Oct. 17, 1961 W. F. HAAS 3,004,268

DRUM CONNECTORS

Filed April 22, 1957

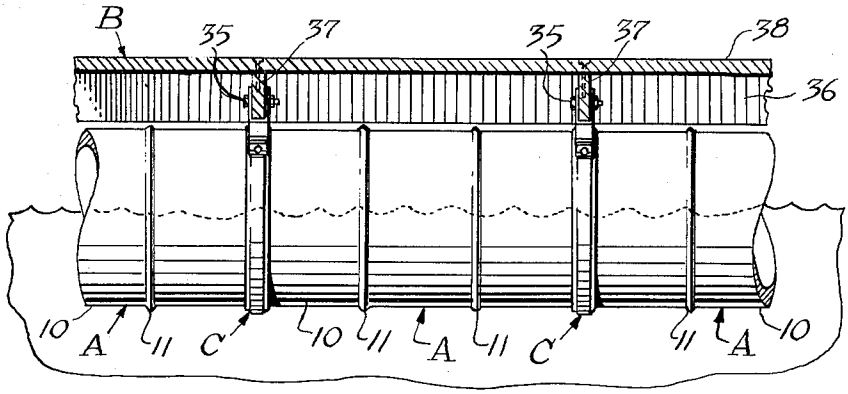


FIG. 1

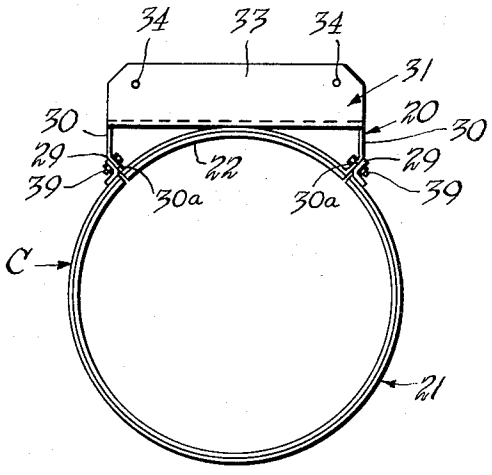


FIG. 2

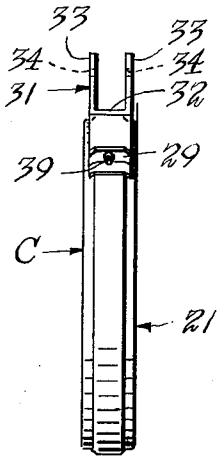


FIG. 3

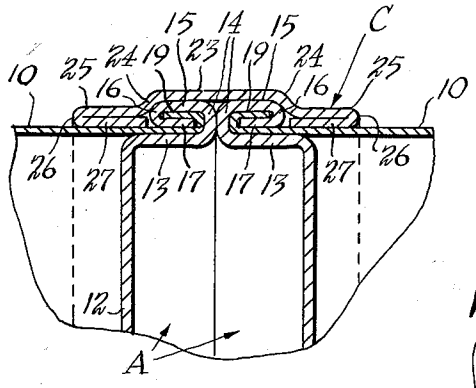


FIG. 4

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DRUM CONNECTORS

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This invention relates to an improvement in drum connectors and deals particularly with an apparatus for securing a plurality of drums in end to end relation.

During recent years the use of pontoon supported rafts has become increasingly popular. These rafts usually comprise a rectangular platform of sufficient size to accommodate a number of people and includes provisions for the support of one or more outboard motors. In place of one piece pontoons for supporting the superstructure of the raft, metal barrels or drums are often employed. Unless these barrels or drums are securely connected together, the drums may move to some extent relative to one another and cause considerable noise as well as wear. Furthermore, some connecting means which have been used are cumbersome to operate and require considerable time and effort in the assembly and disassembly of the raft.

An object of the present invention resides in the provision of a means capable of encircling the ends of two axially aligned drums and to hold these drums in proper relationship. By connecting the adjoining ends of the drums, the drums are held in end to end contact so that no relative movement between the drums can take place and so that an extremely strong end to end construction may be formed.

A feature of the present invention resides in the provision of a drum connecting means which is simple to operate. In order to connect two drums in end to end relation, it is only necessary to put the drums in place, place the drum encircling band in proper position, and to tighten the connection by means of two bolts.

