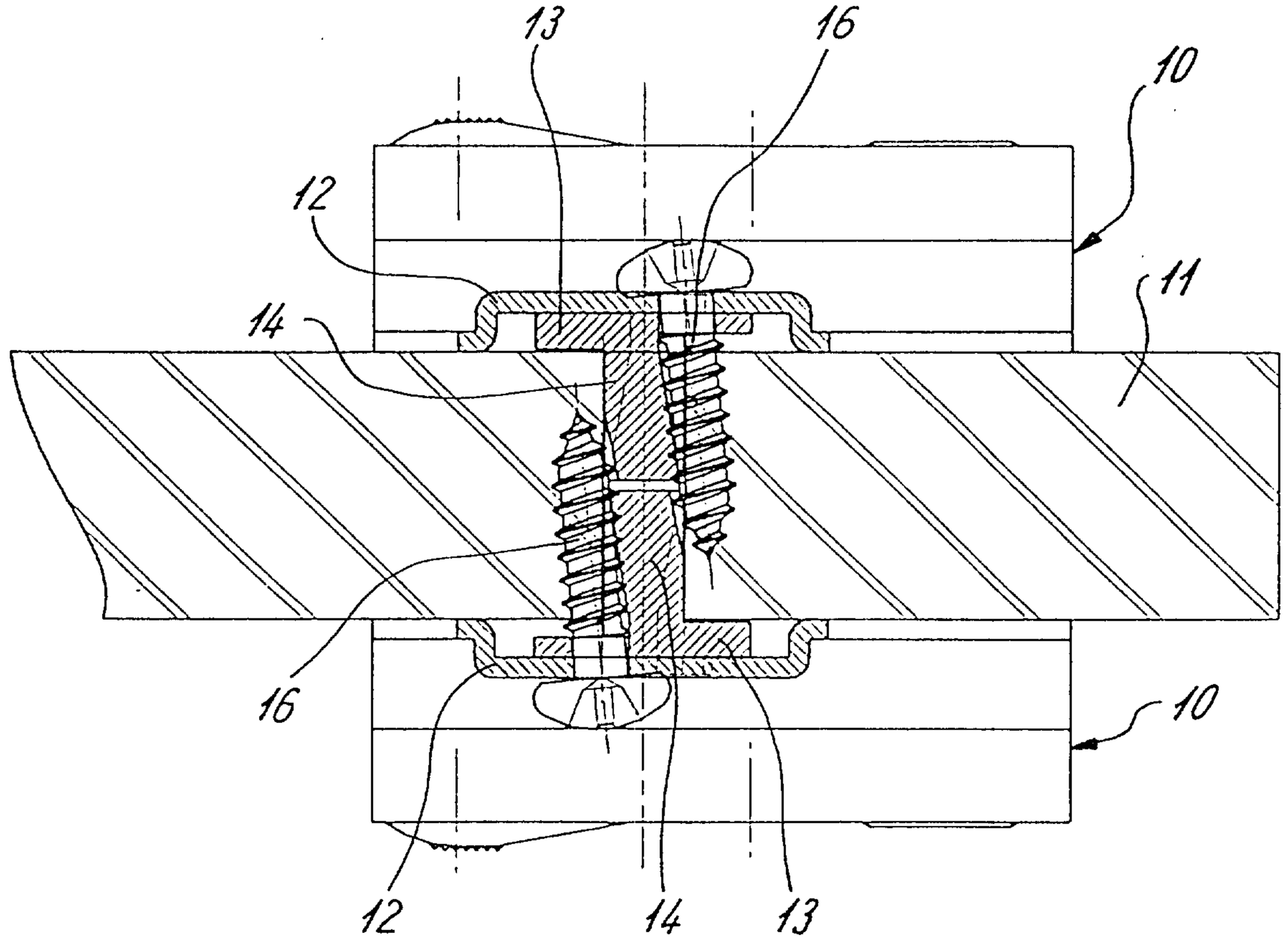

Fig. 3

