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F. BERMAN

STRAINER

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2,532,052

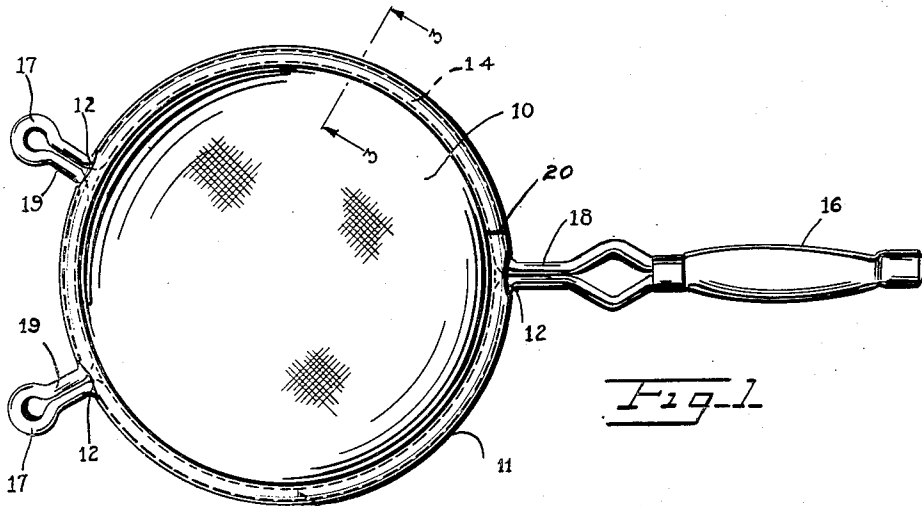


Fig-1

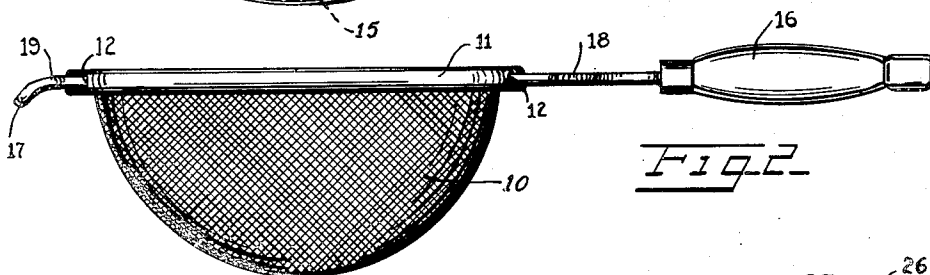


Fig 2

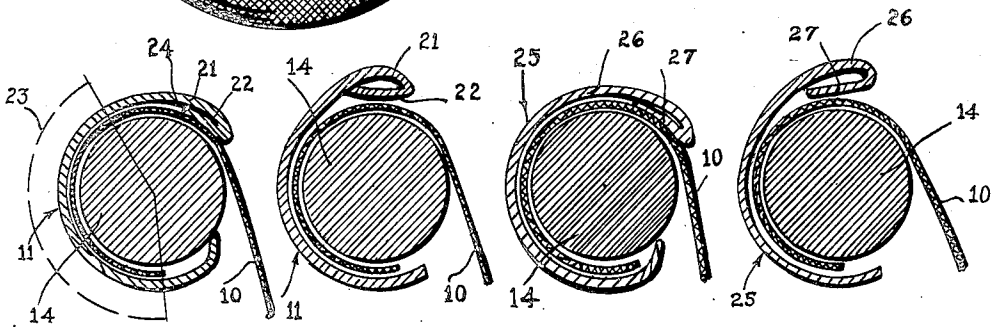


Fig 3

Fig 4

Fig 5.

Fig 5.

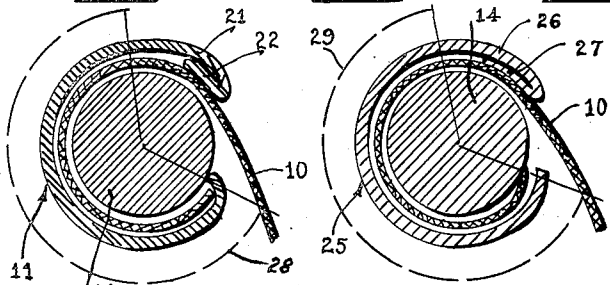


Fig-7

Fig 8

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STRAINER

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1 Claim. (Cl. 210—161)

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This invention relates to new and useful improvements in strainers and the like, and, more particularly, aims to provide a novel and improved type of interlock between the strainer frame, the handle frame where it extends around the strainer frame, and the marginal portion of the foraminous member, as a bowl of gauze or netting woven from metal strands or the like.

