

No. 876,630.

PATENTED JAN. 14, 1908.

A. C. GAYNOR.

MEANS FOR LOCKING CAPS TO SOCKET SHELLS, CANISTERS, &c.

APPLICATION FILED FEB. 25, 1907.

Fig. 1

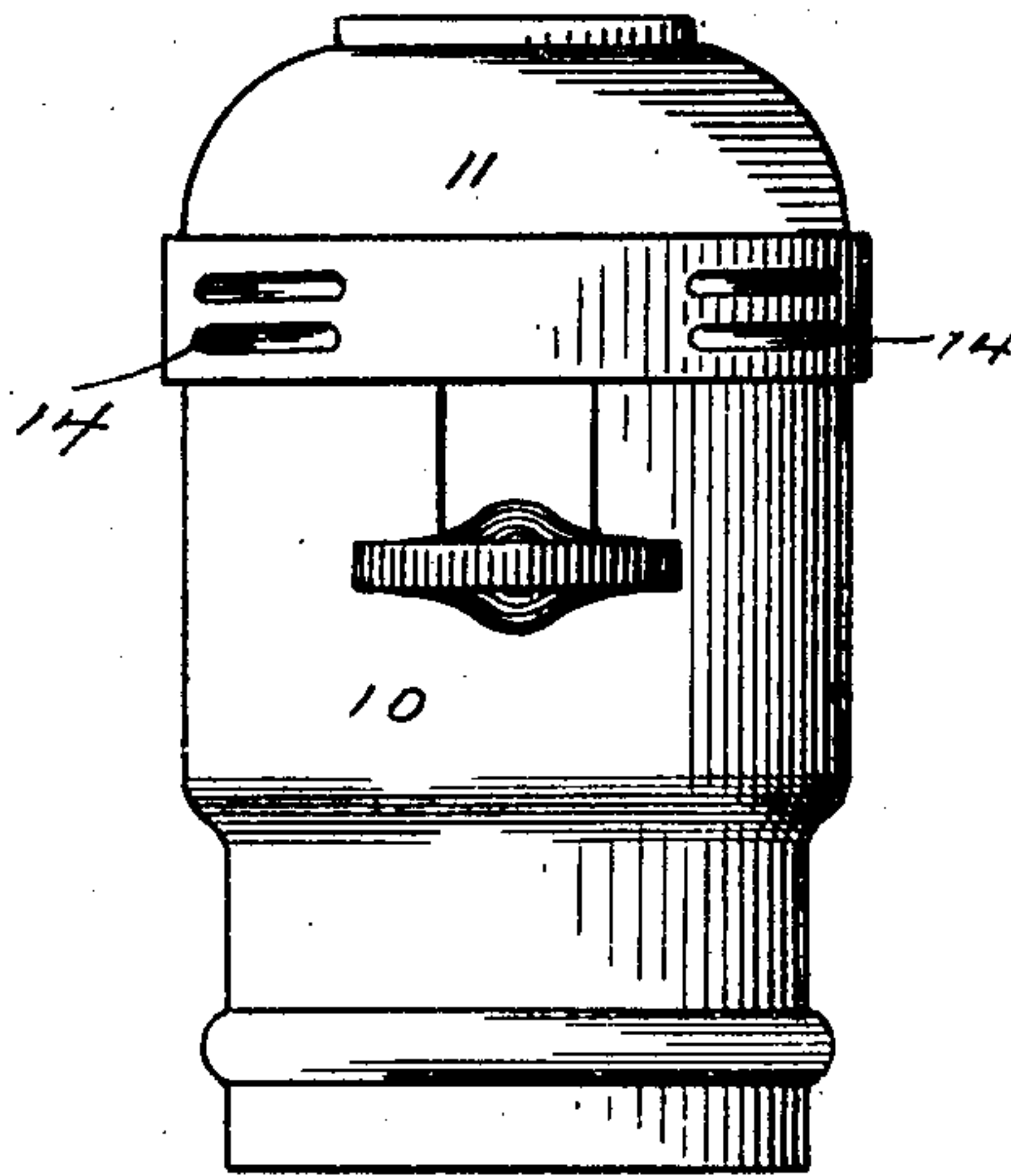


Fig. 2.