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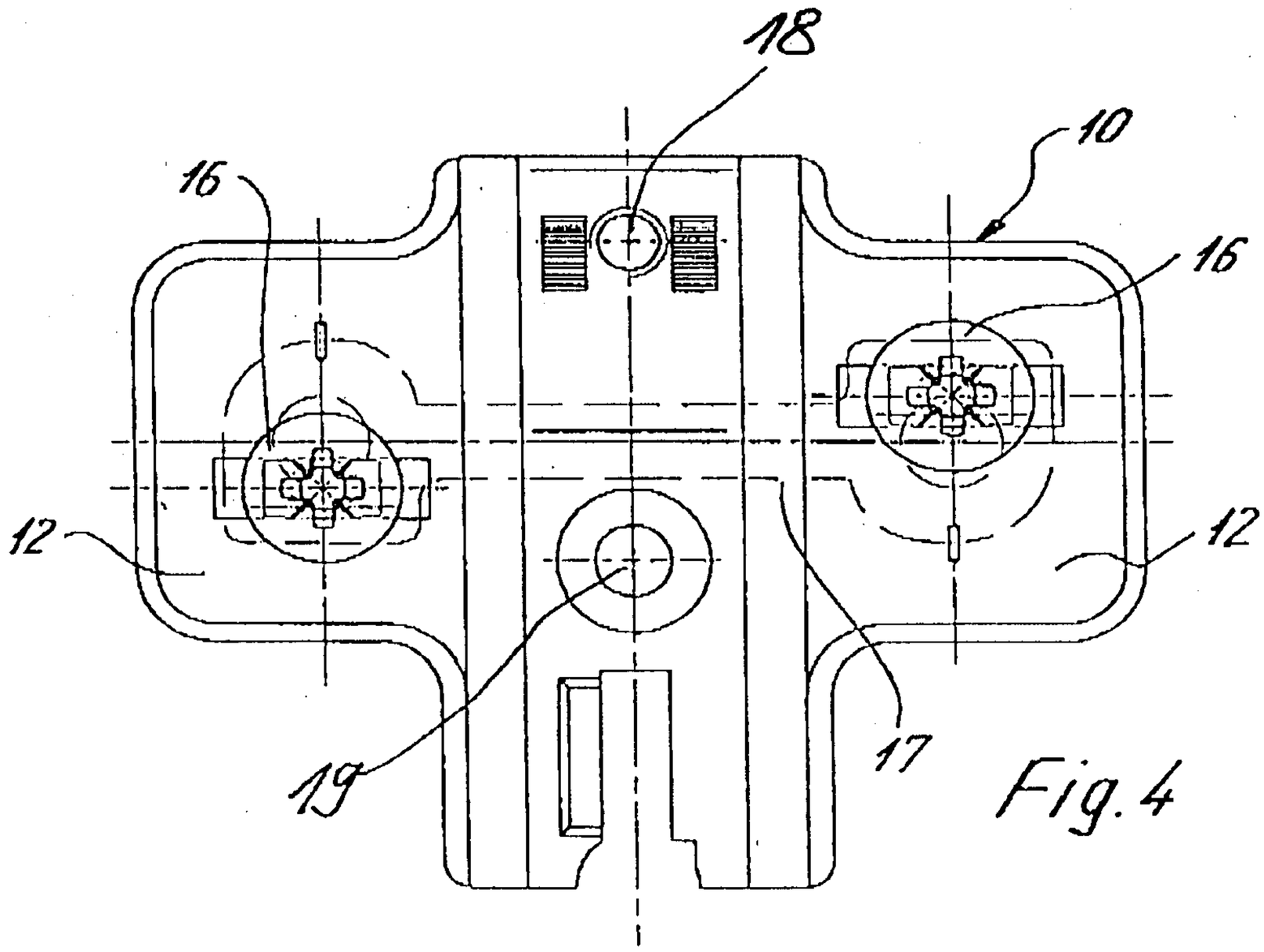


