

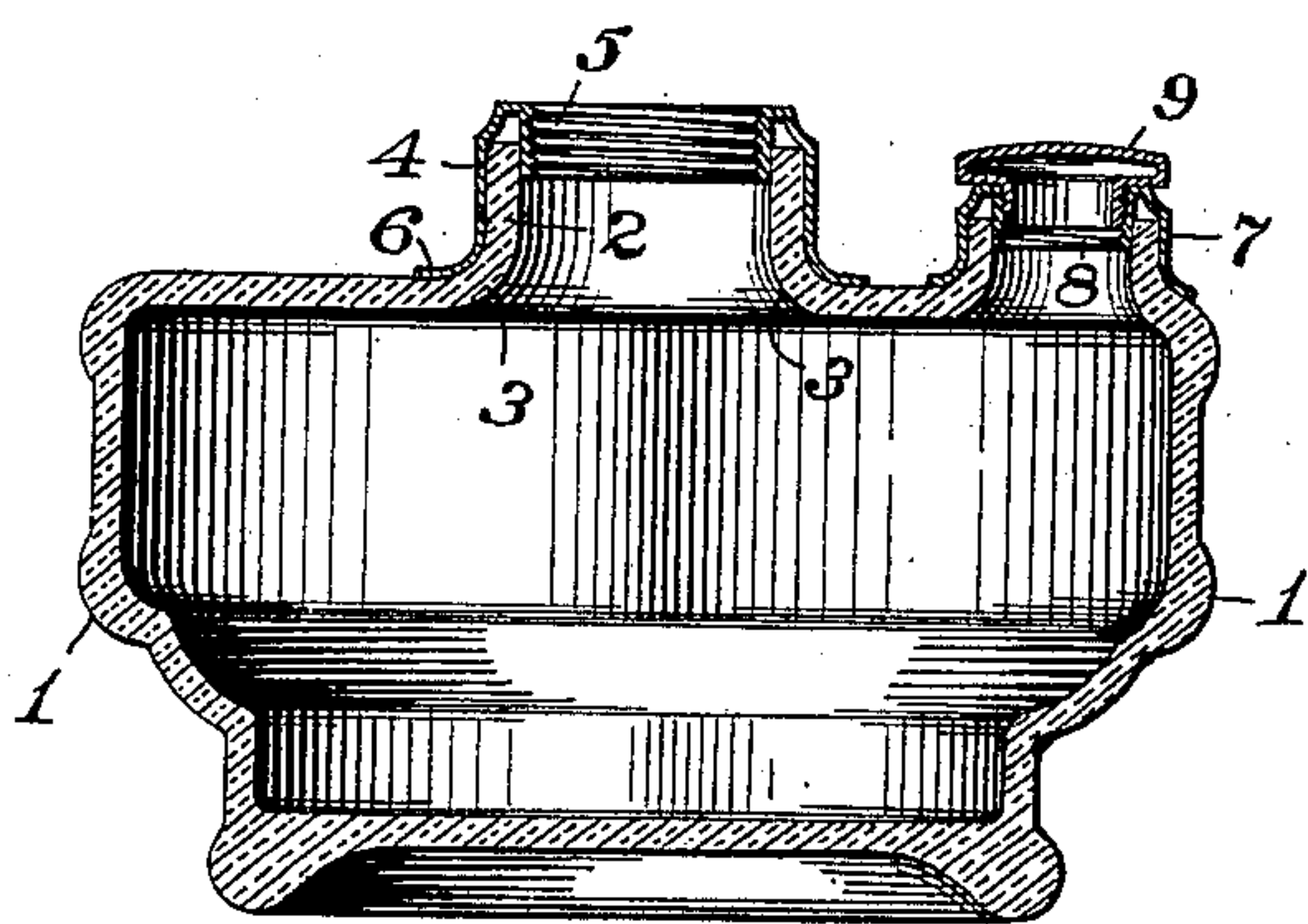
No. 658,171.

W. A. B. DALZELL.
LAMP.

Patented Sept. 18, 1900.

(Application filed Feb. 26, 1898.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

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LAMP.

SPECIFICATION forming part of Letters Patent No. 658,171, dated September 18, 1900.

Application filed February 26, 1898. Serial No. 671,756. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. B. DALZELL, a citizen of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented or discovered a certain new and useful Improvement in Lamps, of which improvement the following is a specification.

