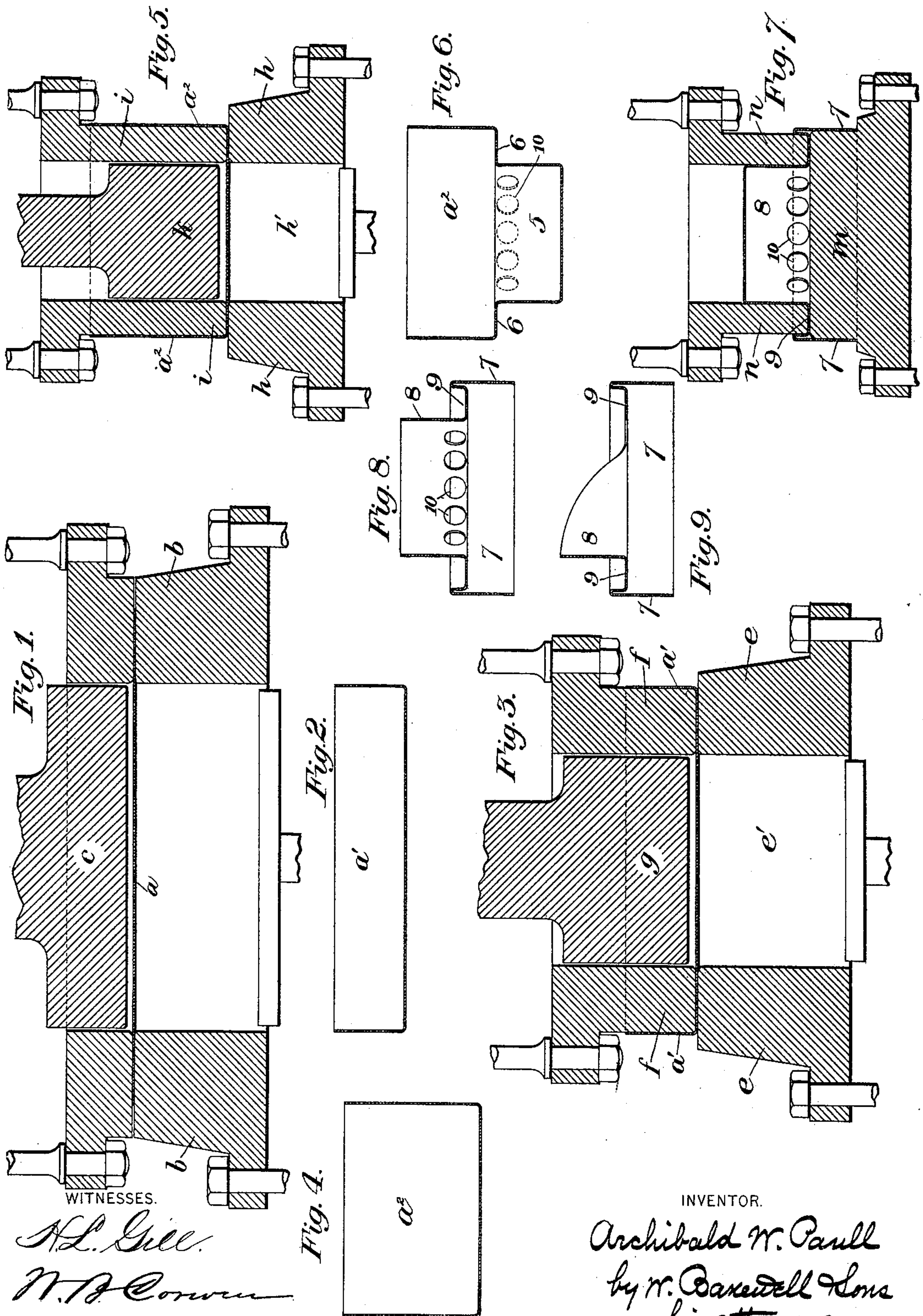


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MANUFACTURE OF COLLARS FOR JUG TOPS.

No. 403,605.

Patented May 21, 1889.



(No Model.)

