S. SVENSON.

METHOD OF FORMING BAIL EARS ON SHEET METAL VESSELS.

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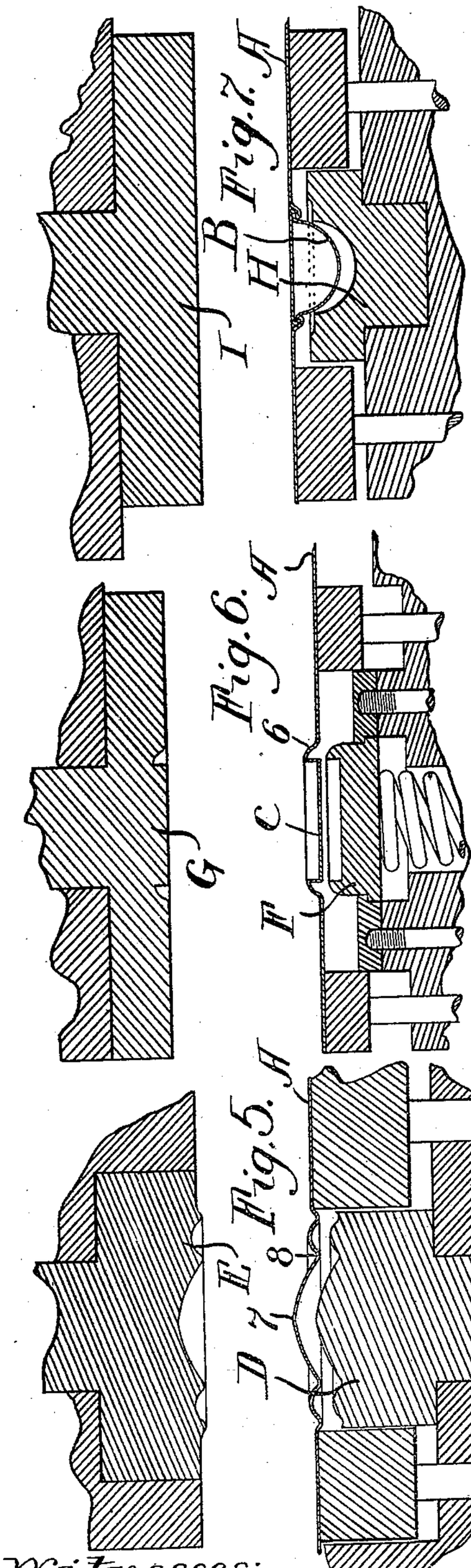
975,479. Patented Nov. 15, 1910.



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UNITED STATES PATENT OFFICE.

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METHOD OF FORMING BAIL-EARS ON SHEET-METAL VESSELS.

975,479. Specification of Letters Patent. **Patented Nov. 15, 1910.**

Application filed July 2, 1909. Serial No. 505,590.

To all whom it may concern:

Be it known that I, SVEN SVENSON, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented a new and useful Improvement in the Method of Forming Bail-Ears on Sheet-Metal Vessels, of which the following is a specification.

My invention relates to a method of forming bail ears on sheet metal vessels such for instance as the well known lard pails.

This invention has for its object to secure the ears on the walls of the pails in a simple and effective manner at a lower cost than heretofore.

A further object is to produce a strong and rigid attachment between the ears and the bodies of the vessels which is neat in appearance, and the construction of which will permit the ready assembling and rigid attachment of the same.

Primarily this invention has to do with that form of attachment which is produced by stamping as distinguished from spinning or pressing. In consequence the tools necessary for the construction of my invention are simpler and less liable to disorder and are adapted to operate at a higher rate of speed and produce a larger number of attachments than with methods heretofore used.

In the accompanying drawings forming part of this specification Figure 1 is a perspective view of a fragment of a pail body showing one ear attached thereto; Fig. 2 is a perspective view of a fragment of a pail body illustrating the first step of forming the recess to receive the bail ear; Fig. 3 is another perspective view of a fragment of a pail body illustrating the second step in the forming of the recess; Fig. 4 is a perspective view of the bail ear in readiness to be placed in the recess illustrated in Fig. 3, and Figs. 5, 6 and 7 are sectional elevations of detail portions of the stamping dies which are employed for forming the recess in the body of the pail and securing the ear to the pail in said recess, portions of the body being shown in section between the members of the dies.

A represents the pail body a fragment of which is illustrated in the drawings and B the bail ear the latter being cup shaped and formed in its crown with the usual central opening 2 to receive the hooked end of the bail (not shown). At the base of the bail ear is an annular flange 3 which is formed by stamping, said flange being flat and extending substantially at right angles to the axis of the cup shaped ear.

C represents a bail ear recess which is formed in the wall of the pail by stamping an annular bead in its wall. The inside of this bead above the recess has a cylindrical inner wall 4 into which the base of the ear is adapted to be received snugly. The outer surface 6 of the bead tapers downwardly and outwardly in a gradual slope. In forming the bead the sheet metal out of which the body of the pail is made is first stamped with an inner crown 7 and a concentric ridge 8 at the base of said crown, the first step of stamping serving to stretch the metal inwardly and cause sufficient metal to accumulate in the proper place for the second step.

In Fig. 5 the pair of die members D and E are illustrated between which the metal is formed during the first step of the process. In Fig. 6 the pair of die members F and G are illustrated which coöperate to form the metal with the bead and recess during the second step as illustrated in Fig. 3. During the second step the inner crown is stamped flat and the bead formed with the cylindrical wall 4. In assembling the parts the bail ear is placed with the flange on its base in the recess C and the bead is upset or folded in by pressing it down over said flange thus causing the parts to interlock. The die members H and I illustrated in Fig. 7 produce the final step in the operation and leave the bead securely fastened over the flange thus forming a rigid connection between the ear and the body of the pail. During the process of forming the bead and turning it over the flange of the ear the metal flows inwardly as regards the bead at each step of manipulating said bead.

It is obvious that in carrying my invention into use the dies may be so constructed that one or more recesses can be formed in and one or more ears secured to the body at each stroke of the dies.

When desired the bead on the body and flange on the ear may be reversed the bead thus forming an annular groove the sides of which are folded over said flange to secure the ear on the body.

In accordance with the patent statutes I

have described the method and principles of operation of my invention together with apparatus by which my invention is carried into use but I desire to have it understood that the steps of operation and the apparatus employed may be variously modified within the scope of the following claims.

Having described my invention what I claim as new and desire to protect by Letters Patent is:—

1. The method of securing a bail ear to a metal vessel consisting in stamping a marginal bead on the body of the vessel with a recess within said bead, leaving the portion of the pail within said bead imperforate and even with the original surface of the pail, forming a bail ear with an outwardly extending base flange, assembling the parts with the ear in said recess and the bead surrounding said base flange and finally applying pressure to the parts to turn said bead over said flange, leaving a smooth inner surface on the body and causing the metal to flow inwardly as regards said bead.

2. The method of securing a bail ear to a metal vessel, consisting in forming an outwardly extending crown and a concentric ridge at the base of said crown in the body of the vessel, stamping said crown and ridge into a circular bead with an imperforate recess within said bead, stamping a bail ear with a marginal base flange, assembling the parts with the ear in said recess and the bead surrounding said base flange and finally applying pressure to the parts to interlock said marginal bead and flange; whereby the inner surface of said body is left substantially smooth and even and the portion of the body within the bead equivalent to the original surface of the pail, and the metal is caused to flow inwardly as regards the bead during each step of manipulating said bead.

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

SVEN SVENSON.

Witnesses:

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