In the manufacture of lamps it is necessary to affix a metallic collar or casing to the neck or other portion of the surface of the article. The metallic collar or casing is affixed for the purpose of connecting the burner to the lamp. Heretofore it has been customary to affix such metallic collar or casing to such inelastic articles by resorting to various expedients, among which may be mentioned three: first, cementing the collar or casing to the article with plaster-of-paris or other cement; second, screwing the collar or casing into position, having formed upon the collar or casing and upon that part of the surface of the article with which it is to make contact corresponding screw-threads; third, spinning the metallic collar or casing into the desired shape and around properly-formed projections on the surface of the article, by means of which inclosed projections the casing is held to the article. These various expedients are each of them subject to certain defects which render the completed articles so manufactured more or less unsatisfactory in use. Thus, first, in case the metallic collar or casing is affixed by cement it will often be displaced by a sudden shock or by the wearing away of the cement or by the gradual separating of the adhering surfaces by repeated washing or, in case the finished article is to be used as a receptacle for liquid, by the gradual separating of the adhering surfaces from contact with the liquid contents of the article, these defects being, for example, sources of continual annoyance and expense in the use of glass lamps having metallic collars manufactured in the usual manner; second, in case the metallic collar or casing is screwed into position it is practically impossible to secure a tight joint, which is a feature often essential in such articles, and, moreover, the forming of screw-threads is a source of additional expense in manufacturing such articles in this manner; third, in

case the metallic casing is spun into position not only is it impossible to obtain a tight joint, but the process is a relatively-expensive one, requiring machinery peculiarly adapted to the purpose, as well as the employment of skilled labor. The method which is the subject of my present invention produces a completed article of the nature referred to which is subject to no one of the practical objections to which such articles as heretofore made are subject. I affix the metallic collar to the neck of the lamp by my method, making a hermetically-tight joint between the surfaces in contact by taking advantage of the relatively-great tenacity of metals when stretched or expanded to or slightly beyond the elastic limits of the metals used. I accomplish my method with great cheapness and produce an article which is perfectly satisfactory in the use for which it is designed and which also presents a neat and plain appearance and can easily be kept clean because of its smooth surface and because there is no danger of loosening the neck by applying water or other liquid to the article.

In order that others skilled in the art to which this my invention belongs may be able to understand the practical application of my method and the increased utility of the article produced, I give the following detailed explanation.

In the accompanying drawing is shown, in vertical section, a glass lamp-bowl with a metallic collar attached by my new method.

In the drawing, 1 represents a glass lamp-bowl of the usual shape and size, which has the usual protruding glass neck 2, to which glass neck the metallic collar 4, with its threaded socket 5, is to be attached. The shape of the bowl and its glass neck is unimportant; but I find it desirable in operating by my method to make the angle which is formed by the glass neck and the body of the lamp rounded, as shown at 3. I find it desirable also to make the walls of the utensil where the neck and body join somewhat thicker than the walls of the adjoining parts—that is, at the point 3 it is desirable to increase the thickness of the glass. The outer surface may be formed as shown and the inner surface reinforced by making a square corner.

This feature of rounding this corner and increasing the thickness of the glass at this point I find desirable, because when pressure is applied to force the metallic collar into position, as will be described below, this point of the lamp-bowl is subjected to some strain, which I have found to be sufficient to break the neck at this point in some instances when I had formed a square corner and not increased the thickness of the glass.

4 represents the metallic collar. This collar is made very much in the usual manner. It has the usual threaded socket 5 for connecting the lamp-burner with the bowl and differs from a metallic collar to be cemented to the glass neck only in its size as related to the size of the glass neck. The internal diameter of this metallic collar is slightly less than the external diameter of the glass neck to which it is to be applied. Otherwise the inner surface of the metallic collar conforms as exactly as may be to the external surface of the glass neck. A flanged portion 6, conforming in shape to the external surface of the lamp-bowl beyond the neck, is formed on the lower end of the collar, as in case the metallic collar is smaller than the glass neck by a certain amount the metallic neck will split when applied unless prevented by the flange in question. I affix this metallic collar to the glass neck by placing it over the glass neck and forcibly pressing it into the position shown. This pressure may be applied in any convenient manner; but I find it desirable to use a clamp which extends through the glass neck and engages the shoulder below and to exert the downward pressure against an upward pressure exerted on this clamp. In such manner the least possible strain is exerted upon the body of the lamp. A similar metallic collar 7 is applied in like manner to the opening formed in a lamp-

bowl for filling the lamp. The drawing shows this metallic collar provided with a screw-thread 8 for engaging a corresponding thread on the cap 9.

The efficacy of my process lies in this: Glass being practically an inelastic substance, when the metallic collar of slightly-smaller diameter is forced over the glass neck the metal is expanded, and when expanded to or slightly beyond the limit of elasticity or "springiness" of the metal used the metal will then "set" or remain in the exact form into which it is forced, while the tenacity of the metal will hold it in close and hermetically-tight contact with the glass neck. If the metallic collar be made too small, it will split in being applied. If, on the other hand, it be made too large, the surfaces in contact will not bind closely. The relative diameters of the metal and glass necks are readily determinable and are of course different for different metals used.

Having described fully my method and its application, what I claim is—

As a new article of manufacture, a glass lamp having a neck and a metallic collar provided at one end with means for engaging the lamp-burner, said collar also provided with an outwardly-turned flange at the opposite end, said collar being smooth and uncorrugated over the contacting surfaces and adhering to the glass neck by the frictional contact which it makes with said neck, substantially as set forth.

In testimony whereof I have hereunto set my hand.

WILLIAM A. B. DALZELL.

Witnesses:

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