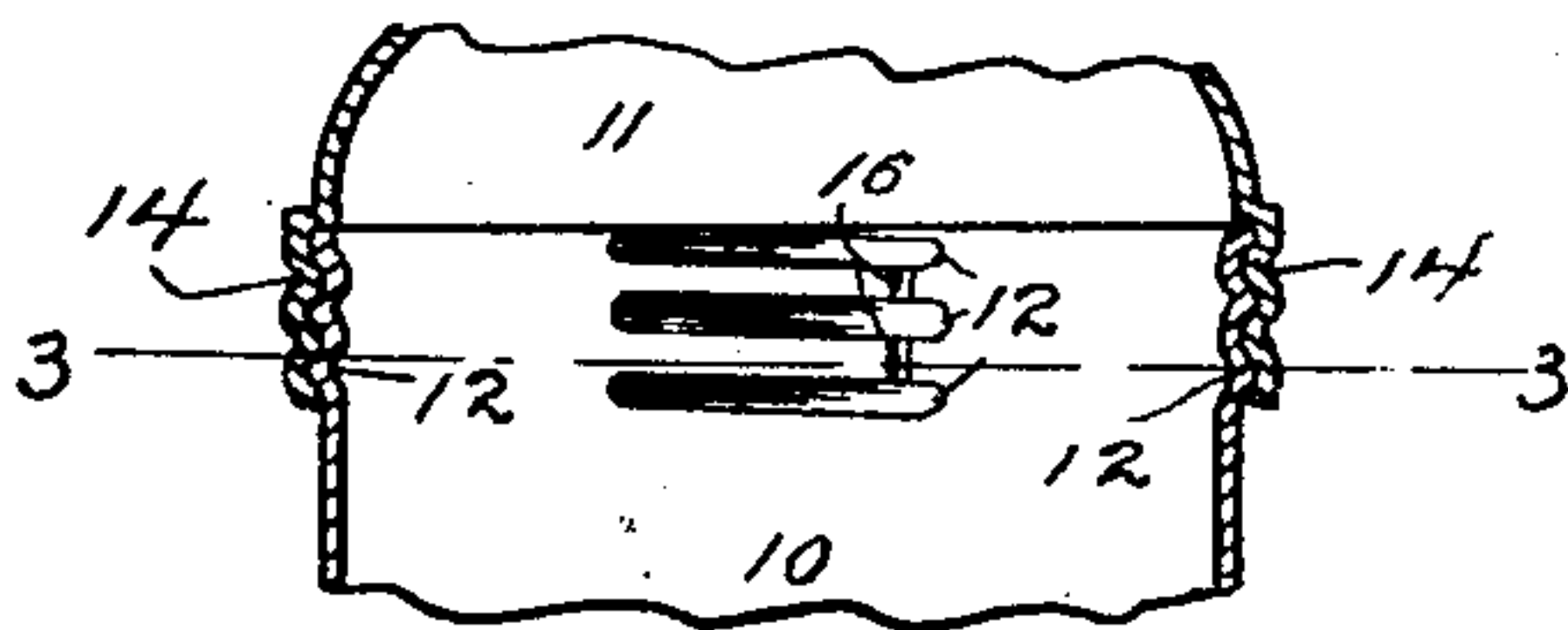


Fig. 3.

