Neuberger & Illig.

Die for Stamping Tinware.

No. 75961 Patented Mar. 24, 1868

Fig. I

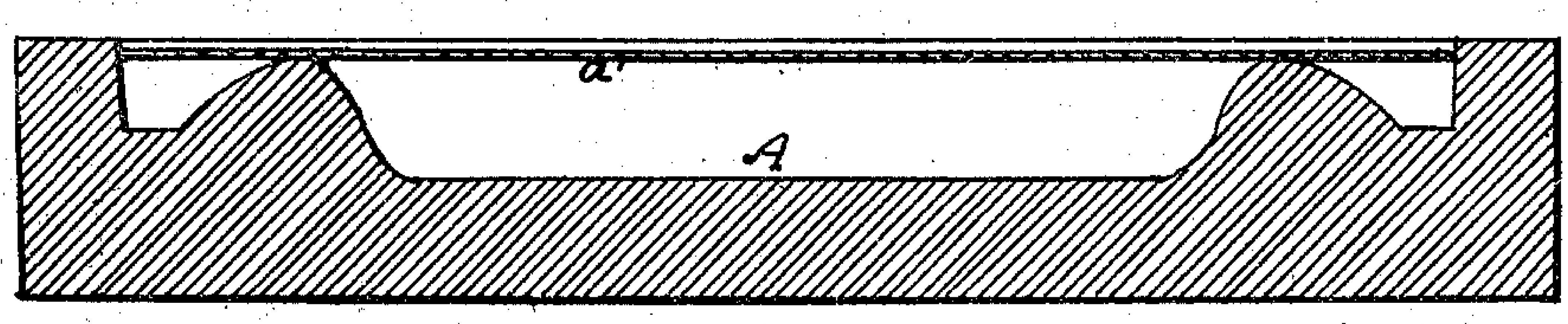


Fig. II

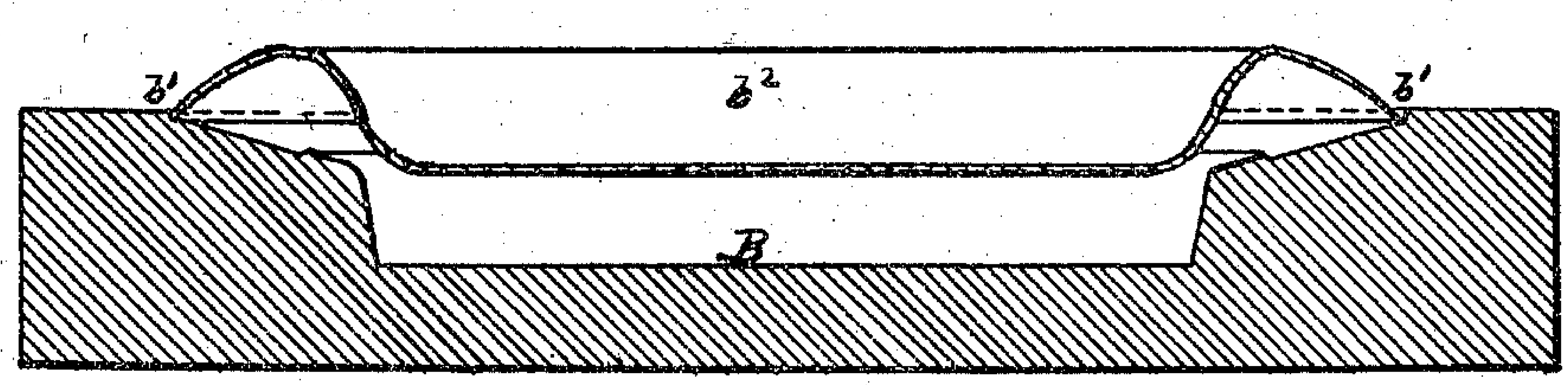
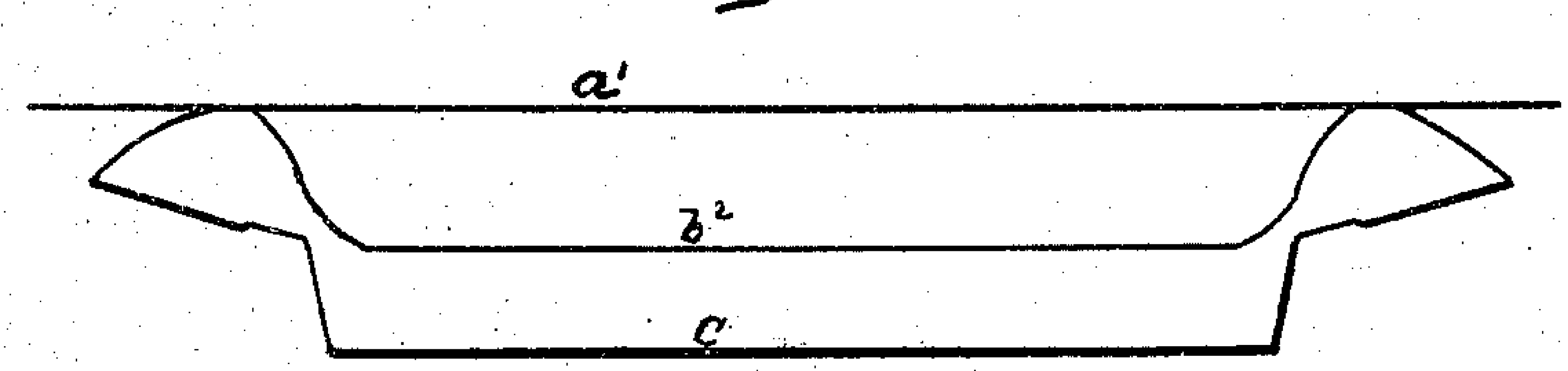


Fig. III



WITNESSES.

