

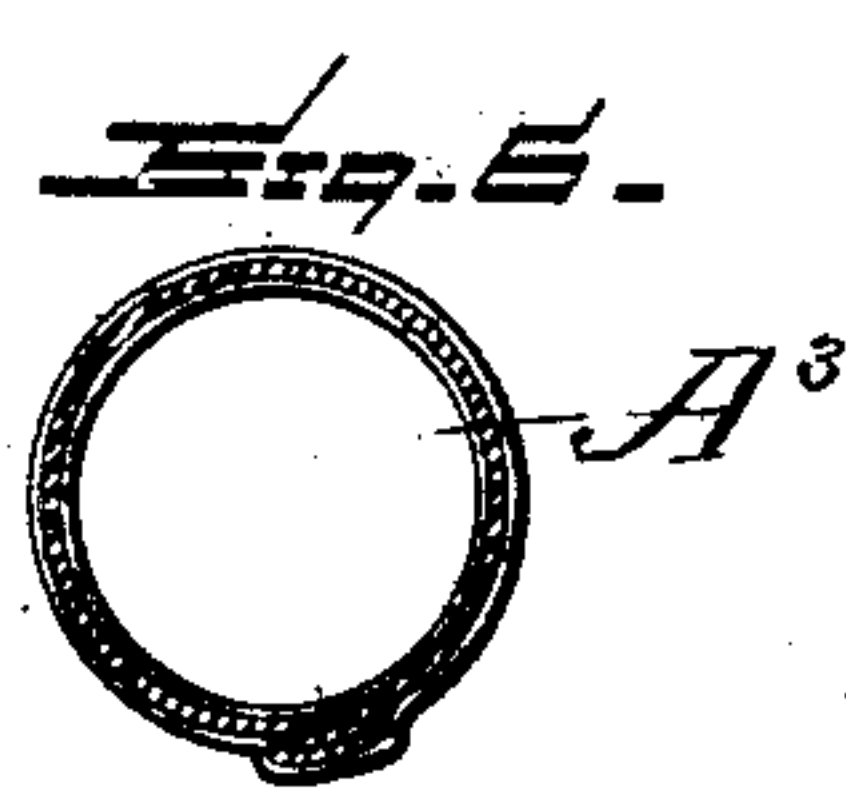
