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(54) Particularly shaped hook for fixing sinks, washbasins or the like to base planes

(57) A particularly shaped hook (1) is proposed for fixing sinks, washbasins or the like to base planes in kitchens or bathrooms. The peculiarity of the present hook is the presence of elements (2,3) that slide reciprocally and are arranged on at least two inclined planes to permit an easy insertion of the sink or washbasin on avoiding the hindrance of the hook mounted on the sink or washbasin itself.

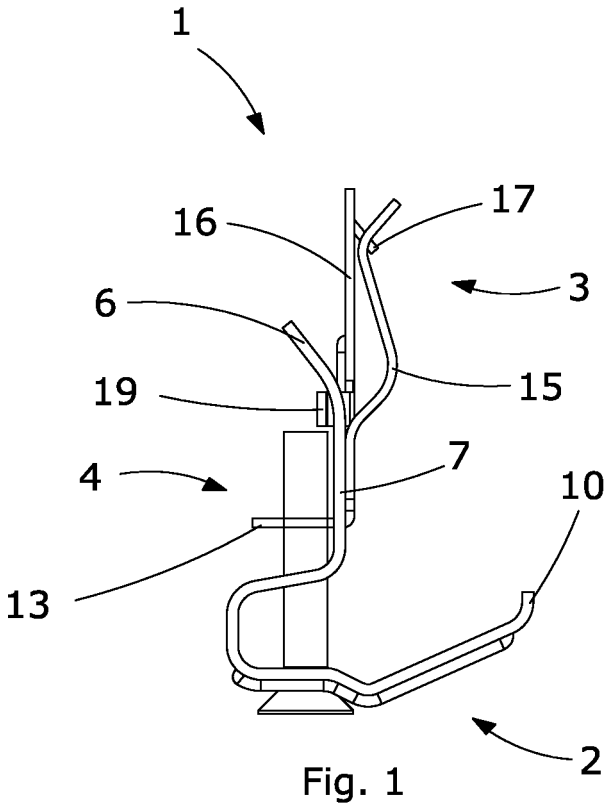

Fig. 1

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Description

[0001] The present invention refers to a particularly shaped hook element that permits a rapid and safe hooking and fastening of kitchen sinks or the like to the relative base plane.

[0002] For the realization of modular kitchens or the like, in addition to the various components, built-in cooking planes or sinks or washbasins are utilized in such dimensions that it is possible to insert them in suitable cavities obtained in the base planes.

[0003] To this end, the lateral borders of the sinks, washbasins or cooking planes have suitable crimpings that permit the coupling through suitable seats with the relative border of the base plane.

[0004] In general, particularly shaped hooks are utilized for the coupling of the sink, washbasin or cooking plane with the base plane to permit the connection of the borders of the sink, washbasin or cooking plane with the respective ends of the seat obtained in the base plane.

[0005] To this end, various types of hooks have been carried out. In general, said hooks comprise at least three pieces of which two pieces have the possibility of sliding reciprocally and the third piece is usually provided with a connecting and fastening screw.

[0006] However, there are many problems in the hooks of the known typology. Firstly, the known hooks do not permit an easy and rapid mounting: in fact, if the hook is arranged after having arranged the sink, washbasin or the cooking plane adjacent to the base plane, the positioning operation of the hook itself is rather complex because it is necessary to dispose the hook in a sector that is rather difficult to reach.

[0007] Attempts have been made to solve the above problem by positioning and fixing the hook to the border of the sink or cooking plane and then, disposing the sink - hook assembly in the suitable seat obtained in the base plane. Also in this case, it is very troublesome the positioning phase for positioning the sink - hook assembly in the base plane since it is very easy for the hooks of known typology to disconnect from the sink.

[0008] Besides, in the same positioning phase of the sink in the base plane, the presence of the hook can bar the operation of approaching the sink to the base plane.

[0009] The aim and function of the present invention is to remove all the above problems and further ones by proposing a hook, characterized in that it comprises a plate and a lower element which slide reciprocally and are coupled through at least a fastening element or screw, said plate comprising gripping and fixing elements for the fixing to the washbasin or cooking plane; said lower element comprising slide elements disposed on two inclined planes so as to permit, in a possible arrangement, the positioning of the lower element in the half-space, in respect to the plane on which said plate is disposed, specularly to the base plane.