Fig. 4

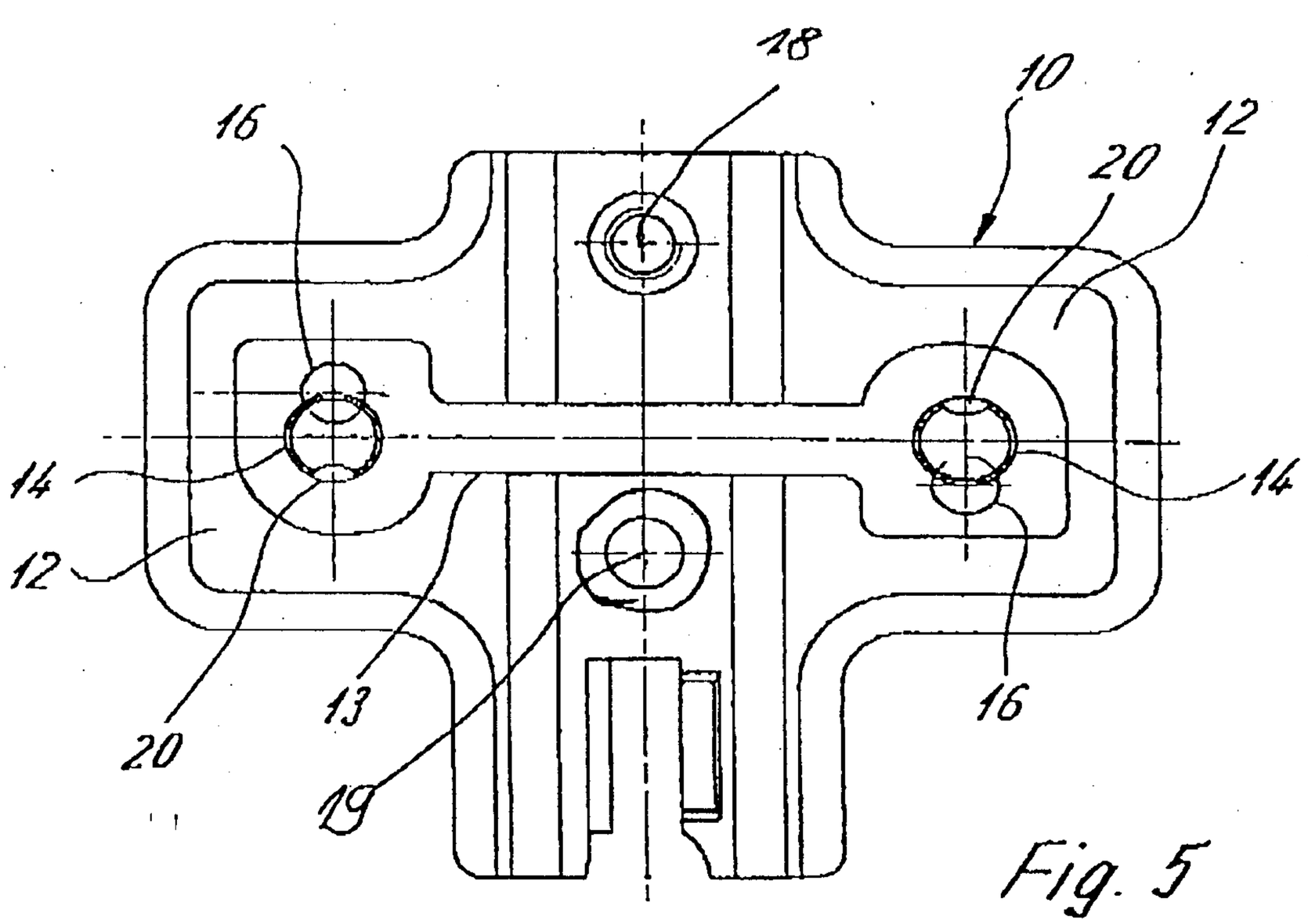
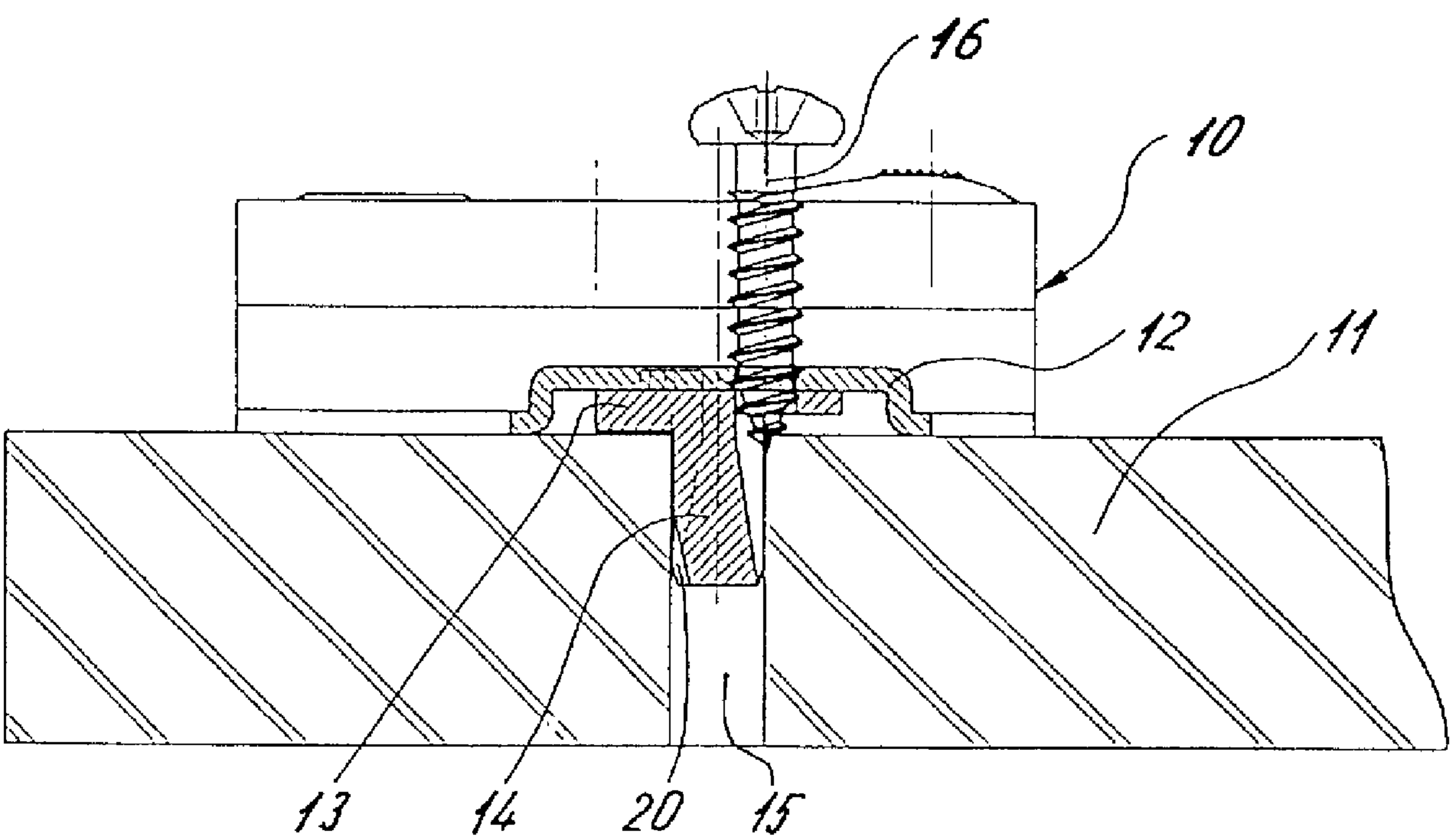


Fig. 5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