L. ULLMAN.

STOPPER PLUG.

APPLICATION FILED DEC. 4, 1919.

1,370,170. Patented Mar. 1, 1921.

Fig. 1.

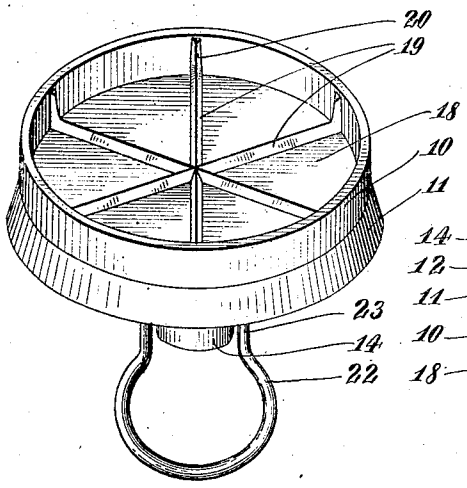


Fig. 3.

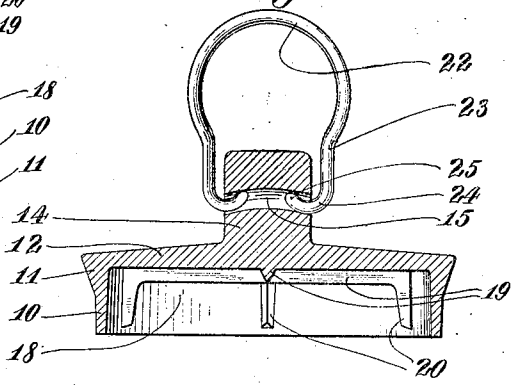


Fig. 4.

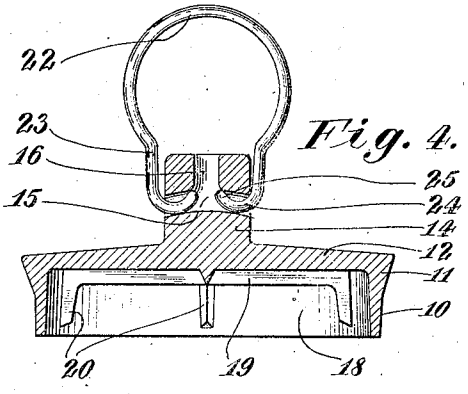


Fig. 2.

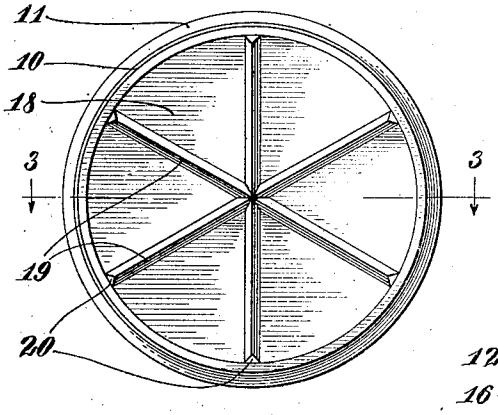
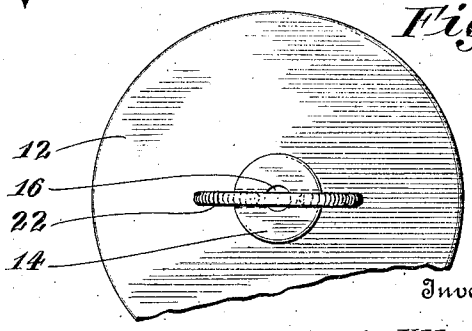


Fig. 5.



Inventor

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UNITED STATES PATENT OFFICE.

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STOPPER-PLUG.

1,370,170. Specification of Letters Patent. Patented Mar. 1, 1921.

Application filed December 4, 1919. Serial No. 342,510.

