

No. 760,192.

PATENTED MAY 17, 1904.

E. L. GAYLORD.

PROCESS OF STRENGTHENING AND ORNAMENTS ARTICLES MOLDED
FROM AMBER OR AMBROID.

APPLICATION FILED JAN. 27, 1904.

NO MODEL.

Fig. 1.

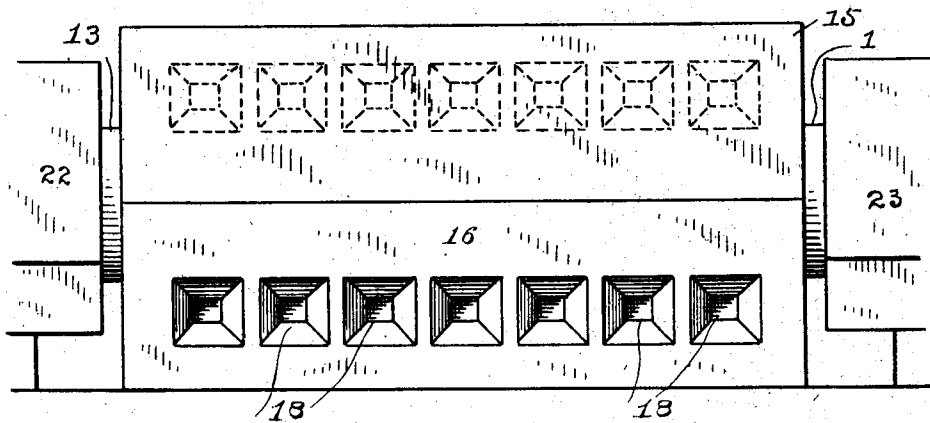


Fig. 2.

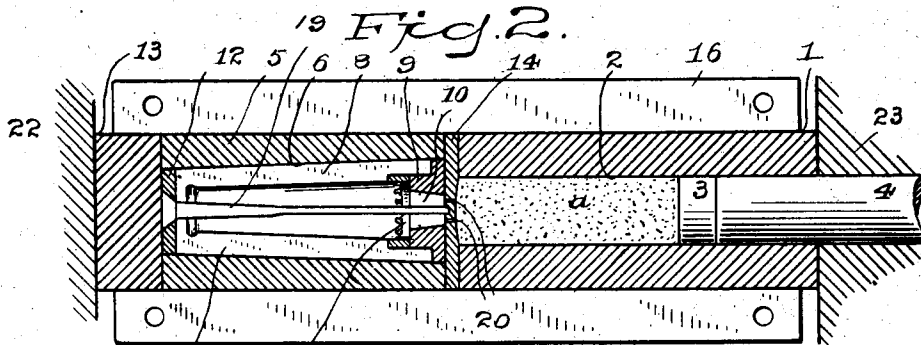


Fig. 3.

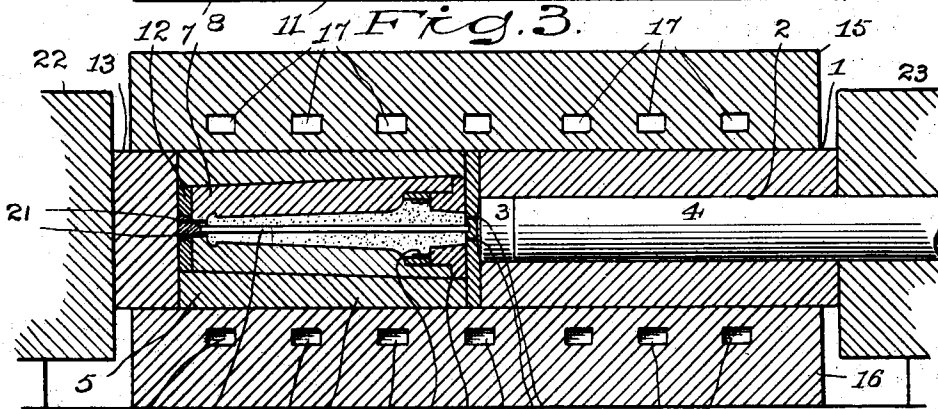


Fig. 4.

Fig. 5.

