July 5, 1949. J. STANITZ 2,475,112

METHOD OF MOUNTING FLAT RIM SINKS ON TABLE TOPS

Filed Feb. 1, 1945 2 Sheets-Sheet 1

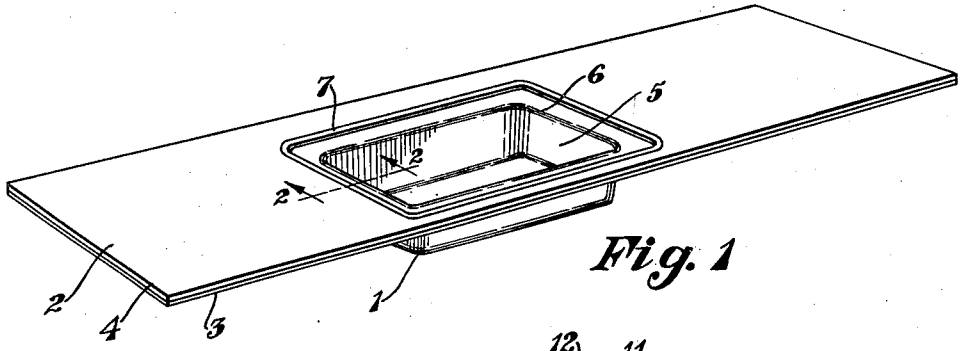


Fig. 1

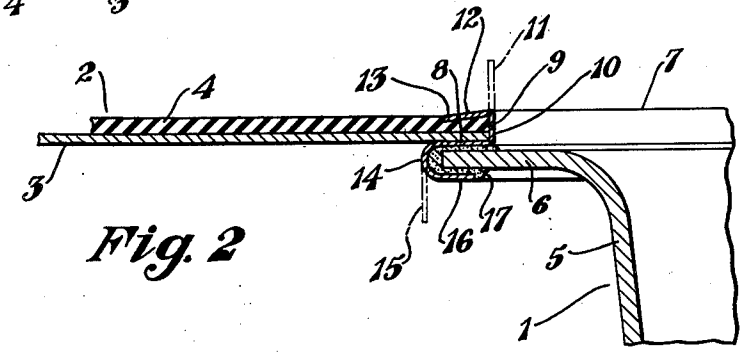


Fig. 2

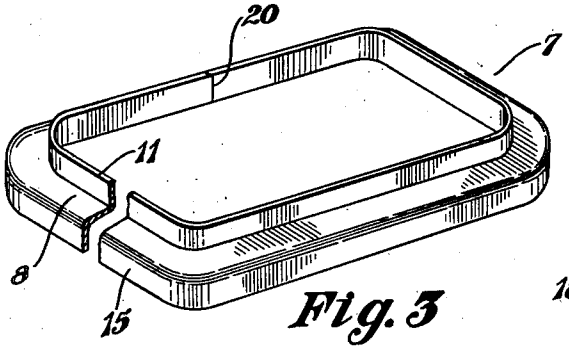


Fig. 3

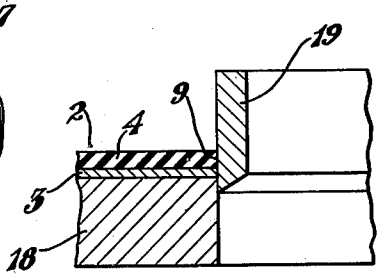


Fig. 4

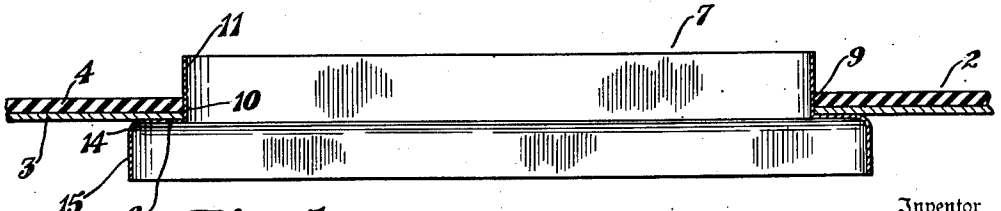


Fig. 5

Inventor
Jacques Stanitz
By Frease and Bishop
Attorneys

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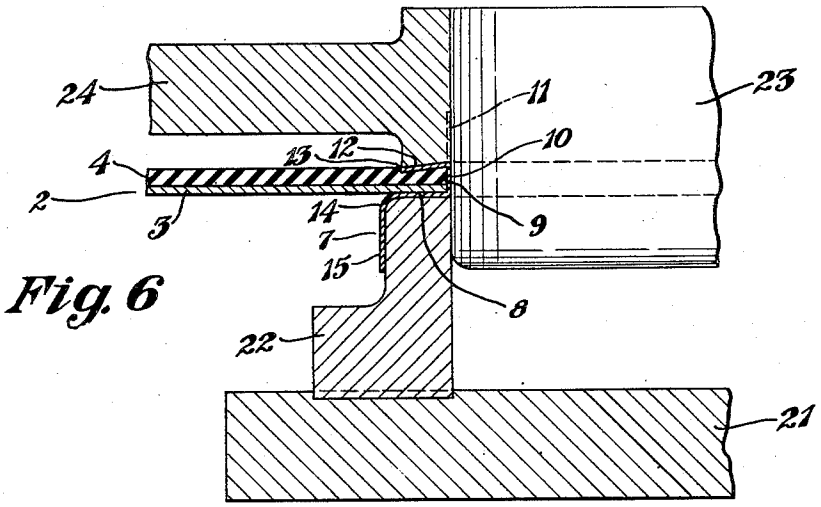


