

No. 701,504.

Patented June 3, 1902.

J. L. RAWBON & E. W. BUNDY.

METHOD OF MANUFACTURING STOPPERS FOR BOTTLES, JARS, OR OTHER ARTICLES.

(Application filed Feb. 27, 1901.)

(No Model.)

2 Sheets—Sheet 1.

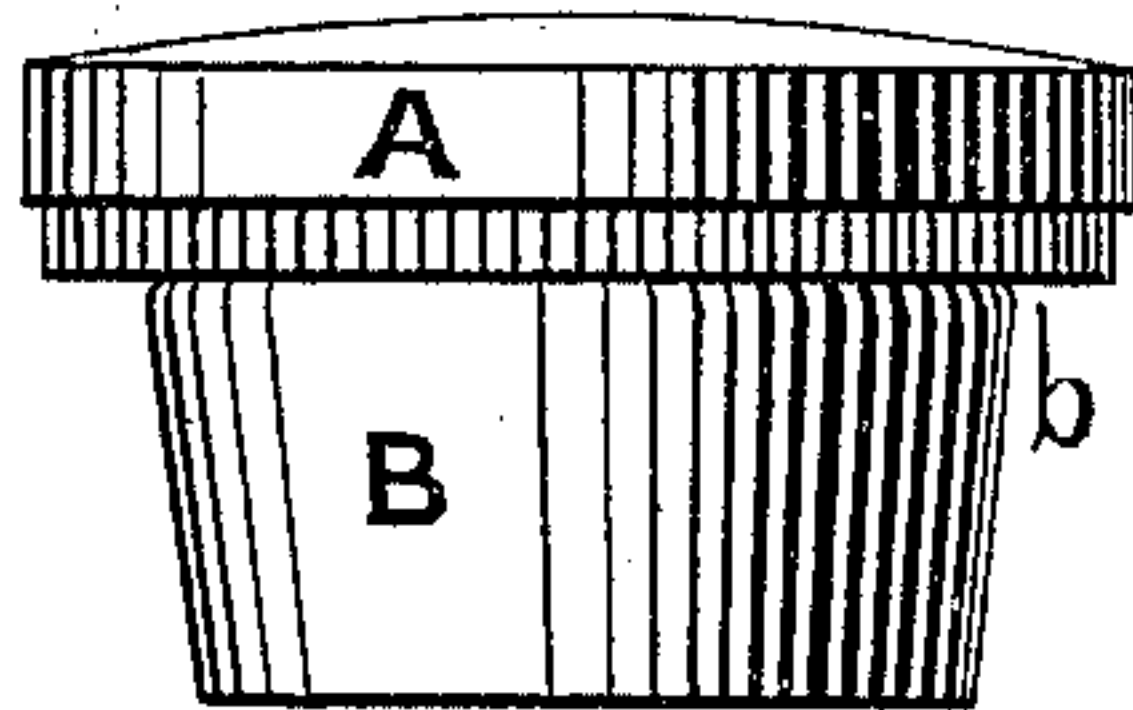


FIG. 1.