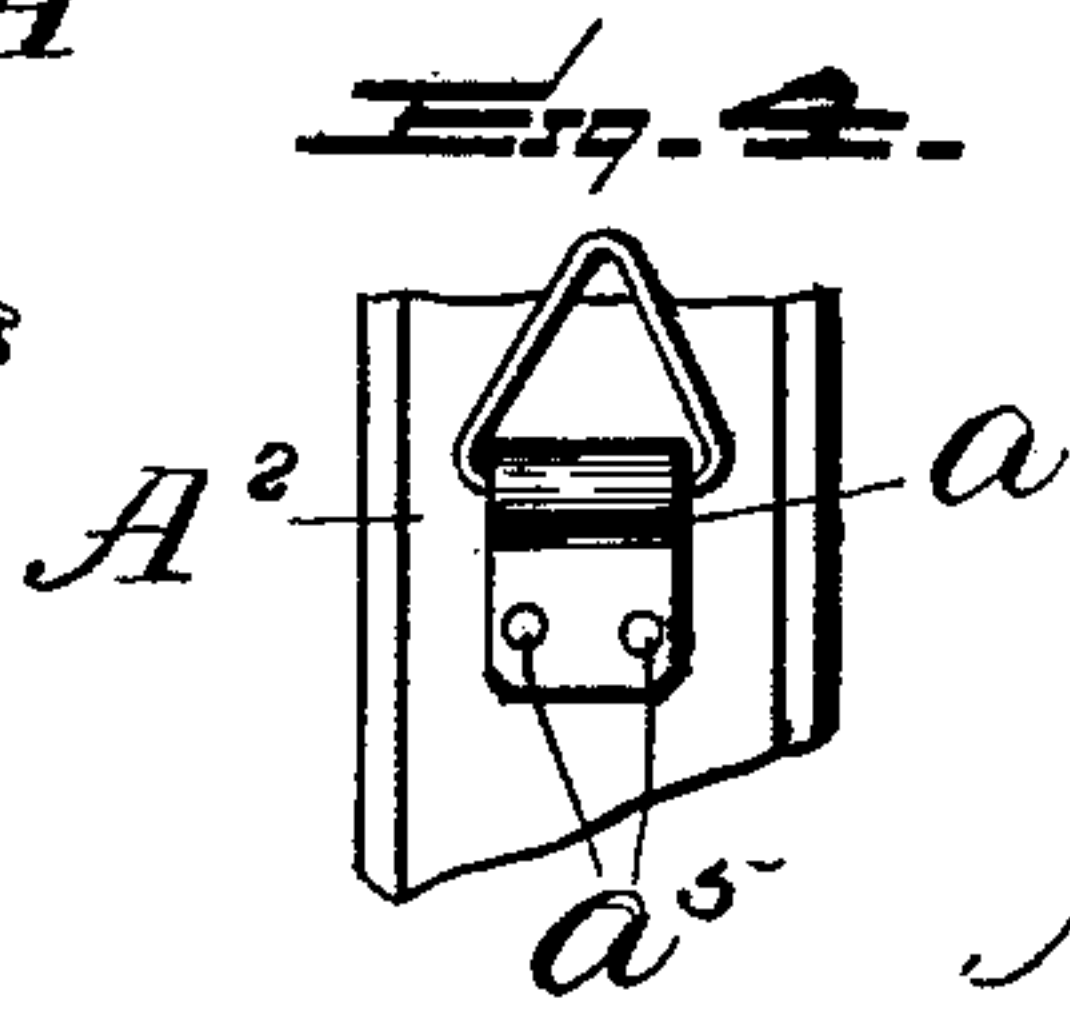
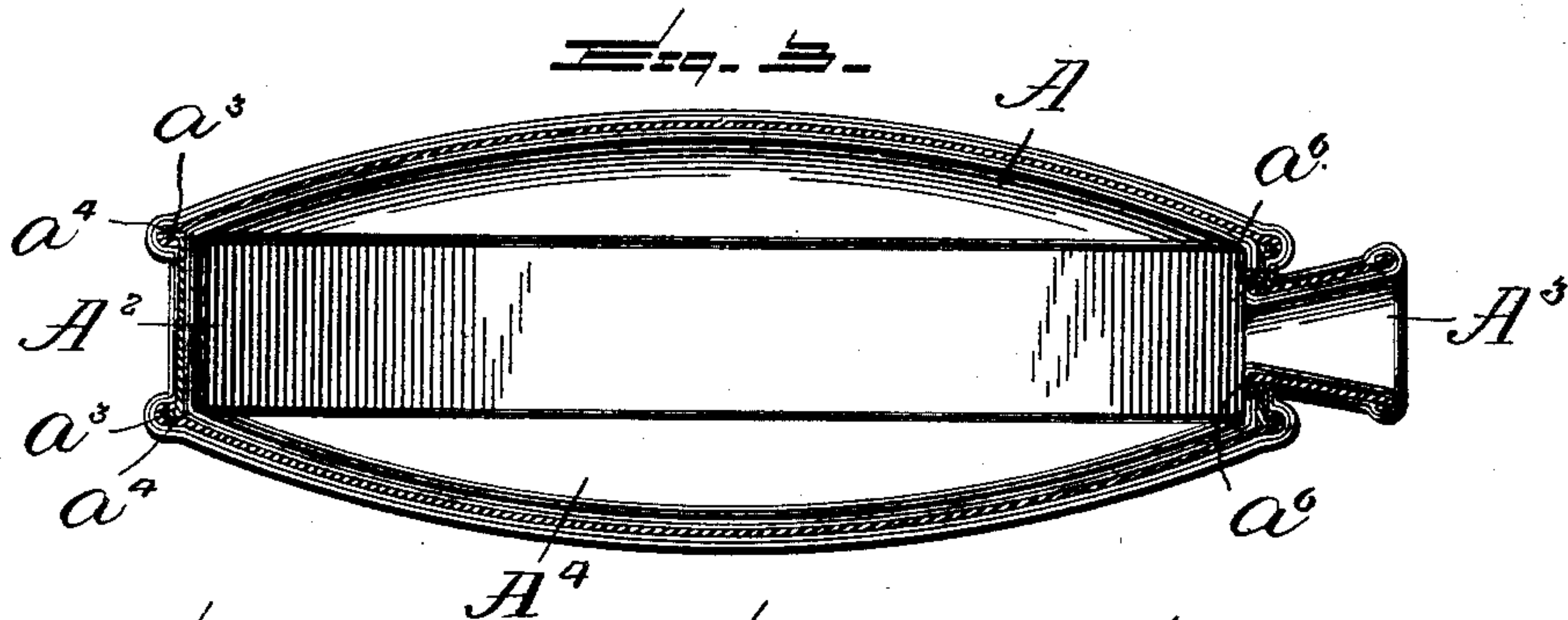
