

(No Model.)

G. B. ELY, Dec'd.

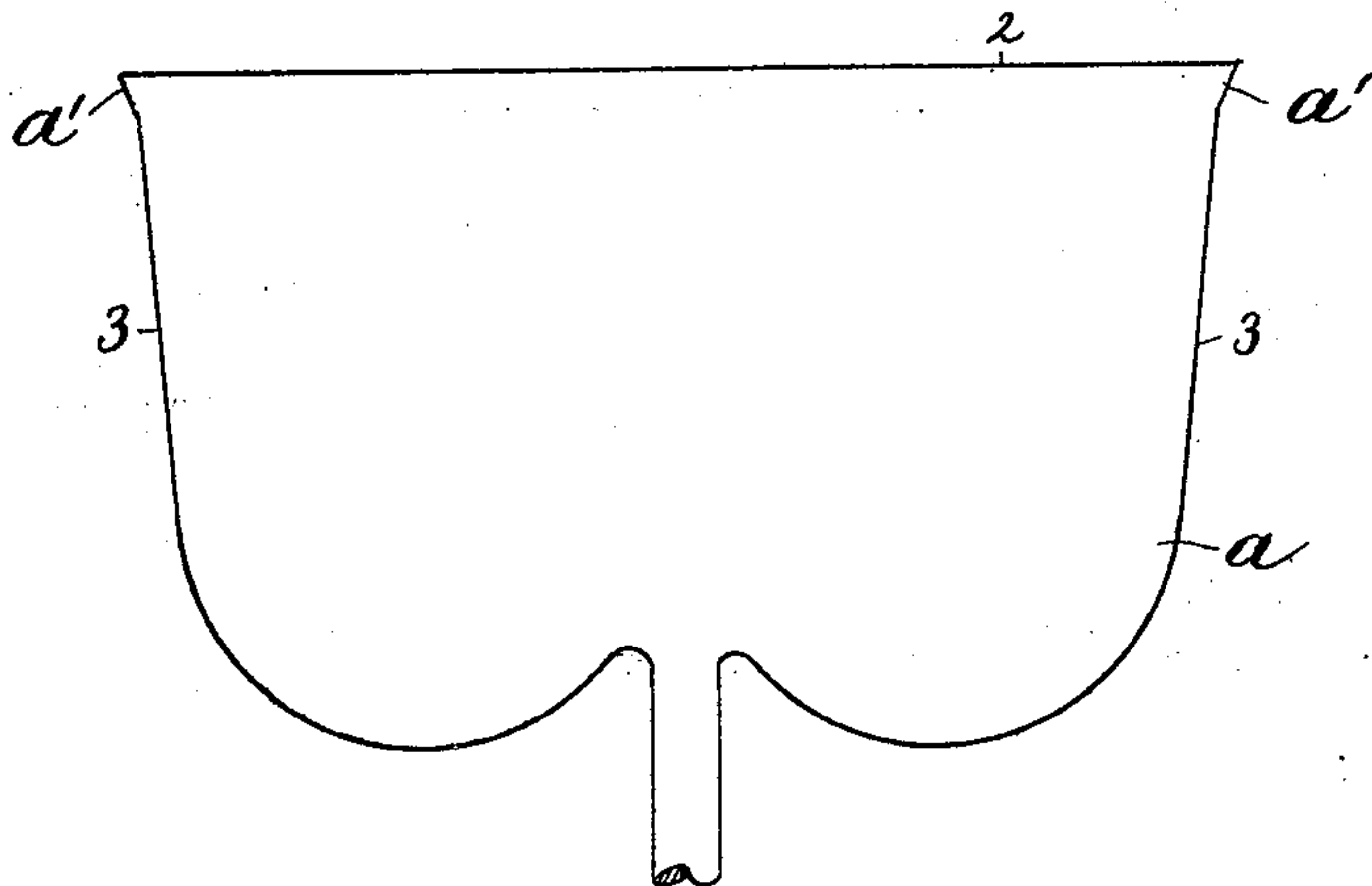
H. G. ELY, Executor.

HOE BLANK.