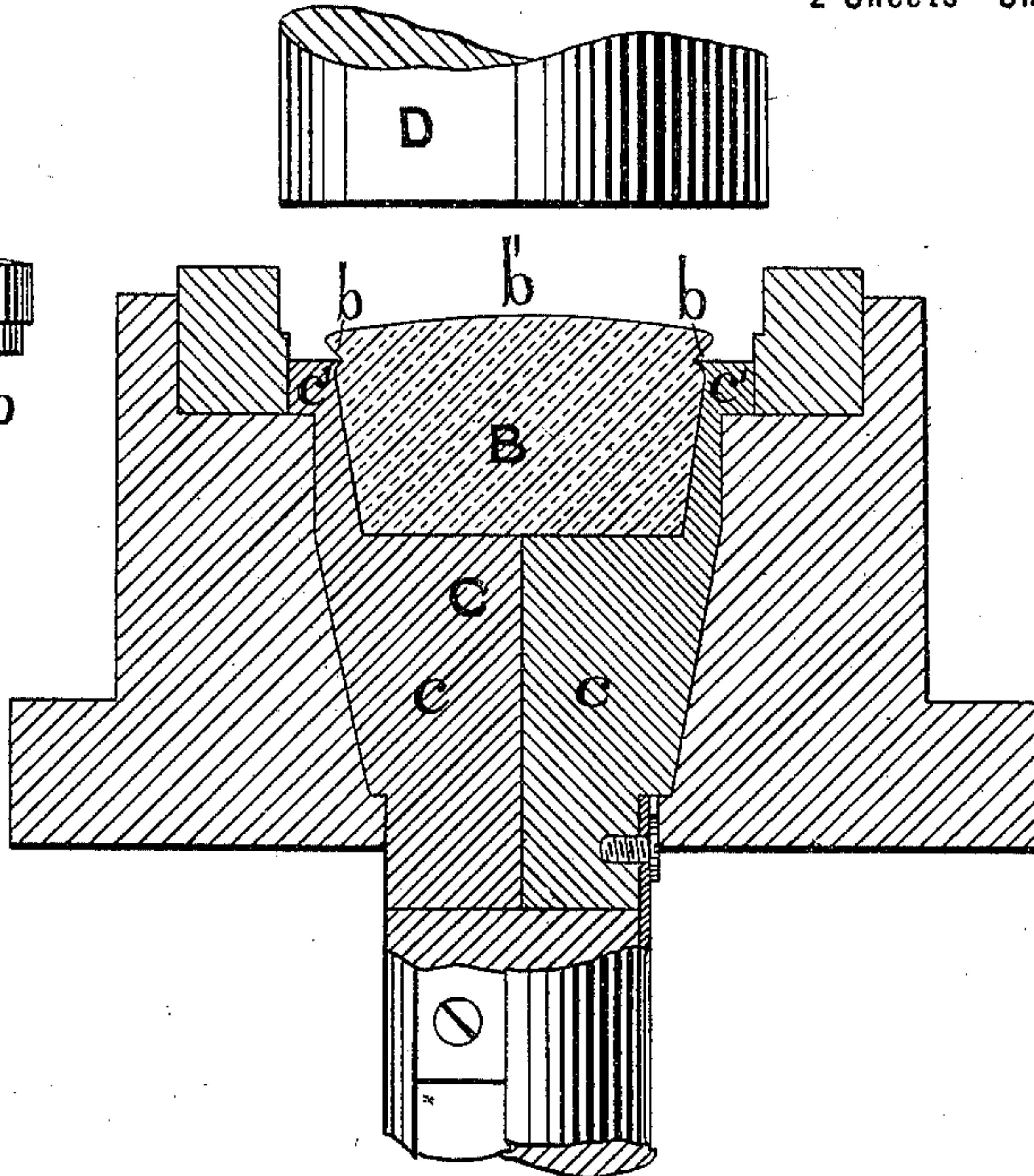


FIG. 5.

