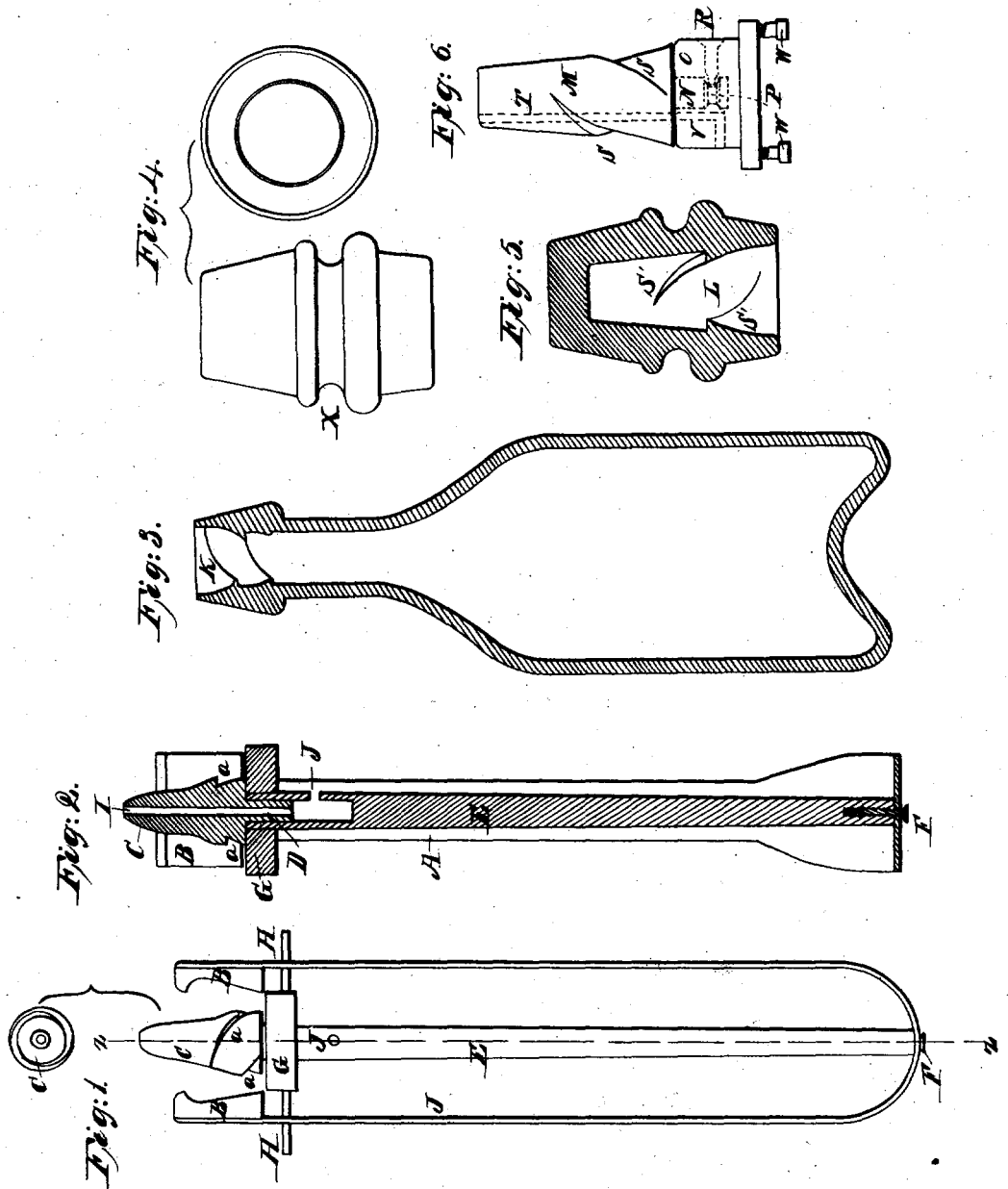


A. STONE.

Forming Screw Threads, &c., in the Necks of Glass Bottles and Similar Articles.

No. 13,402.

Patented Aug. 7, 1855.



# UNITED STATES PATENT OFFICE.

AMASA STONE, OF PHILADELPHIA, PENNSYLVANIA.

## FORMING SCREW-THREADS, &c., IN THE NECKS OF GLASS BOTTLES AND SIMILAR ARTICLES.

Specification of Letters Patent No. 13,402, dated August 7, 1855.

*To all whom it may concern:*

Be it known that I, AMASA STONE, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented  
5 certain new and useful improvements in tools for forming the orifices of glass, earthen, or other bottles, and the orifices or interior of insulators for telegraphs and for  
10 such other purposes as it can be applied to advantage; and I do hereby declare that the same are described and represented in the following specifications and drawings.

To enable others skilled in the art to make and use my improvements I will proceed to  
15 describe their construction and use, referring to the drawings in which the same letters indicate like parts, in each of the figures.