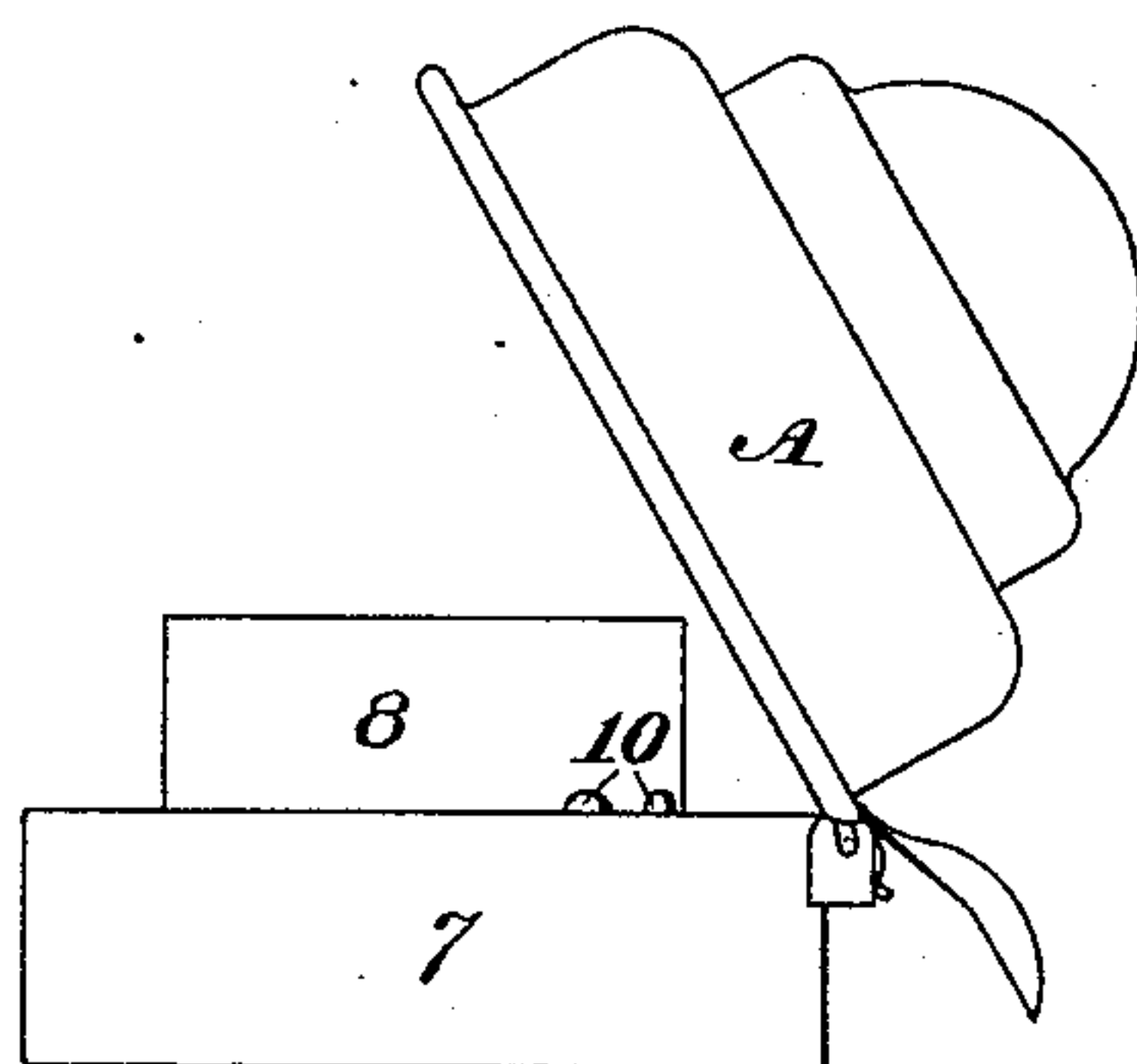
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