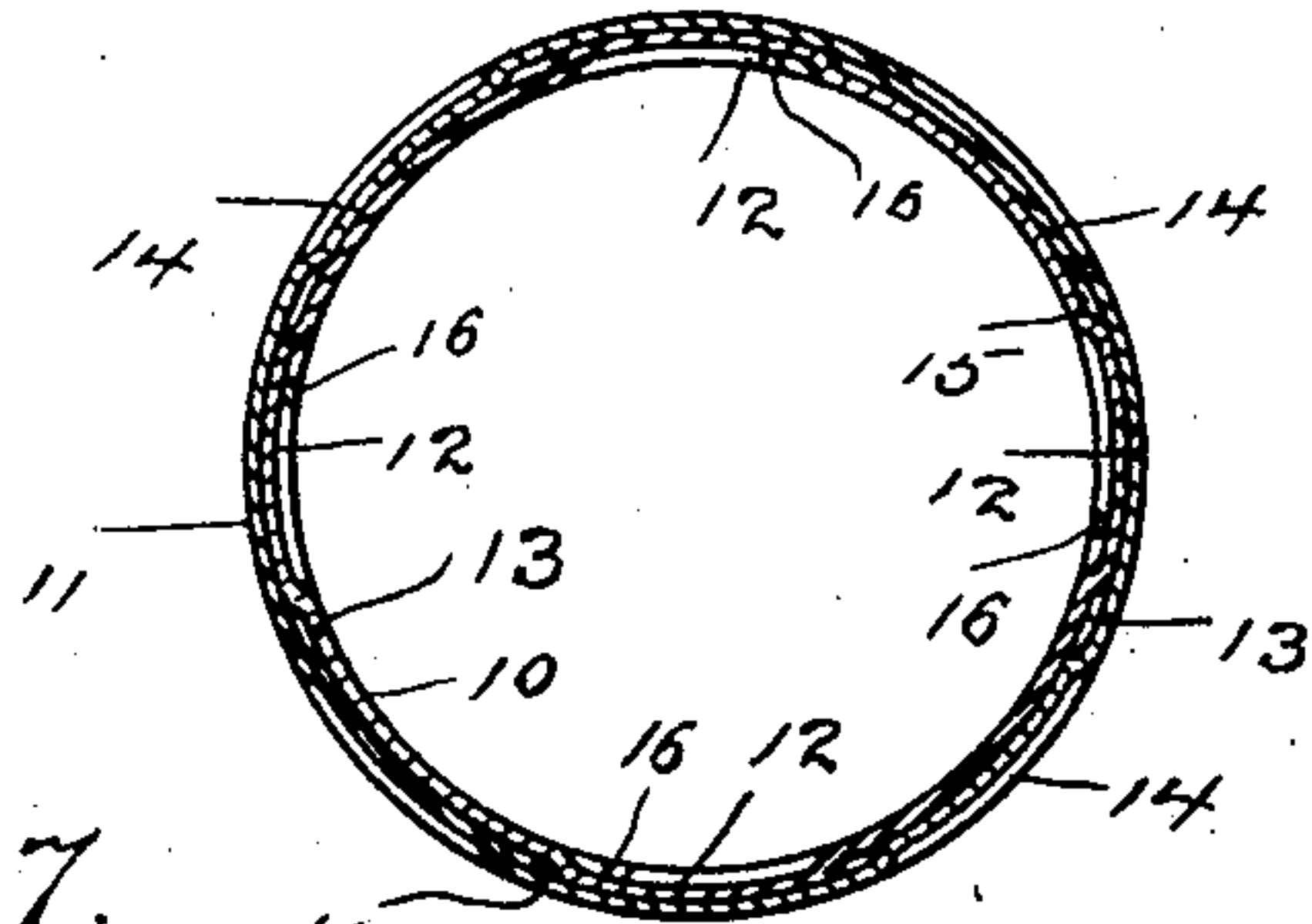


Fig. 4.