A further feature of the present invention resides in the provision of a drum connecting element which is formed of two main parts, one of which extends partially around the ends of the drums from the upper extremity thereof and the other of which comprises a band designed to encircle the lower portions of the drums. The ends of the upper portion are attached to the ends of the lower portion to form a clamp for tightly connecting the drums in end to end relation.

A further feature of the present invention resides in the provision of a drum connecting means which also serves as a means of attaching the drums to a transverse beam or joist. In usual practice, rafts of the type in question are formed by securing flooring or decking to a rectangular frame made of two by sixes or similar joists. In the present construction, the part of the drum connecting means which extends over the upper portions of the drum includes an integral channel designed to accommodate such a joist. Thus, by spacing the joists a distance apart equal to the length of the drums, and providing a drum connecting means projecting downwardly from each such transverse joist, the drums may be simultaneously connected together and connected to the frame of the raft or other structure.

Drums of the type in question are usually provided at each end with an enlarged diameter chime connecting the wall of the drum to the ends thereof. The drum connecting means includes a band having a centrally offset portion which bridges the chimes of the drum and edges which engage the wall of the drum to securely hold the two drums in end to end relation.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of the specification:

FIGURE 1 is a sectional view through a platform showing the manner in which the drum connecting means acts to connect the drums thereto.

FIGURE 2 is a side elevational view of the drum connecting means shown in FIGURE 1.

FIGURE 3 is an end elevational view of the connecting means shown in FIGURE 2.

FIGURE 4 is a sectional view through the ends of a pair of drums and through a portion of the drum connecting means showing the operation thereof.

While the drum connecting means has been described particularly in combination with a raft, it should be understood that such a means is also useful in the provision of a floating dock or the like which may include a series of individual and articulated sections. Thus, while the drums have been most commonly used in conjunction with rafts, other uses are possible.

The drums are indicated in general by the letter A and are used in supporting a platform such as the platform B. This is accomplished by the drum connecting means shown in the drawings and illustrated in general by the letter C.

Drums of the type which are normally used include generally cylindrical walls **10** which may have a series of spaced encircling stiffening ribs such as **11**. As indicated in FIGURE 4 of the drawings, the ends of the drums A usually comprise disc shaped closures **12** having a peripheral flange **13** connected thereto, of a diameter to fit snugly within the end of the cylindrical wall **10**. The flanges **13** are provided with outturned flanges **14** which may be reversely bent to form chimes **15** which overlie the ends of the drum. The chimes **15** may also be bent at **16** to provide internal flanges **17** which are interlocked with reversely turned flanges **19** at the ends of the side walls **10**. This interlocking structure is usually formed by a rolling operation or spinning operation which acts to roll the edges of the drum walls and enclosures into interlocked relation.

The drum connecting means C include an upper section **20** which may extend, for example, one-fourth of the circumference of the drums although this length of arcuation can be increased or decreased. The drum connecting means also includes a lower section **21** which extends the remainder of the distance of the periphery of the drums. The cross sectional shape of the arcuate upper segment **22** of the upper section **20** and of the lower section **21** is best illustrated in FIGURE 4 of the drawings. In section, the band includes an offset central portion **23** which is connected by short offsets **24** to outwardly directed flanges **25**. The edges of the outwardly directed flanges **25** are bent as indicated at **26** to form inwardly extending marginal flanges **27**.

The amount of offset of the central portion **23** is normally such that the inner surface of the flanges **27** engage against the outer surfaces of the walls **10** of the drums A. The central offset portion **23** bridges the chimes **15** of the drums and when the two sections **20** and **21** of the drum connecting means are secured together, a tight drum encircling band is provided.

An outwardly turned ear **29** is provided at each end of the lower section **21** of the device. Straps **30** which are generally parallel but which include radially extending inner portions **30***a* connected to the ends of the arcuate part **22** of the upper section **20** are secured to the ends of this section and act as a means of connection between the ends of the arcuate portion **22** and the ends of a channel **31**. The channel **31** includes a flat base portion **32** which is centrally attached to the center of the arcuate portion **22** and parallel side walls **33** which are designed to accommodate a two by six or other such joist therebetween. Apertures **34** are provided through the frame

sides 33 to accommodate anchoring bolts such as 35 shown in FIGURE 1.

