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SINK OF COMPOSITE CHARACTER

Filed Dec. 31, 1930 2 Sheets-Sheet 1

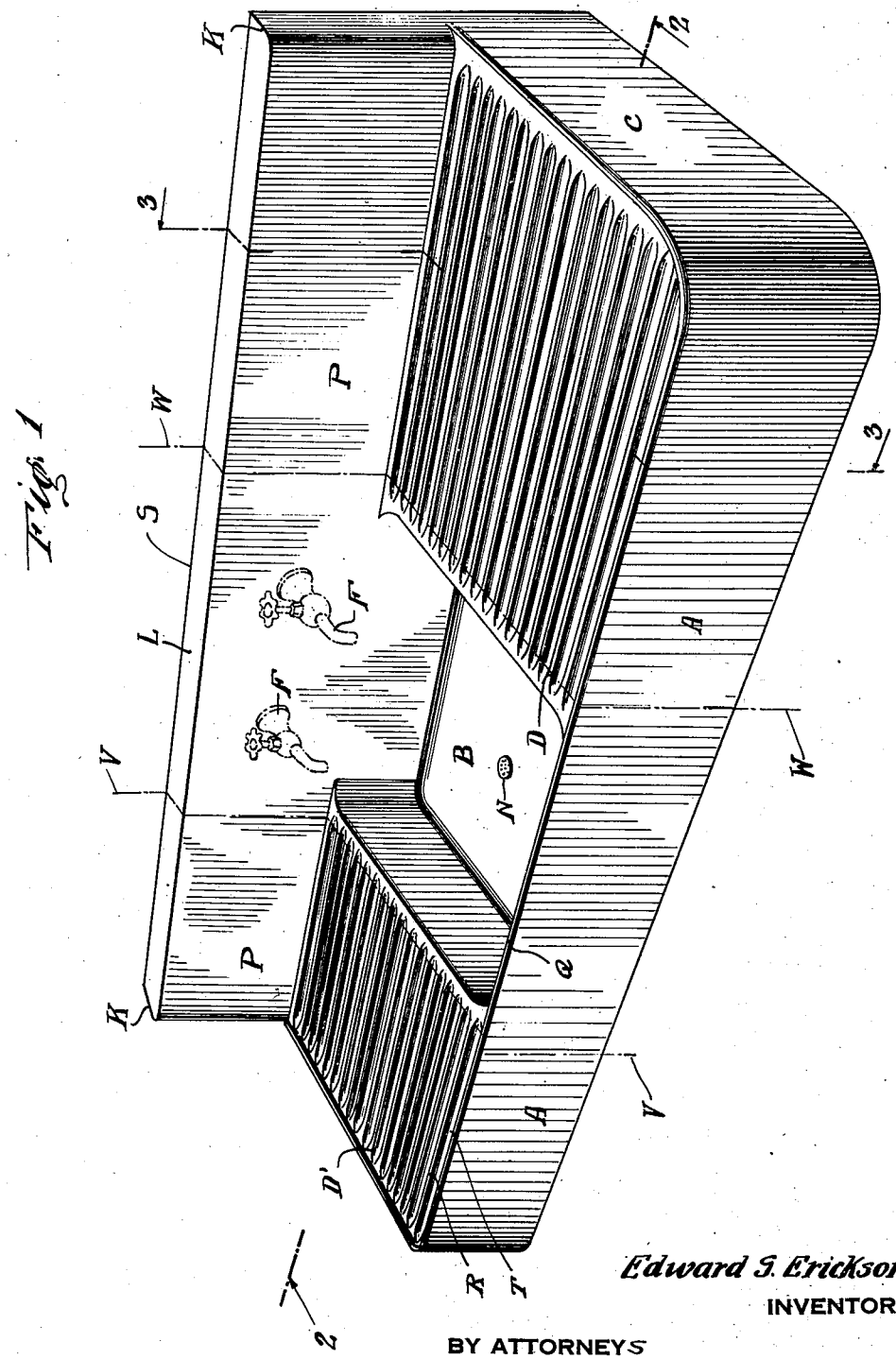


Fig. 1

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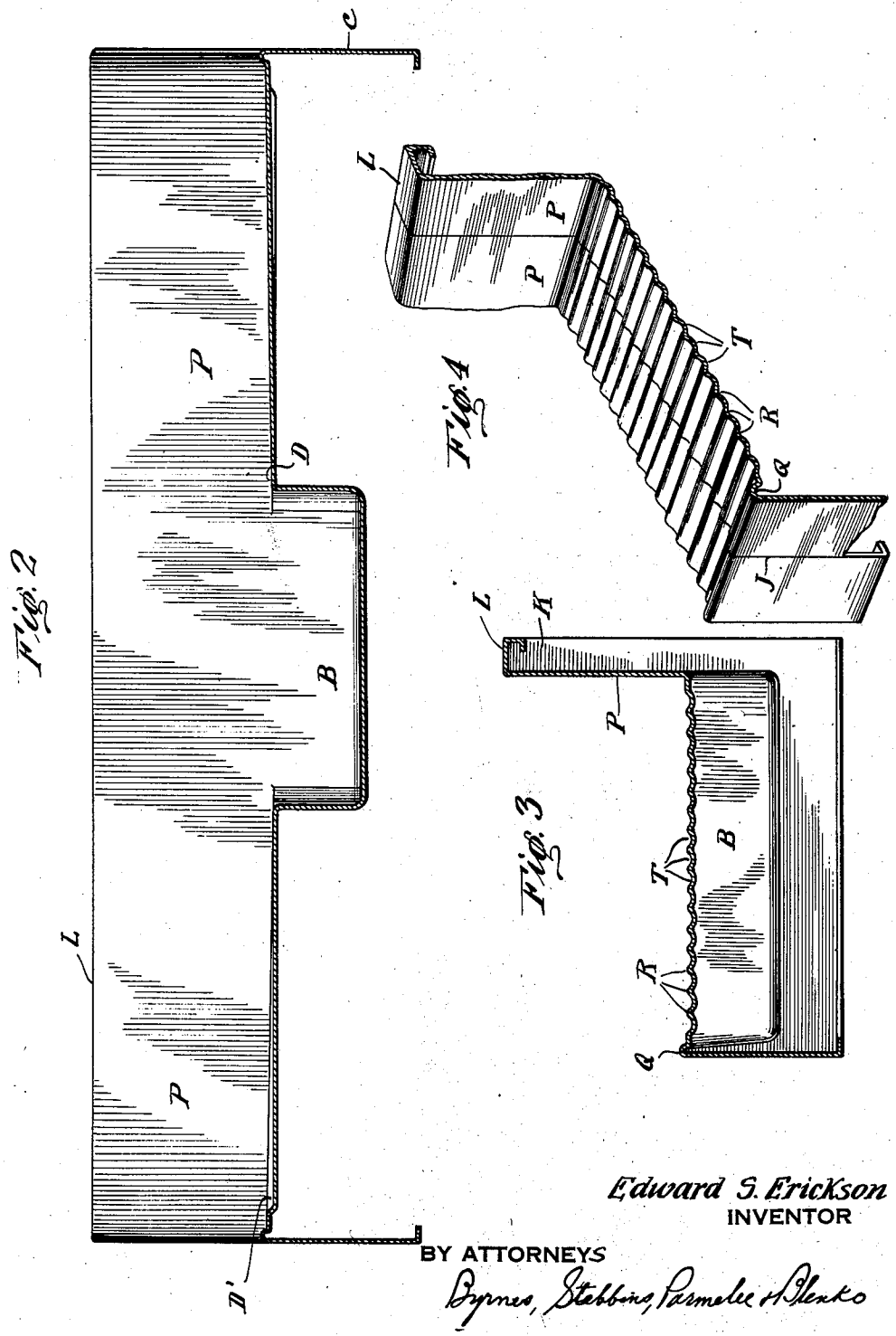


Fig. 2

Fig. 4

Fig. 3

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SINK OF COMPOSITE CHARACTER

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5 Claims. (Cl. 4—187)

The present invention relates to sinks of the kitchen type and more particularly to drawn, sheet metal sinks of composite structure having a unitary appearance.