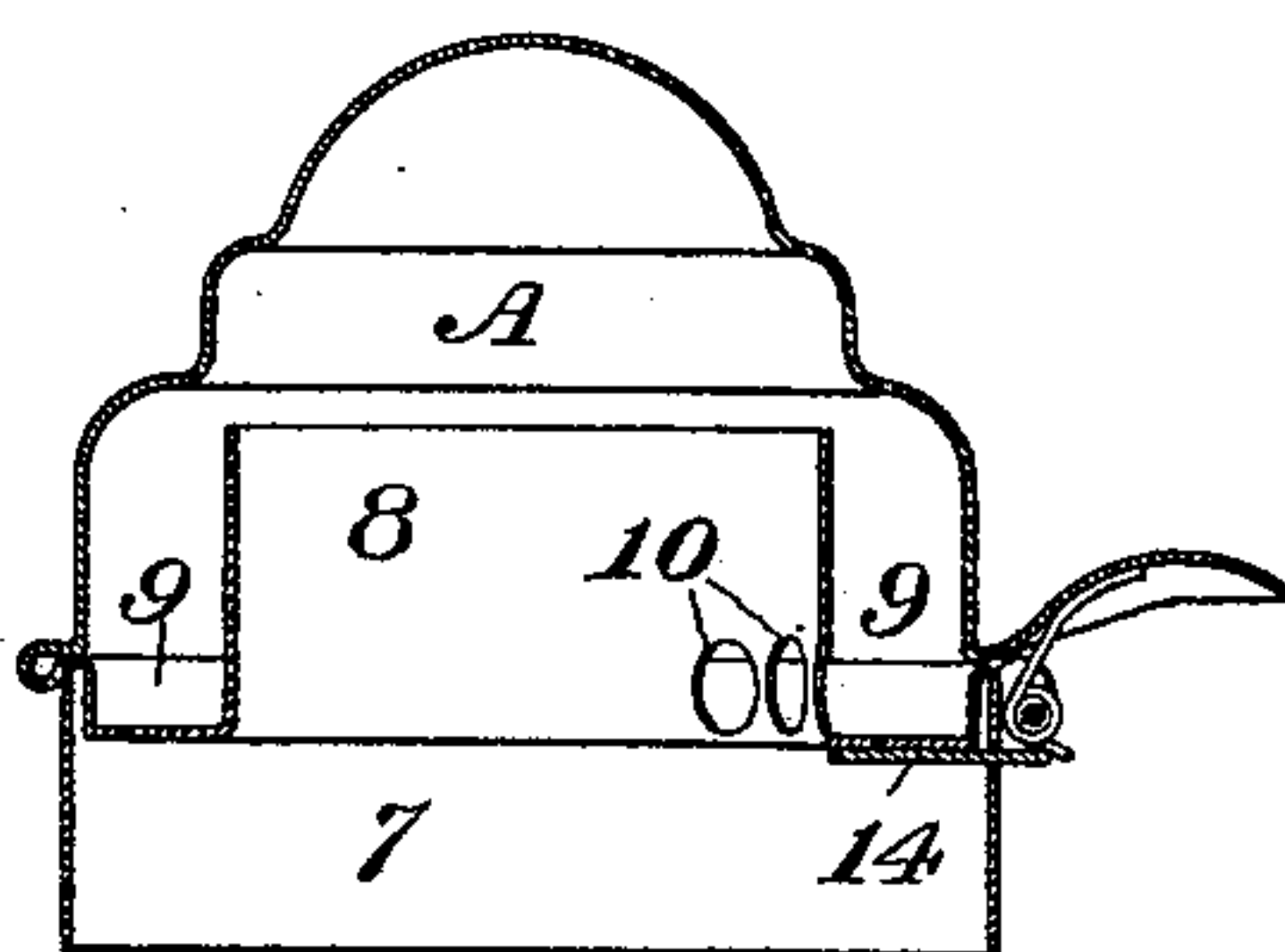
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*Fig. 10.*