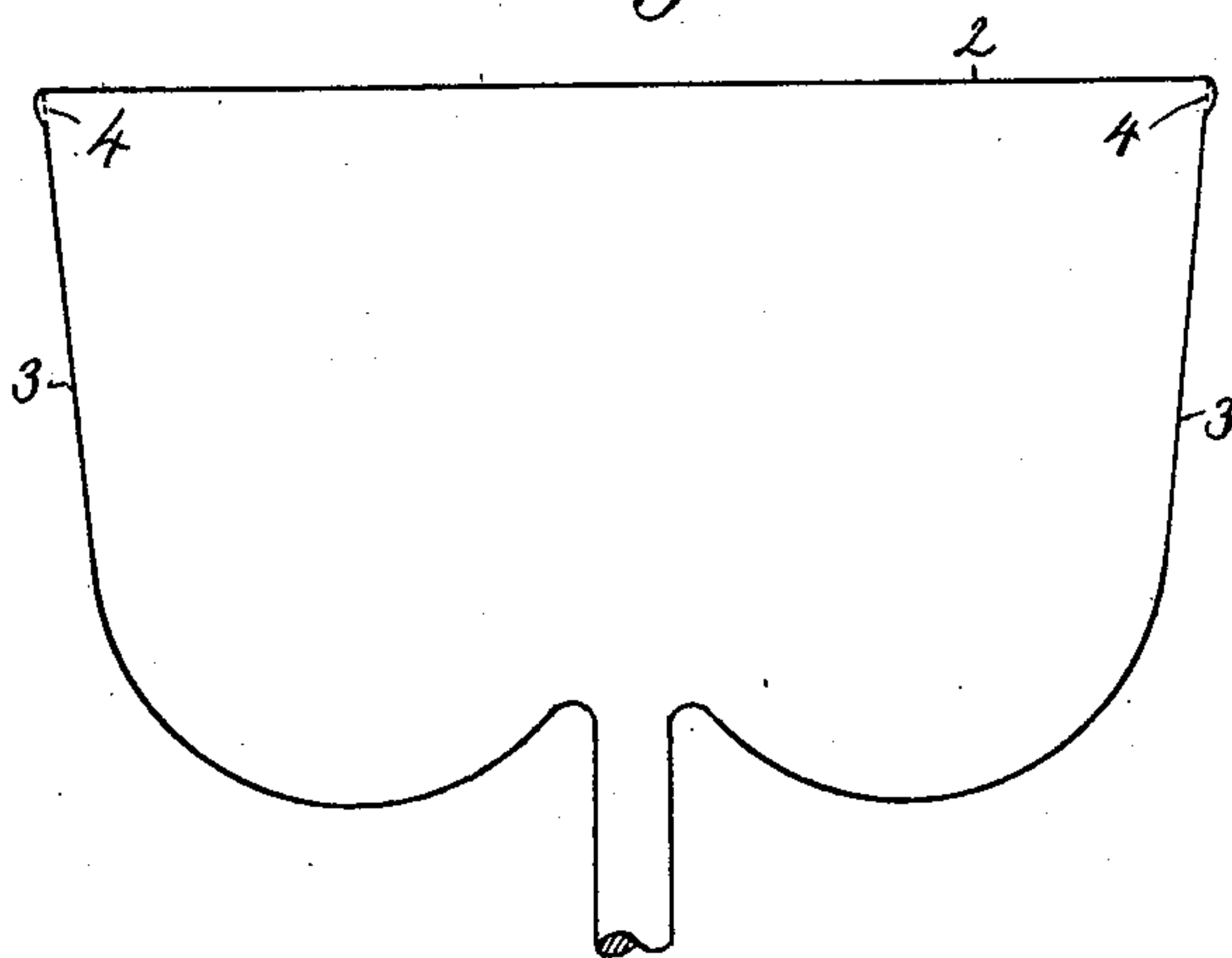
No. 400,902.

Patented Apr. 9, 1889.