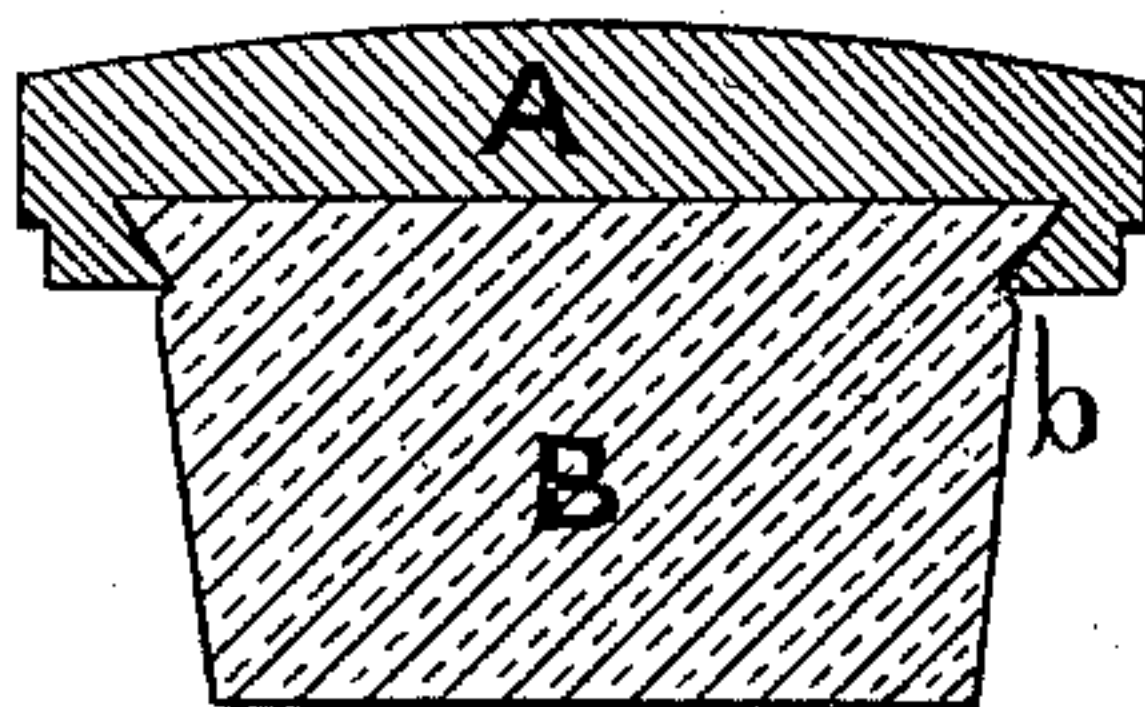


FIG. 2.