Fig. 6

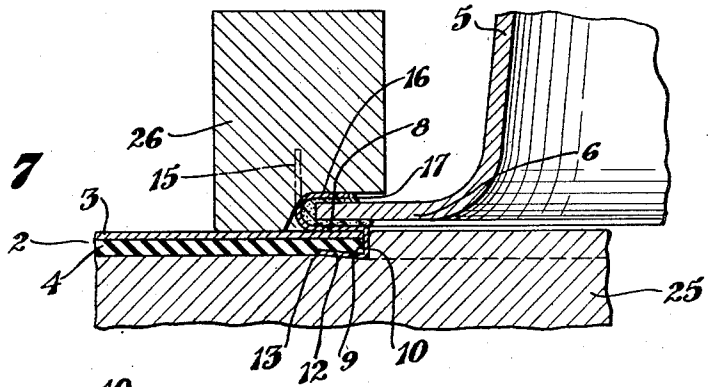


Fig. 7

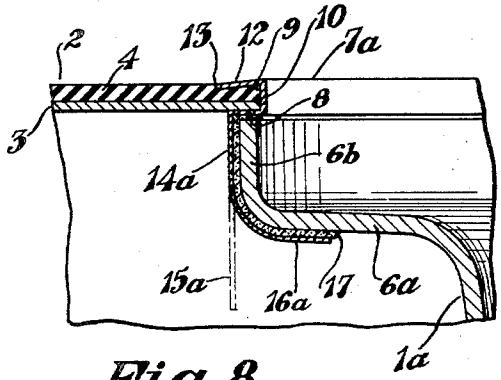


Fig. 8

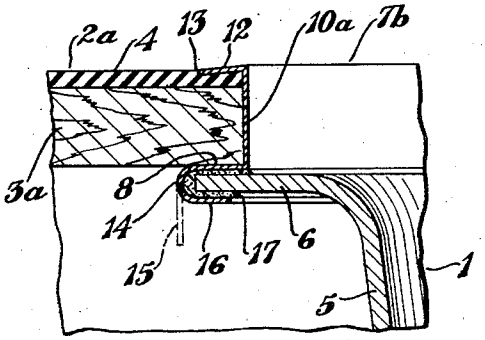


Fig. 9

Inventor

Jacques Stanitz

By Frease and Bishop

Attorneys

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2,475,112

METHOD OF MOUNTING A FLAT RIM SINK ON A TABLE TOP

Jacques Stanitz, Warren, Ohio, assignor to Mullins Manufacturing Corporation, Salem, Ohio, a corporation of New York