Heretofore, the type of sink generally used in a kitchen was a cast iron sink with or without enamel coated on the exposed or working surfaces thereof. These sinks were heavy and required a considerable amount of metal in making the same. They had many objections and disadvantages among which may be noted the occupying of a large volume or space while only providing a limited active working drainboard space and bowl or basin space, the use of large curves and filets in the casting, the tendency of the enamel to chip from the sink, the rusting of the iron and the cumbersome appearance. Many attempts were made to replace the prior cast iron sinks with a stamped or drawn sink of sheet metal construction. Among the prior attempts may be noted the proposals to make a stamped sink out of one sheet of metal. It was found to be impractical to stamp a sink with a drainboard out of one sheet of metal due to one reason or another, particularly due to the tendency of the sheet to tear and to become distorted. Moreover, when large sinks were attempted to be stamped out of sheet metal, it was found that parts of the metal had a tendency to wrinkle at some places and other parts had a tendency to warp and to deform and fail. Then again, the sink as a whole lacked structural rigidity and strength.

The objects of this invention is to provide a stamped or drawn sink of composite character of sheet metal which avoids the shortcomings of prior sinks and which provides the art with a practical and satisfactory sink of the kitchen type.

It is another object of the invention to provide a drawn sheet metal sink of composite character which has continuous surfaces and which is free from broken or sharp corners.

It is a further object of the invention to provide a drawn sheet sink of composite structure in which the portions of the sink are cut transversely to the length of the sink and are welded or joined together in such a manner as to give a unitary appearance to the sink as a whole while at the same time providing an upstanding splashback and a depending apron to give rigidity and strength to the structure.

It is also within the contemplation of the invention to provide a drawn sheet sink of composite structure which has a smaller working radii to form the various curves and which has a smaller overall size than prior sinks, while at the same time providing a larger active working area both on the drainboard and in the basin or bowl and which has sharp corrugations incorporated in the drainboard for effecting quick draining.

Other objects and advantages will become apparent from the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 depicts a perspective view of a preferred embodiment of the present invention;

Figs. 2 and 3 illustrate sectional views taken on the lines 2—2 and 3—3 of Fig. 1; and

Fig. 4 is an enlarged fragmentary view, somewhat diagrammatic, of the corrugations in the drainboard and welded joint between the drainboard and bowl of the sink.

Referring more particularly to Fig. 1 of the drawings, the reference character S generally designates a drawn sheet metal sink of composite character. This sink comprises, broadly speaking, a basin or bowl B and a right and/or left hand drainboard D and D'. Each of these parts is a unit. By joining or assembling the parts together, as mentioned hereinafter, a composite sheet metal sink of unitary character is provided.

In practice, it has been found that aprons A and C, which constitute front and side depending walls of the sink, respectively, and splashback P, which constitute the back of the sink, should be made integral with the body portions of the right and left drainboards and the bowl or basin. By organizing and arranging the parts in the aforesaid manner, it is possible to produce a satisfactory composite sink of drawn sheet metal which has sufficient strength and rigidity to withstand handling, erecting and stresses of daily use.

On the drainboards a plurality of ridges or corrugations R are provided which form a plurality of troughs T, which preferably extend from one extreme thereof and which cover practically the entire drainboard. In other words a completely fluted drainboard is provided. As it is well known, these ridges permit the placing of wet articles on the drainboard to drain and to become free from water or the like. The collected water or other liquid runs down troughs T into the bowl B.

