(No Model.)

E. M. BREWSTER.

TEA KETTLE.

No. 279,635. Patented June 19, 1883.

Fig. 1.

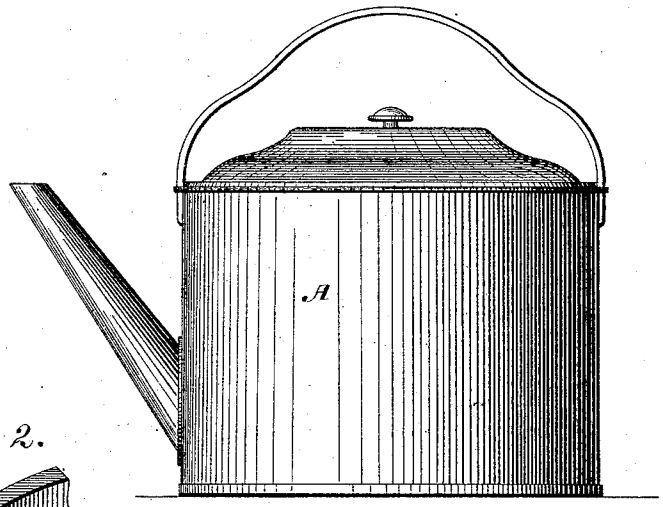


Fig. 2.

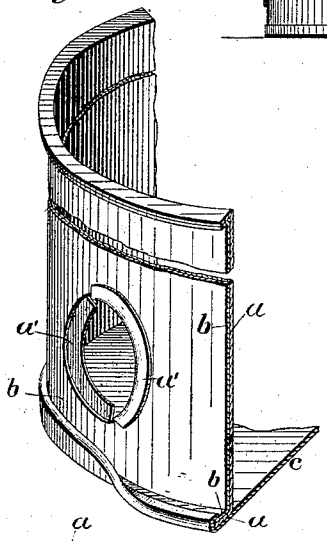


Fig. 3.

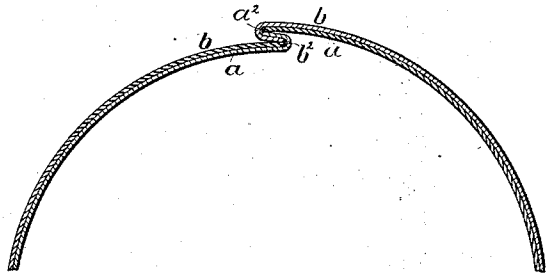
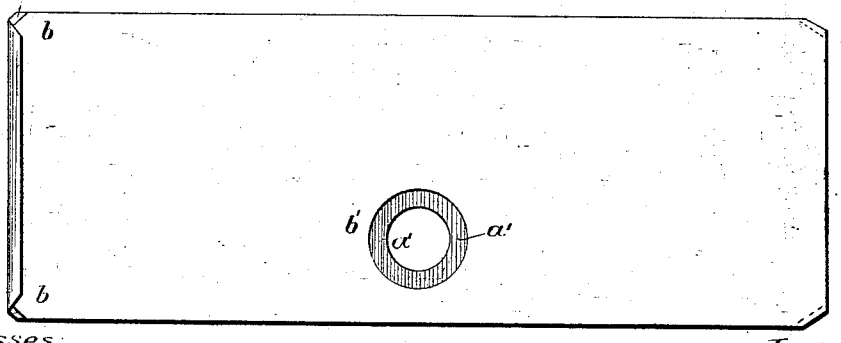


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TEA-KETTLE.

SPECIFICATION forming part of Letters Patent No. 279,635, dated June 19, 1883.

Application filed April 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, ELIAS M. BREWSTER, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented a new and useful Improvement in the Manufacture of Sheet-Metal Ware, of which the following is a specification.

My invention relates to that class of sheet-metal ware in which the sides or main body portions are made of two thicknesses of thin metal, neither thickness of itself being sufficiently stiff or rigid to be durable; and it consists in a method (hereinafter to be described) of working the two thicknesses together as one single sheet, and thus strengthening and stiffening one with the other, so that the sides of the vessel may not be readily indented, as they would be if there were even a small air-space between the two thicknesses.