Application February 1, 1945, Serial No. 575,646

6 Claims. (Cl. 29—148)

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The invention relates to the mounting of a sink with relation to a preferably flat work surface; and more particularly to a method of attaching a flat rim sink bowl to a flat, covered, work surface, table, counter, platform and the like, and to a mounting construction which supports the sink bowl, provides a water-tight joint between the sink bowl and table top, and provides a trim for the table top facing material at the opening therein beneath which the sink rim is supported.

Present day kitchens are equipped with a sink bowl, supported in relation to a table top to provide a continuous work surface surrounding the sink and extending from each side thereof.

Usually such a sink has a flat rim and a vitreous enamel coating with one or two bowls; and the table top is formed of some suitable relatively rigid base material having a top covering of a softer material, such as sheet linoleum, rubber, plastic, laminate and the like.

Considerable difficulty has been experienced in satisfactorily supporting a sink bowl in relation to a table top at the sink opening provided in the table top; in providing a water-tight and leak-proof joint between the sink bowl and table top and between the table top laminations at the sink opening therein; and in providing a satisfactory trim construction for the sink opening in the table top.

There are numerous prior art constructions in which a sink bowl is supported in relation to a table top by clamps, bolts or similar means at spaced intervals around the sink rim, and in which various kinds of gaskets and the like are used. However, these constructions require many parts and considerable hand work in assembling, erecting and installing the sink bowl and table top. Moreover, because the joint between the sink bowl and table top is bolted or clamped only at spaced intervals, the resulting joint is not effectively water-tight and is not uniformly and continuously leak-proof.

Likewise, there are numerous prior art constructions of trim means for the sink opening in a table top which are intended to secure the edges of the table top laminations and form a smooth, sanitary and satisfactory joint. Frequently, however, the table top covering material, such as linoleum, warps and curls upward at the edge around the sink opening and it is difficult if not impossible to avoid or correct this defect.

Some of these prior art constructions include a nosing-like trim member, and connecting and mounting means for the nosing; and these constructions require grooving, beveling or routing of the linoleum in order to make a flush joint between the nosing trim member and the linoleum. Thus, many parts are used for such trim constructions; and considerable hand work is required in their installation.

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In other words, prior art sink bowl mounting and trim constructions involve many parts and considerable hand work and are consequently very expensive. Moreover, they do not provide a completely satisfactory trim for the sink opening in the table top.

Accordingly, it is a primary object of the present invention to provide a sink mounting and trim construction for attaching a sink bowl to a table top in which the sink bowl is rigidly supported with a water-tight joint and with a satisfactory sink opening trim in a uniform and continuous manner entirely around the sink rim.

Furthermore, it is an object of the present invention to eliminate multiple parts in supporting and trimming a sink bowl with respect to a table top.

Also, it is an object of the present invention to eliminate hand work and numerous and expensive prior art operations and difficulties in assembling and installing a sink bowl with a flat, covered, table top.

Moreover, it is an object of the present invention to eliminate spaced clamps, bolts or the like in mounting a flat rim sink with respect to a table top.

Also, it is an object of the present invention to provide a complete and uniform water-proof joint construction between a table top and a sink bowl suspended therefrom.

Likewise, it is an object of the present invention to provide a construction for uniformly and rigidly suspending a vitreous enameled sink bowl from a composite or laminated table top preferably formed of sheet metal with a covering of softer material.