WITNESSES:

H. A. Lamb.
M. J. Longless

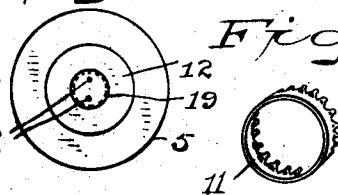
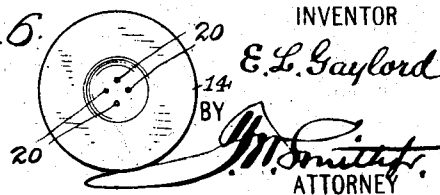


Fig. 6.



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PROCESS OF STRENGTHENING AND ORNAMENTING ARTICLES MOLDED FROM AMBER OR AMBROID.

SPECIFICATION forming part of Letters Patent No. 760,192, dated May 17, 1904.

Application filed January 27, 1904. Serial No. 190,850. (No specimens.)

To all whom it may concern:

Be it known that I, EDWARD L. GAYLORD, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Processes of Strengthening and Ornamenting Articles Molded from Amber or Ambroid; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the strengthening and ornamentation of articles made from amber or ambroid; and it consists in certain novel methods or processes which are particularly pointed out in the claims which are appended to this description.

The following is a description of my improved method in the form in which I now prefer to practice it, and although I have shown and will hereinafter describe suitable molds whereby my process may be carried out for the purpose of producing a stem or mouthpiece for a pipe, it will of course be readily understood that my process is not limited to the production of any particular article, and I therefore do not wish to be limited in this respect. Likewise it will be understood that my claims are not limited to the employment of any particular apparatus and that the process herein described may be modified in various ways without departing from the spirit of my invention and without exceeding the scope of my claims.

Certain features of the process hereinafter described are not essential to the several features of my invention separately and broadly considered, and this will be indicated in any given claim where the omission of reference to steps or features of the process described will be understood to be a specific declaration that the omitted features are not essential to the invention therein covered.

In the accompanying drawings, Figure 1 illustrates a front elevation of an apparatus for carrying out my process. Fig. 2 is a horizontal sectional view taken through the primary heating-chamber and mold-case and with the top section of the heating-jacket re-

moved; Fig. 3, a vertical sectional elevation of the apparatus shown at Fig. 1. Figs. 4 and 5 are respectively detail elevations of opposite ends of the mold-case with the core-supports in position, and Fig. 6 is a detail perspective showing a form of strengthening or reinforcing band.

Similar numbers of reference denote like parts in the several figures of the drawings.

In an application for Letters Patent of the United States, filed by me December 1, 1903, Serial No. 183,376, I have described and claimed the identical method of molding articles from amber or ambroid which is employed by me in connection with the present invention, and therefore I do not wish to be understood as claiming herein any process of molding amber or ambroid, since my present invention is limited to the process of strengthening or ornamenting the amber article during the process of molding.

In carrying out my present invention I prefer to employ a primary heating-chamber 1, which has a longitudinal opening or chamber 2, circular in cross-section and highly polished, within which chamber is a plug 3, also highly polished and fitting the opening 2 with the greatest nicety, so as to be practically air and gas tight. 4 is a plunger which fits within the opening 2 and abuts against said plug.

In the drawings I have shown a mold-case 5, which has a tapered longitudinal opening 6 therethrough, said opening being circular in cross-section and highly polished. The particular mold for the main portion of the stem is made in two halves 7 8, adapted to fit together with the greatest nicety, and the exterior surfaces of these halves when fitted together are circular in cross-section and are tapering, so that may be forced within the mold-case 5, the action of the tapered surfaces of the molds and case being to unite the halves of the mold together, so that I obtain all the benefits that might arise from the use of a single mold and at the same time preserve all the advantages of a sectional mold. 9 is a third section of the mold, which is inserted snugly within the larger end of the opening in the mold-case and extends within the molds 7 8 and is formed with a central

circular opening 10 of a diameter much less than that of the opening at the inner end of the molds 7 8, and this section 9 is utilized for the purpose of making the shouldered reduced end of the stem, which serves as the plug, to be inserted within the short stem of the pipe-bowl.

