

(No Model.)

2 Sheets—Sheet 1.

H. & J. GROM.

METALLIC ARTICLE AND PROCESS OF MANUFACTURING THE SAME.

No. 303,222.

Patented Aug. 5, 1884.

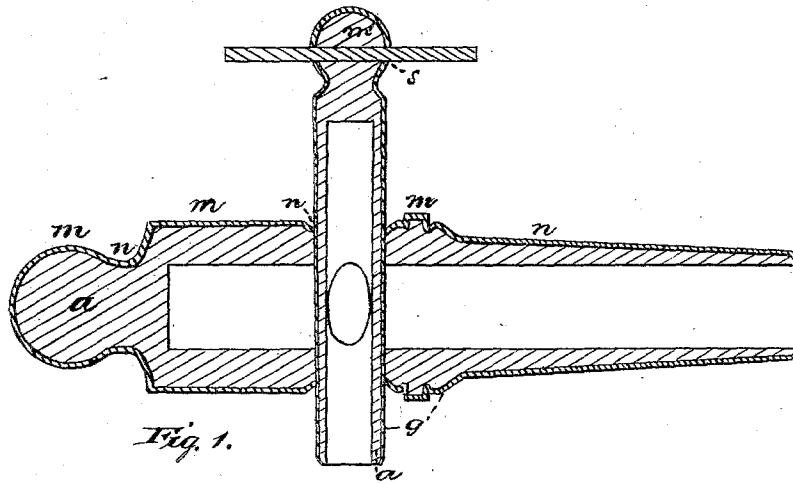


Fig. 1.

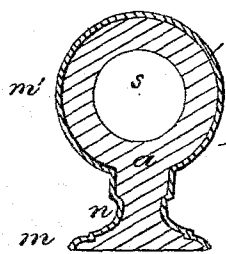


Fig. 2.

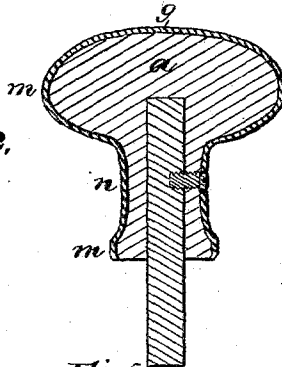


Fig. 3.

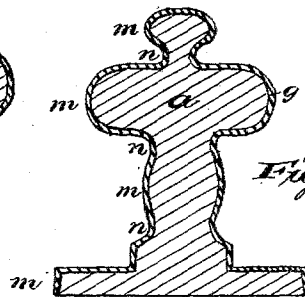


Fig. 4.

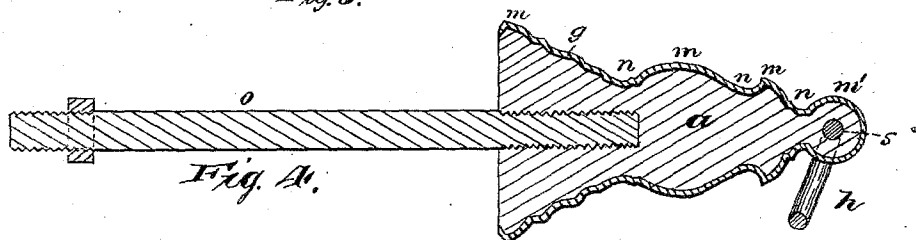


Fig. 5.

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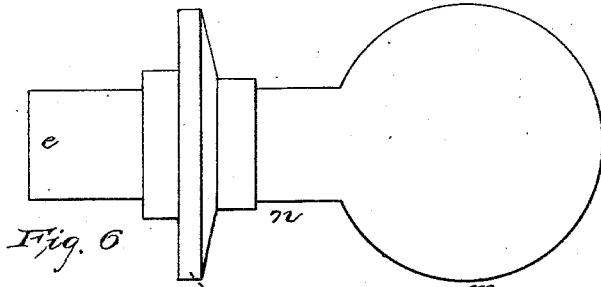


Fig. 6

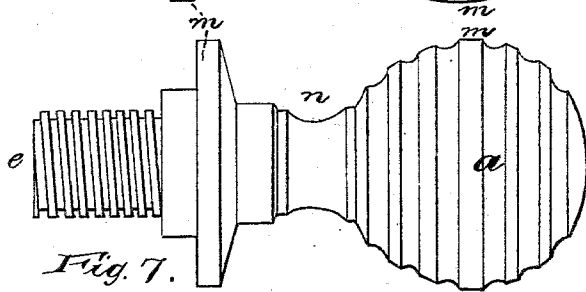


Fig. 7.