Furthermore, it is an object of the present invention to provide a uniform, satisfactory and effective trim for a sink bowl opening in a laminated table top from which a vitreous enameled sink is suspended.

Also, it is an object of the present invention to provide an improved sink mounting and trim construction incorporating the foregoing desiderata which may be fabricated at a factory by production methods to eliminate installation difficulties and reduce costs.

Moreover, it is an object of the present invention to provide a method of attaching a flat rim

sink to a flat, covered table top which avoids prior art difficulties, satisfactorily solves problems existing in the art, and incorporates the foregoing advantages in a simple, effective and inexpensive manner.

Finally, it is an object of the present invention to provide a new sink mounting and trim construction for a flat covered, table top and a flat rim sink supported thereby, which avoids prior art difficulties, satisfactorily solves problems existing in the art, and incorporates the foregoing advantages in a simple, effective and inexpensive manner.

These and other objects and advantages apparent to those skilled in the art from the following description and claims may be obtained, the stated results achieved, and the described difficulties overcome, by the methods, steps, operations, procedures, devices, constructions, arrangements, combinations, sub-combinations, parts and elements which comprise the present invention, the nature of which are set forth in the following general statements, preferred embodiments of which—illustrative of the best modes in which the applicant has contemplated applying the principles—are set forth in the following description and shown in the drawings, and which are particularly and distinctly pointed out and set forth in the appended claims forming part hereof.

The nature of the improvements in a method of mounting a flat rim sink on a table top may be stated in general terms as preferably including forming a flat rim vitreous enameled sink bowl, forming a laminated table top with a base and a softer covering such as linoleum, cutting a sink opening in the table top, forming an endless binding strip of generally Z-shaped cross-section to have the shape and size of the sink opening cut in the table top, inserting one binding strip Z-leg in the sink opening and clinching said leg upon the table top to continuously trim the edge of the sink opening and embed said Z-leg in the linoleum and form a flush and uniformly tight joint around the table top sink opening edge, telescoping the sink rim within the other binding strip Z-leg, applying water-proofing cement between the sink rim and binding strip, and bending and pressing the last named Z-leg to uniformly lock the sink bowl in place and form a uniform and continuous water-proof joint entirely around the sink rim supporting the sink from the table top.

The nature of the improvements in sink mounting and trim construction may be stated in general terms as preferably including in combination with a sink having a flat rim, a table top preferably formed of composite material such as a metal or wood base and a top covering of sheet linoleum, rubber, plastic or other softer material, there being a sink opening formed in the table top, an endless metal binding strip generally Z-shaped in cross-section having one Z-leg or flange turned over, embedded and locked to the table top continuously around the sink opening therein and having the other Z-leg or flange turned over and locked to the sink rim entirely around the periphery thereof, and water-proof cement and the like at the joint between the sink rim and binding strip.

By way of example, preferred steps of carrying out the improved method and preferred embodiments of the improved construction are illustrated in the accompanying drawing forming part hereof, wherein:

Figure 1 is a perspective view of a table top having a sink bowl attached thereto utilizing the improved mounting and trim construction;

Fig. 2 is a fragmentary section taken as on the line 2—2, Fig. 1;

Fig. 3 is a perspective view with parts broken away and in section of an endless binding strip, used in the improved sink mounting and trim construction illustrated in Figs. 1 and 2;

Fig. 4 is a fragmentary sectional view illustrating somewhat diagrammatically the cutting of a sink opening in a composite table top in accordance with the invention;

Fig. 5 is a sectional view illustrating the binding strip of Fig. 3 telescoped in a sink opening cut in a table top;

Fig. 6 illustrates somewhat diagrammatically a press operation for locking the binding strip to the table top;

Fig. 7 illustrates somewhat diagrammatically a press operation for locking the binding strip to the sink rim;

Fig. 8 is a view similar to Fig. 2 showing a modified form of construction; and

Fig. 9 is a view similar to Figs. 2 and 8, illustrating a further modified form of construction.

