No. 830,193. PATENTED SEPT. 4, 1906.

O. ANDERSSON.

METHOD OF MANUFACTURING SEAMLESS PLATE METAL VESSELS OF ANGULAR CROSS SECTION.

APPLICATION FILED OCT. 18, 1905.

Fig. 1.

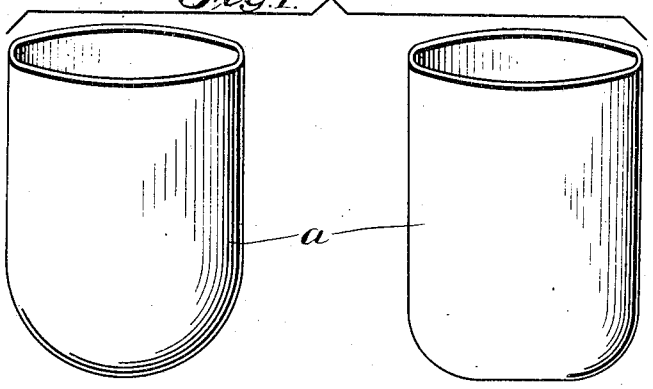


Fig. 2.

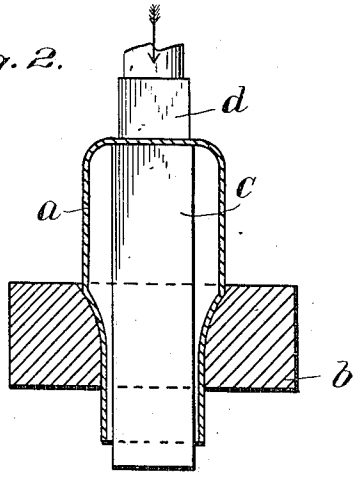


Fig. 3.

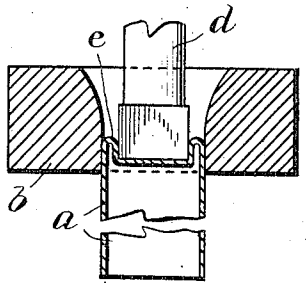


Fig. 4.

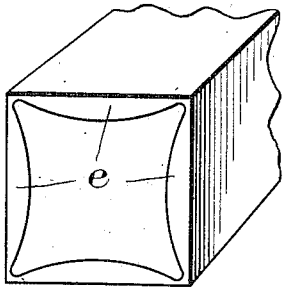


Fig. 5.

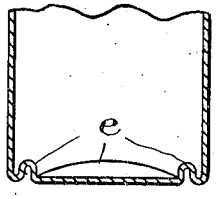
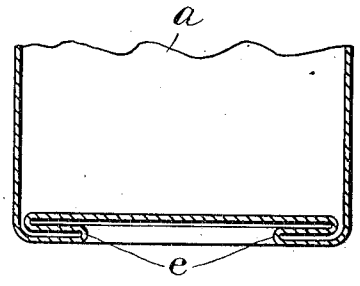


Fig. 6.



Inventor

Witnesses

T. P. Britt

Geo. Heinicke

Otto Andersson

By J. Lothman

Attorney

UNITED STATES PATENT OFFICE.

OTTO ANDERSSON, OF OLOFSTRÖM, SWEDEN.

METHOD OF MANUFACTURING SEAMLESS PLATE-METAL VESSELS OF ANGULAR CROSS-SECTION.

No. 830,193. Specification of Letters Patent. Patented Sept. 4, 1906.

Application filed October 18, 1905. Serial No. 283,352.

To all whom it may concern:

Be it known that I, OTTO ANDERSSON, engineer, a subject of the King of Sweden, residing at Olofström, county of Blekinge, Sweden, have invented new and useful Improvements in Methods of Manufacturing Seamless Plate-Metal Vessels of Angular Cross-Section, of which the following is a specification.

In manufacturing seamless vessels of angular cross-section the method has hitherto been employed of first drawing a round vessel blank provided with a bottom shoulder of a shape corresponding to the desired angular shape of the completed vessel and subsequently drawing this blank, bottom first, through a matrix or several matrices by the aid of an angular mandrel or die of the cross-section required in the completed vessel. In the said operation the surplus material arising in the transition, for instance, from a round to a square shape must be either upset or transferred forward, and inasmuch as such superfluous material always occurs to a greater extent at the sides than at the corners and thin metal plate has more of a tendency to fold than be upset the result is the occurrence of a number of unsightly creases along the sides and of irregular stresses in the material which frequently cause a tearing of same, and therefore the production of deep angular sharp-cornered vessels of thin plate metal in the manner just described is almost impossible. On the other hand, according to the present invention angular seamless vessels of any depth and with sharp corners can be manufactured from thin plate metal by pushing (pressing) a blank of round (circular or oval) cross-section made in usual manner of the same perimeter as the completed angular vessel, the mouth or orifice first through the angular matrix or matrices. The advantage is that the surplus material above mentioned as the bottom passes over from a round to a square shape will without irregular stresses or upsettings adjust itself in a regular fold on each side of the angular bottom formed, which folds may be subsequently deflected either toward the bottom or toward the sides or may be bent inward.

In the accompanying drawings a couple of blanks are illustrated in Figure 1, while Figs. 2 and 3 illustrate such a blank at the beginning and end of a drawing operation. Fig. 4 illustrates a completed vessel with the folds deflected toward the bottom, while Fig. 5 illustrates a section of such a vessel with the folds deflected inward. Fig. 6 shows the completed vessel, Fig. 4, in section.

a is the blank, *b* the matrix, and *c* the mandrel for preventing the sides from yielding inward, said mandrel being inserted into the blank and having its corners faced off. *d* is the pushing-mandrel proper by means of which the blank is forced through the matrix, and *e* represents the creases or folds.

Having thus described my invention, what I claim is—

1. An improved method of manufacturing seamless vessels of angular cross-section from pressed blanks of a curved section, consisting in pushing the blanks, mouth first, through matrices of the desired angular cross-section, and deflecting the folds or flaps formed at the bottom against the vessel.

2. An improved method of manufacturing seamless vessels of angular cross-section from pressed blanks, of a curved section, consisting in placing the bottom of the vessel between two mandrels *c* and *d*, then placing the open end of said vessel into a converging matrix, passing the vessel jointly with the mandrels through said matrix and finally bending the folds at the bottom against the vessel, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OTTO ANDERSSON.

Witnesses:
A. G. FAYERSTROM,
A. MONAN.