No. 689,797. Patented Dec. 24, 1901.

M. E. ERWIN.

ENAMELED ARMY CANTEEN AND METHOD OF MAKING SAME.

(Application filed Feb. 27, 1900.)

(No Model.)

Fig. 1.

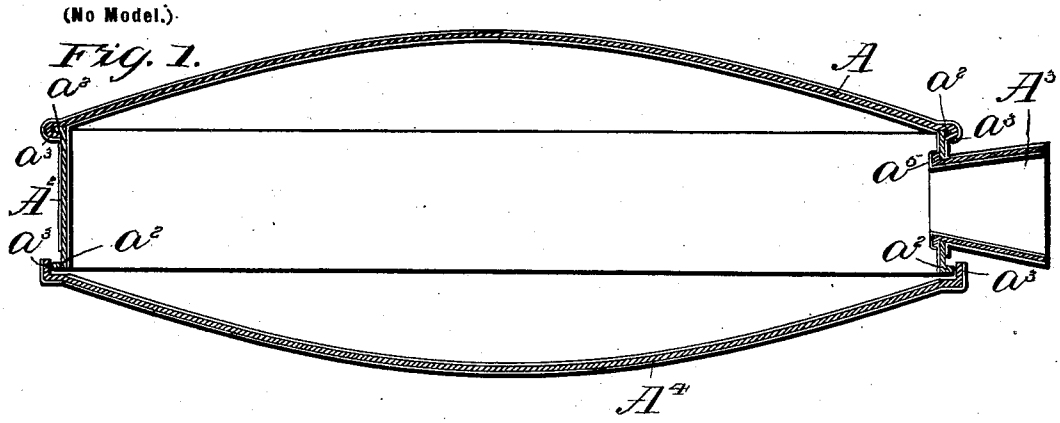


Fig. 2.

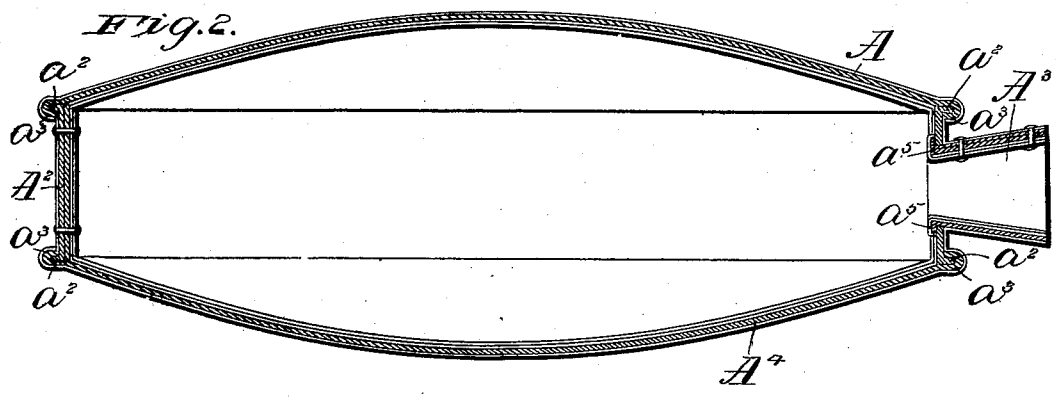


Fig. 3.

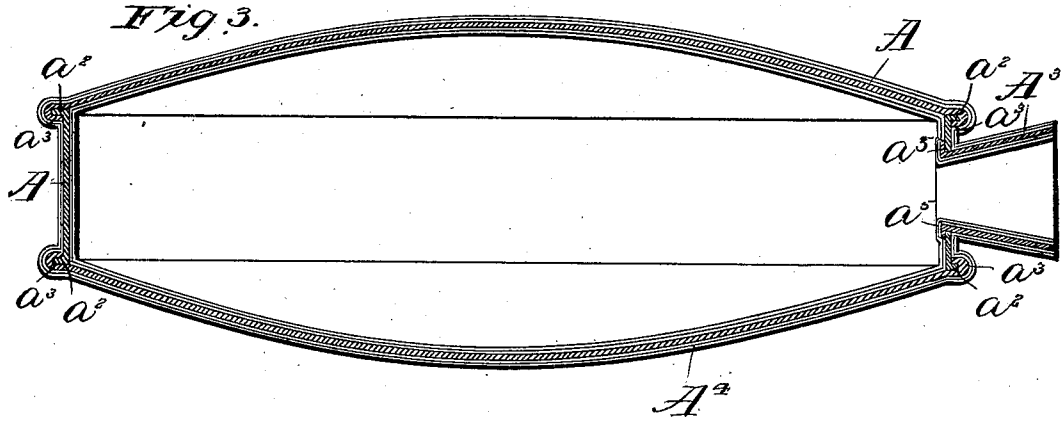
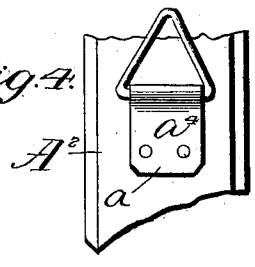