Similar numerals refer to similar parts throughout the various figures of the drawings.

The improved sink bowl and table top mounting and trim construction is illustrated generally in Fig. 1 and includes a sink bowl 1 and a table top generally indicated at 2. The table top 2 is preferably of laminated or composite construction and includes a sheet metal, preferably sheet steel base 3, having sufficient strength and rigidity to remain flat and to support the loads to which sink tops, kitchen tables, counters and the like are usually subjected. The table top 2 has an upper covering, surfacing, ply or lamination of a softer material, preferably linoleum 4.

The sink bowl 1 has any desired shape or configuration and may be either a single bowl or a double bowl sink, a single bowl sink being shown in the drawings. The sink bowl 1 has usual side walls 5 which terminate in a flat rim 6; and the sink bowl 1 may be either a cast metal or a sheet steel sink covered with vitreous enamel, or may be formed of stainless steel, Monel metal or the like, or may be formed of china or earthenware.

The improved mounting and trim construction is best illustrated in Figs. 1 and 2 and includes a metal binding strip generally indicated at 7 having a generally Z-shape in cross-section with its central web 8 engaging the underside of the sheet metal base 3 of the table top 2 adjacent the edge of the sink opening 9 formed in the top 2. One Z-leg or flange 10 of the binding strip 7 extends upward along the edge of the opening 9 and initially has a portion indicated by dot-dash lines 11 in Fig. 2 which projects beyond the table top 2. In forming the improved joint, the portion 11 is formed, pressed, turned, bent, or laid over at 12, and embedded under pressure into the linoleum facing 4 as indicated at 13.

The other Z-leg or flange 14 of the binding strip 7 extends downward from the outer end of the web and has a portion indicated in dot-dash lines at 15 in Fig. 2 which initially projects below the sink rim 6. The portion 15 is pressed, formed, turned, shaped, bent or laid over inward as at 16 entirely around the outer edge of the flat rim 6 of the sink bowl 1. Water-proofing cement indicated at 17 surrounds the outer edge of the sink rim 6 between the sink and portions

8 and 16 of the binding strip 7 to provide a water-proof joint.

Similarly, water-proofing material or cement may be interposed between the binding strip 7 and the edges of the top 2, if desired, before the binding strip portion 12 is pressed or clinched into final position. The binding strip 7 may be made of any desired strip metal such as stainless steel, aluminum, or the like, having sufficient strength to maintain the final shape to which it is formed under pressure to suspend the sink bowl 1 from the table top 2 and to bind the edge of the sink opening 9 formed in the table top 2.

In fabricating the improved construction, the sink bowl 1 is manufactured in the usual manner. A table top 1, such as illustrated in Fig. 1, of the desired length and width is fabricated by providing a base panel of sheet metal 3 of the desired size and by cementing or otherwise securing a linoleum panel sheet 4 to the sheet metal base 3. The fabrication of the top panel 2 in the described manner enables production methods to be used and a uniformly efficient or adherent bond to be obtained between the laminations 3 and 4. Depending upon the specific materials used for the laminations 3 and 4, and upon the character of cement used to provide the desired adherence or bond therebetween, heat, pressure, or both, may be used in bonding or cementing the laminations together.

The sink opening 9 is then blanked out of the laminated table top 2 by a cutting or shearing operation as illustrated in Fig. 4. In carrying out this operation, the laminated table top 2 is placed on a bottom shear die 18 with the steel base 3 on the die 18 and the linoleum facing 4 at the top. The cutting shear 19 is then pressed downward to simultaneously shear the entire opening 9 in both the steel sheet 3 and linoleum cover 4.

By fabricating the sink opening 9 in the laminated table top 2 in accordance with the present invention in this manner, production operations can be utilized, the sizes of the openings in the sheet metal base 3 and the softer linoleum covering 4 are exactly the same, the openings are exactly aligned, and the cemented joint between the laminations 3 and 4 is not disturbed at and adjacent the opening 9.