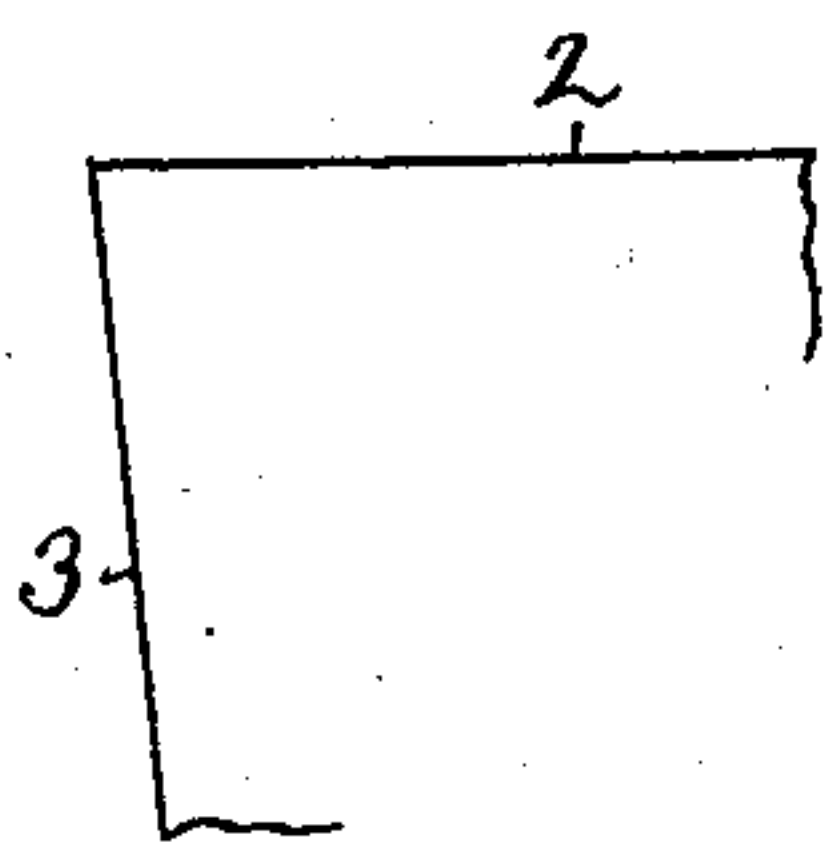
*Fig. 1,*



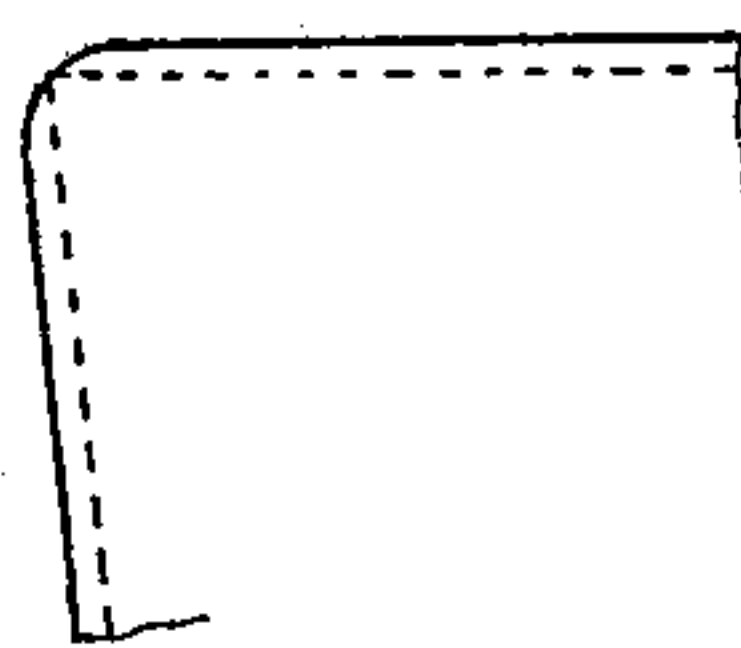
*Fig. 2,*



*Fig. 3.*



*Fig. 4.*



Witnesses,  
*Jas. J. Maloney*  
*H. J. Livermore*

*Henry G. Ely executor of*  
*Geo. B. Ely deceased,*  
*by J. P. Livermore Att'y.*

# UNITED STATES PATENT OFFICE.

HENRY G. ELY, OF ST. JOHNSBURY, VERMONT, EXECUTOR OF GEORGE B. ELY, DECEASED.

## HOE-BLANK.

SPECIFICATION forming part of Letters Patent No. 400,902, dated April 9, 1889.

Application filed August 7, 1888. Serial No. 282,185. (No model.)