Figure 1, is a plan of the tool used for forming the necks and orifices of glass bot-  
20 tles, embracing my improvements. Fig. 2, is a section representing Fig. 1, cut through the line Z, Z. Fig. 3, represents the section of a bottle, showing the interior of the orifice formed by my improvements. Fig. 4, is  
25 the elevation of a telegraphic insulator. Fig. 5, is a section of Fig. 4, cut through the center, showing the interior formed with my improved plug represented in Fig. 6.

The nature of my improvements consist in  
30 constructing the tools for forming the necks and orifices of bottles, so as to allow the plug which forms the interior of the orifice to turn with the bottle; while the material of the neck is worked around it.

In the above mentioned drawings A is a  
35 metal spring, provided with a pair of steel jaws B, B, so as to make a pair of forming forceps, or tool, the interior of the jaws being made in such a shape as to give the  
40 neck and nozzle of the bottle, the desired form on the outside, as it is rotated between them, in a plastic state, and the jaws being pressed together upon the neck and nozzle of the bottle by the hand of the workman.

In order to prevent the jaws of the forceps  
45 from closing the orifice of the bottle while they are forming the outside, the play C is arranged between the jaws B B so as to be readily inserted in the orifice of the bottle,  
50 when the jaws are applied outside of the neck and nozzle. The plug C, is provided with a shank D, fitted to the end of the spindle E, which is arranged to turn freely  
55 between the legs of the forceps in the position represented; the rear end of the spindle

being supported by the screw F which is fitted to turn in a hole in the bow of the forceps; and the front end of the spindle is fitted to turn freely in the block G, which  
60 block is supported in its proper position, by the pivots H, H, fastened in opposite sides of the block G, and fitted to traverse freely in the holes provided for them, in the legs of the forceps or spring A. The plug C, is  
65 perforated with the hole I, through its whole length and there is a hole J, through the side of the spindle, so as to ventilate the interior of the bottle and allow its neck and orifice to be formed with facility around the  
70 plug; and also to facilitate its removal when the neck and orifice are completed. The shank D, of the plug C, may be fitted tight enough to the spindle E, so as to hold it  
75 when it is driven in or it may be fastened in some other convenient manner; or the shank D may be arranged to turn in, or the plug C arranged to turn upon the spindle E which may be made stationary or otherwise  
as may be most convenient or desirable.

The extremity of the plug C should be  
80 made smaller than its base which is next to the block G gradually tapering as it extends from its base, so that it can be withdrawn from the orifice of the bottle with  
85 facility; and made more tapering as it approaches the apex so that it can be readily inserted in the orifice of the bottle.

The plug C, is represented as having two  
angular scores *a, a*, made spirally upon it, so as to form a two threaded left handed  
90 male screw, the angle of the scores nearest or next to the apex, being made at a right angle to the center of the plug and the angle next to the base forming an acute angle  
95 with the center of the plug; the latter so as to give such a form to the orifice K, of the bottle Fig. 3, as will permit the cork to be readily forced in; and the former to hold  
100 the cork in when its elasticity expands it, or the pressure of the contents of the bottle acting in conjunction with the pressure which forces it in, expands it into the  
105 threads of the female screw formed by the male screw on the plug C, so as to effectually hold the cork in the orifice K, against the pressure of the contents of the bottle; and at the same time allow the cork to be  
110 readily removed by a right handed cork-screw provided with a collar (as many of them are) to come against the top of the

cork so as to turn it with the corkscrew to make it drawn out easier out of common bottles; but to unscrew the corks from the orifices of bottles formed as above described  
 5 with a left handed female screw on the interior of the orifice I have described this plug C as being made in the form of a left handed two threaded male screw, but the screw upon it may be either right handed or  
 10 left with a single, or such a number of threads as may be desirable for the purpose intended; or the plug may be made conical, spheroidal, elliptical or angular with three, four or more sides, or in such form as may  
 15 be desirable provided it is made largest at the base and tapering from the base to the end or apex.

In making bottles of glass or such substances as require to be wrought hot it is used with the forceps, (but in making stone, clay or earthen bottles, jugs, etc., where the material is wrought cold, the plug may be used without the forceps if preferred and the material worked around it with the  
 20 fingers or such tools as may be convenient for that purpose.) With the aid of my improved plug a female screw may be formed in the orifices of the bottles, jugs, etc., without materially increasing the expense of  
 25 making them, so as to retain the corks and save the labor and expense of applying any other fastening, which renders them particularly desirable for effervescent and other fluids which act strongly against the cork  
 30 of the vessel which contains them, and further if the corkscrew used to draw the corks from such bottles, is made so short as not to perforate the cork entirely through its whole length, the corks may be used again  
 35 and again, until they become defective from some other cause.