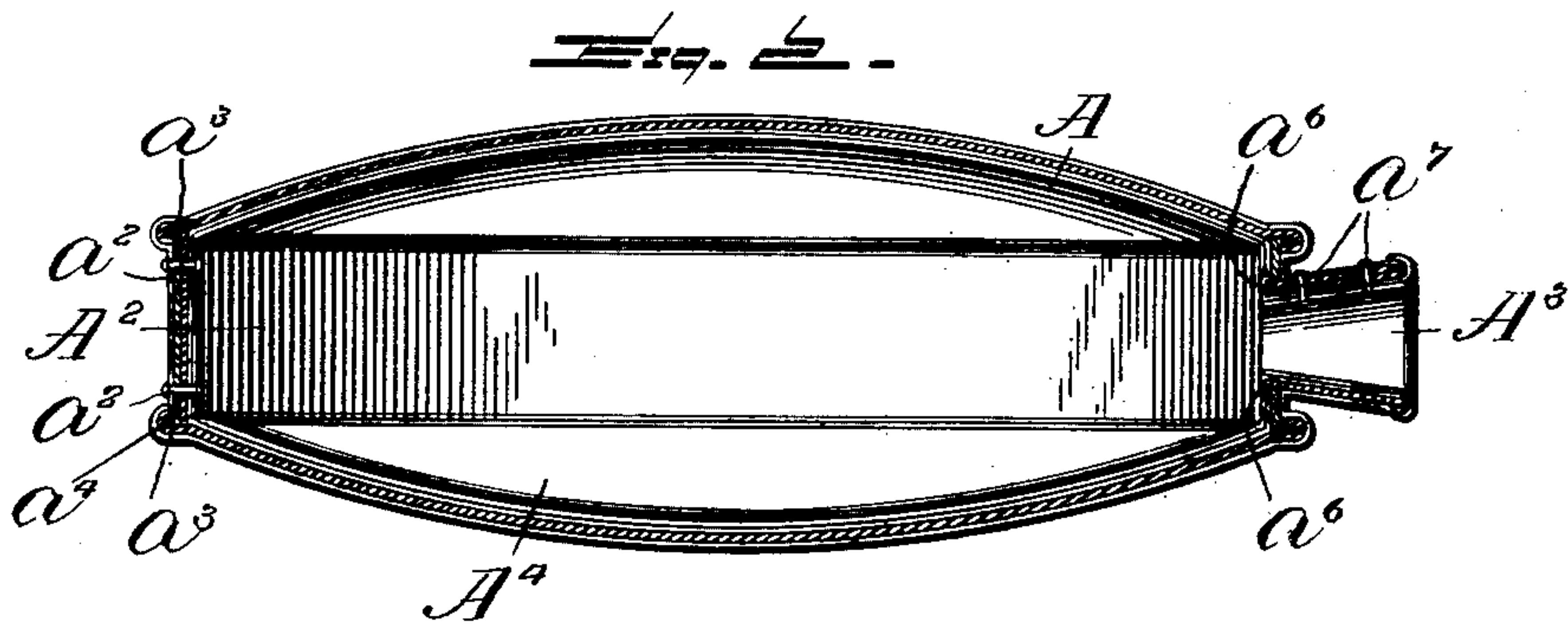
