(No Model.) 2 Sheets—Sheet 1.

J. C. MILLIGAN & E. MOUHOT.

ATTACHMENT OF LIPS AND SPOUTS TO VESSELS.

No. 298,222. Patented May 6, 1884.

Fig. 1.

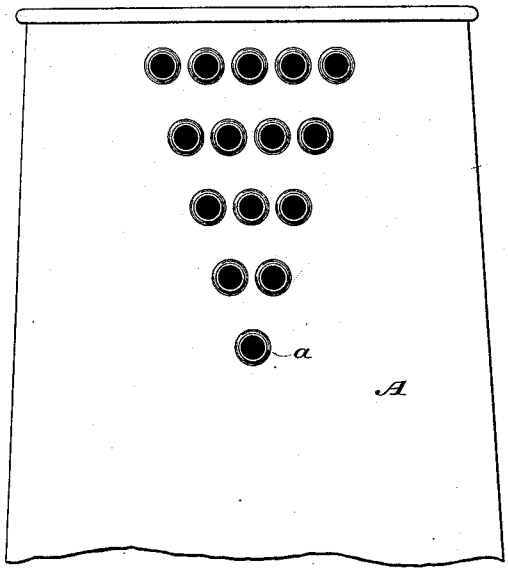

Fig. 2.

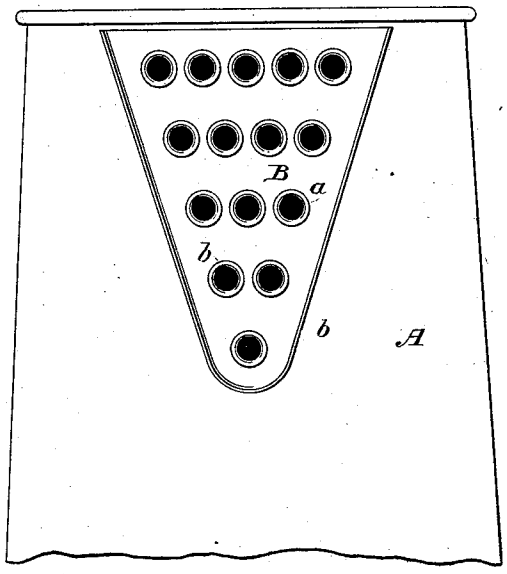

Fig. 3.

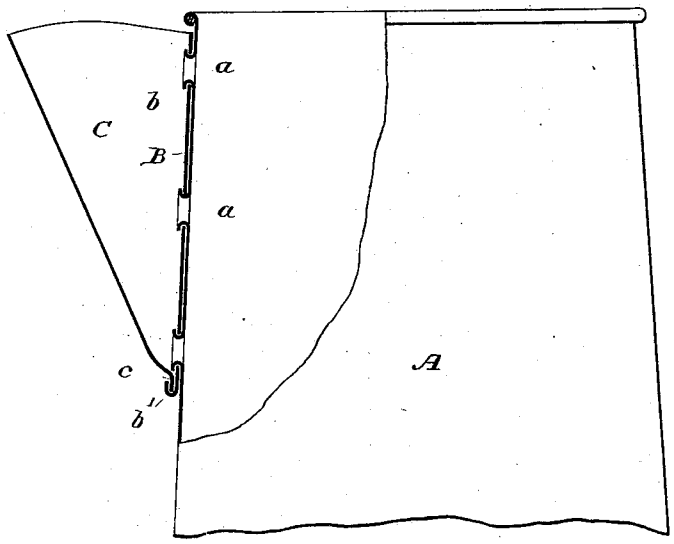

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Fig. 4.