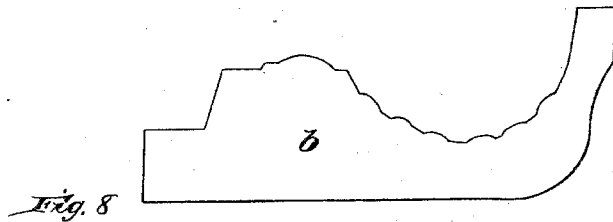


Fig. 8

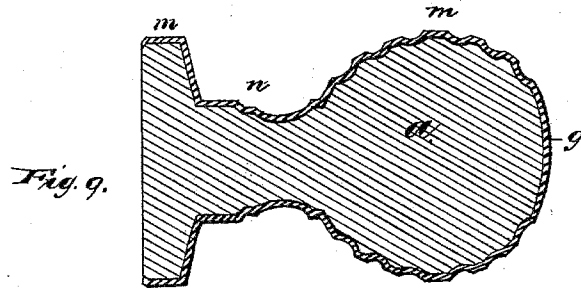


Fig. 9.

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# UNITED STATES PATENT OFFICE.

HENRY GROM AND JOHN GROM, OF NEWARK, NEW JERSEY.

METALLIC ARTICLE AND PROCESS OF MANUFACTURING THE SAME.

SPECIFICATION forming part of Letters Patent No. 303,222, dated August 5, 1884.

Application filed September 17, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY GROM and JOHN GROM, citizens of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Metallic Articles and the Process of Manufacturing the Same; and we 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to a certain class of ornamental metallic articles which have heretofore been cast in brass or other metal, then turned upon a lathe to secure a perfect outline, and finally polished, the object of the invention being to reduce the cost of constructing said articles, to secure a better finish, and to furnish a greater variety of articles with finer details of ornamentation than can be given at a moderate cost by processes now in vogue.

The invention consists in the improved article of manufacture and the process of producing the same, hereinafter set forth, and finally embodied in the claims.

Referring to the accompanying drawings, embraced in two sheets, in which similar letters of reference indicate like parts in each of the several figures, Figure 1, Sheet 1, is a representation of a faucet, Fig. 2 a standard for a cross-bar, Fig. 3 an ornament, Fig. 4 a chain fixture for a wash-basin, and Fig. 5 a door-knob, said devices being represented in longitudinal section, and illustrating the nature of our invention. Figs. 6, 7, 8, and 9 illustrate the process by which the said devices are manufactured.

In carrying out our invention we cast in an appropriate mold a core-piece, *a*, or, more properly, a quantity of duplicate core-pieces, preferably from lead or other soft metal, having the general contour of the articles which it is wished to produce. To bring the core-pieces to a proper exactness and uniformity of design, we secure the same in a chuck of a