With respect to ridges R, it has been found that when sharp acute curves are provided more effective and quicker draining can be accomplished. By the use of sheet metal, it is possible to provide ridges of sharp acute character and to provide the sink with a more efficient drainboard.

Extending along the front and sides of the sink at the upper edge thereof a rim or an elevated roll Q is provided. This roll is higher than troughs T and ridges R and prevents water from running over the front or side of the sink. In

addition, the provision of this roll gives further rigidity to the sink as a whole.

Splashback P lies practically vertically with respect to the bottom of the sink and to the plane of the drainboards. At each side of the splashback, a rolled corner K, preferably of a quarter circular form, is located which terminates at the back of the sink. In the same way, the top of the splashback is bent over in the form of a ledge L, preferably of a flat character.

The units or parts of the sink are butt welded together along lines V—V and W—W. These welds or joints are so made that the finished sink does not appear to be a composite sink but gives the impression of a unitary structure.

In Fig. 4, I have shown a fragmentary perspective view of a portion of the sink containing the weld. It will be noted that the ridges or corrugations R extend across the weld or joint J which is illustrated somewhat in a diagrammatic manner. In this manner the welds are rendered practically non-visible and are reinforced or strengthened. It is to be noted that the welds are further reinforced by the improved construction described herein. The front depending skirt and the upstanding splashback act as beams and resist the weld opening up or failing due to loads placed in the basin or on the drainboards. The side depending skirts act as transverse beams and resist twisting or bending stresses tending to open up the weld. In the same way, the weld in the splashback and skirt is reinforced and strengthened by the drainboard and the inturned flanges which are approximately transverse thereto.

In the present sink provision is made for connecting a drain to the bowl of the sink by means of an aperture N. Similarly, faucets F, which are shown in dotted lines in Fig. 1, may be mounted in front of the splashboard of the sink in the usual manner. As one skilled in the art will readily understand any other auxiliaries may be provided in an appropriate manner.

An improved sink having a structure such as described hereinabove has a weight of about 100 pounds, and overall size of 12,006 cu. in., an active draining board space of 425 sq. in. and an active basin or bowl space of 2,925 cu. in., whereas a corresponding conventional enameled cast iron sink has a weight of about 306 pounds, and overall size of 14,725 cu. in., an active draining board space of 346 sq. in., and an active basin or bowl space of 2,762 cu. in. In the same way the curves used in the present sink can be more acute than those employed in cast iron or enameled cast iron sinks. The foregoing data is tabulated for convenience in the following table:

Approximate figures	New sheet metal (Monel) sink	Old cast-iron enameled sink	Gain over old sink
			Per cent
1. Net weight in pounds	100	306	206
2. Size in cubic inches	12,006	14,725	18
3. Active drainboard area in square inches	425	346	18
4. Active basin space in cubic inches	2,925	2,762	6

By having the splashback, drainboard or basin and front apron constituted of an integral structure, the sink has sufficient rigidity even though it is made from relatively thin sheet material to withstand handling and especially hard use. Then again, this structure is of such a character that the splashback is a flat surface which is free from wrinkles or dents.

Although any appropriate sheet metal such as metal of the so-called stainless steel type, copper, brass or the like may be employed, it is preferred to utilize a sheet of Monel metal having a thickness of about 0.0625 inch. Monel metal has work-hardening properties which cause a hardening of the metal after it is stamped or drawn in a die. The worked metal produces a harder and more rigid structure than a metal having no work-hardened properties. In addition, Monel metal is possessed with non-corrosive features and is capable of resisting alkalis of soaps, washing powders, and the like and is also capable of resisting the destructive action due to organic acids occurring in foods, greases, fats, wash water and other substances commonly occurring or used in a kitchen sink.