To all whom it may concern:

Be it known that I, LOUIS ULLMAN, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Stopper-Plugs, of which the following is a specification.

This invention has as its principal object to provide a stopper plug formed by die casting processes in such manner as to avoid any finishing operation whatever, the contacting surface of the plug being so made that it will fit limited variations in size of openings.

A further object is to provide a peculiar form of split ring for attaching the plug to a pull chain, the ends of the ring being tightened within the stem of the plug upon exerting a tensile force upon it.

These objects are attained by the novel construction and combination of parts hereinafter described and shown in the accompanying drawings, forming a material part of this specification, and in which:—

Figure 1 is a perspective view looking at the bottom of a plug made in accordance with the invention.

Fig. 2 is a bottom plan view of the same.

Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 2.

Fig. 4 is a similar view of the same, but showing a modification in construction, and

Fig. 5 is a fragmentary top plan view of the plug.

Referring to the drawings in detail, the numeral 10 designates the lower, slightly conical, portion of the plug exterior, the same blending into the upper beveled wall portion 11 formed with the top 12. Due to the double bevel or taper of the wall, the plug is suited to engage in openings varying somewhat in size, or which have become worn in use.

Rising centrally from the slightly convex surface of the top 12 is a straight cylindrical stem 14, the same containing midway in its height an arcuately curved passage 15 and a central vertical opening 16 extending from the passage through the top of the stem 14.

Within the hollow open interior 18 of the plug are a plurality of triangular cross sectioned reinforcing ribs 19, meeting at a common center, their outer ends merging into short, angular ribs 20, extending nearly to the bottom of the plug.

All of the foregoing elements are susceptible of being cast in metal dies, producing accurate plugs of relatively thin but strong cross section, assuring lightness, strength and great economy in construction.

The attaching ring 22, is preferably formed from brass wire or other material having the necessary tensile strength, resilience and non-corrosive properties.

This ring is formed with substantially parallel arms 23, spaced to pass freely over the stem 16, curved inwardly at their lower ends 24 and terminate in upturned elements 25 in such manner that a portion of the curved ends may enter freely into the passage 15, as shown in Fig. 3, and when drawn forcibly upward the terminals 25, sliding on the upper portion of the curved passage 15, enter the opening 16, tending to draw the sides of the ring toward each other, as shown in Fig. 4, serving to tighten the ring in its engagement with the plug, rather than to separate it, as in common forms of construction.

From the foregoing it will be seen that a neat appearing effective and cheap form of plug has been disclosed in which the securing ring is engaged in an unusually practical and novel manner.

It is to be noted that the construction is not confined to the showing in Fig. 4, but may be made alternatively if preferred, as shown in Fig. 3, in which the arcuate slot 15 is preserved but the central opening 16 dispensed with.

Having thus described my invention, and set forth the manner of its construction, what I claim as new and desire to secure by Letters Patent, is:—

1. A die cast integral stopper plug having a hollow lower portion, radial ribs formed interiorly of said hollow portion, a stepped conical exterior surface on the plug, a cylindrical stem extending opposite said hollow portion, said stem having an upwardly arched transverse passage, and a split ring having its ends bent inwardly to engage in the mentioned passage.

2. A die cast stopper plug having a double conical body, a cylindrical central stem extending from the top, an arcuately curved transverse passage in said stem, the higher portion of said passage being uppermost, a

wire forming a ring and having parallel arms spaced to straddle said stem, and hook elements formed at the ends of said wire engaged in said passage.

3. A die cast stopper plug having a body, a stem formed therewith, a curved passage passing transversely through said stem, the curvature of said passage being convexed with respect to said body, said stem also containing a central longitudinal opening extending from said passage outward, a spring wire forming a ring element and a pair of opposed arms, and reëntrantly inturned hooks at the end of said wire disposed in said passage and adapted to enter the central opening when said ring is pulled.

In testimony whereof I have signed my name to this specification.

LOUIS ULLMAN.