turning-lathe, and one by one turn said core-pieces to the desired pattern. To do this with sufficient rapidity, so that the finished articles can be placed in the market at a much lower price than a similar device cast in one integral piece in the ordinary manner, we construct a knife, *b*, Fig. 8, the cutting-edge of which has a reverse outline of the pattern to be given to the finished core-piece. Said knife *b* is brought by a suitable carrier into engagement with the revolving core-piece, when the whole pattern is turned out at one movement of the knife and entire uniformity of design and size secured. The irregularities in the surface of the core-piece, caused by shrinkage of the metal, air-bubbles being caught therein, and by the imperfect union of the molds, are thus removed and a perfectly-true surface provided for the exterior plate, *g*. The core-pieces are each provided with chuck projections *e*, which may be simple projections to be clamped by the lathe-chuck, or be threaded, as in Fig. 7, to be screwed in said chuck, the latter being the preferred construction. Over the core thus prepared we next spin a plating, *g*, of sheet-brass or other metal, bringing said plate to the shape of the core-piece. The soft-metal core, being pliant, yields in a slight degree under the spinning process, and allows the sheet metal to be formed into shapes that it would be impossible to make over a hard core of brass or iron, such as is now used, as said hard core would cause the plate to break or tear when forming, for example, an article with a series of expanded flanges, *m m*, and contracted necks *n n*, such as are shown in Fig. 3, which alternate with one another. Said soft-metal core, however, possesses sufficient strength to remain rigid, even when formed with a comparatively small neck, as in Fig. 3, or of much greater length than diameter, as in Fig. 1, wherein said metal differs from wooden chucks heretofore in use. After the spinning process is completed, the core projection *e* for the chuck is removed, the article trimmed and otherwise finished for the market. The heat generated in the spinning process causes the sheets to expand, so that after said process is completed and the plate metal brought to a bearing on the core-piece the con-

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traction of said plate metal, caused by cooling, brings the two parts to such a complete union as to make them practically one. Said article is thus better adapted to receive ornamentation by impression than the solid brass, as the soft metal easily gives back when struck with a die, so that a design is given to the thin sheet-metal exterior plate, with a sharp outline much resembling engraving, having a much better ornamental effect than is possessed by the cast ornaments upon the ordinary solid brass or hard-metal articles.

Although a large number of articles may be constructed in accordance with our invention, a few of which are illustrated, the specific claims for which may form the subject of subsequent applications, we elect to claim specifically in this specification the one shown in Fig. 4, in which an ornamental core-piece is first formed in accordance with the process hereinbefore described, over which core a sheet-metal covering is spun, the head *m'* being subsequently perforated through both plate and core by a suitable tool, the perforations thus formed receiving a chain ring or link, *h*, a bar, *o*, being screwed into the core to hold the fixture down upon the basin. The fixture thus formed, while possessing all the advantages of beauty of design and durability, may be placed in the market at a much reduced cost.

We do not herein wish to be understood as claiming the process claimed in Reissue Patent No. 10,356, granted to one of the parties hereto; but said process differs materially from what is claimed herein, as will be evident upon examination of said reissue patent.

We are aware that it is not new to spin metal over a metallic chuck, the shell being removed when brought to the desired shape; but in our invention the core and shell are brought into a permanent relation one with the other, the alternating expansions *m* and contractions *n* holding said parts together.

We are also aware that a cast-iron core-piece has been secured in a spun-metal shell previ-

ously prepared, the core only approximating the shape of the shell; but such a device could not be practically ornamented, as the spaces between said core and shell would allow said shell to bend, and thus prevent a perfect piece of work being accomplished.

Having thus described our invention, what we claim as new is—

1. The process of producing metallic articles, to wit: casting a metallic core-piece, turning said core-piece to the desired shape with one movement of a cutter having the reverse outline of the desired article, and spinning over said core-piece a superficial metallic plate, as set forth.

2. An article having a soft-metal core turned down to the desired shape and a metallic covering spun thereover, said article having contractions *n* and expansions *m*, substantially as shown and described.

3. As a new article of manufacture, a wash-basin fixture for plug-chains, consisting of a core-piece and spun-metal surface-plate provided with alternating expansions *m* and contractions *n*, and perforated to receive the chain ring or link, and having the bar *o* secured in the core-piece, all as set forth.

4. A core-piece having a metallic plate spun thereover, said core-piece and plate having alternating contractions and expansions, and being perforated to receive a bar, ring, or link, as set forth.

5. A soft-metal core-piece having a metallic covering spun thereover and retained in permanent relation thereto, substantially as and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 13th day of September, 1883.

HENRY GROM.  
JOHN GROM.

Witnesses:

CHARLES H. PELL,  
C. P. KARR.