The improved drawn sheet metal sink of composite character may be fabricated in an appropriate way, but it has been found that when a special method is followed for manufacturing the sink, as will be explained hereinafter, improved and satisfactory results are obtained.

Sheet metal, preferably an alloy of copper and nickel such as Monel metal, is taken and cut into appropriate strips of sufficient area to completely form a unit or part of the sink. It has been found that Monel metal possesses peculiar properties which make it especially adaptable for drawing, stamping and the like. For instance, it has been discovered that Monel metal has the property of being capable of being drawn into deeper bowls before permanent sets, deformations or fractures occur than with other metals or alloys. The aforesaid property of Monel metal makes it possible to stamp or draw shapes and pieces with standard stamping and drawing equipment which could not be made with such metals as stainless steel, for instance.

In practice, the following process of making the improved drawn sheet metal sink of composite structure is preferred.

A sheet of metal, for instance Monel metal, is cut into pieces herein termed blanks, which are large enough to form a unit of the sink. A blank having a sufficient size to form the basin unit is placed in a drawing machine and the sink basin is drawn by forcing a ram into a die. During this operation, sufficient pressure must be applied to the blank holder to hold the sheet metal of the blank surrounding the drawn basin in a flat, non-distorted or wrinkled condition.

After the basin has been formed, it is preferred to make an aperture in the bottom of the basin for the drain of the sink. Any surplus material around the edge of the blank is then trimmed to prepare the unit for further operation.

The trimmed basin unit is now placed over a hub and worked in position by a blank holder while a ram forms the back of the sink and sets a bead or rim on the front edge thereof. The metal extending from the front rim is then turned down so as to form the front skirt of the sink.

The drainboards are next made by drawing a right and left drain from one blank. In making this drawing, a relatively small radius is employed at the corners of the blank or the drainboards whereas a relatively large radius is formed at an intermediate portion thereof.

The drawn drainboard unit is next cut in two and then trimmed to form the crude right and left drainboards. In the one corner of each of

the right and left drainboards, a notch is cut so as to facilitate the bending and formation of the splashback. Similarly, notches are cut in the lower right and left hand corners of the right and left drainboard, respectively, to allow for the formation of a complete inturned flange without the production of wrinkles.

After the foregoing trimming and notching operation has been completed, each drainboard unit is placed in a blank holder under pressure and a ram forms the splashback and forms the rim and skirt on the side and end of each unit.

With the completion of a basin unit, a right drainboard unit and a left drainboard unit, they are ready for assembly and joining in one structure. The drainboard units are now placed in alignment with the basin unit and the units are welded together by means of electricity, as one skilled in the art will readily understand. The welding joins the three units into a sheet metal sink of composite character.

After welding, an inturned flange is formed on the bottom edge of the front and side skirts and an inturned flange is formed at the top of the splashback. The formation of these flanges gives increased strength and rigidity to the sheet metal structure, particularly at the corners.

The burr on the top of the weld is removed in any suitable manner such as grinding or the like. After this operation, the entire sink is placed in a die and corrugations are stamped in the drainboards. Corrugating the drainboard tends to even out any slight waves, buckles, or the like occurring therein. As pointed out hereinbefore the corrugations extend across the weld so as to make it practically non-visible. In addition, the corrugations in the weld give it strength. In a similar manner, the corrugations give greater rigidity to the drainboard.

The foregoing operations completely form the sink described hereinabove and produce a structure which has rigidity and strength and which has the appearance of a unitary sink.

When all of the mechanical operations have been performed and the sink is completely assembled and fabricated, the entire exposed surface of the sink is polished in a suitable manner so as to provide a surface having a uniform reflection and appearance.

In some instances, it is preferred to form the drainboards back to back and to make a right hand drainboard and a left hand drainboard at one time. When this procedure is followed, the two drainboards have to be cut apart and then welded or joined to the bowl or basin unit as described hereinbefore.