In a pipe mouthpiece or stem the part most likely to chip or become broken is the shouldered portion which is intended to abut against the short stem of the pipe-bowl, and in the present drawings I have illustrated the manner in which my process is applied for the purpose of strengthening and ornamenting this particular portion. I therefore strengthen or ornament this portion by means of a ring or band 11 of metal, which is placed snugly within the main mold adjacent to the section 9, which ring or band may be plain or it may be ornamental, as shown, and with an open-work pattern.

12 is a disk snugly contained within the smaller end of the opening in the mold-case.

The ends of the mold-case are finished very accurately and are highly polished, and I employ closure-caps 13 14, whose surfaces are likewise highly polished, which caps are abutted against the ends of the mold-case, so as to make the latter perfectly air-tight.

The mold-case, the closure-caps, and the primary heating-chamber are all contained snugly within a heating-jacket composed of two sections 15 16, provided with a series of openings 17 18 for the introduction of a heating agent, and these sections of the heating-jacket are held firmly together in any suitable manner.

19 is the core-pin, which is supported at its ends by the closure-caps 13 14. The closure-cap 14 is provided with minute perforations 20, which establish communication between the primary heating-chamber and the interior of the mold, while at the other end of the mold small ducts 21 lead from the interior of the mold to the outside of the disk 12.

I employ pressure-blocks 22 23, which bear against the closure-cap 13 and the primary heating-chamber, so that the various parts of the molding apparatus will be held firmly together.

The apparatus which I have above described is the apparatus which I prefer to utilize in carrying out my present process and is also the apparatus which is shown and described in my pending application above referred to, and therefore it is not believed that any detailed description of the operation of this apparatus or of the molding of the amber thereby is necessary in the present application.

Amber is a very brittle substance, and hitherto this peculiarity has rendered it unsuitable for a great many uses, although its non-solvent and non-absorbent qualities would otherwise render it well adapted for such uses to a marked degree. The nature of amber is

such that manual application of strengthening material is not practicable. In my present process when the amber is introduced within the molds in a powdered form it will pack very closely against the strengthening-band, but will not get between the outer surface of this band and the mold itself, so that when the final heat is applied to the mold the powdered amber will become an integral moldable mass and will be flush with the outer surface of the strengthening-band, while the expansion of the amber will cause the strengthening-band to be firmly embedded in the completed article.

By my present process it becomes a comparatively easy matter to produce at a reasonable cost a great variety of articles strengthened and ornamented as may be desired. In this connection I would state that the metal strengthening and ornamenting strip or band may have jewels set therein, which jewels will be firmly held in place by the setting and will likewise be embedded in the amber during the process of molding. I am enabled to strengthen and ornament articles made of amber by gold or silver, or I can use cheaper metals, which may thereafter be plated with gold or silver, since amber is non-solvent and electroplating may be accomplished without injury to the article.

It is of course not necessary that a band such as is shown be employed to strengthen or ornament the article, since any suitable shape or pattern may be employed in this respect, and it will of course be readily understood that this depends upon the nature of the article to be produced and the particular shape of the parts to be strengthened or ornamented.

I am aware that it is not new to plate or cover metal articles with substances such as rubber or celluloid and also that it is not new to inclose ornaments between sections of plastic or glutinous materials that are transparent and are consolidated by means of heat or pressure, and therefore I disclaim such processes or articles.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The process of strengthening or ornamenting articles molded from amber or ambroid, which consists in placing metallic portions in a mold with powdered amber densely packed and heating the same to the required temperature.

2. The process of strengthening or ornamenting articles molded from amber or ambroid, which consists in confining the gum in a densely-packed atomized form in direct contact with metallic reinforcing portions, and heating the gum while in this state until it becomes moldable and has adapted itself to the proper shape.

3. The process of strengthening articles

molded from amber or ambroid, which consists in densely packing the amber in powdered form against the strengthening metallic element, said amber and element being confined within a suitable mold, and subsequently heating the amber to the required temperature.

4. The process of strengthening articles molded from amber or ambroid, which consists in confining the strengthening metallic

portions and densely-packed powdered amber within a suitable mold and then heating the amber to the required temperature.

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

EDWARD L. GAYLORD.

Witnesses:

F. W. SMITH, Jr.,

M. T. LONGDEN.