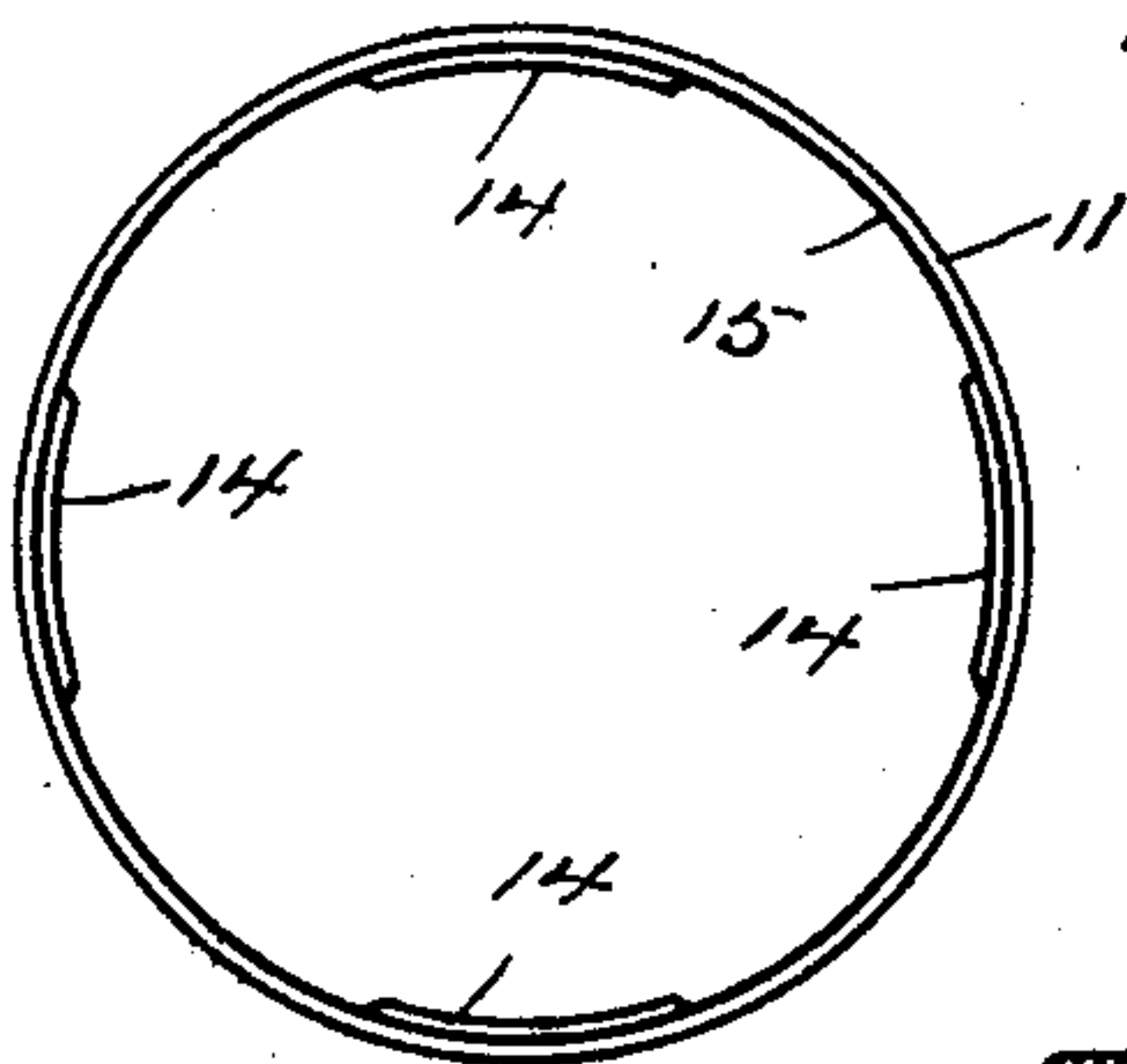


Fig. 7.