[0010] Further features and details of the invention will be better understood from the following specification which is provided as a non-exclusive example with reference to the accompanying drawings wherein:

Fig. 1 is an orthogonal lateral view of the hook according to the present invention in a possible reciprocal positioning of the elements that form the hook itself;
Fig. 2 is an orthogonal lateral view of the hook in a further possible positioning of the elements that form the hook itself;
Fig. 3 is a schematic axonometric view of the hook of Fig. 1;
Fig. 4 shows the hook of Fig. 2 in a schematic axonometric rear view;
Figg. 5, 6, 7 are front, lateral and rear views, respectively of the lower element of the hook;
Figg. 8, 9, 10 are front, lateral and rear views, respectively of the upper element of the hook.

[0011] With reference to the accompanying drawings, number 1 denotes the hook as a whole according to the present invention. Hook 1 comprises a lower element 2, a plate 3 and a connecting and adjusting screw 4.

[0012] The lower element 2, which is represented in Figg. 5, 6, 7, shows a basically L-shape and comprises two tongues 5 having a basically vertical development and a base 9 which includes a seat 11 through which the stem of the fastening screw 4 passes. In addition, the end base 9 of the lower element 2 acts as a hooking element for the base plane in that the end base 9 is provided with an end which is provided with tips 10.

[0013] The tongues 5 of the lower element 2 are spaced and their mutual distance creates an opening 12. The tongues 5 have a central sector 7 and an end part 6. The central sector 7 is basically vertical while the end part 6 is inclined in comparison with the central part 7. The end part 6 of each tongue 5 has a projection 8 turned toward the opening 12.

[0014] The plate 3, which is the upper element of the hook according to the invention and can be seen in Figg. 8, 9, 10, comprises a vertical part and a horizontal base 13 which has a through-hole 14 for the insertion of the fastening screw 4. The vertical sector has a central part 16 and two lateral tongues 15 having essentially an S-shape. The central part 16 includes a hooking element or projection 17 turned toward the half space of development of the tongues 15, and suitably shaped to be inserted in suitable seats of the borders of the washbasins or cooking planes.

[0015] In addition, the central part 16 is provided with two shoulders 19 of horizontal development which are to fasten the plate 3 to the lower element 2 so as to permit the slide of it.

[0016] As it can be seen easily in Figg. 1, 2, 3, 4, the so-described particular arrangement of the lower element 2 and plate 3 permits the tongues 15 to be inserted between the central part 16 of the lower element 3 and the shoulders 19. The shoulders 19 are inserted in the

opening 12 of the lower element 2 with possibility of sliding and cooperating with the outer surfaces of the tongues 5. In this way, the plate 3 can slide parallelly to the lower body 2.

[0017] In addition, said slide takes place between the final position where the horizontal base 13 is next to the base 9 of the lower element 2 on the one side and the final position where the shoulders 19 of the plate 3 are adjacent to and leaning against the projections 8 of the tongues 5 of the lower element 2 on the other side.

[0018] The position of the plate 3 near one of said final positions is very important, namely, when the shoulders 19 of the plate 3 are adjacent to and leaning against the projections 8 of the tongues 5 of the lower element 2. In fact, in this position, the plate 3 assumes an inclined position because the plate 3 is forced to follow the development of the tongues 5 of the lower element 2, which tongues 5 are inclined in their final part 6.

[0019] In said position, as it appears from Figures 2 and 4, basically, the end provided with tips 10 will find on the plane of substantial development of the plate 3. This arrangement concerns the positioning phase of the assembly sink or washbasin - hook in the suitable seat in the base plane.

[0020] Now, an example of mounting will be described in order to better explain all the innovative features of the subject of the present invention.

[0021] It is necessary to fix a sink or washbasin to a base plane of a modular piece of furniture in a stable and safe way.

[0022] The plate that corresponds to the hooking border of the sink or washbasin showing suitable hooking holes is inserted between the central part 16 and the shoulders 19 of the lower element 3, and slides so as to reach the joint of the hooking element or projection 17 in a hole of the border of the sink or washbasin. In this way, the shoulders 19 that are shaped like an "S" press the coupling border of the sink or washbasin against the central part 16 of the lower element 3.

[0023] When the hook 1 is coupled with the sink or washbasin through the plate 3, it is necessary to have the lower element 2 slide in respect to plate 3 itself so as to reach the extreme position where plate 3 is inclined in respect to the lower element 2 itself. In this way, it is possible to position the end base 9 of the lower element 2 as internally as possible in respect to the sink or washbasin and to remove the end provided with the tips 10 of the hook 1 from the base plane.