The foraminous member, below called the strainer sheet, has previously been attempted to be interlocked with the two frames aforesaid, by reception of the marginal portion of the strainer sheet into a recess extending longitudinally of the strainer frame.

The latter is ordinarily a strip of metal, rolled over at both long edges to a C-shaped cross section, and so to incorporate a longitudinal channel with the mouth of the C facing inwardly when the parts are assembled.

According to previous practice, the handle frame is entered into the lower zone of said channel, and, with the marginal portion of the strainer sheet entered into the upper zone of said channel, the strainer frame is laterally crimped with the object of gripping the strainer sheet with sufficient tightness to anchor the same against separation from the strainer frame at any point around the periphery of the strainer. The incidentally intended coupling of the two frames has presented no problem; the difficulty has been to properly anchor the marginal portion of the strainer sheet in the assemblage.

In an attempt to overcome this difficulty, it has even been proposed, in addition to pocketing the handle frame in the lower zone of the strainer frame's channel, to extend the marginal portion of the strainer sheet rollingly into the upper zone of said channel, and thereafter curl the upper portion of the strainer frame inwardly of the strainer and then down toward the handle frame and then inwardly of the channel. Here, however, the grip between the marginal portion of the strainer sheet and the handle frame has been merely a line-contact one, and backed at the strainer frame by a curled portion thereof and hence with that portion at best merely a somewhat resiliently acting pressure source.

A feature of the present invention is that advantage has been taken of the availability of the handle frame as a most important element, and not merely a secondary one, for absolutely dependably secure anchorage of the strainer sheet. Such availability of the handle frame is particularly augmented, when, as is the usual practice, the handle frame is made of round wire

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stock of a diameter which is many times a multiple of the thickness of the strip stock of which the strainer frame is made.

According to the present invention, the marginal portion of the strainer sheet is rolled outwardly over the handle frame and then downwardly and then inwardly under the same; and the strainer frame, preferably previously channeled to the aforesaid C-shaped cross section, is coupled to the strainer sheet and the handle frame in such manner that the upper marginal portion of the strainer frame, shaped to present a special structure, is squeezed down tightly onto the strainer sheet where the latter is curved around the lateral convexity of the handle frame, and accordingly to follow the lateral rotundity of the latter.

The said special structure of the strainer frame is such that it conforms its lowermost concavity to the convexity of the marginal portion of the strainer sheet where the latter follows the top area of the lateral rotundity of the handle frame. Thereby, a band grip rather than a mere line-contact grip is established relative to the strainer sheet.

Also, a dense and compacted mass of metal, this mass the special structure aforesaid and composed of a plurality of plies of the strainer frame, acts against the handle frame, in applying said band grip on the strainer sheet.

At the same time, the lower marginal portion of the strainer frame is tightly squeezed around the handle frame, with the result that a second band grip is obtained. Said second band grip is on the part of the marginal portion of the strainer sheet which follows the lateral rotundity of the handle frame at the bottom and outer areas thereof, and not only this, but also at the inner area of the lateral rotundity of the handle frame when the marginal portion of the strainer sheet is extended to such inner area in curling said marginal portion around the handle frame.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a top plan view of a strainer comprising a strainer sheet, a strainer frame and a handle frame.

Fig. 2 shows said strainer in side elevation.

Fig. 3 is an enlarged detail view, being a trans-

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verse section taken through the rim of the strainer, as on the line 3—3 of Fig. 1, illustrating one form of interlock in accordance with the present invention.

Fig. 4 shows the interlock of Fig. 3, at an intermediate stage in completing the same.

Fig. 5 shows a modification of the new interlock.

Fig. 6 shows the interlock of Fig. 5 at an intermediate stage in completing the same.

Fig. 7 shows a further modification of the new interlock.

Fig. 8 shows an interlock pursuant to the modifications of Figs. 7 and 5.

Referring to the drawing in detail, and preliminarily to Figs. 1 and 2, the type of strainer shown, the size of which is immaterial as is also the shaping of the central portion of the strainer sheet, and as are also the formations carried by the handle frame for projection beyond the rim portion of the strainer, is one wherein the strainer sheet 10 is illustrated as shaped at its central portion to provide a spherically arched bowl, the strainer frame 11 has three cut outs 12, and the handle frame 14 is made from a length of relatively heavy round wire stock having its ends meeting at 15 and having shaped therefrom a handle 16 and opposite the latter a pair of fingers 17.

When the parts are assembled, the handle 16, at its restricted neck 18, is accommodated in one of the cut outs 12, and the fingers 17, at their restricted necks 19, are accommodated in the other two of such cut outs.