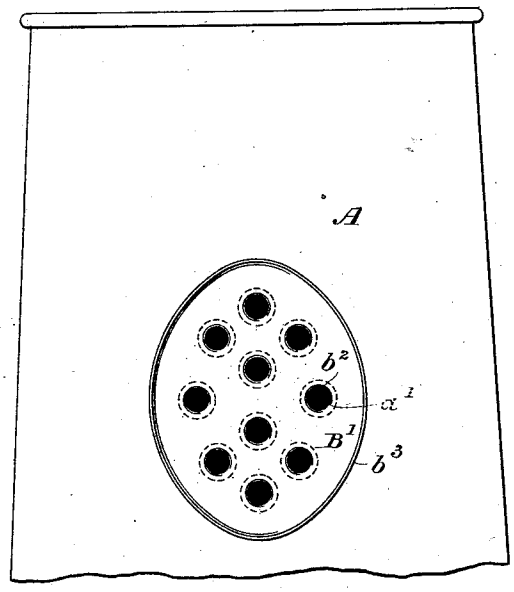
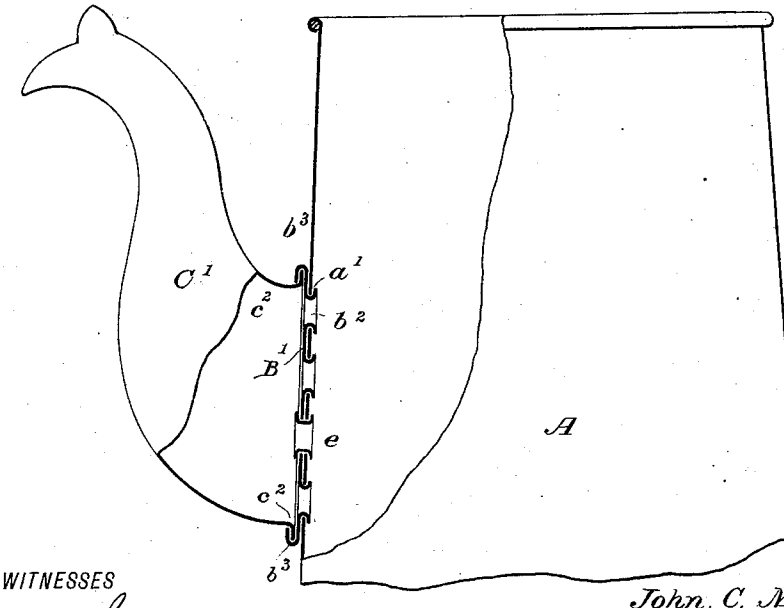


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ATTACHMENT OF LIPS AND SPOUTS TO VESSELS.

SPECIFICATION forming part of Letters Patent No. 298,222, dated May 6, 1884.

Application filed October 16, 1883. (No model.)

To all whom it may concern:

Be it known that we, JOHN C. MILLIGAN and EMILE MOUHOT, citizens of the United States, residing, respectively, in Brooklyn, in the county of Kings, and in Wood Haven, in the county of Queens, both in the State of New York, have jointly invented certain new and useful Improvements in the Attachment of Lips and Spouts to Vessels, of which the following is a specification.

The object of our invention is to unite lips and spouts to vessels by means of a joint which possesses greater strength and rigidity, and which is better adapted to undergo the process of enameling, than joints heretofore devised. Sheet-iron vessels covered with an enamel or a glaze have been found to possess very desirable qualities for the preparation of tea, coffee, and similar infusions. These vessels require the attachment of either a lip or a spout for pouring out the liquids. For the purpose of rendering the articles capable of withstanding the effects of the great heat to which they are subjected during the process of enameling, and to afford the required strength to the completed vessel, it is desirable that the joints of attachment should be as firm and unyielding as possible. If any considerable portion of the body of the vessel is cut away—such, for instance, as a triangular section of the size necessary for applying the lip, or a circular or oval section for receiving the base of the spout—the vessel is weakened, and is more liable to be bent at that place, even after the lip or spout has been attached and the vessel has been enameled. In such case the enamel is almost certain to crack or break from the surface of the metal at that point, and a leak is the result. It is very difficult to remedy such a leak in this class of vessel. Solder cannot be made to adhere to the enamel, and therefore the vessel soon becomes useless and is thrown aside. It is quite essential, therefore, that every element of weakness in the joints in this class of vessel should be carefully eliminated.

Our invention consists, principally, in the use of a flanged clamping-plate, which is firmly attached to that part of the vessel to which the lip or spout is to be united. The portion of the side of the vessel covered by the flanged plate and the plate itself are both perforated with a series of holes, those in the vessel corresponding in location to those in the plate. The holes in either the vessel or the plate are so punched as to leave their edges projecting somewhat beyond the surface of the metal. By causing these projecting edges to extend through the corresponding holes in the other metal, and turning them down against its face, the vessel and the flanged plate are firmly united. The lip or spout which is to be attached to the vessel is constructed with a flange around its base, and this flange is firmly interlocked with the flange upon the plate in a well-known manner.

In the accompanying drawings, which illustrate our invention, Figure 1 is a front elevation of a lip-vessel, showing its appearance before the flanged plate has been attached; and Fig. 2 shows the same with the plate attached. Fig. 3 is a side elevation, partly in section, illustrating the method of attaching the lip to the flanged plate. Figs. 4 and 5 illustrate the invention as applied to a spout-vessel.