[0024] Once the assembly sink/washbasin is positioned in the relative seat in the base plane, it is necessary to have the lower element 2 side inversely in respect to plate 3 so that the end provided with tips 10 of the hook 1 is near the lower surface of the base plane.

[0025] Finally, once it is certain that the hooking position is correct, the fastening screw 4 is screwed so that it is possible to have the lower element 2 slide in respect to the plate 3 and the tips 10 of the lower element 2 are next and hooked to the lower surface of the base plane. In this way, it is not possible for the sink/washbasin to shift.

[0026] It is evident that the hook according to the present invention permits a practical easy assembly and makes the first connection of the hook itself to the sink or washbasin stable and safe.

[0027] In addition, a fundamental advantage of the hook in question is the possibility of shaping the hook in such a way that the lower part 2 does not hinder the insertion of the assembly sink or washbasin-hook in the seat provided in the base plane.

[0028] In addition, it is sufficient a simple movement of translation to bring the lower element 2 itself back, in the proximity of the lower surface of the base plane and to permit the fastening of screw 4 in order to obtain a stable safe coupling of the sink, washbasin or cooking plane to the base plane.

[0029] A technician of this field can make changes or versions that are to be considered as included in the scope of protection of the present invention as claimed in the following claims.

Claims

1. Particularly shaped hook for fixing sinks, washbasins or the like to base planes, **characterized in that** it comprises a plate (3) and a lower element (2) which slide reciprocally and are coupled by means of at least a fastening element or screw (4), said plate (3) comprising gripping and fixing means (15, 16, 17) to grip and fix the sink, washbasin or cooking plane; said lower element (2) comprising slide means (5) disposed on two inclined planes so as to permit, in a possible arrangement, the positioning of the lower element (2) in the half-space, in respect to the plane on which said plate (3) is disposed, specularly to the base plane.

2. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claim, **characterized in that** said lower element (2), which is shaped basically like an "L", comprises at least two tongues (5) having an essentially vertical development and a base (9) provided with a seat (11) for the insertion of the stem of the fastening screw (4).

3. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** said terminal base (9) of the lower element (2) comprises an end provided with tips (10) having a hooking function to the base plane.

4. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** the tongues (5) of the

lower element (2), which form an opening (12), comprise an essentially vertical central part (7) and an end part (6) inclined in respect to said central part (7).

5. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** said end part (6) of the tongues (5) comprises at least a projection (8) turned toward said opening (12).

6. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** said plate (3) comprises a part having a vertical development and a horizontal base (13) having a through-hole (14) for the fastening screw (4).

7. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** said part having a vertical development has a central part (16) and two lateral tongues (15) shaped like an "S".

8. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** said central part (16) includes at least a hooking element or projection (17) turned towards the half-space of development of the tongues (15) and shaped to be inserted in suitable seats in the borders of sinks, washbasins or cooking planes.

9. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** said central part (16) is provided with at least two shoulders (19) having a horizontal development.

10. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** the coupling of the lower element (2) with the plate (3) is made possible by inserting tongues (5) between the central part (16) of the lower element (3) and the shoulders (19), in which the shoulders (19) are, in turn, inserted in the opening (12) of the lower element (2) with possibility of sliding and cooperating with the outer surfaces of the tongues (5) so that the plate (3) slides parallelly to the lower element (2).

11. Particularly shaped hook for fixing sinks, washbasins or the like to base planes as claimed in the foregoing claims, **characterized in that** when the shoulders (19) of the plate (3) are adjacent and leaned against the projections (8) of the tongues (5) of the lower element (2), the plate (3) is inclined since it is forced to follow the development of the tongues (5) of the lower element (2).

12. Process for fixing a sink, washbasin or cooking plane to a base plane of a modular piece of furniture by means of a hook as claimed in the foregoing claims, **characterized by** the following phases:

- insertion of the plate corresponding to the hooking border of the washbasin, provided with suitable hooking holes, between the central part (16) and the shoulders (19) of the lower element (3) and slide of same to insert the hooking element or projection (17) in a hole of the border of the washbasin;
- once the hook (1) is coupled with the washbasin by means of the plate (3), the lower element (2) slides in respect to the plate (3) to reach the extreme position in which the same is inclined in respect to said lower element (2) in order to position the end base (9) of the lower element (2) as internally as possible in respect to the washbasin and remove the end provided with tips (10) of the hook (1) from the base plane;
- positioning of the assembly washbasin - hook in the suitable seat of the base plane;
- sliding the lower element (2) in respect to the plate (3) so that the end provided with tips (10) of the hook (1) is in the proximity to the lower surface of the base plane;
- screwing down the screw (4) in order to have the lower element (2) slide in respect to the plate (3) so that the tips (10) of the lower element (2) are adjacent and hooked to the lower surface of the base plane.