The strainer strip 11 is made from a sheet metal strip, of a length to encircle the rim of the strainer, so that the two ends of said frame meet at some selected point around said rim, as at 20.

Referring to Fig. 3, the completed interlock here shown is one wherein the marginal portion of the strainer sheet 10 is curled outwardly and down over the handle frame 14 and then inwardly below the latter, with the strainer frame 11 compressed tightly to have the parts positioned as here illustrated.

The strainer frame 11 is C-shaped in cross section to incorporate a longitudinal channel, as is usual, but before said frame was arranged to pocket the handle frame 14 therein, said frame 11 was rolled, as shown in Fig. 4, to incorporate adjacent the upper limit of the frame 11 not only a downwardly laterally curved portion 21 but below the latter a portion 22 curved upwardly and inwardly of said channel.

As a result, when the interlock is completed as in Fig. 3, with said portions 21 and 22, now arranged as there shown, not only is the strainer sheet 10 clamped by a comparatively wide band grip between the upper part of the strainer frame 11 and the underlying part of the handle frame 14, but also by even a wider band grip between said frames opposite the band grip first-mentioned.

Said band grip first-mentioned is as wide as the width of the bottom surface of the portion 22 as said portion finally disposes itself as in Fig. 3 to conform to the lateral rotundity of the handle frame 14; while the second-mentioned band grip is of a width as great as nearly one-half the cross sectional circumference of the handle frame 14, as graphically shown by the arc 23.

Also, the center of the width of the band grip below the portion 22 of the strainer frame 11 is

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substantially diametrically opposite the center of the width of the band grip measured by the arc 23.

Moreover, the extra mass of metal of the strainer frame 11, provided at the first-mentioned band grip by the two-ply special structure thereof made up of the portions 21 and 22 of said frame, one of said portions above the other, makes said band grip, although of less width than the other band grip, particularly stiff and unyielding.

Further, the free end edge 24 of the portion 22 is forced to dig into the interstices of the strainer sheet 10.

Referring to Fig. 5, the completed interlock here shown is one wherein the marginal portion of the strainer sheet 10 is curled in the same way as in Fig. 3 outwardly and down over the handle frame 14 and then inwardly below the latter.

The strainer frame 25, corresponding to the strainer frame 11 and also C-shaped in cross section to provide a longitudinal channel, was, before it was arranged to pocket the handle frame 14 therein, rolled, as shown in Fig. 6, to incorporate adjacent its upper limit a downwardly laterally curved portion 26, corresponding to the portion 21, and therebelow a portion 27 extending inwardly of said channel; said portion 27 differing from the portion 22, in that the latter was extended not only inwardly but also upwardly of said channel.

With the interlock completed by compressing the parts to the final dispositions thereof as shown in Fig. 5, and with the portions 26 and 27 now arranged as there shown, all the advantages above pointed out in connection with Figs. 3 and 4, are present in Figs. 5 and 6. While the upper band grip in Fig. 5 is somewhat wider than the same means in Fig. 3, the lower band grip is, as a consequence, somewhat narrower; with the net result that an equally tight interlock is obtained in both the constructions of Figs. 3 and 5.

Referring to Figs. 7 and 8, the same tight engagement between the two frames is had in Fig. 7 as in Fig. 3, in both of which the strainer frame 11 is included, and in Fig. 8 as in Fig. 5, in both of which the strainer frame 25 is included. The main difference between Figs. 3 and 7 is that in Fig. 7 the marginal portion of the strainer sheet 10 is extended over and down around the handle frame 14 so as to almost completely encircle the same. The main difference between Figs. 5 and 8 is that in Fig. 8, as in Fig. 7, the marginal portion of the strainer sheet substantially completely encircles or encloses the handle frame 14.

Consequently, in both Figs. 7 and 8, the lower band grip is of a width equal to considerably over one-half of the cross sectional circumference of the handle frame 14, as graphically shown in Fig. 7 by the arc 28 and as graphically shown in Fig. 8 by the arc 29.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

Means for securing a bowl-shaped strainer sheet in position with its top edge portions bent about a circular handle frame from the inside

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to the outside thereof and over the top thereof, comprising a circular strainer frame, said strainer frame being C-shaped in cross-section and engaged over the top edge portions of the strainer sheet from the outside of the handle frame, said strainer frame having its bottom edge bent to engage the handle frame beyond the peripheral edges of the strainer sheet to restrain movement of the strainer sheet relative to the handle frame in a direction toward the bottom edge of the strainer frame, said strainer frame having its top edge portion bent under and inward and clamp between the adjacent faces of the strainer sheet and the strainer frame so that the free edges of said bent under top edge portion engage the interstices of the strainer sheet and secure

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the same against movement in a direction away from the bottom edge of the strainer frame.

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