Referring to the drawings, A represents the body of the vessel, through a triangular portion in the upper portion of which a series of holes, *a*, have been punched. These holes are designed to serve as a strainer for the vessel, and the space which they occupy is covered by a flanged plate, B. The holes are punched from the side of the metal forming the inner surface of the vessel, and their edges extend outward from the surface of the metal a considerable distance, as shown in Fig. 1. The better the material of which the vessel is composed—that is to say, the more ductile it is—the farther these edges may be made to project. The flanged plate B is punched with holes *b*, corresponding to those in the sides of the vessel, but of such size as to permit the projecting edges of the holes *a* to extend through them. The holes *b*, however, differ from the holes *a*, in that they are smooth upon both surfaces. After the plate has been fitted against the surface of the vessel, the project-

ing edges of the holes *a* will, it is evident, extend beyond the surface of the flanged plate. By means of suitable instruments these edges are turned down upon the surface of the plate in the manner of a hollow rivet, as shown in Fig. 3. The plate is thus securely clamped to the body of the vessel. The plate B is provided with a flange, *b'*, extending around its edge, except at the top, and by means of this flange a lip, C, is attached to the vessel. A flange, *c*, formed at the edge of the lip C, fits within the flange *b'*, and the latter being firmly closed over a flange *c*, the two are securely united.

Thus far we have described our invention as having the holes *a* in the side of the vessel punched from the inside outward, in which case the iron of which the body is made must be of a fine quality and ductile. It is evident, however, that substantially the same effect may be produced by punching the holes in the flanged plate in such a manner that when it is applied to the vessel the edges will project into the interior of the same. They may then be clamped upon the inside surface of the vessel, around the edges of the holes formed therein, in precisely the same manner as already described. In this latter case the body of the vessel itself may be of a cheaper material, and it is necessary only that the iron of the flanged plate be of fine quality. Such a method of construction is illustrated in Figs. 4 and 5, in which we have represented the vessel as constructed for receiving a spout instead of a lip.

A series of holes, *a'*, are formed in the body of the vessel through the area which is to be covered by the base of the spout C'. These holes are, however, smooth upon both surfaces, and are designed to receive the edges which are struck out from a corresponding series of holes, b^2, formed in the flanged plate B'. When the plate is applied, these edges are turned back upon the inner surface of the vessel in precisely the same manner as described with reference to the vessel A and plate B. The plate B' is provided with a flange, b^3, extending entirely around its periphery. A corresponding flange, c^2, is formed around the base of the spout C'. When the spout is in position, this flange rests against the outer surface of the vessel, and by folding the flange b^3 upon it the two parts are securely united.

To secure additional strength in certain cases, the series of holes on both plate and body are formed with smooth edges, and the attachment is made by means of rivets, either solid or hollow, secured in the manner of an eyelet, as shown at *e*.

By constructing a vessel in this manner no considerable portion of its side is cut away, and it therefore is not weakened at the point where the lip or the spout is attached, and it is thus less liable to bend or crack the enamel when subjected to ordinary use. Moreover, the flanged plate has a very large bearing-surface, and is so securely attached at different points that much more strength is added than is taken away by the punching of holes.

We hereby disclaim, so far as this application and these Letters Patent are concerned, all inventions which are shown, described, and claimed in an application made by us, relating to similar subject-matter, of even date herewith, being Serial No. 109,161, the peculiar features of this invention being the series of perforations made in the vessel and the flanged plate, the edges of the perforations being adapted to clamp the vessel and plate together, in combination with the other parts of the vessel, as shown.

We claim as our invention—

1. The combination, substantially as hereinbefore set forth, with the body of a vessel, of a lip or spout and an intervening flanged plate, whereby said vessel and lip or spout are united, the body and plate being perforated, so as to serve as a strainer, the projecting edges of the perforations being the means whereby the plate and the vessel are united.

2. The combination, substantially as hereinbefore set forth, of a vessel having a series of perforations formed in its side, a plate similarly perforated, the projecting edges of said perforations being the means whereby said vessel and plate are united, and a spout or lip secured to said vessel by flanges upon said plate and upon said spout or lip.

3. The combination, substantially as hereinbefore set forth, with the body of a vessel, of a spout or lip and an intervening flanged plate, a series of holes being formed through said vessel and said plate, by the projecting edges of which said plate and vessel are united.

In testimony whereof we have hereunto subscribed our names this 13th day of October, A. D. 1883.

JOHN C. MILLIGAN.
EMILE MOUHOT.

Witnesses:
W. S. HOLBROOK,
JAMES COCHRAN.