*Fig. 11.*



WITNESSES:

*H. B. Gill*  
*M. B. Conover*

INVENTOR,

*Archibald W. Paull*  
*by W. B. Baxwell & Sons*  
*his Attorneys.*



# UNITED STATES PATENT OFFICE.

ARCHIBALD W. PAULL, OF WHEELING, WEST VIRGINIA.

## MANUFACTURE OF COLLARS FOR JUG-TOPS.

SPECIFICATION forming part of Letters Patent No. 403,605, dated May 21, 1889.

Application filed November 19, 1888. Serial No. 291,233. (No model.)

*To all whom it may concern:*

Be it known that I, ARCHIBALD W. PAULL, of Wheeling, in the county of Ohio and State of West Virginia, have invented a new and useful Improvement in the Manufacture of Collars for Jug-Tops; and I do hereby declare the following to be a full, clear, and exact description thereof.

Heretofore the tops of molasses-jugs and like vessels have been usually made of sheet metal in two parts—a collar which fits over the neck of the jug and a lid hinged to the collar—and each of these parts has been commonly made of a number of separate pieces united together by soldering. The labor and cost involved in the manufacture of jug-tops in this manner have led to my present invention, which I shall describe with reference to the accompanying drawings, forming part of this specification, in which—

Figure 1 shows in vertical section the dies which I employ in practicing the first step of my improved process. Fig. 2 is a view of the blank in vertical section after it has been acted upon by the dies of Fig. 1. Fig. 3 is a vertical central section of the dies used in the second step of the process. Fig. 4 is a vertical central section of the product of these dies. Fig. 5 is a vertical central section of the dies used in the third step. Fig. 6 is a vertical central section of the product of these dies. Fig. 7 is a vertical central section of the dies used in the practice of the fourth step of the process, the product of the dies being also illustrated in this figure. Fig. 8 is a view of the blank after the end thereof has been cut or punched out. Fig. 9 is a view similar to Fig. 8, showing the blank cut to constitute a modified form of spout. Fig. 10 is a side elevation of a finished jug-top, showing a lid hinged to the collar, whose manufacture is illustrated in the preceding figures. Fig. 11 is a vertical central section of the jug-top shown in Fig. 10. In Fig. 10 the lid is shown raised; in Fig. 11 it is closed.

Like symbols of reference indicate like parts in each.

Referring to the drawings, in making the collar for the neck of the jug I take a flat blank or disk, *a*, and form it into a cup—such as is shown in Fig. 2—by drawing it in a die, *b*, by means of a plunger, *c*. The blank thus

made is then placed upon the top of a second die, *e*, Fig. 3, over the matrix *e'*, where it is clamped by a ring, *f*, which enters the cup *a'*, and while so clamped it is acted upon by a plunger, *g*, which draws down the cup *a'* into the matrix *e'*, thus forming a second deeper and narrower cup, *a''*, Fig. 4. This blank *a''* is then placed upon the top of a third die, *h*, Fig. 5, over the matrix *h'*, where it is clamped by a ring, *i*, which enters the cup and clamps the edge of its bottom on the surface of the die. It is then forced into the die by a plunger, *k*, a sufficient distance to form a smaller cup, *5*, in the bottom of the cup *a''*, as shown in Fig. 6. The blank of Fig. 6 is then placed on a suitable supporting-block, *m*, Fig. 7, and a ring or plunger, *n*, is caused to descend on the shoulder 6 of the blank, forcing the metal down upon itself until the plunger is arrested by the block *m*. The result is the formation of the blank of the shape shown in Fig. 7, having a vertical annular portion, 7, a second annular portion, 8, of less diameter, and an intermediate annular trough or cup, 9. The solid end of the portion 8 is then cut or punched out, thus reducing the article to the shape shown in Fig. 8, which is in readiness to be applied to a jug, the annular portion 7 being adapted to fit around the neck of the jug, the portion 8 forming the spout, and the annular trough 9 forming a drip cup or cavity for the reception of any sirup which may drip from the edge of the spout. In order to provide for the return of the drip from the trough into the jug, I make holes 10 at the base of the annular portion 8, so that the liquid may flow from the trough 9 through these holes into the jug; or, instead of using these holes, I may attain the same result by cutting down a portion of the annular spout 8, reducing the article to the shape shown in Fig. 9. The holes 10 may conveniently be formed in the article while it is in the form of the blank shown in Fig. 6, or they may be formed therein after the article has been removed from the dies of Fig. 7. The collar thus made is then ready to be hinged to the lid *A* to form the complete jug-top, as shown in Figs. 10 and 11.

The advantages of my invention will be apparent to those skilled in the art. The collars are made thereby with very much less



labor and cost than where the parts are made in several sections and soldered together, and the article when completed is much more shapely and neat in appearance, and is stronger and more durable.

While I have described particularly and in detail apparatus which I regard as being well adapted for use in the practice of my process, I wish it to be understood that my invention is not limited precisely thereto, since modifications in the nature of the apparatus employed may be made by those skilled in the art.

The particulars of the invention which I deem to be novel, and which I severally and independently desire to protect, are indicated in the following claims.

I claim—

1. An improvement in the manufacture of collars for jug-tops, which consists in forming a sheet-metal cup, drawing a second cup of less diameter within the cup first formed, fold-

ing back the base of the first cup upon itself to form a drip-trough, and removing the metal at the end of the second cup, substantially as and for the purposes described.

2. An improvement in the manufacture of collars for jug-tops, which consists in forming a sheet-metal cup, drawing a second cup of less diameter within the cup first formed, folding back the base of the first cup upon itself to form a drip-trough, removing the metal at the end of the second cup, and cutting away or perforating the metal of the second cup at or near its junction with the metal of the first cup, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 1st day of November, A. D. 1888.

ARCHIBALD W. PAULL.

Witnesses:

W. B. CORWIN,  
JNO. K. SMITH.