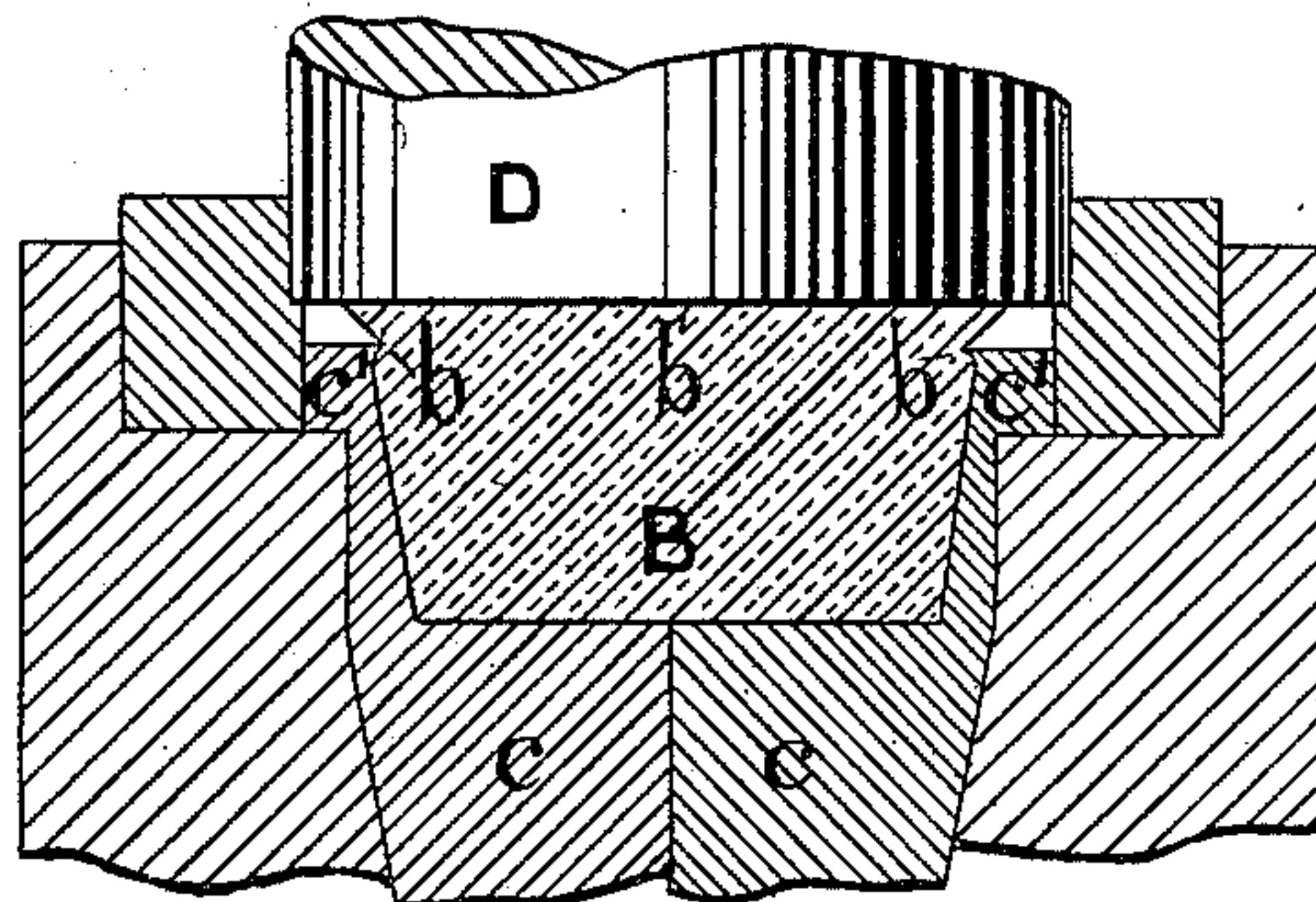
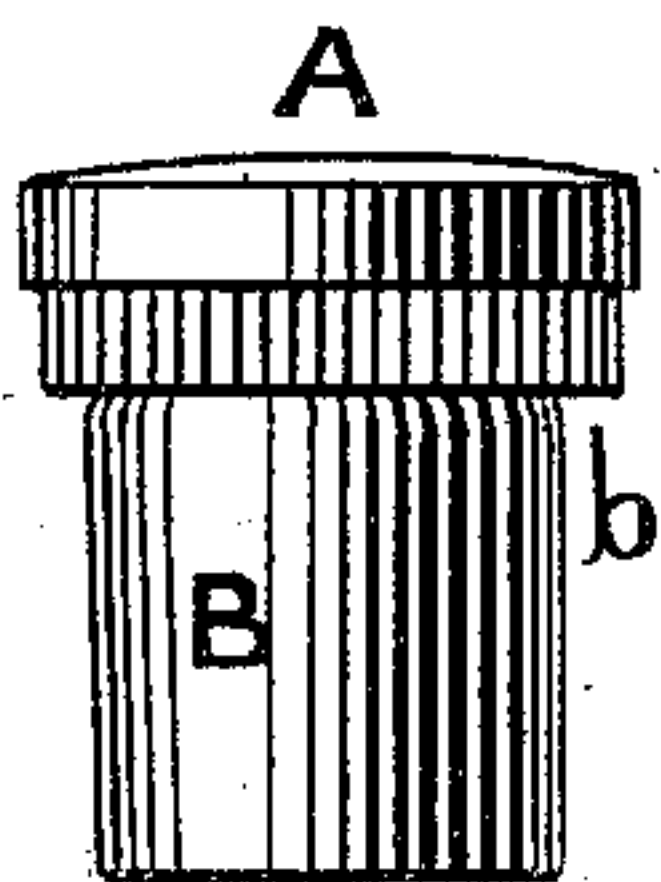