FIGURE 1 shows a platform indicated in general by the letter B and including a platform side 36 which forms one of the sides of the generally rectangular platform, the two sides being connected by transverse joists 37. A decking or flooring 38 is supported by the frame sides and joists as illustrated. As shown in FIGURE 1, the joists 37 are spaced apart a distance equal to the length of the drums A. Accordingly, in order to attach the drums A to the platform B, it is only necessary to provide a series of aligned connecting members C to project downwardly from the various joists by means of the bolts 35.

In the usual float or raft, two such rows of drums A are provided along opposite sides thereof although if additional support is required, one or more intermediate rows can be provided.

In attaching the drums, the upper portions 20 of the drum connecting means C are first attached in longitudinal alignment to the studs or joists 37 and the drums A are then attached to these upper portions. If the raft is being assembled on the land, the upper portions 20 may be attached to the bottom of the frame while the platform B is inverted and the drums may be attached by merely placing them in the arcuate portions 22 of the various connecting means which are then projecting upwardly from the joists. The lower portions 21 are then moved longitudinally of the drums, the ends of the lower portion being flexed apart slightly to permit the lower portion to be inserted into place. Bolts 39 are then inserted through the outturned ears 29 and the radially extending portions 30*a* of the straps 30. The tightening of the bolts 39 draws the ends of the lower portion 21 to the ends of the arcuate portion 22 of the upper section 20, thus connecting the adjoining drums in end to end relation.

The float or raft can also be erected in the water if desired. One side of the platform B is lifted after the upper portions 20 of the connecting means are attached to the float and a drum is placed so that the chimed ends thereof act as a support for the arcuate portion 22 of the upper part of the connecting member. Another drum may then be placed to extend between the next pair of upper sections 20 so that the ends of the two drums are in side by side relation. A lower portion 21 of an attaching member may then be placed in drum encircling position and the ends thereof attached by the bolts 39 to the upper section 20. This action may be continued throughout the length of the float.

Where the drums A are used to support a movable raft or similar object, a pointed prow and a rounded rear end may be desired on the pontoon structure. This may be accomplished by modifying certain of the drums so as to provide a relatively short forward projecting section from the foremost complete drum and a rounded rearwardly projecting portion attached to the rear drum of the series. However, the drum connectors may be used to support the single ends of a drum if desired to form a support for the front and rear ends of the pontoon structure.

In accordance with the patent statutes, I have described the principles of construction and operation of my improvement in drum connectors, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A drum connecting and supporting means including an upper arcuate section having an arcuate extent substantially less than one hundred eighty degrees and a lower arcuate section having an arcuate extent substantially more than one hundred eighty degrees, a pair of ears projecting outwardly and upwardly in a radial direction from the ends of said lower arcuate section, a pair of straps having vertical upper portions and inwardly angled lower portions connected to the ends of said upper arcuate section and to the ears in a contacting relation with said ears, and a channel member including channel sides in planes parallel to the side edges of said arcuate sections and an integral base extending horizontally between the lower edges of said channel sides, the ends of said channel being secured to the upper ends of said straps and tangentially engaging an intermediate portion of said upper arcuate section.

2. The construction described in claim 1 and in which said arcuate sections have a cross sectional shape including an outwardly offset central portion, a pair of outturned flanges connected to said offset central portion, and a pair of reversely bent flanges connected to the edges of said outturned flanges and extending in substantially surface contact with said outturned flanges.

3. A float structure for use on a float supported raft including a platform having a supporting frame including a series of parallel cross braces, the float structure including parallel rows of metal drums, said drums having encircling chimes at each end thereof, each row of drums including a plurality of drums in axially aligned relation, and connecting means connecting the abutting ends of adjacent drums, each said connecting means including an arcuate upper section and an arcuate lower section, the arcuate upper section having a channel secured thereto, said channel having a base secured to said upper section to extend tangentially thereof and parallel sides extending upwardly from said base and adapted to embrace one of said cross braces, said arcuate sections having in cross-section, edge portions encircling the ends of two adjacent drums adjoining said chimes and an intermediate offset portion encircling the chimes, radially extending means on the ends of said sections, and clamping bolts extending through said radially extending means to connect the ends of said sections in drum encircling position.

4. The structure of claim 3 and in which the radially extending means on said upper section are connected to the base of the channel.

5. The structure of claim 3 and in which said upper section has an arcuate extent substantially less than one hundred eighty degrees, and the lower section has an arcuate extent substantially more than one hundred eighty degrees.

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