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RECEPTACLE AND METHOD OF MAKING THE SAME

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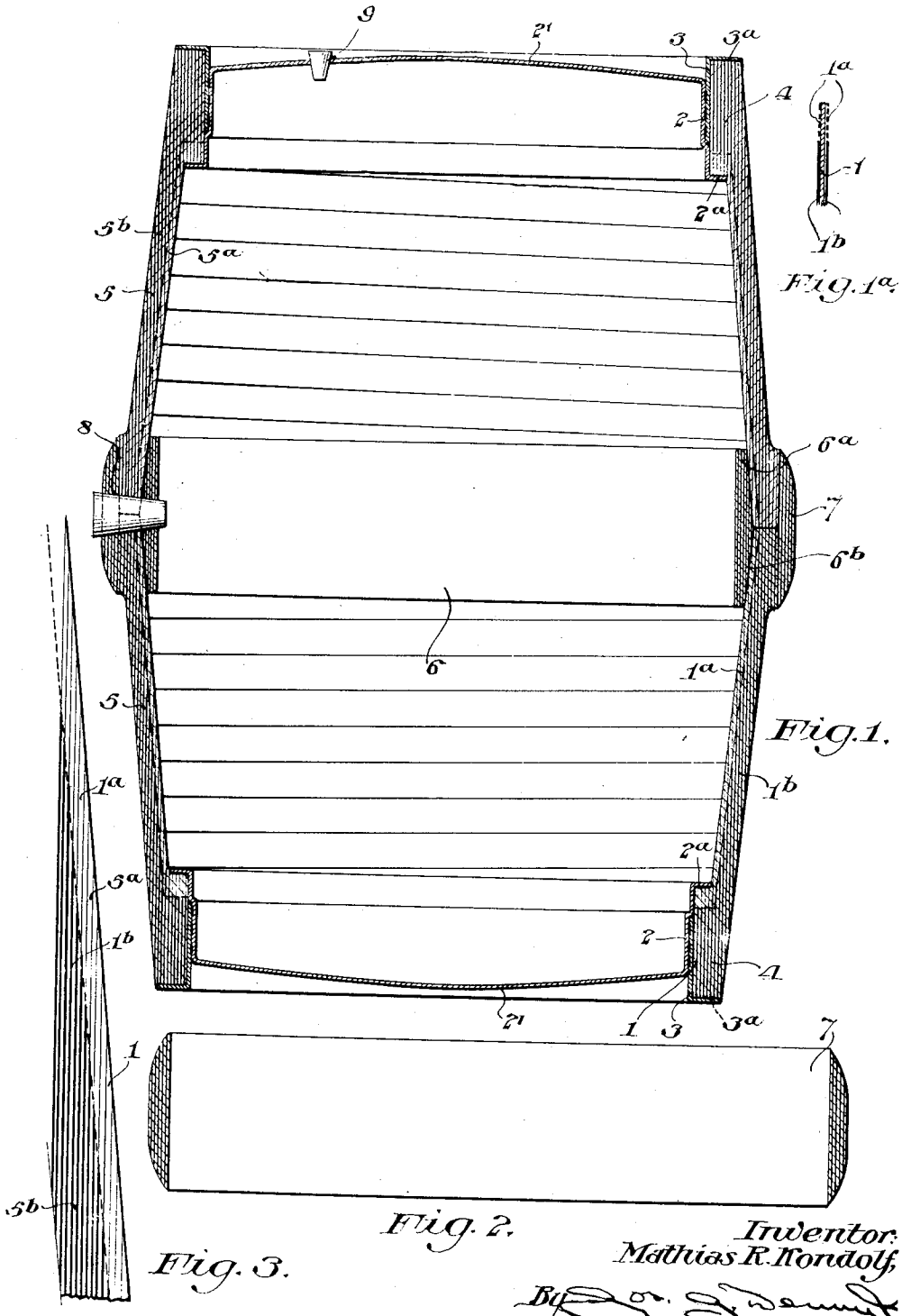


Fig. 1a.

Fig. 1.

Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

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RECEPTACLE AND METHOD OF MAKING THE SAME.

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My invention is designed to provide a receptacle, particularly a barrel, which will be resistant to the actions of substances having different characteristics, such, for instance, as oil and water. In its preferred form, it comprises a body formed by laminating sheet material, such as a strip of paper, having portions thereof treated, by impregnation, coating, or the like, with suitable substances, such as a bitumen and a sizing, so that the sections of the convolutions forming the interior of the receptacle form a stratum or layer impervious to penetration by the contents of the receptacle while the sections of the convolutions forming the exterior of the receptacle form a stratum or layer impervious to penetration by fluids to which the receptacle may be externally exposed.

In the production of barrels in accordance with my invention, bodies having the foregoing characteristics are preferably wound upon flanged bottoms so designed as to form tight, interlocked joints with the bodies; two of the bodies being united at their open ends by inner and outer reenforcing bands, which may be wound from sheet material to closely conform with the contour of and adhere to the barrel surfaces and form a tight joint between the sections.

The characteristic features and advantages of my improvements will more fully appear from the following description and the accompanying drawings in illustration thereof.

In the drawings, Fig. 1 is a longitudinal sectional view of a barrel embodying my invention; Fig. 1^a is a diagrammatic view of a strip of sheet material from which the receptacle illustrated in Fig. 1 is wound; Fig. 2 is a diametrical view of a detached ring for sealing the external joint between the barrel sections; and Fig. 3 is an enlarged fragmentary view of a section of the barrel wall.