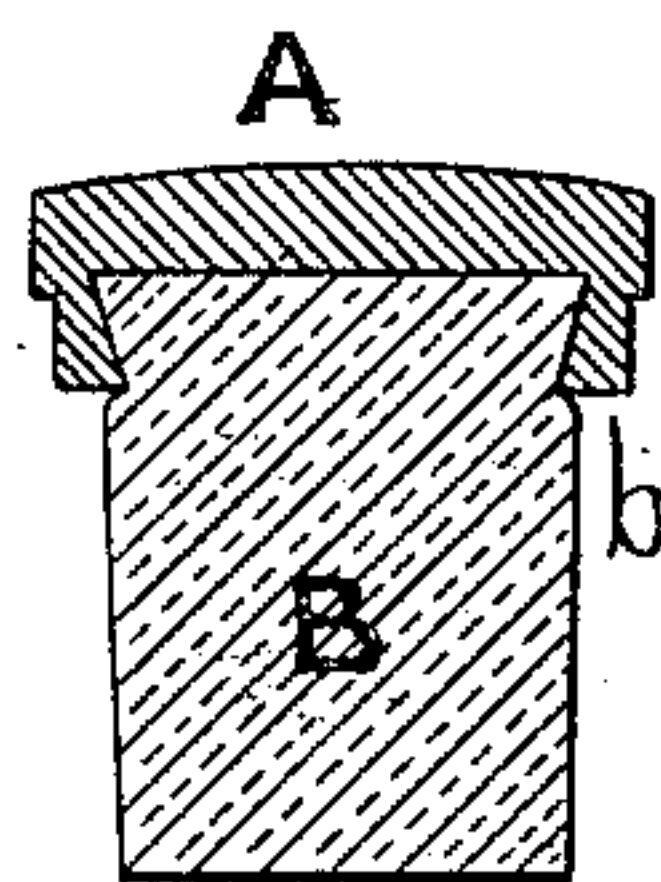
FIG. 6.



WITNESSES.

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2 Sheets—Sheet 2.

