June 19, 1945. J. H. REICHART 2,378,866

ENDLESS SELF-CLAMPING BAND STRUCTURE

Filed Nov. 15, 1943

FIG. 1

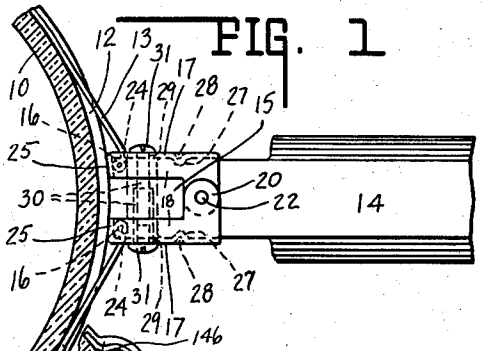


FIG. 2

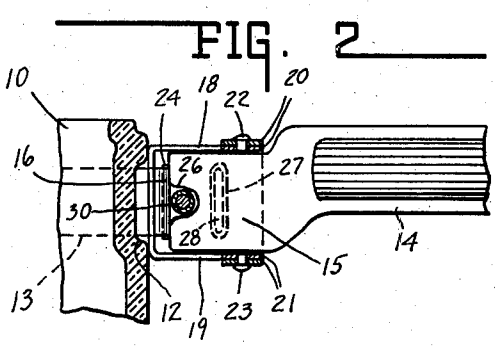


FIG. 3

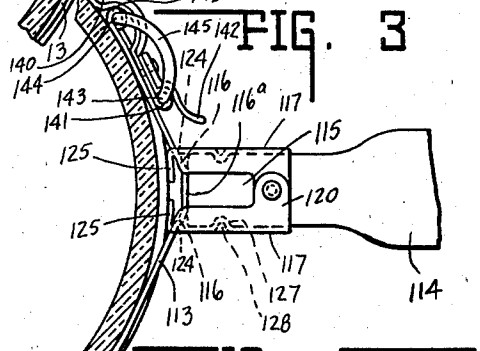


FIG. 4

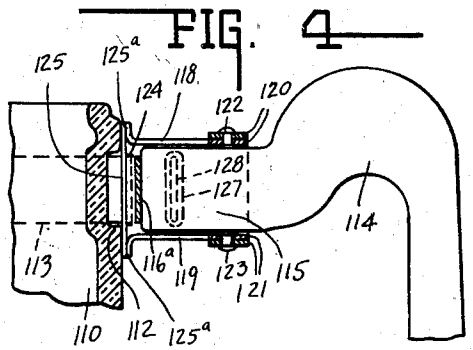


FIG. 5

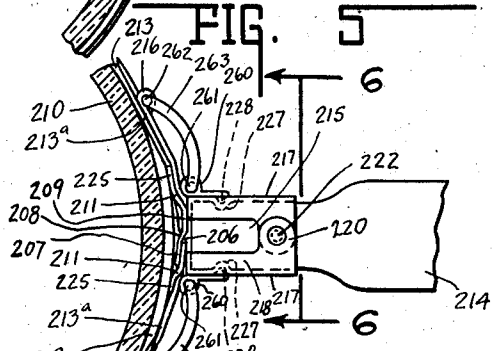


FIG. 6

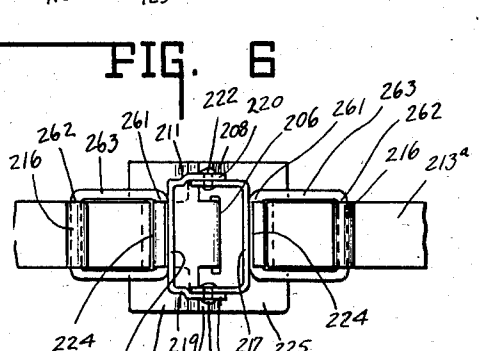
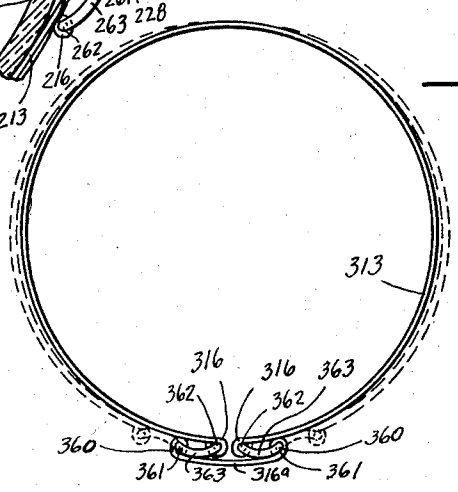


FIG. 7



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ENDLESS SELF-CLAMPING BAND STRUCTURE

James H. Reichart, Muncie, Ind.