It will be observed that the present invention provides a drawn sheet metal sink of composite character which has an extended area while at the same time has sufficient strength and rigidity for practical and useful purposes.

It will be further observed that the invention provides a composite sheet metal sink, which gives the appearance or impression of a unitary sink and in which the joints are not visible.

It will also be noted that the sink is provided with continuous surfaces which are free from broken corners and that the sheet metal is of such a character that it is durable and cannot crack like cast iron or enamel.

It will be further noted that a composite sheet metal sink is provided which has a smaller overall size than a corresponding conventional sink while at the same time having larger active working surfaces.

Although a preferred embodiment of the present invention has been herein illustrated and described, it is to be observed that modifications and variations may be resorted to without departing from the spirit and scope of the invention. For example, a sink with a single drainboard or a corner sink with a single drainboard can be made in accordance with the principles of the present invention.

What is claimed is:

1. A stamped sheet metal sink of composite character constituted as an integral and unitary article of manufacture having non-visible joints which comprises a plurality of units including an integral stamped basin and drainboard having a front apron extending lower than the bottom of said basin and having a rear splashback, an inturned edge provided on said apron and said splashback, said units being aligned with respect to said apron, splashback and inturned edges and being welded together to form a unitary structure having sheet metal walls transverse to the various parts of the weld whereby a strong, rigid structure is produced, said sink being capable of being handled, shipped and mounted as a unit.

2. A stamped sheet metal sink of composite character constituted as an integral and unitary article of manufacture having non-visible joints which comprises a unit including an integral stamped basin having a front depending apron extending lower than the bottom of said basin and having a rear upstanding splashback, said apron and said splashback being approximately transverse to the bottom wall of the basin, an inturned edge provided on said apron and said splashback, and at least one drainboard unit welded to said basin unit and having a front depending apron and a rear upstanding splashback and inturned edges aligned with the apron and splashback of the basin unit whereby a composite sheet metal sink is provided having a unitary character facilitating the handling, shipping and mounting thereof and having metallic walls approximately transverse to portions of the weld so as to strengthen and reinforce said weld.

3. A stamped sheet metal sink of composite character constituted as an integral and unitary article of manufacture having non-visible joints which comprises an integral stamped basin unit having an apron depending in the front thereof lower than the bottom of the basin and a splashback upstanding in the rear thereof, said apron and splashback being substantially transverse to the bottom wall of the basin, an inturned edge provided on said apron and said splashback, a right hand drainboard welded to the right side of said sink and having an apron, splashback and inturned edges aligned with the apron and splashback of said basin unit, and a left hand drainboard unit welded to the left side of said basin unit and having an apron, a splashback and inturned edges aligned with the apron and splashback of the basin unit, said sink being capable of being handled, shipped and mounted as a unit.

4. A stamped sheet metal sink of composite character constituted as an integral and unitary article of manufacture having non-visible joints which comprises an integral stamped basin unit having an apron depending in the front thereof lower than the bottom of the basin and a splashback upstanding in the rear thereof, said apron and splashback being substantially transverse to the bottom wall of the basin, an inturned edge

provided on said apron and said splashback, a right hand drainboard welded to the right side of said sink and having its apron, splashback and inturned edges aligned with the apron and splashback of said unit, and a left hand drainboard unit welded to the left side of said basin unit and having its apron, splashback and inturned edges aligned with the apron and splashback of the basin unit, and a plurality of corrugations incorporated in each of said drainboards and extending across the line of weld between the drainboard and the basin whereby the visibility of said weld is greatly lessened, said sink being capable of being handled, shipped and mounted as a unit.

5. In a sheet metal sink having a fluid receiving bowl terminating in a turned rim and in a splash-back all formed integrally from a single sheet of metal; the splash-back projecting upwards from the rear of said bowl, the turned rim surrounding the front and sides of said bowl and the ends thereof terminating at and merging into the said splash-back, and the places of merger between the ends of the turned rim and the splash-back being seamless.

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