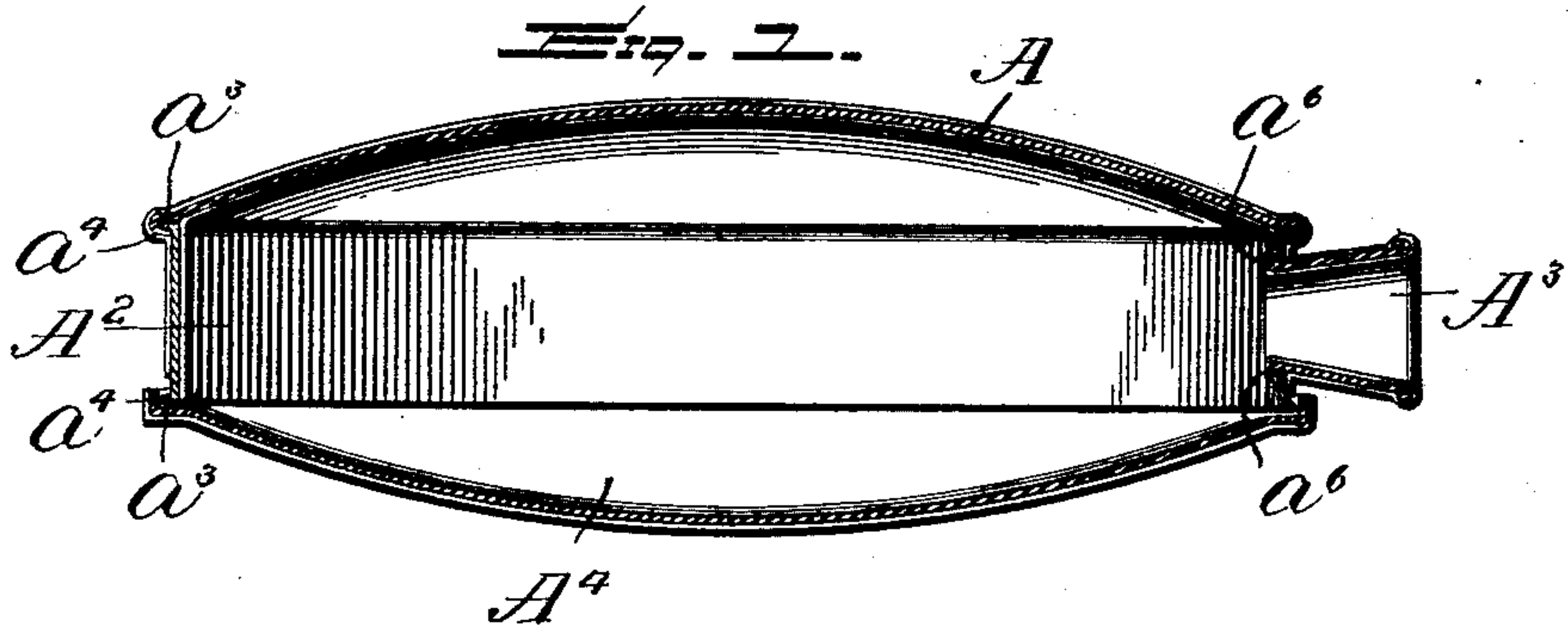
No. 677,309.