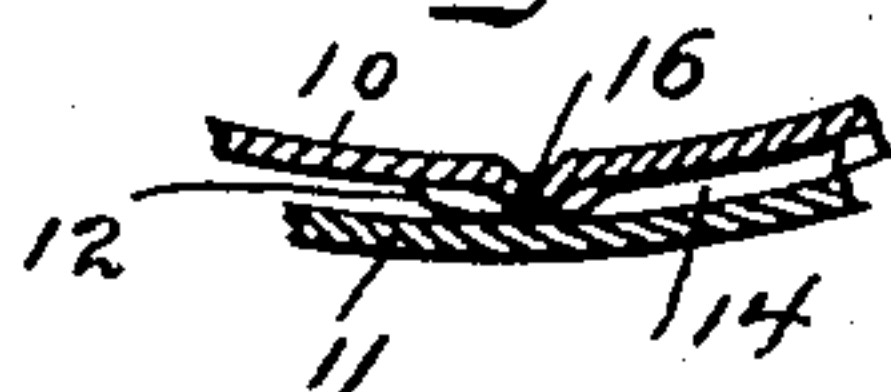


Fig. 5.

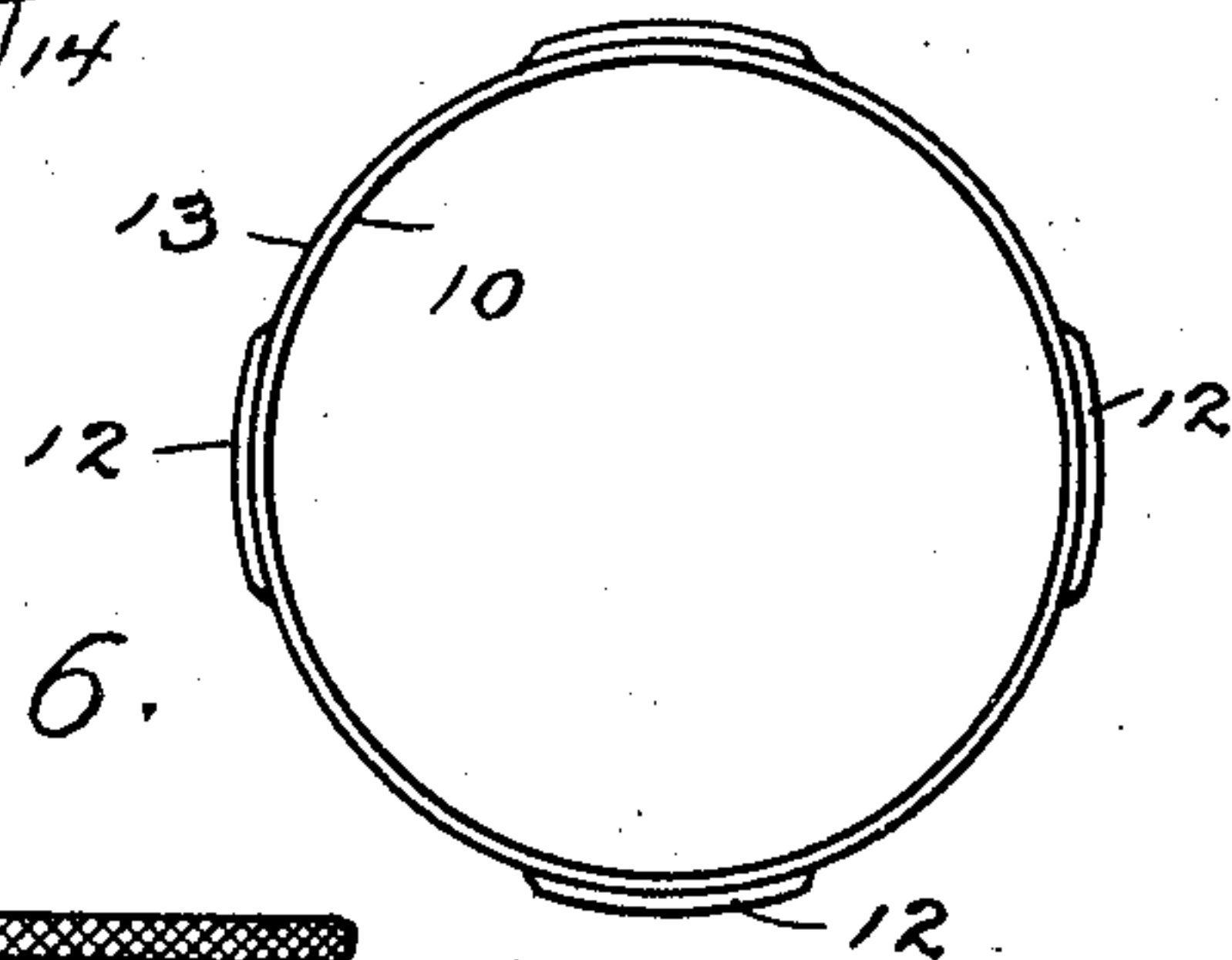
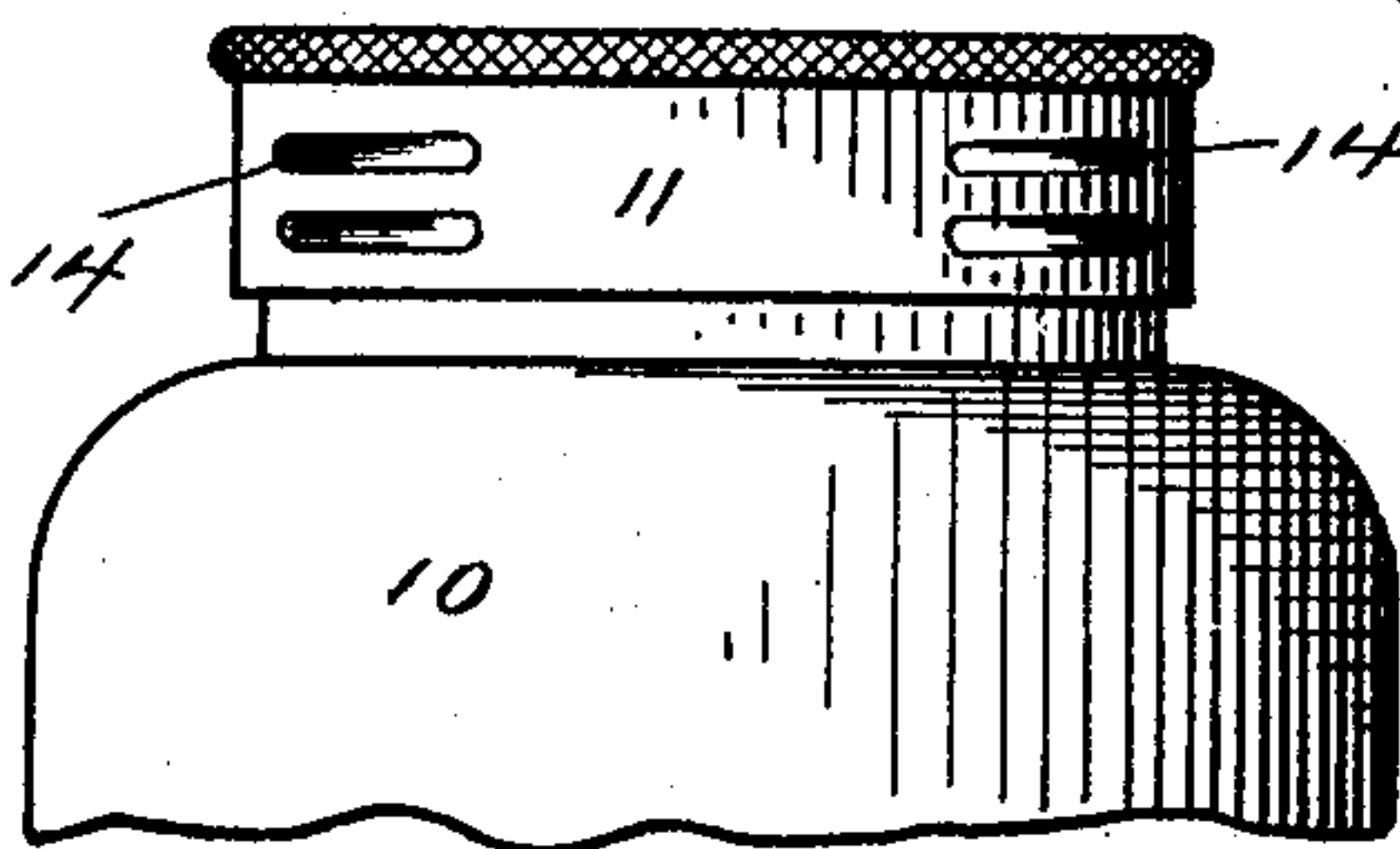