In making insulators for telegraphs such as are represented in Figs. 4, and 5, formed in a mold; the plug which forms the interior of the orifice L may be fitted to turn in that part of the mold which forms the base of the insulator and fitted so that it can be turned to unscrew the plug before the mold is opened so as to withdraw it  
 45 partially or entirely from the insulator. Or that portion of the plug M, (see Fig. 6,) may be provided with a shank N, (represented in dotted lines) fitted to turn in the block O, and provided with a score P, for  
 50 the point of the screw R, which is so arranged as to let the plug M, which has the male screw upon it, turn freely; but prevents the shank from being drawn out of the block in drawing the plug out of the insulator, or other article formed upon it.  
 55 The plug M is represented with a two threaded male screw upon it, the threads S, S, corresponding to the threads S', S' in the insulator; one edge of the threads  
 60 on the plug being at a right angle to the

center of the plug, and the other sloped off so as to hold the material inserted in the insulator firmer and stronger. This plug is provided with a hole to ventilate the interior of the insulator as it is drawn out;  
 70 which hole is represented by the dotted lines T, and the air to supply this hole may pass in between the plug M, and block O, or a groove may be made in the end of the plug or block, or both around the shank N, and  
 75 a hole or opening from the groove to the side of the block as represented in dotted lines at V, to supply the hole T with air. The block O may be fastened to the piston of a common press used in glassworks by  
 80 the screws W, W, and a proper quantity of molten glass put into the mold which is to form the outside of the insulator, when the plug M may be forced down by the piston so as to form the interior of the  
 85 insulator; when the piston is raised, the plug M, turns and unscrews itself from the insulator which has been formed around it. I contemplate that articles which would be improved by having a female screw made in their interior, may be made of glass, earthen  
 90 or other materials which are formed in a molten, fluid, semifluid or plastic state; may be made with a female screw in their interior with my improved tools with the  
 95 greatest facility.

When insulators are made as above mentioned the interior or orifice may be partially filled with cork, gutta percha or such other substance as will answer the purpose, which  
 100 should be screwed or forced in so as to fill, or partially fill the threads of the female screw in the insulator, so that it will not come out readily unless it is unscrewed for that purpose. After the insulators are  
 105 properly filled the material in the orifice may be perforated and the tapering screw formed upon the end of the iron which is to be driven into the telegraph pole, may be screwed into it; or the iron may be driven  
 110 in and the insulators screwed on afterward. The thread of the screw on the iron screwed in, should be made in the same direction with the female screw in the insulator so as not to unscrew the cork or other ma-  
 115 terial in the insulator by screwing in the iron which supports it. The telegraph wire may be fastened to the insulator by a wire passing around it in the score X provided for that purpose.  
 120

I believe I have described the construction operation and use of my improvements in tools for forming orifices of bottles, jugs, telegraphic insulators, etc., so as to enable  
 125 any person skilled in the art, to make and use the same. I will now specify what I desire to secure by Letters Patent.

What I claim as my invention in the construction of tools for forming screw threads, angular or other scores in the necks  
 130

and orifices of glass, earthen, or other bottles, and other articles, is—

Making the plug which forms the interior of the orifice, to turn with the bottle, jug, or other article while the material of the orifice is worked around it, substantially as described.

AMASA STONE.

Witnesses:

10 YORK MATTHEWS,  
J. SNIDER.

15 *To the Commissioner of Patents:*

The petition of SARAH T. STONE, administratrix to the estate of AMASA STONE, deceased, late of Philadelphia, Pennsylvania, respectfully represents: That your petitioner has made application for an extension of the patent granted to the said AMASA STONE August 7th, 1855, but that she is advised that the terms and claim of said patent are too broad as embracing the manufacture of earthen ware or ware of other material than glass. Your petitioner, therefore, as the legal representative of the heirs of the patentee, hereby enters her disclaimer to the application of said patent to any and all materials and manufactures other than glass; and in particular enters her disclaimer to the following words and

sentences contained in the schedule or specification of said patent, to wit: On page 1 of said schedule, line 5, the words, "earthen or other," and in the next line below, the words, "and for such other purposes as it can be applied to advantage." On page 2 of the said schedule the following sentence, beginning at line 16: "In making bottles of glass, or such substances as require to be wrought hot, it is used with the forceps, but in making stone, clay or earthen bottles, jugs, etc., when the material is wrought cold, the plug may be used without the forceps if preferred and the material worked around it with the fingers or such tools as may be convenient for that purpose." On page 3 of said schedule, line 6, the words "earthen or other." And she hereby enters her disclaimer to the following words and phrases in the claim or to so much of the claim as is expressed in these words, to wit, the words "earthen or other" and the words "jug or other article." And further that your petitioner has paid ten dollars into the Treasury of the United States agreeably to the requirements of the act of Congress in that case made and provided.

SARAH T. STONE,

*Administratrix of A. Stone, deceased.*

Witnesses:

WALTER D. STONE,  
I. L. WILLOUGHBY.