*To all whom it may concern:*

Be it known that GEORGE B. ELY, deceased, late a resident of St. Johnsbury, in the county of Caledonia and State of Vermont, invented  
5 an Improvement in Blanks for the Manufacture of Hoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention relates to the manufacture of hoes or similar agricultural implements, the object of the invention being to diminish the cost of production by effecting a saving in labor and in the material used.

15 Prior to this invention hoes have been made by forging a block or billet to the approximate shape by hammering or molding in dies and then trimming the blank thus formed to give it the proper outline for the finished article.  
20 The blanks thus formed have then been subjected to a tumbling process in cylinders for the purpose of removing scale and other irregularities and partially smoothing the surface preparatory to the final finish by  
25 grinding and polishing. When the blank is trimmed, prior to being operated upon in the cylinders, to the shape desired for the finished hoe—namely, with the lower or cutting edges and the side edges intersecting at a sharp  
30 angular corner—the tumbling process wears away and rounds off the corners, so that a considerable amount has to be ground off from the edges in order to bring the hoe to the desired shape for the finished article, such  
35 grinding operation consuming a considerable amount of time and labor, and thus materially adding to the cost of manufacture, and at the same time wasting a portion of the stock or material from which the hoes are  
40 made. These objections are overcome by the present invention, which consists in trimming the blank prior to subjecting it to the tumbling operation in the cylinders with projecting portions at the corners properly proportioned with relation to the amount of wear  
45 in the tumbling operation, so that although said projecting portions become rounded in the tumbling operation the intersection of the edges will be within the blank, and by  
50 grinding off the small remaining portion of said projections the edges will be brought to

a sharp intersection or corner, as required for the finished product.

Figure 1 is a face view of a trimmed blank for a hoe having projecting portions to provide for wear in the finishing process in accordance with this invention. Fig. 2 is a similar view, showing the blank after it has been operated upon in the cylinders, showing by dotted lines the shape required for the finished article; and Figs. 3 and 4 are details  
60 of a portion of a blank as made prior to this invention at the same stages in the manufacture as those represented in Figs. 1 and 2, respectively.

The blank *a* (see Fig. 1) may be made in the usual manner by forging a piece of steel to the approximate shape and then trimming its edges to the desired outline for the finished article.

Prior to this invention the blanks were trimmed, as shown in Fig. 3, with the lower or cutting edge, 2, and the side edge, 3, both straight and intersecting at a sharp angle or corner, such as is required for the finished  
75 article. When a blank shaped in this manner is subjected to the tumbling process in the cylinders prior to the final grinding and polishing, the corners become worn off, as shown in full lines, Fig. 4, and in order to  
80 make the edges of the finished article meet in a sharp corner a considerable portion has to be ground off from the edges, as indicated in Fig. 4, in which the dotted lines represent the shape of the finished hoe, which is attained  
85 by grinding off the portion between the full and dotted lines around the edges. The operation of grinding off a considerable portion of the material for the purpose of producing a sharp corner, as thus described, is expensive, making a considerable portion of the  
90 cost of finishing the hoe.

In order to save the time and labor required for grinding the edges, the blank is, in accordance with this invention, trimmed with projecting portions *a'* beyond the line of the main portion of the side edges, 3, of the blank and outside of the outline desired for the finished hoe. When the blank *a*, having such projections *a'*, is operated upon in the cylinders, a portion of said projections is worn off and rounded, as shown in Fig. 2, but the



rounded portion is beyond the intersections  
of the main line of the side edges, 3, with the  
cutting edge 2 of the hoe, as shown, so that  
grinding off the slightly-rounded projection  
5 beyond the line of the edges 3—namely, that  
portion outside the dotted lines 4 in Fig. 2—  
the edges 2 and 3 intersect with the sharp  
corner, as required. In addition to the sav-  
ing in time in the subsequent grinding op-  
10 eration, there is also a saving in the stock or  
material, as the material removed by trim-  
ming may be used again, while the material  
removed by grinding is practically lost.

What is claimed is—

A hoe-blank having a finished form other- 15  
wise than the projecting portions  $a'$  at the  
points of intersection of the sides of the plate  
with the edge thereof.

In testimony whereof I have signed my name  
to this specification in the presence of two sub- 20  
scribing witnesses.

HENRY G. ELY.

Witnesses:

A. B. COOK,  
J. G. P. HICKS.