Application November 15, 1943, Serial No. 510,258

1 Claim. (Cl. 294—27)

This invention relates to a contractible band structure.

One object of this invention is to provide a contractible band structure that is of comparatively simple character.

Another object of this invention is to incorporate therein a handle socket such that a handle may be retained therein simultaneous with band contraction.

A further object of this invention is to incorporate in a handle socket included collapsible band, means for simultaneously clamping the handle in the socket by tautening the band for anchorage or conversely simultaneously tautening the band by causing the socket to clampingly engage and retain the handle.

Still a further object of the invention is to provide a band tautening structure including two outwardly directed open rectangular loops arranged upon collapse toward the band to contract the same and, when socket included, to simultaneously clamp the handle in the socket.

The chief feature of the present invention resides in the construction of the band, its connections, etc., and the handle socket whereby the several objects aforesaid are accomplished.

Other objects and features of the invention will be set forth more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawing and the following description and claim:

In the drawing

Fig. 1 is a top plan view of a handle, socket and connected band portions and an externally enveloped vessel, the latter being shown in transverse or horizontal section.

Fig. 2 is a longitudinal central sectional view of the aforesaid, the handle being shown in elevation.

Fig. 3 is a view similar to Fig. 1 and of a modified form of the invention.

Fig. 4 is a view similar to Fig. 2 and of the form of the invention shown in Fig. 3.

Fig. 5 is a view similar to Figs. 1 and 3 and of of a further modification of the invention.

Fig. 6 is a transverse sectional view of the same and is taken on line 6—6 of Fig. 5 and in the direction of the arrow, the handle being omitted.

Fig. 7 is a top plan view of a further modified form of the invention.

In Figs. 1 and 2 of the drawing, 10 indicates a vessel, say of circular section and including an external groove 12 therein. Seatable in said groove is a band 13. A handle 14 is of radial type and includes an anchor portion 15.

The adjacent ends 16 of the band are curled, but may be otherwise enlarged. Such enlarged ends are slightly offset so as to position same slightly outwardly from the vessel groove, see Figs. 1 and 2, thereby maintaining, when the band is tautened, a guy wire effect therein for handle socket sustainment.

The handle socket herein includes two handle clamping side plates 17, which have upper and lower flanges 18 and 19, respectively. The outer ends thereof are extended towards each other as ears 20 and 21, respectively, and pivots 22 and 23 pivotally secure these ear members together. While pivot pins or rivets are disclosed, any other suitable pivotal connection will serve.

The other end of each side plate is slotted as at 24 to pass the band 13 adjacent its curled offset end 16. Inherent springiness or resiliency in the band serves to hold the slotted ends of the socket members apart. Herein adjacent each slotted end and extending towards each other are the vessel bearing portions 25 of said plate members. These also reenforce the members and prevent glass handle anchor portion 15 from contacting and scratching, thereby unnecessarily weakening the vessel.

The anchor portion 15 includes a longitudinal slot 26 and each side face thereof includes a recess 27. Each side plate 17 is indented as at 28 for nesting therein to prevent axial pull out of the handle from the socket. Each side plate also is apertured at 29. Male and female screw portions 30 pass through these apertures and have heads 31 bearing exteriorly upon side plates 17.

This connection naturally is adjustable. When fully extended the side plates 17 are divergingly directed and the band ends 16 are spaced apart the greatest possible distance, hence the band, in effect, is enlarged. It can be passed over the vessel and groove seated. At the same time the socket mouth defined by the outer edges of the side plate 17 and flanges 18 and 19 and ears 20 and 21 is not unduly restricted, since the pivotal connection of said plates is immediately adjacent said socket mouth.