In accordance with the preferred practice of my invention, a strip of sheet material 1, such as a paper web, has a longitudinal zone or portion 1^a, preferably adjacent to one edge, treated, as by impregnation or coating, with a substance resistant or repellant to the action of the fluid which the receptacle is designed to hold. A longitudinal section or portion 1^b of the strip, preferably adjacent to its other edge, is treated, as by impregnation or coating, with a substance repellant or resistant to the action of fluid with which the exterior of the receptacle is likely to come into contact.

Where the receptacle is designed for use as a container for oil or oily matter, the portion of the sheet which is to form the inner surface of the receptacle may be economically rendered impervious thereto by treatment with a glue or sizing; and where protection is desired against penetration by external water or the like, a portion of the sheet material forming an outer stratum, or the exterior, of the receptacle wall may be economically treated with a bituminous substance, such as asphalt. It will, of course, be understood that other imperviating agents may be used as may be best suited to particular conditions of manufacture or use.

Strips of sheet material so treatd may be helically wound to form frusto-conical bodies for barrels, tubs and the like.

In the embodiment of the invention illustrated, strips of treated paper are wound upon heads or ends comprising flanged members 2 and 3 telescoped and brazed together to form channels in which the initial convolutions of the paper web are wound to form chine-like collars 4 on which the heads are securely locked by the radial flanges 2^a, 3^a.

When the chines have been wound to the desired thickness, the web-feeding rolls or the head-supporting mandrels are moved axially so as to build up convoluted bodies 5 of gradually increasing diameters.

The width of the strip portions 1^a and 1^b and the overlap of the convolutions in winding a body 5 are so proportioned that the glue impregnated or coated portions 1^a of adjacent laminæ are juxtaposed so as to form a stratum or layer 5^a (extending continuously from the ring 2, around the flange 2^a to the opposite end of the body) of sized sheet material impervious to oil or oily substances. The bitumenized portions of the respective laminæ are also juxtaposed and form a stratum or layer (extending continuously from the ring 3 to the opposite end of the body) which is impervious to water or the like.

The treated strips of sheet material are preferably wound while the substances with which they are treated are sufficiently tacky to form an adhesive uniting the respective laminæ together and such substances may be applied in such quantity and condition of fluidity as to form continuous coatings thereof respectively on the inner and outer surfaces of the bodies.

By securing together a pair of wound bodies with their larger ends in abutting relation, a bilged barrel may be formed; the butt joint between the sections being sealed and the construction reenforced by internal and external bands lapping the joint. In the constructing of such barrels, the flared ends of the bodies are preferably tightly telescoped into abutting relation upon a ring 6 wound from sheet material gradually narrowing toward its end so as to provide tapering exterior surfaces 6^a, 6^b conforming with the contour of the inner surface of the barrel. The laminæ of the ring 6 are secured together and the ring is secured to the barrel by an adhesive and pressure, the adhesive preferably being the substance used for treating the inner stratum of the barrel wall.

The external ring 7 may be wound directly upon the telescoped sections from a strip of sheet material and has its outer layers of narrower width than its inner layers so as to provide a bilge ring of desired convex contour. The laminæ of the ring 7 are fixed to the barrel and to one another by an adhesive, preferably consisting of the substance used for treating the outer stratum of the barrel.

A bunghole 8 may be formed through the bilge of the barrel and a spigot opening 9 may be formed in one of the concavo-convex head webs 2'.

By my improvements there is provided a structure effectively preventing outward or inward seepage through the body walls or head joints, as well as through the bilge joint when units are combined to form a barrel. The heads are securely interlocked in the body without perforating the sheet material and provide protection for the edges of the chines; all points of juncture or strain are adequately reenforced; and the barrel produced may be easily manipulated.

Having described my invention, I claim:

1. A receptacle element comprising a partially lapped narrow strip having on one of its faces a bituminized section and on the other of its faces a sized section.

2. A receptacle element comprising a coiled strip of sheet material, having its convolutions axially offset from one another, said strip having its edge forming the inner exposed surface of said receptacle sized and its edge forming the outer exposed surface of said receptacle bituminized, the intermediate portion of said strip forming the interior of the body wall of said element being partly sized and partly bituminized.

3. A receptacle element comprising a coiled strip of sheet material having convolutions offset axially from one another, portions of the convolutions of said strip having a bituminous substance between them and portions of the convolutions of said strip having a sizing between them.

4. A receptacle element comprising a pair of bodies of coiled sheet material having the joint between them lapped by a band of coiled sheet material having convolutions of different widths forming a convex periphery.

5. A receptacle element comprising a body of coiled narrow strips of sheet material wound in conoidal helixes and having within it a reenforcing band of coiled sheet material wound in laminations intermediate the ends thereof.

6. A receptacle element comprising a head having telescoping peripheral members with radial flanges thereon, and a body of coiled sheet material fixed to said head between said flanges.

7. A receptacle comprising a head having telescoping peripheral members each provided with a radial flange and a body having a collar engaged between said flanges.

8. The method of making receptacle elements which comprises treating sheet material with a fluid resistant substance over a portion of its width and with a different fluid resistant substance over another portion of its width and winding such material.

9. The method of making receptacle elements which comprises treating one edge of a strip of sheet material with a water repellant substance and another edge with an oil repellant substance, and winding the treated strip.

10. A receptacle element comprising a wound strip of sheet material having a fluid resistant substance over a portion of its width and a different fluid resistant substance over another portion of its width.

11. A receptacle element comprising a wound strip of sheet material having a fluid resistant substance over a projecting edge section of one side thereof and a different fluid resistant substance over a projecting edge section of the other side thereof.

12. A receptacle element comprising a wound strip of sheet material having both sides of one edge thereof treated with a water repellant substance and both sides of the other edge thereof treated with an oil repellant substance.

In testimony whereof I have hereunto set my name this 2nd day of July, 1924.

MATHIAS R. KONDOLF.