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Letters Patent No. 75,961, *dated March* 24, 1868.

IMPROVEMENT IN DIES FOR STAMPING TINWARE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, JOSEPH NEUBERGER and PETER J. ILLIG, of the city of Buffalo, in the county of Erie, and State of New York, have invented certain new and useful Improvements in Dies for Stamping Tinware; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure I is a section of the primary die, with the piece of tin fed to it.

Figure II is a section of the secondary or finishing-die, showing the piece of tin as formed by the first die and fed to the second.

Figure III illustrates the successive formation of the tin and its shape when finished.

The nature of this invention relates to an improved method of stamping tinware, and more particularly to forming articles having sharp edges, such as tin-can covers, toys, or necks, and the like. It consists—

First, in the construction and use of a primary die for preparing the sheet of tin to be stamped in such manner that its circumference or outer edge, after the tin has been stamped in this die, will be equal to and correspond exactly with the circumference of the finished article to be produced.

Second, in the construction and use of a finishing-die, having a circular flange or shoulder, the circumference of which is equal to that of the piece of tin formed by the first die, and also equal to that of the finished article, so that the former, when fed to the said finishing-die, will fit exactly within the said circular flange, and hence, when it is pressed or stamped, cannot spread outwardly, but allow and compel the tin to contract radially toward the centre, thereby forming the sharp edges with a sufficient quantity or thickness of metal to prevent their tearing or splitting while being stamped.

Third, in forming sharp-edged tinware by stamping a flat piece of tin first in a primary die, and then in a finishing-die having a flange, for the purpose of making the edges or creases in the article, when complete, as strong as any other part thereof, and prevent their tearing while being stamped.

In the accompanying drawings, letters of like name and kind refer to like parts in each of the figures.

A represents the primary die, and a' a piece of round flat tin, which is fed thereto to be stamped. B represents the secondary or finishing-die, having a flange or shoulder, b^1, and b^2 is the piece of tin which has been formed upon the first die, and is fed to the second die, as shown in Fig. II. C, Fig. III, represents the article when finished. The article represented in the drawings for the purpose of illustrating this invention is the neck and flange of a fruit-can, which we manufacture under Letters Patent granted to us, April 11, 1865.

Great inconvenience has been experienced in the manufacture of tinware for the want of an apparatus or a method of stamping such articles as tin-can covers, necks, or tops, and the like. The inferior quality of metal generally used for the purpose cannot be stamped or pressed between dies into any desired shape and form; it breaks and tears at sharp edges almost invariably, not having the yielding and ductile qualities of brass, copper, and other superior and more expensive metals. There are a great many articles of tinware which have sharp edges; these edges are formed by pressing the metal at right angles, or nearly so. This cannot be done without one or more so-called "coaxing"-dies, and a great number of blows, for the purpose of forming the metal in a gradual, progressive manner, until it is stamped upon the last die into the proper shape; and, even when this precaution is taken, it is utterly impossible to stamp out sharp edges without tearing or breaking the metal at those edges.

My improvement obviates this difficulty, and furnishes a means for stamping out sharp-edged tinware by the use of only two dies, and only one blow upon each being necessary to produce the required impression.

The primary die, shown at A, may be made of a form best adapted for the purpose of gradually preparing the metal, being nothing more nor less than a "coaxing"-die; but one peculiar and particular condition must be complied with in the construction thereof, viz, it must be so constructed that a piece of tin stamped upon this die will be so shaped that its circumference is equal to that of the finished article. Then this piece of tin so formed is fed on to the die B, (which we call the finishing-die,) and placed within the shoulder b', into which it fits. One blow will now be sufficient to complete the work, and produce the article in the desired shape.

The improvement in this die consists in the flange or shoulder b', which is made just the size of the finished article. Without this flange the piece of tin formed by the die A, or any other "coaxing" die would spread

out over the required circumference, and, in almost every case, tear and break where a sharp edge should be formed. The shoulder *b'* prevents the metal from spreading out, and compels it to contract towards the centre, and fill the sharp edges with a sufficient quantity and thickness of metal to render the breaking or tearing of the metal impossible.

The advantages derived by the use of our improvements in the manufacture of tinware are very great. Tin may be stamped by means thereof into almost every conceivable shape, and there need be no waste of material, as is often the case when tinware is stamped out in the manner now known, and in common use in the manufacture thereof.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The primary or "coaxing"-die A, when constructed and used for the purpose, and substantially as herein described.

2. The secondary or finishing-die B, having a shoulder, *b'*, for the purpose and substantially as herein set forth.

3. The secondary or finishing-die B, having a shoulder, *b'*, in combination with the primary or "coaxing"-die A, for the purposes and substantially as herein described.

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Witnesses:
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