Fig. 4.



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ENAMELED ARMY CANTEEN AND METHOD OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 689,797, dated December 24, 1901.

Application filed February 27, 1900. Serial No. 6,772. (No model.)

To all whom it may concern:

Be it known that I, MELVILLE E. ERWIN, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Methods of Enameling Vessels; 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.

The object is to effect perfect enameling of both the interior and exterior surfaces of an inclosed vessel—that is to say, a bottle-like structure having a large body portion and a small neck or mouth—and to present a vessel without interior or exterior seams or spaces.

While the mode of procedure of this invention may be used in connection with the production of other vessels, in this instance it is shown particularly as employed in the production of a canteen.

As is well known, the ordinary army canteen usually employed is composed of sheet steel or tin, having its joints soldered together. Despite the best work that can be done the interior of these canteens will in time rust, and will thus deteriorate and spoil everything carried in them. Moreover, by reason of the presentation of cracks and spaces not thoroughly filled with solder if certain substances—for example, milk—be carried in the canteen and sour it is practically impossible to cleanse the canteen thoroughly of the soured milk. Aside from this, owing to the fact that when the joints are soldered, and even if flanged or overlapped, if an attempt be made to boil water or coffee in the canteen if great care be not taken to prevent the flames from lapping above the level of the liquid in the canteen it will inevitably follow that the solder in the seams above the liquid will melt and the vessel thus be rendered useless.

By the procedure of the present invention I present a canteen which is absolutely seamless within and without—that is to say, one in which there are no seams or spaces in which material can lodge—and the material of which the canteen is constructed and the manner in which its parts are assembled are such that no degree of heat to which the canteen may be subjected in boiling water, coffee, or the like can possibly affect the seams or points of juncture to cause them to open, and thus to leak.

The invention consists in the method of enameling a vessel, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference indicate corresponding parts, I have illustrated in a diagrammatic manner the steps of assembling the parts of a canteen and of enameling the same, it being understood that I do not limit myself to the precise mode of procedure herein set forth, as the invention may be carried into effect in other ways, and in the drawings—

Figure 1 is a view in sectional elevation displaying the first step in the procedure of assembling the parts of a canteen. Fig. 2 is a similar view exhibiting the second step. Fig. 3 is a similar view exhibiting the third step, and Fig. 4 is a detail view in elevation of a portion of the rim.

In carrying my invention into effect one side A of the canteen, the rim A^2, carrying the usual ears a, (for holding in place the rings or loops to be engaged by the clips of the carrying-strap,) and the neck or spout A^3 are assembled. The manner of securing the rim and side together is by preference to form the rim with a flange a^2, inclosed by an inturned flange a^3 on the side, the ears being by preference secured to the rim by rivets a^4. The neck or mouth is held in place by having its inner end outturned or flanged, as shown at a^5, to bear against the inner side of the rim, the overlapped ends of the neck being in this instance held together by rivets. (Clearly shown in Fig. 2.) At this step of the procedure the flange a^3 on the unassembled side A^4 occupies a plane approximately at right angles to the side, as shown in Fig. 1. All of the parts are then coated on all sides with a suitable enamel and are dried and burned in any usual or preferred manner. After cooling, the side A^4 is then assembled with the rim by turning in the flange a^3