Axial presentation of anchor portion 15 to the mouth and passage into the socket, positions said portion so that the screw portions 30 seat in the handle slot 26 and when the screw portions 30 are threaded together, projections or embossments 28 of the side plates seat in the recesses 27 of the anchor portion. During this movement of the plates 17 towards each other for handle anchorage, the curled ends 16 of the

band are drawn towards each other for band contraction and towards the vessel **10** until portions **25** of the socket engage the vessel above and below groove **12** thereof.

When the screws **30** are fully tightened, the several parts are positioned as shown in Figs. 1 and 2 and the band **13** is tautened upon the vessel **10** and seated in groove **12** thereof and handle **14** is rigidly anchored in the handle socket aforesaid.

In Figs. 3 and 4, there is illustrated a modified form of the aforesaid invention. In one sense it is the converse of that previously described in that therein socket clamping resulted in band tautening, while in the present form band tautening results in socket clamping of the handle.

Reference is here made to the copending application Serial No. 498,220 filed August 11, 1943, entitled "Glass vessel band and handle structures." Figs. 1 to 4 of the same illustrate the construction and operation of an open rectangular loop connection included in the endless band for extending and collapsing same.

Herein the band may be and preferably is endless, as illustrated herein. In other words, the band is not parted at the socket as in Figs. 1 and 2. Numerals of the primary series increased by one hundred herein designate parts herein identical or similar to the primary numeral designated parts shown in Figs. 1 and 2. A minor difference is that handle **114** is of a pistol grip type, although it may be as shown in Figs. 1 and 2.

In the present form of the invention side plates **117** are not apertured (see apertures **30** in plates **17**), but are embossed as indicated at **128** for seating in anchor portion **115** recesses **127**. Herein the band **113** includes offset portions **116** connected by an intermediate portion **116***a*. Side plates **117** are slotted at **124** for band reception. Herein the portions **125** are extended above and below flanges **118** and **119**, respectively, as at **125***a*. Naturally, the notch or slot in the handle anchor portion **115** (see notch **26** in Fig. 2) is not required and may be omitted.

The means for extending and contracting the band includes the arcuately, outwardly offset portion **140** having eye portion **141** and finger piece **142**. Eye portion **141** embraces one leg **143** of the open rectangular arched loop having the opposite leg **144** and spaced arched portions **145**. The latter leg is received within eye portion **146** on the adjacent end of band **113**.

The handle anchor portion **115** is axially inserted into the socket mouth the full extent possible, band intermediate portion **116***a* limiting the extent thereof. Then the open buckle **143—144—145** is collapsed upon the band which simultaneously tautens band **113** upon the vessel and draws members **125** into vessel bearing engagement above and below groove **112**. The band shoulders **116** limit separation of the socket forming plates **117** remote from their pivotal connection. In this manner the handle is simultaneously anchored in the socket with and by band tautening or contraction.

In Figs. 5 and 6 there is illustrated a further modified form of the invention. Herein numerals of the two hundred series indicate corresponding parts. This embodiment of the invention incorporates the crossed wire or drawstring effect of copending application Serial No. 510,257, filed Nov. 15, 1943, now Patent No. 2,361,471, issued Oct. 13, 1944, and entitled Endless, self clamping, handled band, a continuation of the aforementioned application of which this application also is a continuation-in-part.

Herein the two side plates **217** with upper and lower flanges **218** and **219**, respectively, are provided with ears **220** and **221**, respectively, which are pivotally connected by pivots **222** and **223**. Each side plate is embossed as at **228** to seat in adjacent recesses **227** in handle anchor portion **215** of handle **214**.

Each side plate at its forward edge is provided with a curled portion or eye **260**. Herein same are illustrated as welded additions, but same obviously may be formed from integral, oppositely directed, lateral extensions when desired.

Each eye portion **260** embraces one leg **261** of an open rectangular loop having an outer leg **262** and two arcuate spaced connecting portions **263**. Herein the strap **213**, embracing vessel **210** with groove **212**, and seating therein, includes two end portions **213***a* terminating in eye portions **216**, which embrace the said other legs of the aforesaid open buckles or loops.