Fig. 6.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ARTHUR C. GAYNOR, OF BRIDGEPORT, CONNECTICUT.

MEANS FOR LOCKING CAPS TO SOCKET SHELLS, CANISTERS, &c.

No. 876,630.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed February 25, 1907. Serial No. 359,054.

*To all whom it may concern:*

Be it known that I, ARTHUR C. GAYNOR, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented a new and useful Means for Locking Caps to Socket Shells, Canisters, &c., of which the following is a specification.

This invention has for its object to provide simple and inexpensive means for locking caps to socket shells, canisters, and similar articles.

It is, of course, well understood that, in the manufacture of socket shells, canisters, etc., in fact, in the manufacture of all small articles drawn from sheet metal and requiring the attachment of one member to another—as, for example, the attachment of a cap to a body—any change in structure that will effect a slight saving in the cost of manufacture per hundred or gross becomes of great importance in the aggregate where many thousands are required, as in the manufacture of socket shells and small canisters in which the numbers consumed run into the millions.

My present invention does away with continuous threads and bayonet joints and their disadvantages and with the use of small screws and the attendant expense of thickening parts and tapping them for the screws and provides a means of attachment which does not appreciably increase the cost of the parts themselves, provides a perfectly strong and secure attachment and furthermore provides that the parts may be readily disconnected if required.

With these and other objects in view I have devised the novel means for attaching a cap to a body, which I will now describe, referring to the accompanying drawing forming a part of this specification and using reference characters to indicate the several parts:

Figure 1 is an elevation illustrating the application of my invention in the attachment of a cap to a socket shell; Fig. 2 a vertical section through points of attachment; Fig. 3 a horizontal section on the line 3—3 in Fig. 2; Fig. 4 a plan view of the cap detached; Fig. 5 a plan view of the body detached; Fig. 6 an elevation illustrating the application of the invention to the attachment of a cap to a canister; and Fig. 7 is an enlarged detail sectional view, corresponding

with Fig. 3, illustrating the means for locking the members in the attached position.