Patented June 25, 1901.

M. E. ERWIN.
ENAMELED VESSEL.

(Application filed Dec. 11, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

MELVILLE E. ERWIN, OF DUBUQUE, IOWA, ASSIGNOR TO THE DUBUQUE ENAMELING COMPANY, OF SAME PLACE.

ENAMELED VESSEL.

SPECIFICATION forming part of Letters Patent No. 677,309, dated June 25, 1901.

Application filed December 11, 1900. Serial No. 39,535. (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 Enameled Vessels, of which the following is a specification.

The object is to effect perfect enameling of both the interior and exterior surfaces of a vessel, thereby to present a vessel without interior or exterior seams or spaces.

While the procedure of the present invention is described as employed in connection with an inclosed vessel—that is to say, a bottle-like structure having a large body portion and a small neck or mouth, particularly in this instance an army-canteen—it is to be understood that the invention is not to be limited to such particular article, as various other articles may be enameled by following the same procedure.

As is well known, the ordinary army-canteen universally employed is composed of sheet metal or tin, having its joints soldered together. Despite the best work that can be done the inside of these canteens will in time rust and will thus deteriorate and spoil anything carried therein. Moreover, by reason of the presentation of cracks and spaces not thoroughly filled with solder if certain substances, such as milk, be carried in the canteen and sours 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 up 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 manner of assembling and enameling the parts of a canteen or other vessel characterized by the present invention I present a vessel that 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 vessel may be subjected in boiling water 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 an enameled vessel, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of the 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 vessel—in this instance of a canteen—and of enameling the same, it being understood that I do not limit myself to the precise procedure herein set forth, as the invention may be carried into effect in other ways.

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 view exhibiting the second step. Fig. 3 is a similar view exhibiting the third step. Fig. 4 is a detail view in elevation of a portion of the rim of a canteen, and Figs. 5 and 6 are sectional detail views exhibiting a modified manner of securing together certain parts of the vessel.

In carrying my invention into effect one side A of the canteen, the rim A², carrying the usual ears a, Fig. 4, for holding in place the rings to be engaged by the clips of the carrying-strap, and the neck or spout A³ are assembled. As shown in Fig. 2, the overlapped ends of the rim are held assembled by rivets a²; but, if preferred, these parts may be secured together by interlocked flanges, as shown in Fig. 5. The manner of securing the rim and side together is, by preference, to form each side or edge of the rim with a flange a³, inclosed by an inturned flange a⁴ on the side, the ears being, by preference, secured to the rim by rivets a⁵ and the neck or mouthpiece being held in place by having its inner end outturned or flanged, as shown at a⁶, to bear against the inner side of the rim. As shown in Fig. 2, the overlapped ends of the neck are held assembled by rivets a⁷; but, if preferred, these parts may be secured together by interlocked flanges, as shown in Fig. 6. At this step of the procedure the flange a⁴ on the unassembled side A⁴ occupies

a plane approximately at right angles to the side, as shown in Fig. 1. All these 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^4 over the flange a^3 of the rim in the same manner as that on the side A. In this operation there will necessarily be a slight chipping of the enamel around the flange of the side A^4 where it is turned over the flange a^3 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 over the entire inner surface, so that every portion will be evenly coated 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 would lodge. The canteen is then subjected to requisite heat thoroughly to dry the coating of enamel on the inside, after which the exterior surface of the canteen has applied to it a finishing coating of enamel and is again dried. The canteen is then placed in an oven and is subjected to a requisite heat—say to $1,250^\circ$ Fahrenheit—to cause both of the coatings 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 of the side A^4 of which the enamel may have been 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 that is absolutely devoid either on the interior or the exterior of cracks, crevices, or seams, and as the enameling material employed is practically acid-proof the canteen will be 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 foul from any cause, as from sour milk or the like, it will only be necessary partially 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 advantage of cleanliness and of being practically acid-proof the fur-

ther advantage 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 a canteen be subjected to a heat even approximating $1,250^\circ$ 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. As a new article of manufacture, a vessel comprising a rim having a flange on each edge, the ends of the rim being suitably secured together, sides having flanges adapted to be interlocked with those of the rim, a neck or mouthpiece fitting an opening in the rim and held in place by having its inner end outturned or flanged, to bear against the inner surface of the rim, and an enamel coating covering the interior and exterior of the vessel and fused between the flanges, thus presenting a seamless and practically acid and fire proof structure, substantially as described.

2. As a new article of manufacture, the herein-described canteen, the same being constructed of a metallic body portion composed of two sides, a rim and a neck or mouthpiece, the parts being held assembled by interlocked flanges and rivets, and an enamel coating covering the interior and exterior of the structure and fused between the flanges, thus presenting a seamless, practically acid and fire proof article, substantially as described.

3. As a new article of manufacture, the herein-described canteen comprising a rim having a flange on each edge, the ends of the rim being suitably secured together, sides having flanges interlocked with those of the rim, a neck or mouthpiece fitting an opening in the rim and held in place by having its inner end outturned or flanged to bear against the inner surface of the rim, ears secured to the rim, and an enamel coating covering the interior and the exterior of the vessel, and fused between the flanges, thus presenting a seamless, practically acid and fire proof structure, substantially as described.

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

MELVILLE E. ERWIN.

Witnesses:

W. ZUMHOF,

F. W. ALTMAN.