around the flange a^2 of the rim in the same manner as that described in connection with the side A. In this operation there will necessarily be a slight chipping of the enamel around the flange a of the side A^4 where turned over the flange a^2 of the rim; but this chipping is not detrimental to the device and is entirely removed by subsequent steps in the procedure. The inside of the canteen is then coated with an enameling compound, care being taken to flow the compound evenly and smoothly over the entire surfaces, so that every portion will be perfectly covered and the seams between the flanges of the rim and the sides entirely filled, thereby effectually obviating the presentation of cracks or crevices in which matter could lodge. The canteen is then subjected to requisite heat thoroughly to dry the coating of enamel on the inside, after which its exterior surface has applied to it a finishing coating of enamel, and in the same manner dried. The canteen is then subjected to a requisite heat (say to 1,250° Fahrenheit) to cause both coatings of enamel to flux and the coating last applied to fuse with that first applied, this last heating operation causing the enamel to flow over and smoothly cover any portion of the flange on the side A^4 of which the enamel may have been crazed, chipped, or marred in assembling the said side with the rim. When the canteen has been thus finally treated, it will be found to present a structure entirely devoid either on the interior or exterior of cracks, crevices, or seams, and as the enameling material employed is practically acid-proof it will be thus impervious to destruction from any substance that may be used for culinary purposes, such as vinegar or the like.

Should the interior of the canteen become sour from any cause, as from sour milk or the like, it will only be necessary partly to fill the canteen with water and put in small gravel or sand, and by rapidly agitating the canteen cut or loosen the foul material, which may then be removed.

Aside from the advantages of cleanliness and of being practically acid-proof, as stated, the further advantages of a canteen constructed as herein described is that it will stand any heat to which it may be subjected in use, and will thus be of greatest value to a soldier on a campaign, as in no instance will the canteen be subjected to a degree of heat even approximating 1,250° Fahrenheit in boiling water, coffee, or the like.

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

1. The method of enameling a vessel composed of a plurality of parts, which consists in coating said parts with an enamel, then drying and burning the enamel on said parts, then assembling the parts, then giving the interior of the vessel an additional coat of enamel that will flow into the seams and crevices, and, finally, again drying and burning to effect fusion of the coatings of enamel, substantially as described.

2. The method of enameling a vessel, composed of a plurality of parts, which consists in assembling certain of the parts, coating all the parts, those assembled as well as what remains detached, with an enamel, then drying and burning the enamel on the parts, then assembling with the parts assembled the remainder to present a complete vessel, then coating the interior of the vessel, thus presented, with an enamel that will flow into and fill all of the seams, cracks and crevices, then drying, then coating the exterior of the vessel with an enamel and drying, and, finally, burning to effect fusion of the coatings of enamel, substantially as described.

3. The method of enameling a vessel, such as a canteen, which consists in assembling one side, the rim, the ears and the neck or spout, with the other side detached, coating all of these parts with a suitable enamel, drying and burning, then assembling with the rim the remaining side, coating the inside of the vessel with a suitable enameling substance, which will flow into and fill all seams, cracks and crevices, then drying, then applying a coating of enamel to the exterior surface of the vessel and drying, and then burning to cause a fusion of both coats of enamel, substantially as and for the purpose specified.

4. The method of enameling a vessel, which consists in taking the body thereof, with one side or portion open, coating the body, as well as the part or parts to close the opening, with an enamel, then drying and burning the enamel on all the parts, then closing the opening, with the part or parts to close the opening, then coating the interior of the vessel, thus presented, with an enamel that will flow into and fill the seams, cracks and crevices, then drying, then coating the exterior of the vessel with an enamel and drying, and, finally, burning to effect fusion of the coatings of enamel, substantially as described.

5. The method of enameling a vessel, such as a canteen, which consists in assembling one side, the rim and the neck or spout, with the other side detached, coating all of these parts with a suitable enamel, drying and burning, then assembling with the rim the remaining side, coating the inside of the vessel with a suitable enameling substance, which will flow into and fill all of the seams, cracks and crevices, then drying, then applying a coating of enamel to the exterior surface of the vessel, and drying, and then burning to cause a fusion of both coats of enamel, substantially as and for the purpose specified.

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

MELVILLE E. ERWIN.

Witnesses:
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