10 denotes one of the members; for example, the body of a socket shell or canister, and 11 a cap for attachment thereto. As a means of attachment, the body is provided with a plurality of series of outwardly projecting ribs 12 struck up from the metal, the ribs in each series lying parallel with each other and at a slight angle to a line at right angles to the axis. Between the series of ribs are blank spaces indicated by 13. The cap is provided with a plurality of series of inwardly projecting ribs 14 struck up from the metal, the ribs in each section lying parallel with each other and at a slight angle to a line at right angles to the axis. Between the series of ribs are blank spaces indicated by 15. The number of series of ribs on each member and the number of ribs in each series is immaterial; but the number of series of ribs in the two members must correspond and preferably the number of ribs in each series. The blank spaces between the series of ribs are longer than the ribs in the several series in order to permit the inwardly projecting ribs upon the cap to be passed over the blank spaces on the body and between the series of ribs on the body. Having placed the two members in engagement, the series of ribs upon one member corresponding with the blank spaces upon the other member, the members are locked together by a rotary movement relatively to each other which causes the ribs upon one member to pass between the ribs upon the other member. In the case of canisters and other articles that are not subjected to vibration, the engagement of the series of inclined ribs upon the members with each other may be sufficient to retain the members in the attached position. It is sometimes desirable however, especially in the case of socket shells and other articles liable to be subjected to vibration, to provide locking means to retain the members in the attached position. In order to accomplish this result, I provide cross-ribs or bumps 16 between the ribs 12 on the body near the rear end of the series. These cross-ribs or bumps are made approximately half the height of ribs 12 and constitute one form of means for presenting frictional obstruction to accidental disengagement by return movement. In turning the cap to place the forward ends of ribs 14 on the cap enter



between ribs 12 on the body, as before, thus starting the engagement, and then ride over cross-ribs or bumps 16, which is permitted by the spring of the metal. After passing cross-ribs or bumps 16, the rear ends of ribs 14 on the cap spring to place in front of the cross-ribs or bumps, thus locking the members securely against displacement through vibration. The cap cannot now be drawn off, cannot be turned forward past the full locking position, owing to the inclination of the ribs, and can only be removed by turning the members backward relatively to each other and causing ribs 14 upon the cap to ride upward and over the cross-ribs or bumps and again placing the series of ribs upon one member in alinement with the blank spaces upon the other member, when the two members may be readily separated. The backward movement from the locking position, however, requires quite a little power owing to the complete interlocking of the ribs upon one member with the ribs upon the other member, and the fact that the ribs upon the cap must ride upward and over the cross-ribs, so that the members when locked together are secure against detachment under the ordinary conditions of use and against displacement through vibration. Practically the space between the ribs 12 are open at each end, the cross-ribs or bumps 16 constituting means which serve to present frictional obstruction to accidental disengagement by return movement of the parts.

Having thus described my invention, I claim:

1. A sheet metal receptacle having a cylindrical upper portion provided with a plurality of series of outwardly projecting inclined ribs struck up from the metal of the receptacle, vertical spaces being provided between the series, the ribs in each series being parallel and the vertical spaces being longer than the ribs, and a cap for said receptacle, said cap having a cylindrical portion provided with a corresponding plurality of

series of inwardly projecting inclined ribs struck up from the said cylindrical portion, vertical spaces being formed between said ribs, the inclined ribs upon one member passing between the inclined ribs upon the other member to act as screw threads when the cap is rotated relatively to the receptacle.

2. The combination with a member provided with a series of outwardly projecting ribs struck up from the metal, of a corresponding member having a series of inwardly projecting ribs struck up from the metal, and means for preventing backward movement of the members relatively to each other.

3. The combination with a member provided with a plurality of series of outwardly projecting inclined ribs struck up from the metal and having cross-ribs between them near their rear ends and blank spaces between the series, of a corresponding member having a plurality of series of inwardly projecting inclined ribs struck up from the metal with blank spaces between the series, said inwardly projecting ribs riding over the cross-ribs when the members are rotated and the ends of the inwardly projecting ribs springing to place in front of the cross-ribs whereby the members are locked together.

4. The combination with a member provided with a plurality of series of outwardly projecting ribs, having cross-ribs between them near the rear ends, of a corresponding member having a plurality of series of inwardly projecting ribs, said inwardly projecting ribs riding over the cross-ribs when the members are rotated and the ends of the inwardly projecting ribs springing to place in front of the cross-ribs, substantially as described, for the purpose specified.

In testimony whereof I affix my signature, in presence of two witnesses.

ARTHUR C. GAYNOR.

Witnesses:

A. M. WOOSTER,  
S. W. ATHERTON.