(No Model.)

2 Sheets—Sheet 1.

H. BARRETT & J. J. VARLEY.

MANUFACTURE OF SCREW STOPPERS.

No. 382,206. Patented May 1, 1888.

Fig. 1.

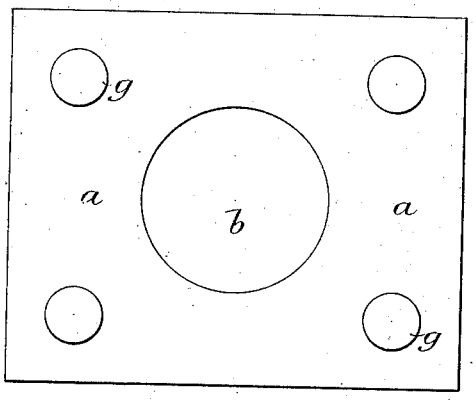


Fig. 5.

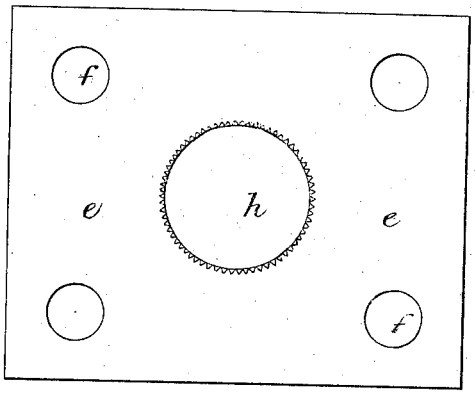


Fig. 2.

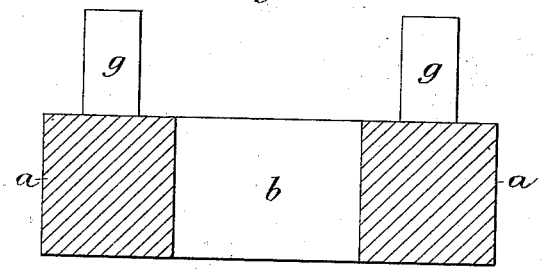


Fig. 6.

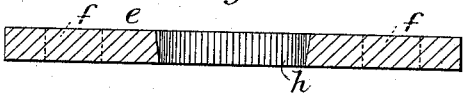


Fig. 3.

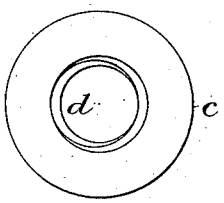


Fig. 8.

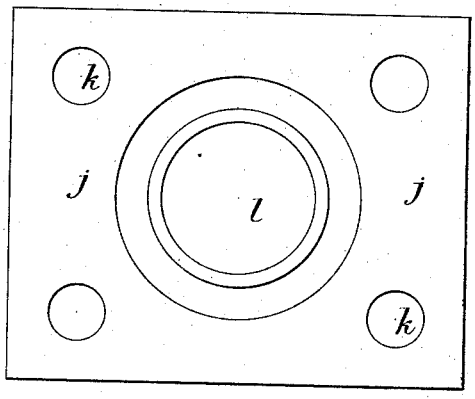


Fig. 4.

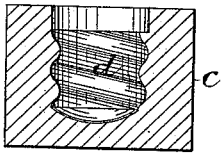
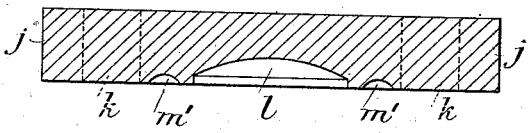


Fig. 7.



Witnesses:
Will. A. Norton.
Marion Belt.

Inventors.
Henry Barrett.
and John James Varley
by John J. Halsted & Son, their Att'ys

(No Model.) 2 Sheets—Sheet 2.

H. BARRETT & J. J. VARLEY.

MANUFACTURE OF SCREW STOPPERS.

No. 382,206. Patented May 1, 1888.

Fig. 9.

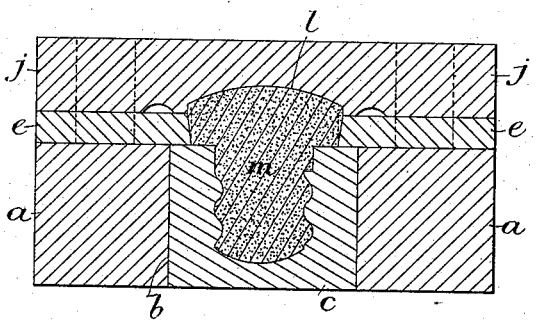


Fig. 10.

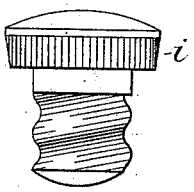


Fig. 11.

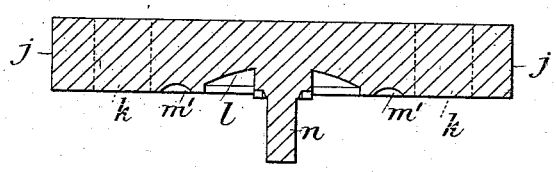


Fig. 13.

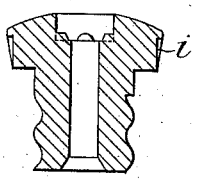
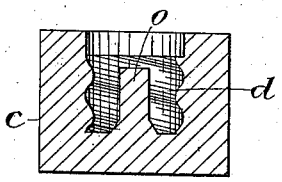


Fig. 12.



Witnesses:
Wm. T. Horton.
Thos. Tett

Inventors.
Henry Barrett.
and John James Varley.
by John J. Halstead & Son their Attys.

