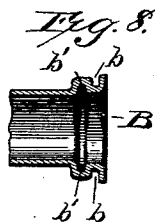
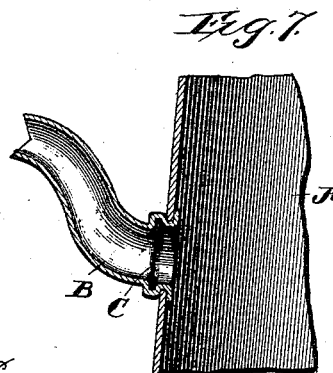
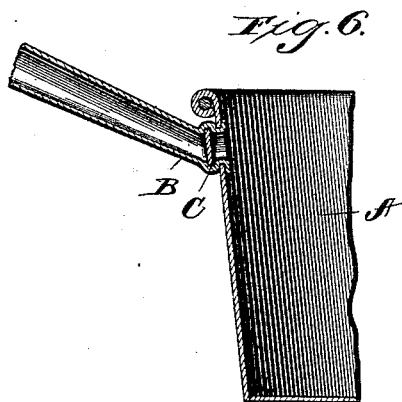
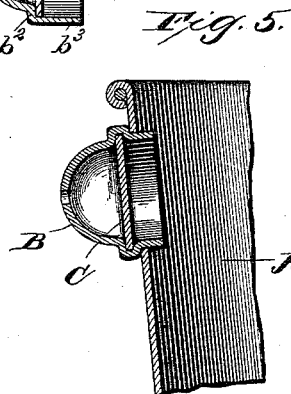
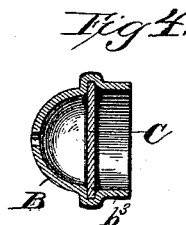
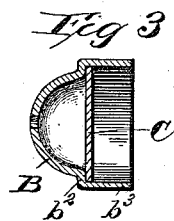
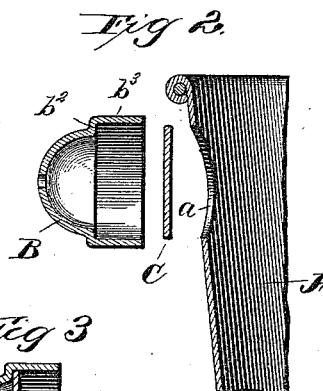
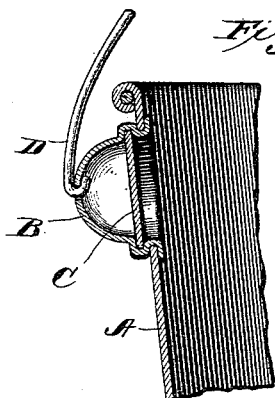


(No Model.)

L. STURGES.  
METALLIC VESSEL.

No. 458,352.

Patented Aug. 25, 1891.



Witnesses

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Inventor

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# UNITED STATES PATENT OFFICE.

LEE STURGES, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CHICAGO STAMP-  
ING COMPANY, OF SAME PLACE.

## METALLIC VESSEL.

SPECIFICATION forming part of Letters Patent No. 458,352, dated August 25, 1891.

Application filed March 19, 1891. Serial No. 385,624. (No model.)

*To all whom it may concern:*

Be it known that I, LEE STURGES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have  
5 invented certain new and useful Improvements in Metallic Vessels, of which the following is a specification.

The present invention is applicable generally to all vessels which have a main part,  
10 such as a body or cover and an auxiliary part, such as a knob, a handle, an ear, a spout, or the like attached thereto; and the object of said invention is to enable the formation of a tight joint between said parts without the  
15 use of solder.

To this end the invention consists in certain features of novelty that are particularly pointed out in the claims hereinafter.

In the accompanying drawings, which are  
20 made a part of this specification, the invention is shown applied to the ears of a pail, Figures 1 to 5, inclusive, to the handle of a dipper, Fig. 6, and to the spout of a pot, Fig. 7.

Fig. 1 is a vertical section of a portion of a pail and of the ear when completely attached thereto. Figs. 2 to 5, inclusive, are  
25 sections of the parts at four different stages during the process of attaching them. Fig. 6 is a section of a portion of a dipper and of a portion of the handle attached thereto. Fig. 7 is a section of a portion of a pot and of the spout attached thereto. Fig. 8 is a diagram-  
30 matic view showing the result of the various steps of the process upon the attached or auxiliary part.

A represents the main part, say the body, of a vessel, having an opening *a*, and B represents the attached or auxiliary part having  
40 an external annular groove *b*, of U-shaped cross-section, which receives the metal forming the margin of the opening *a*. The part B has also an internal annular groove of U-shaped cross-section *b'*, which receives the  
45 margin of a disk or diaphragm C, which may be either imperforated or reticulated according to the nature and purpose of the part B. If said part be the ear for the attachment of a bail D, as shown in Figs. 1 to 5, inclusive,

or the handle of a dipper or other vessel, as  
50 shown in Fig. 6, or the like, the diaphragm is imperforated and the joint around its margin is made water-tight. If, however, said part be the discharge-spout of the vessel or the like, then the diaphragm is reticulated and  
55 serves as a strainer. In either case the method of securing the parts together is the same and is best illustrated by Figs. 2 to 5, inclusive. The part B is formed with a shoulder *b*<sup>2</sup> and an annular flange *b*<sup>3</sup>, as shown in  
60 Figs. 2 and 3. The diaphragm C is placed upon the shoulder *b*<sup>2</sup>, as shown in Fig. 3, and the flange *b*<sup>3</sup> contracted so as to bear upon the periphery of the diaphragm and so as to form the annular groove *b'* for receiving the  
65 margin of said diaphragm, as shown in Fig. 4. Unless the diaphragm be reticulated this makes the part B water-tight, and it then only remains to secure it water tight to the main part A. This is done by inserting the  
70 contracted flange, Fig. 4, through the opening *a*, as shown in Fig. 5, and expanding it, causing it to completely fill the opening and embrace the metal forming the margin thereof, as shown in Figs. 1, 6, and 7. These suc-  
75 cessive steps result in forming in the part B the two U-shaped grooves, as shown in Fig. 8.

In practice the part removed from the main part A in forming the opening *a* is used for  
80 the disk or diaphragm C when a water-tight joint is desired.

For the sake of clearness the drawings show all the parts of exaggerated thickness.

Having thus described my invention, the  
85 following is what I claim as new therein and desire to secure by Letters Patent:

1. In a metallic vessel, the combination, with the part A, having opening *a*, of the part B, having external annular groove *b*, in  
90 which the metal forming the margin of the opening *a* fits, and the diaphragm C, situated within the part B, substantially as set forth.

2. In a metallic vessel, the combination, with part A, having opening *a*, of part B, hav-  
95 ing external annular groove *b*, in which the metal forming the margin of the opening *a* fits water-tight and having an internal annu-

lar groove  $b'$ , and the diaphragm C, having its margin confined within the groove  $b'$ , substantially as set forth.

3. In a metallic vessel, the combination,  
5 with part A, having opening  $a$ , of part B, having external annular groove  $b$ , in which the metal forming the margin of the opening fits water-tight, and having also the internal

annular groove  $b'$ , and the imperforate diaphragm C, having its margin fitted water-tight in the groove  $b'$ , substantially as set forth. 10

LEE STURGES.

Witnesses:

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J. HALPENNY.