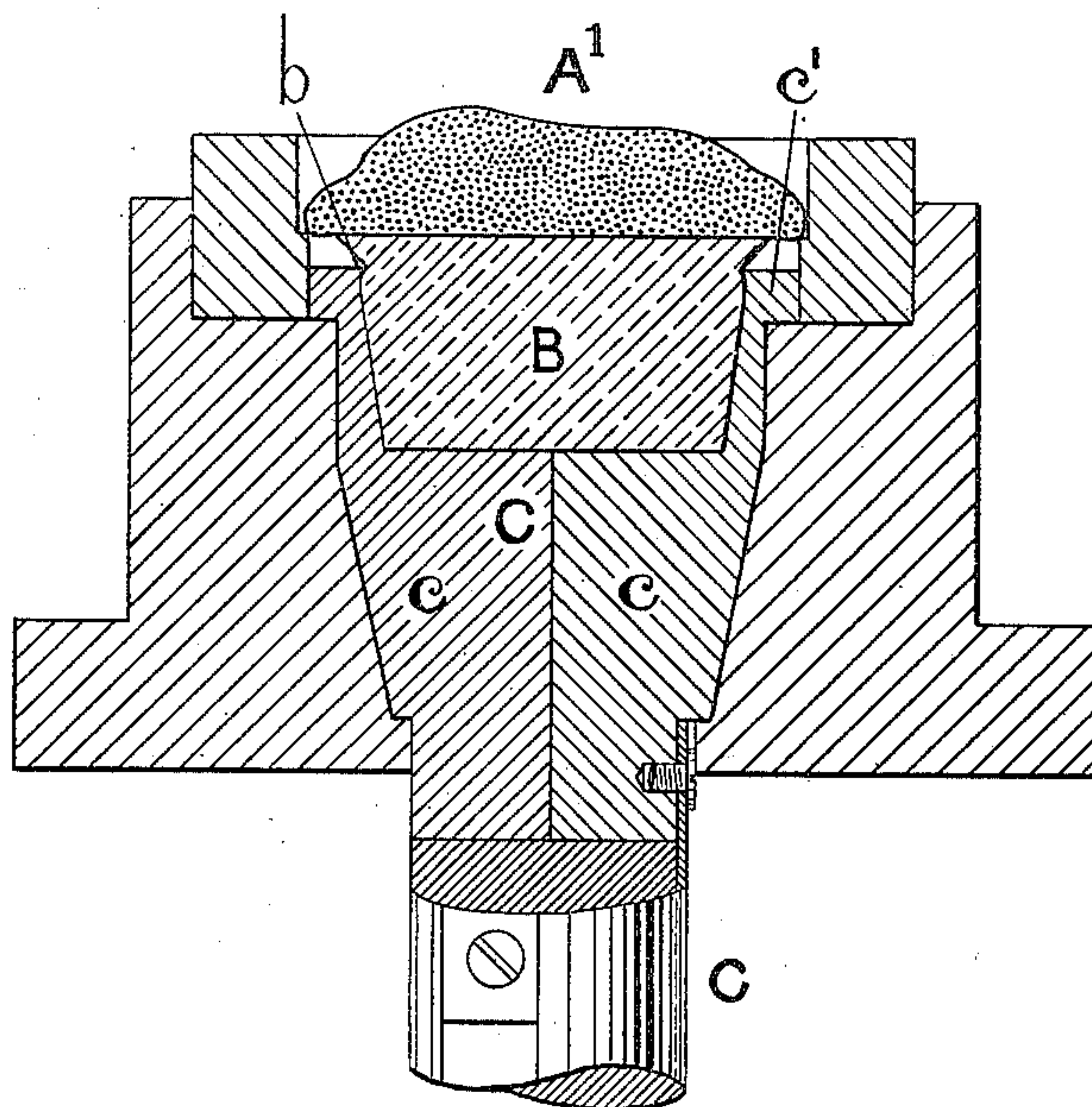
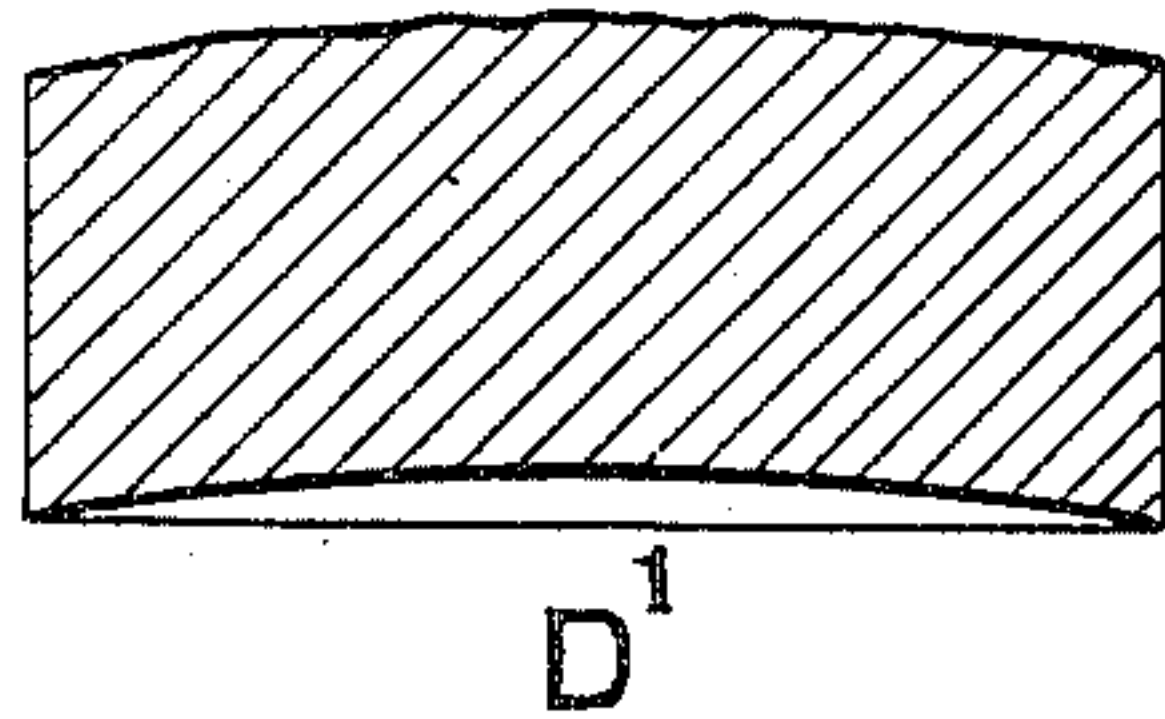


FIG. 7.