Each portion **213***a* includes a portion **225** which is vertically elongated so as to bear upon the vessel **210** above and below the groove **212** thereof. Each portion **225** is offset outwardly as at **211** and each offset portion is slotted as at **224** to pass the extension **213***a* of the opposite end of the band **213**. Each offset portion includes a portion **209** and from one of same extends another and oppositely directed offset portion **208** terminating in a parallel portion **207**. Offset portion **208** is slotted at **206** for band end passage.

When the handle is not mounted, the plates may be divergingly positioned and the loops project outwardly from the band in somewhat radial fashion. The two members **225** are then spaced considerably apart. The band is now extended and can be readily passed over a vessel and when the band is groove seated, the two members **225** can be forced towards each other.

The handle **214** having anchor portion **215** may then be axially applied to the socket throat and forced forwardly, contact with the vessel being prevented by portions **225** and **207**, etc. Inward pressure upon each loop aforesaid first forces the side plates **217** into clamping and locking association with said portion **215** and then forces eyes **216** farther apart, which automatically tautens the band upon the vessel so that the parts interfit as shown in Fig. 5 and by a drawstring-like action.

Herein the final pressure upon the intermediate loops simultaneously clamps the handle and tautens the band. This final loop positioning is "overcenter" or "past center," as it were, similar to that shown in Fig. 3 for the singular open buckle or loop when in retaining position. This final pressure can be handle applied.

In Fig. 7 there is illustrated an endless band suitable for connecting two tubular articles together in clamping relation, or the connection therein may be used in lieu of the single clamp buckle shown in Fig. 3, or the band portion intermediate both buckles in Fig. 7 may be formed as shown at **116***a* in Fig. 3 and carry the socket and handle shown in the latter figure.

In Fig. 7, full lines indicate band contracted position and dotted lines the band extended position. Herein **313** is the band, the opposite ends terminating in eye portions **316**. In each is mounted one leg **362** of an open buckle or rectangular loop having an opposite leg **361**, said legs being connected by spaced arc-shaped portions **363**. An intermediate portion **316***a* includes at

opposite ends eyes **360**, which embrace said other legs **361**.

When the aforesaid is sequentially arranged and in non-lapping relation, the endless band is extended to its maximum possible extent. The intermediate portion **316***a* may then be pulled outwardly from the band. This naturally causes the ends **316** to approach each other and the band circumference is reduced. Inward pressure on portion **316***a* then will cause one buckle to collapse upon the band. Continued pressure on portion **316***a* will cause the other buckle to similarly collapse. The buckles now lap band **313** adjacent eyes **316** and the portion **316***a* now laps both buckles, see Fig. 7.

The buckles each pass over center, as it were, when so positioned and lockingly hold the entire band unit in the contracted formation. Naturally, the length of both buckles must be less than the effective length of portion **316***a*. Band periphery reduction is equal to the sum of the lengths of both buckles and portion **316***a*. This is an ingenious simple contractible structure quickly contracted or extended eliminating all threaded or the like members. Double buckles, if embodied in the Fig. 3 modification, naturally would provide greater band extension whenever desired or required for wide top vessels. Finger pieces like portion **142**, Fig. 2, may be applied to each end of portion **316***a* to facilitate band extension.

While the invention has been illustrated and described in great detail in the drawing and foregoing description, the same is to be considered as illustrative and not restricted in character.

The several modifications described herein as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claim.

The invention claimed is:

In a handle and vessel structure including a split band enveloping the vessel for clampingly mounting thereon the combination of a pair of members directed outwardly from the vessel and pivotally connected together at their outer ends for forming a handle receiving and enveloping throat through which the handle projects in opposite directions, said members having handle clamping socket forming sides between the throat and band, said sides adjacent the vessel end thereof being slotted and the band passing therethrough, and band drawing means comprising a pair of rectangular loops one at each side of the socket, each loop having its socket adjacent and pivotally connected to the adjacent side at the vessel end thereof, the other end of the loop lapping and being connected to one end of the band, the band portions adjacent the side ends crossing each other, one of them being slotted to pass the other for drawstring operation upon movement of the loops toward the vessel into band lapping position for band tautening and handle clamping purposes.

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