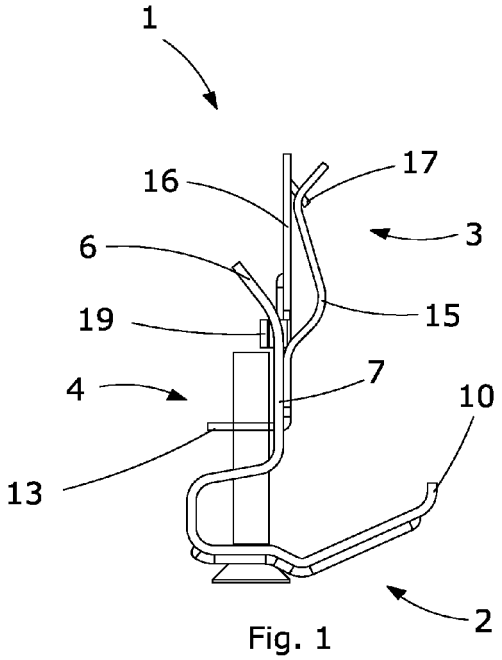

Fig. 1

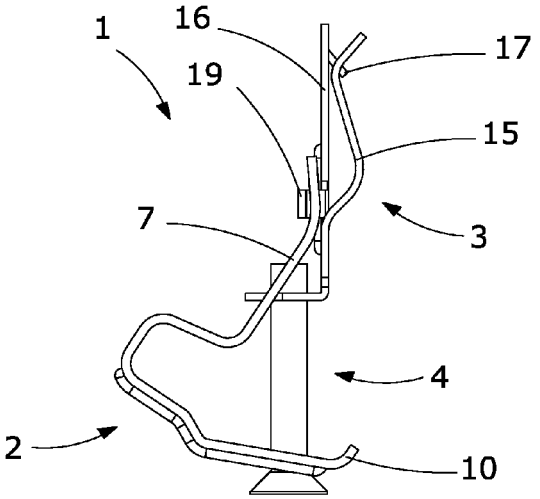

Fig. 2

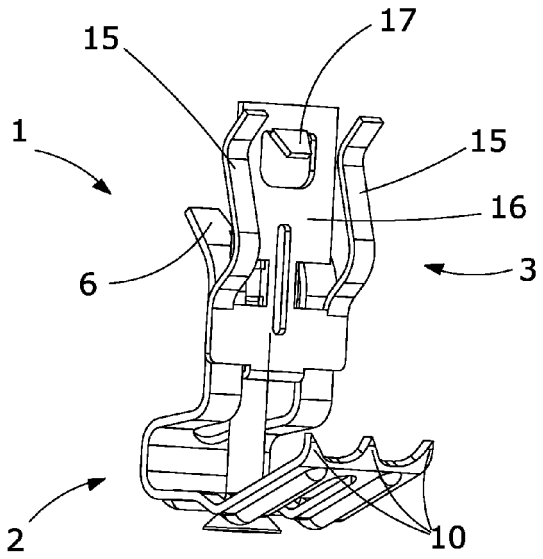

Fig. 3

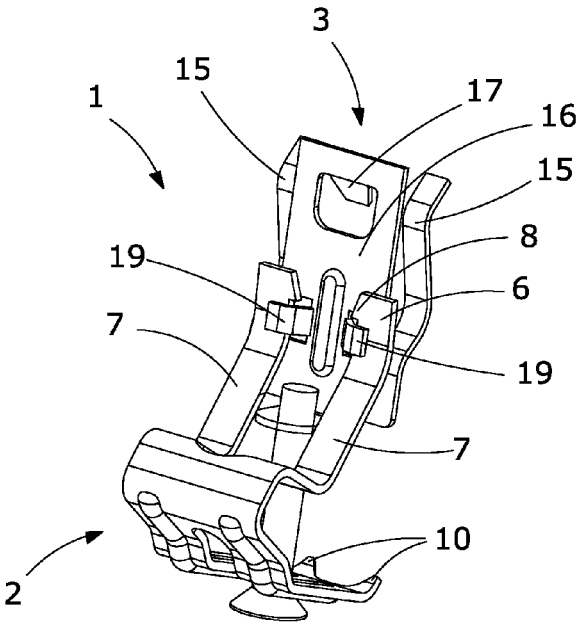

Fig. 4

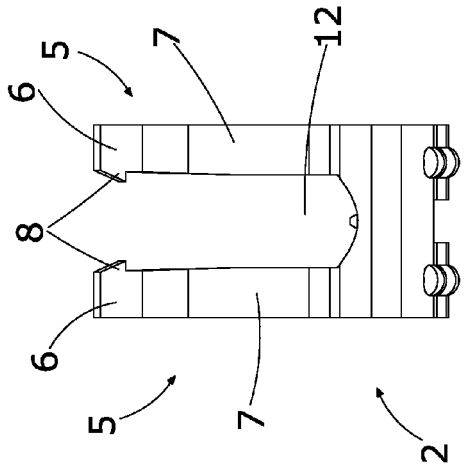

Fig. 7