In accordance with the present invention, the metal binding strip 7 is fabricated from the desired sheet or strip metal to have a generally Z-shaped cross-section best shown in Figs. 3 and 5, including the web portion 8, the upstanding Z-leg or flange 10—11 and the downturned Z-leg or flange 14—15. The binding strip 7 is further formed to endless shape as illustrated in Fig. 3 by brazing or welding or otherwise securing the free ends of the formed strip together as indicated at 20. The endless binding strip 7 is shaped so that the outer surface of the upstanding flange 10—11 has the exact shape and size of the opening 9 blanked out of the table top 2.

The upstanding flange 10—11 of the endless binding strip 7 is then telescoped into the opening 9 formed in the table top 2, as illustrated in Fig. 5, with the web 8 contacting the underside of the sheet metal base 3 around the opening 9 and with the portion 11 projecting beyond the table top 2.

Again, the manufacture of the endless binding strip 7 as illustrated in Figs. 3 and 5 may be carried out by using simple production operations.

The parts, assembled as illustrated in Fig. 5, are then taken to a press having a die shoe 21 upon which the lower die 22 is mounted and having a punch 23 with a relatively movable upper die 24. The initial position of upstanding flange portion 11 of the binding strip 7 is illustrated in dot-dash lines in Fig. 6, prior to the pressing operation.

The downturned binding strip flange 15 is located and positioned by the lower die 22, as shown, and the upstanding flange including the portion 11 is located and positioned by the punch 23 as the punch is depressed. Subsequent downward movement of movable upper die 24 bends the upstanding flange portion 11 over to the position indicated at 12, embeds the portion 12 under pressure into the linoleum 4, and clinches the linoleum facing 4 and metal base 3 of the table top 2 between the portions 8 and 12 of the binding strip. Such an operation again is a production operation and provides a substantially flush surface all around the opening 9, bounded by the binding or trim strip 7 without any routing or grooving of the linoleum. Moreover, a uniformly continuously tight joint is formed entirely around the sink opening 9. The die member 24, after being operated to set the flange 12, may then be operated to strip the work from punch 23.

The table top 2 with the binding strip 7 clinched thereto as illustrated in Fig. 6 is then turned upside down and taken to another press, illustrated in Fig. 7, including a lower die 25 and an upper die 26. The table top 2 is located and centered on the lower die 25 by a central die projection 27 which fits within the portion 10 of the binding strip 7. Initially, the downturned flange 14—15 projects upwardly as indicated in dot-dash lines in Fig. 7.

Caulking compound, or other water-proof putty, and the like, is smeared around the inside of binding strip flange 15 and web portion 8 as indicated at 17 and the upper die 26 is depressed to form the flange portion 15 inward to the position shown at 16, thus uniformly locking the sink bowl in place and providing a tightly sealed water-proof joint continuously around the entire periphery of the sink rim 6. Clearance between the die portions 26 and 27 and the sink rim 6, as illustrated in Fig. 7, prevents direct pressure on the porcelain enameled bowl.

The finished structure resulting from the operation illustrated in Fig. 7, is shown in Fig. 2. In this structure, the edges of the table top 2 and the sink rim 6 are squeeze-clamped all around by the endless binding strip 7. The members are thus permanently joined and the binding strip 7 serves three functions, as follows:

First, the binding strip 7 accurately binds and trims the edge of the table top 2 entirely around the sink opening formed therein so that the linoleum facing 4 cannot curl, warp or become detached from the sheet metal base 3.

Second, the binding strip 7 provides a water-tight, leak-proof joint entirely around the rim of the sink 1 between the sink and the table top 2.

Third, the binding strip 7 provides a support which suspends the sink bowl 1 from the table top 2.