UNITED STATES PATENT OFFICE.

HENRY BARRETT AND JOHN J. VARLEY, OF LONDON, ENGLAND.

MANUFACTURE OF SCREW-STOPPERS.

SPECIFICATION forming part of Letters Patent No. 382,206, dated May 1, 1888.

Application filed December 17, 1886. Renewed March 27, 1888. Serial No. 268,705. (No model.)

To all whom it may concern:

Be it known that we, HENRY BARRETT and JOHN JAMES VARLEY, subjects of the Queen of Great Britain, residing at London, England, have invented new and useful Improvements in Molds for the Manufacture of Screw-Stoppers, of which the following is a specification.

This invention relates to improvements in molds for the manufacture of screw-stoppers from plastic material, the object of the improvements being to manufacture such stoppers without seams in a better manner than hitherto. We manufacture such screw-stoppers by means of improved molds consisting of a block or plate provided with holes to receive a number of screwed hubs, a middle plate having holes for the heads of the stoppers, and a top or press plate.

In the accompanying drawings, Figure 1 is a plan, and Fig. 2 a section, of the block or plate, which is shown by way of example provided with one hole to receive a screwed hub shown in plan and section at Figs. 3 and 4. Figs. 5 and 6 represent a plan and a section of the middle plate. Figs. 7 and 8 represent a section and a plan of the under side of the top plate. Fig. 9 is a section of the complete mold, showing a section of a molded stopper therein. Fig. 10 is a view of a stopper formed by our improved mold. Figs. 11 and 12 are sections, respectively, of the top plate and hub we employ when it is required to mold a screw-stopper with a hole through it such as is shown in section at Fig. 13.

Similar letters in all the figures represent similar parts.

In the drawings, *a*, Figs. 1, 2, and 9, is the block or plate of iron or steel, and *b* is the hole therein to receive the hub *c*, Figs. 3, 4, and 9.

In the drawings the block or plate *a* is shown with one hole only; but it will be obvious that in practice a larger plate is employed with a number of holes. The hub *c* consists of a steel cylinder formed with a female screw, *d*, of the size and shape to be given to the screwed stem of the stopper shown in Fig. 10, and with a recessed portion to form the shoulder and neck of the stopper, and such hub truly fits the hole *b* in the plate *a*. The middle plate, *e*, Figs. 5, 6, and 9, corresponds with the plate *a* and has holes *f*, which slide truly on the guides *g* on the plate *a*. In the center of the middle plate, *e*, is a hole, *h*, which is of the size and shape to be given to the periphery of the head *i* of the stopper. In the drawings this hole is shown circular in shape and serrated; but it will be obvious that it may be octagonal or of other suitable shape. The top plate, *j*, Figs. 7, 8, and 9, has holes *k*, corresponding with the holes *f* of the middle plate, *e*, and, like them, truly fitting the guides *g* of the plate *a*. In the under side of the top plate is a hollowed part, *l*, to give the required form to the top of the stopper. *m'* is an annular groove to allow of the overflow of any excess of plastic material.

To manufacture a stopper by means of our improved molds, the hub *c* is placed in the hole *b* in the block or plate *a* and the middle plate, *e*, is placed on in the position shown in Fig. 9. The composition, *m*, to form the stopper is then filled into the hub *c* and hole *h*, and the top plate, *j*, is placed in position and pressed down against the middle plate, *e*, as shown in Fig. 9, so as to mold the composition into the required shape or form. The top plate, *j*, is then removed, and the middle plate, *e*, being then raised from the plate *a*, draws with it the hub *c*, with the molded stopper, and from off which the hub is then unscrewed, leaving the molded stopper in the middle plate, *e*, from which the stopper is then knocked out. The serrations in the hole *h* prevent the stopper turning while the hub is being screwed off.

When our improved molds are employed for the manufacture of vulcanite screw-stoppers, it will be obvious that the stopper is molded from the dough or material used in the manufacture of vulcanite, and in some cases is vulcanized or cured before removal from the molds or from the hub.

When it is required to mold a stopper with a hole through it, as shown in Fig. 13, we employ molds similar to those hereinbefore described, except that the top plate, *j*, and hub *c* are each provided with a central pin or core, as shown in Figs. 11 and 12, in which *n* represents the pin on the top plate, *j*, and *o* the pin in the hub *c*.

It will be obvious that in some cases the middle and top plates can be combined; but we do not advise this arrangement.

Having now particularly described and as-

certained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. A mold for the manufacture of screw-stoppers, consisting of the combination of a block or plate provided with a hole, (one or more,) as set forth, adapted to receive the hub, a middle plate having a hole for the heads of the stoppers, and a top or press plate, these parts being constructed and operated substantially as shown and described.

2. A mold for the manufacture of screw-stoppers with holes through them, consisting of a block or plate provided with holes, as set forth, adapted to receive a number of screwed hubs, the hub *c* and top plate, *j*, each having a central pin or core, and the middle plate having a hole for the head of the stopper, these parts being constructed and operated substantially as shown and described.

3. In molds for manufacturing screw-stoppers, the combination of the hub *c*, having a female screw-thread, and the plate *e*, adapted for forming the head of the stopper, and also for holding it while it is screwed out of the hub, these parts being constructed and operated substantially in the manner hereinbefore described.

4. In molds for manufacturing screw-stoppers, the combination, with the top plate, *j*, having the central pin, *n*, of the hub *c*, having the central pin, *o*, for the purpose of producing screw-stoppers with a central hole through them, substantially as described.

H. BARRETT.
J. J. VARLEY.

Witnesses:
G. F. REDFERN,
F. W. PRICE.