It also consists in a new article—in this instance a tea-kettle—made by this process.

There has been a complaint that iron tea-kettles are too heavy; that granite tea-kettles soon become worthless by reason of the displacing of the coating, and that copper kettles are too difficult to keep clean and are too expensive. The popular theory of purchasers (whether correct or not does not matter) is that the common copper and tin kettles become corroded and leaky by reason of chemical action of the impure water at the seams when the two metals are in contact and present both copper and tin surfaces, and that also the iron and the granite kettles accumulate rust. It is the purpose of the present invention to avoid all the real as well as fancied objections of purchasers, and give them a kettle that will be serviceable and please them at a cost of not more than twenty-five cents more than an ordinary one of a single thickness of tin.

I attain my objects by the mechanism as illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of a tea-kettle made after my invention. Fig. 2 is a broken section or part of the same to show edge seams and union of the two sheets at the hole for the spout. Fig. 3 is a horizontal section of a portion of the side or body of the kettle. Fig. 4 are the blanks or double sheets from which the body or side are made.

Similar letters refer to similar parts in the several figures.

A is the completed double side of the kettle or vessel. *a* is the inner sheet of thin copper; *b*, the outer sheet of tin. I cut the bottom of the kettle or vessel of copper, and for the sides I cut two blanks, as seen on Fig. 4—*b* of tin and *a* of copper. Through the sides I cut two circular orifices, the outer, *b*, being larger than the inner, *a*. I then turn at one edge of the blank *a* over upon the edge of *b*, and at the other edge I turn *b* over in a reverse direction upon *a*, securing the two metals together near one end. I vary the size, so as to compensate for differences in diameter of inner and outer sheet, and so that when the two pieces are made into a circle by bringing the locked edges together they will be forced tightly upon each other with no air-space between. In Fig. 3 at the locked edges it will be seen that the two single thicknesses of each end make the lock and crowd the free unbent edges b^2 and a^2 tightly and flat between the other portions. After the pieces forming the side or body of kettle are locked the upper and lower edges are burred or "laid off" at one and the same time, and precisely as if the body were of a single thickness. The copper is then turned over upon the sides and interlocked with the top and bottom pieces of the vessel, so that the water can only come in contact with the copper or inner sheet of metal. The edges of the circular opening in the copper sheet are turned out through the larger opening in the tin sheet and then "swaged" firmly down, thus more firmly uniting the two sheets and preventing the water reaching but one kind of metal—viz., the copper.

From the foregoing it will be seen that the expense of manufacture would be no more than that of a single thickness of body, as the two thicknesses (after the double blank is formed) are worked precisely as one would be; that the water does not come in contact with tin unless the kettle be so full as to reach the inner side of the top of the kettle, which is or may be of single thickness of tin, and that the union of the outer and inner sheets, by reason

of the lock and the swaged-over portions at the spout-hole, is perfect, so that no indentation could be readily made in the surface.

Having thus described my invention, what I claim as my invention is—

1. The improved process or mode of construction of a sheet-metal vessel, which consists in forming a double blank of tin and copper, cutting a circular opening for a spout in each sheet, that in the copper or inner sheet being the smaller and in the tin the larger, bending at one edge the copper over the tin and at the other edge the tin over the copper in a reverse direction, securing the two metals together near one end and locking the edges together, as described, turning the inner sides of the circular opening in the copper out over the tin and swaging it down thereon, burring the upper and lower edges of the double blanks and locking the top and bottom thereto at one operation, as if a single thickness only were used, all as and for the purposes described.

2. As an article of manufacture, a tea-kettle with bottom of single thickness of copper and top of single thickness of tin and body of a double blank of copper and tin locked at the edge, as described, and still further firmly and solidly united by the inner edges of spout-hole swaged down upon the outer edges, all as and for the purposes described.

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