A modified form of construction is illustrated in Fig. 8 which is manufactured in the same manner as the construction shown in Fig. 2. In this construction, the sink 1*a* has a substantially flat rim 6*a* terminating in an upstanding well flange 6*b*. In forming the supporting joint, the binding strip 7*a* is modified by having a lower flange 14*a* of greater length, extending along the upstanding sink flange 6*b*, and the initially extended

portion 15a, indicated in dot-dash lines, is turned under as indicated at 16a to engage under the sink rim 6a. Otherwise, the construction illustrated in Fig. 8 is identically the same as that illustrated in Fig. 2.

In the modified construction illustrated in Fig. 9, the laminated table top 2a is illustrated as being formed with a base of plywood, lumber or other similar material 3a, and a linoleum facing 4. The locking strip 7b is identical with the locking strip 7 illustrated in Fig. 2, excepting that the portion 10a has a greater depth than the portion 10 of the locking strip 7. Otherwise, the construction is formed and fabricated in the same manner as described in connection with Fig. 2.

Accordingly, although a steel sheet 3 covered with linoleum, rubber, plastic, laminate or other similar softer material is preferred, the method and construction of the present invention can be used in connection with a plywood or lumber table top surfaced with any desired upper facing material.

In each of the embodiments of the present invention, the construction is characterized by its simplicity, and the method is carried out by utilizing production operations in a factory; thus eliminating hand work, multiple parts and ineffective water-proof joints which characterize prior art constructions and methods of assembly and installation.

Accordingly, the present improvements provide a continuous sink bowl support and trim with a water-tight joint for mounting a sink bowl on a table top in a simplified and inexpensive manner accomplishing all of the foregoing objects and avoiding the described prior art difficulties.

In the foregoing description, certain terms have been used for brevity, clearness and understanding; but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such words are utilized for descriptive purposes herein and not for the purpose of limitation, and are intended to be broadly construed. Moreover, the embodiments of the improved constructions illustrated and described are by way of example and the scope of the present invention is not limited to the exact details of construction of the various parts.

Thus, the sink is described as being a "flat rim" sink and such term is intended to include not only the flat rim sink of Figs. 2 and 9, but also the sink of Fig. 8, which has a generally flat rim that terminates in an upstanding flange to provide a well-type construction.

Likewise, the sink top, table top, platform, panel, work table, or the like, to which the sink bowl is joined, is generically termed a "table top," and such table top may have any desired construction and may be made with a base having substantial rigidity and formed of metal, plywood, lumber, or the like, and covered with linoleum, rubber, plastic laminate, or other suitable relatively softer facing material. Accordingly, the use of any such terms includes all such terms.

Having now described the features of the invention, the manufacture and assembly of preferred embodiments of the improved construction, the preferred steps of the improved method, and the advantageous, new and useful results attained thereby; the new and useful methods, steps, procedures, devices, constructions, arrangements, combinations, sub-combinations, parts and elements, and reasonable mechanical equivalents thereof, obvious to those skilled in the art, are set forth in the appended claims.

I claim:

1. In a method of mounting a flat rim sink on a table top, the steps of forming a table top panel, cutting a sink opening in said panel, forming an endless binding strip of generally Z-shaped cross-section with one Z-leg shaped and sized to fit said opening, clinching said leg upon and embedding it in the table top continuously around the edge of the opening by a pressing operation to form a flush and uniformly continuous tight trim joint between the binding strip and table top, applying water-proofing cement to the other binding strip Z-leg, telescoping the sink rim within said last named Z-leg, and clinching said last named Z-leg over the sink rim continuously therearound by a pressing operation to form a uniformly continuous water-proof joint entirely around the sink rim supporting the sink from the table top.

