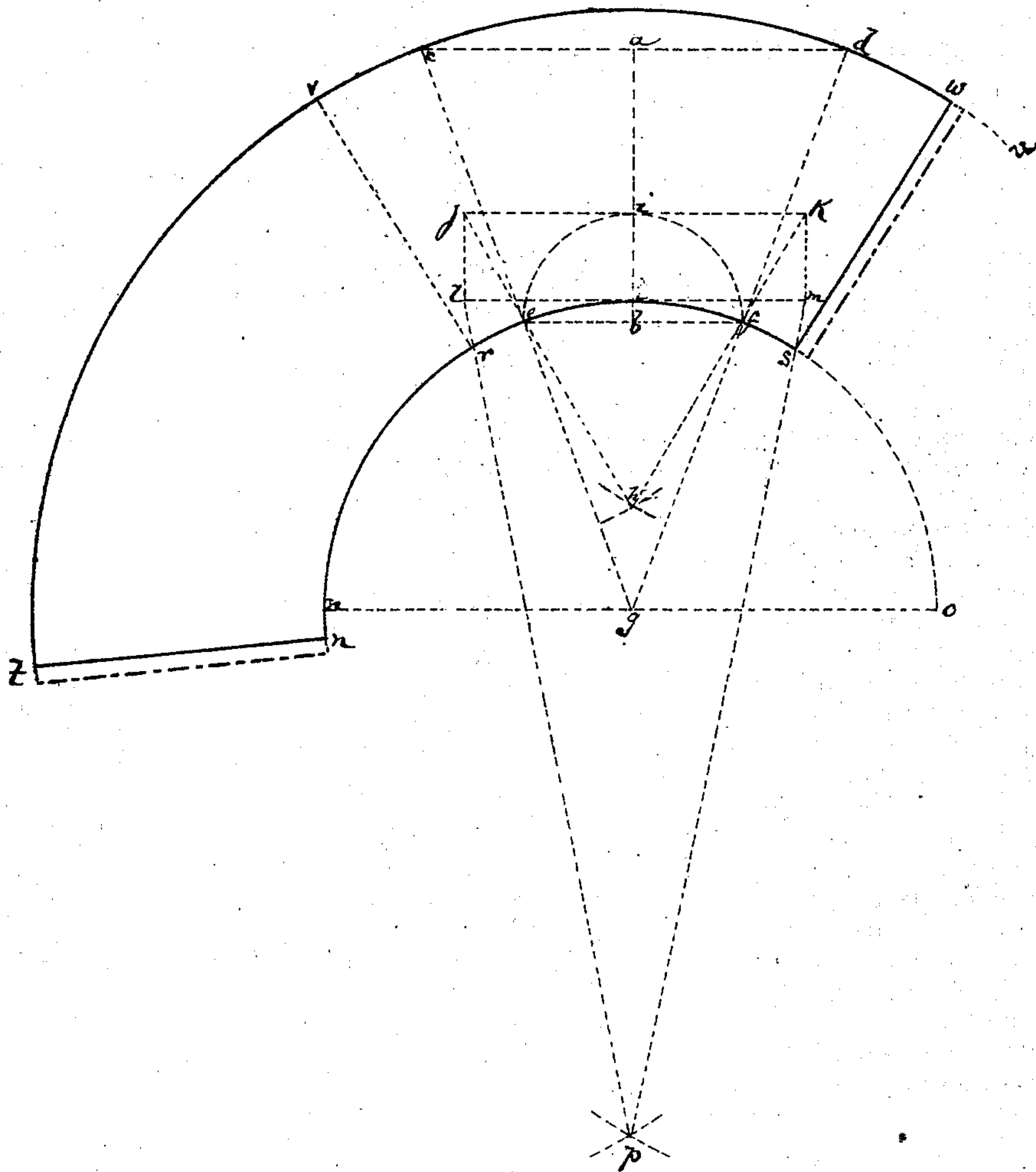


*O.B. Vandenburg. Drawing Patterns for Sheet
Metal.* PATENTED JUL 4 1871

116647



Witnesses:

*A Bennekenhof.
Wm. H. C. Smith.*

Inventor:

O. B. Vandenburg

PER

Wm. H. C. Smith

Attorneys.

UNITED STATES PATENT OFFICE.

ORLANDO B. VANDENBURG, OF FINDLAY, OHIO.

IMPROVEMENT IN METHODS OF DRAWING PATTERNS FOR FLARING VESSELS.

Specification forming part of Letters Patent No. 116,647, dated July 4, 1871.

To all whom it may concern:

Be it known that I, ORLANDO B. VANDENBURG, of Findlay, in the county of Hancock and State of Ohio, have invented a new and Improved Method of Drawing Patterns for Cutting Sheet Metal; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which the diagram illustrates my improved method of drawing patterns.

The object of the present invention is to provide a convenient and reliable system of laying out on sheet metal the necessary lines so that the metal can be cut to be bent into truncated cones.

The following is the description of my method: The height of the cone is first measured on a line, $a b$, the extremities of which meet, at right angles, the lines $c d$ and $e f$. The line $c d$ is equal in length to the long, and the line $e f$ to the short, diameter of the cone. Both the last-named lines are bisected by $a b$. Lines are next drawn through the points $c e$ and $d f$, so that the point g is found. An equilateral triangle, $e f h$, is erected on the line $e f$, and a semicircle, $e i f$, described from the center b . The sides $h f$ and $h e$ of the triangle are extended until they meet a tangent,

$j i k$, of the circle $e i f$, the said tangent being at right angles to the line $a b$. The length $j k$ thus found is next, by perpendiculars $j l$ and $k m$, transferred to the tangent $l m$ of a circle, $n o$, which is described from the point g and radius $g e$, said tangent $l m$ being parallel to $j k$. On the diameter $n o$ I next erect an equilateral triangle, $n o p$, from the point p of which I draw lines to the points l and m , cutting the circle $n o$ at r and s . From the point g and radius $g e$ I next describe the outer circle $t u$. The radiuses $r v$ and $s w$ of this circle, through the points r and s , produce between the two circles $n o$ and $t u$ just one-half the desired length of sheet. By adding another length, as far as n and t , the entire sheet $n s w t$ is produced, to the ends of which sufficient material for overlapping may be added.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The method of drawing patterns for cutting sheet metal, substantially as herein shown and described.

ORLANDO B. VANDENBURG.

Witnesses:

E. T. DUNN,

D. B. BEARDSLEY.