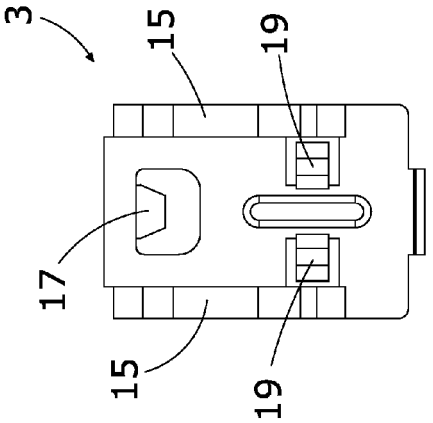

Fig. 10

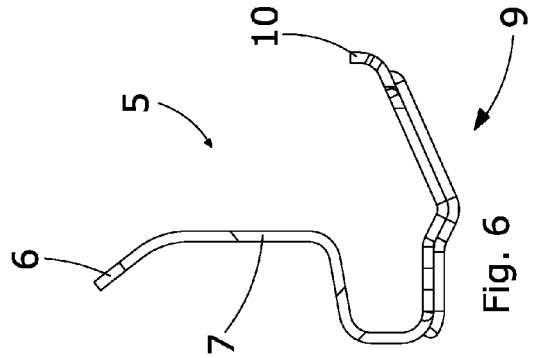

Fig. 6

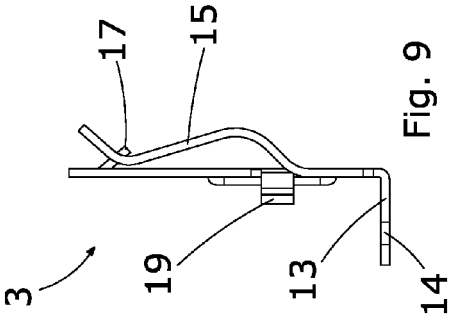

Fig. 9

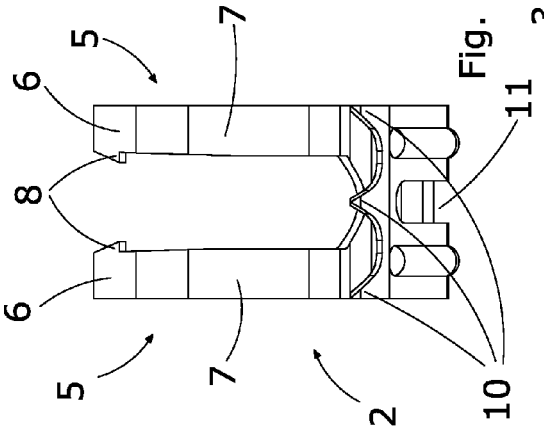

Fig. 5

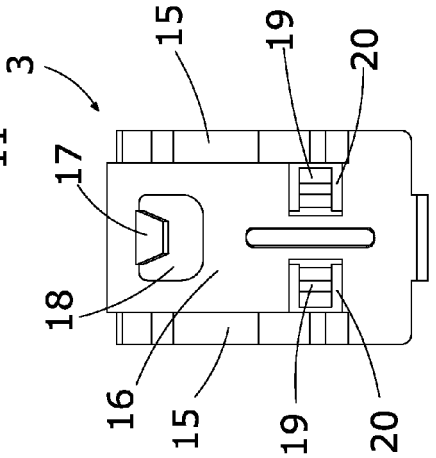

Fig. 8