2. In a method of mounting a flat rim sink on a table top, the steps of forming a table top panel, cutting a sink opening in said panel; forming an endless binding strip having a web, an upwardly extending flange at the inner end of the web, and a downwardly extending flange at the outer end of the web; shaping the upwardly extending flange to fit the shape of said opening, telescoping the panel opening over the upwardly extending flange and abutting the panel against said web, clinching a portion of said flange upon and embedding it in the table top by a pressing operation continuously around the edge of the opening to form a flush uniformly continuous tight trim joint between the binding strip and table top, telescoping the sink rim within the downwardly extending flange, applying water-proofing cement between the sink rim and binding strip, and clinching a portion of said downwardly extending flange upon the sink rim by a pressing operation continuously around the rim to form a uniformly continuous water-proof joint between the binding strip and sink rim entirely around the sink rim supporting the sink from the table top.

3. In a method of mounting a flat rim sink on a table top, the steps of forming a laminated table top having a base and a linoleum covering, cutting a sink opening in said laminated table top, forming an endless binding strip having a web and a flange extending from each end of the web, telescoping the table top opening over one flange and abutting the table top against said web, bending said one flange by a pressing operation to embed it in the table top linoleum and to clinch the table top between the flange and web continuously around said opening, telescoping the sink rim within the other binding strip flange, applying water-proofing cement between the sink rim and binding strip, and bending said other flange by a pressing operation to clinch the sink rim between said other flange and web to form a uniformly continuous water-proof joint entirely around the sink rim supporting the sink from the table top.

4. In a method of mounting a flat rim sink on a table top, the steps of forming a sheet metal panel, forming a sheet linoleum panel, cementing the linoleum panel to the sheet metal panel to form a laminated table top, cutting a sink opening in said laminated table top, forming an endless binding strip having a web and a flange extending from each end of the web, telescoping the table top opening over one flange and abut-

ting the sheet metal thereof against said web, bending said one flange by a pressing operation to embed it in the table top linoleum and to clinch the table top between the flange and web continuously around said opening, telescoping the sink rim within the other binding strip flange, applying water-proofing cement between the sink rim and binding strip, and bending said other flange by a pressing operation to clinch the sink rim between said other flange and web to form a uniformly continuous water-proof joint entirely around the sink rim supporting the sink from the table top.

5. In a method of mounting a flat rim sink on a table top, the steps of forming a sheet metal panel, forming a sheet linoleum panel, cementing the linoleum panel to the sheet metal panel to form a laminated table top, simultaneously cutting a sink opening through said cemented linoleum and sheet metal table top panels, forming an endless binding strip having a web and a flange extending from each end of the web, telescoping the table top opening over one flange and abutting the sheet metal thereof against said web, bending said one flange by a pressing operation to embed it in the table top linoleum and to clinch the table top between the flange and web continuously around said opening, telescoping the sink rim within the other binding strip flange, applying water-proofing cement between the sink rim and binding strip, and bending said other flange by a pressing operation to clinch the sink rim between said other flange and web to form a uniformly continuous water-proof joint entirely around the sink rim supporting the sink from the table top.

6. In a method of mounting a flat rim sink on a table top, the steps of forming a laminated table top having a metal base and a covering of softer material, simultaneously cutting a sink opening through said metal base and softer covering, forming an endless binding strip of generally Z-shaped cross-section with one Z-leg shaped and sized to fit said opening, continuously pressure clamping said leg upon and embedding it in the softer table top covering material entirely around the edge of the opening to form a flush and uniformly continuous tight trim joint between the binding strip and table top, applying water-proofing cement to the other binding strip Z-leg, telescoping the sink rim within said last named Z-leg, and continuously pressure clamping said last named Z-leg over the sink rim continuously therearound to form a uniformly continuous water-proof joint around the sink rim supporting the sink from the table top.

JACQUES STANITZ.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,930,102	Liner	Oct. 10, 1933
2,080,573	Madsen	May 18, 1937
2,193,018	Batcheller	Mar. 12, 1940
2,198,696	Drain	Apr. 30, 1940
2,256,272	Batcheller	Sept. 16, 1941