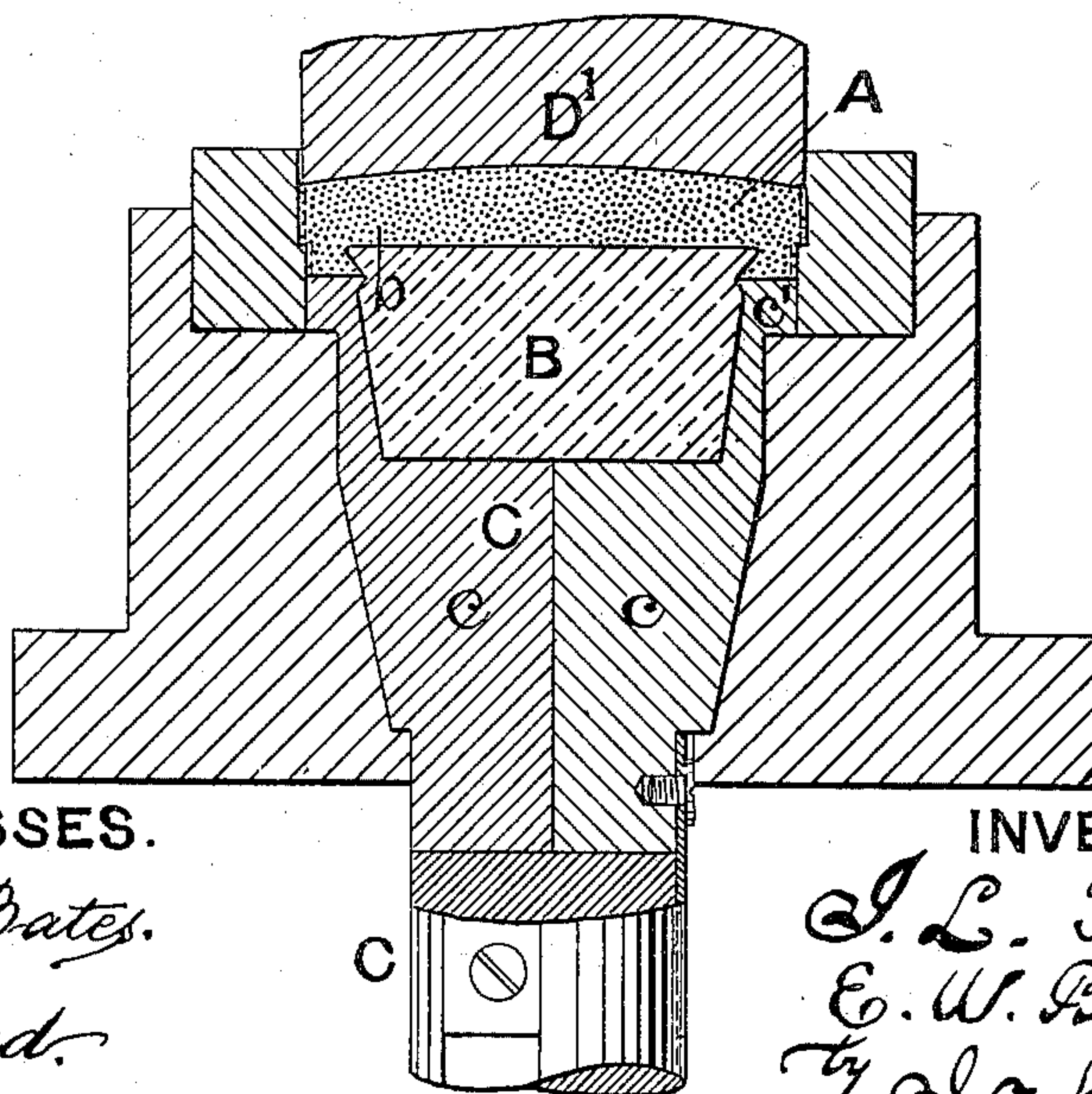


FIG. 8.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOSEPH L. RAWBON AND EDWARD W. BUNDY, OF MANCHESTER, ENGLAND.

METHOD OF MANUFACTURING STOPPERS FOR BOTTLES, JARS, OR OTHER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 701,504, dated June 3, 1902.

Application filed February 27, 1901. Serial No. 49,145. (No specimens.)

To all whom it may concern:

Be it known that we, JOSEPH LOXTON RAWBON and EDWARD WILLIAM BUNDY, subjects of the King of Great Britain, and residents of Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in the Method of Manufacturing Stoppers Applicable for Bottles, Jars, or other Similar Articles, of which the following is a specification.

Our invention is intended to provide a capped cork or cork stopper with a cap or head which is difficult to remove and which will not be liable to be broken or become detached when in use.

It consists, essentially, in first compressing the cork in a suitable die or dies, at the same time forming a recess near the top of the cork for the purpose of retaining the head or cap, and when so firmly compressed causing a die-punch or other suitable contrivance to further compress the cork, thus limiting its elasticity in order that the same cannot expand until the succeeding operation of affixing the head or cap is completed.

Reference being had to the accompanying drawings, Figure 1 is an elevation of a cork stopper constructed according to our invention. Fig. 2 is a sectional elevation of the same. Fig. 3 is an elevation of a similar stopper having a cylindrical cork. Fig. 4 is a sectional elevation of Fig. 3. Fig. 5 is a vertical sectional elevation of the apparatus preferably used by us in carrying our invention into effect. Fig. 6 is a similar sectional elevation showing the manner in which the cork is vertically compressed; Fig. 7, a vertical sectional elevation of the apparatus, showing the plastic material A of which the head is composed in position for compressing around the cork B; Fig. 8, a similar sectional elevation of the apparatus, showing it applied to the compression of the head A.

The head or cap A is formed of a composition or material capable of being applied in a plastic or semiplastic condition to the upper part of the cork B, which is by the action of a suitable die forced into and around the recess *b*, provided to retain the same, the said die being raised when the composition is suf-

ficiently set, so that the completed cork can be removed. The recess *b* in the cork is formed by compressing the cork circumferentially by a tool or die C, which holds the cork during the subsequent operations.

The holding tool or die C opens to receive the cork B and is formed of two or more sections *c*, preferably three. Around the upper edge of the sections *c* is formed an inwardly-projecting flange or rib *c'*, by which the cork is compressed and indented, thus forming the recess *b* and a retaining-head *b'* above the die, as shown in Fig. 5. A second die or plunger D is then applied in the direction of the longitudinal axis of the cork B, which further compresses the head *b'*, thereby preventing it expanding or resuming its previous shape after the sectional die C has been opened and removed and before the composition or material (of which the top or cap A is composed) can set or become hard and firmly affixed to the cork B. (See Figs. 1 to 4.) When the cork B has been thus compressed both laterally and longitudinally, the die or plunger D is raised (see Fig. 7) and the plastic material A' to form the cap A tightly compressed upon and around the head *b'* by a die or plunger D', which may be shaped or engraved to leave an impress upon the cap A. During the compressing of the plastic material and forming of the cap A the dies C retain and hold the cork compressed, and the cap A of plastic material when set prevents the cork expanding to or resuming its normal shape, thereby retaining the cap securely attached thereto.

What we claim as our invention, and desire to protect by Letters Patent, is—

1. The method of manufacturing a capped cork or stopper with a cap of plastic material consisting in compressing the cork and forming thereon by such compression a recess and retaining-head to receive and retain the plastic material and subsequently compressing around such head and recess in the cork while retained compressed a plastic material which sets hard substantially as described.

2. The method of manufacturing a capped cork or stopper which consists in compressing the cork laterally and longitudinally to form

a retaining-head and then compressing thereon while retained compressed a plastic material substantially as described.

5 3. The method of forming a retaining-head and recess on a cork to receive a cap of plastic material consisting of compressing the cork laterally and longitudinally substantially as described.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

JOSEPH L. RAWBON.
EDWARD W. BUNDY.

Witnesses:

J. OWDEN O'BRIEN,
FRANK SPARKES.