Jan. 27, 1925.

1,524,059

B. P. SCOTT

TEMPLATE FOR MAKING ORGAN PIPES

Filed July 3, 1923

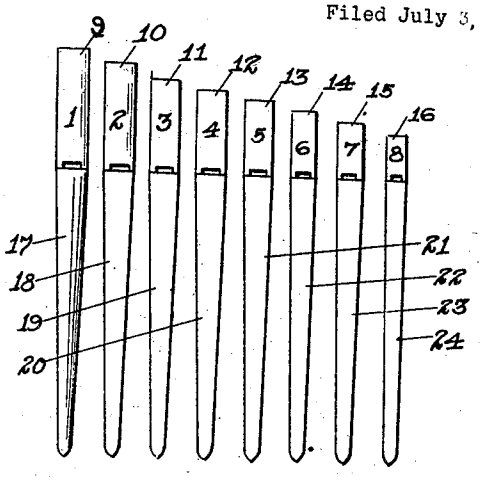


Fig. 1.

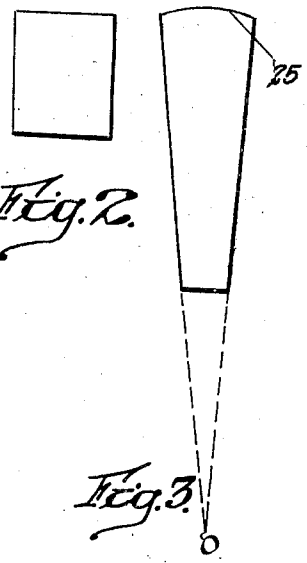


Fig. 2.

Fig. 3.

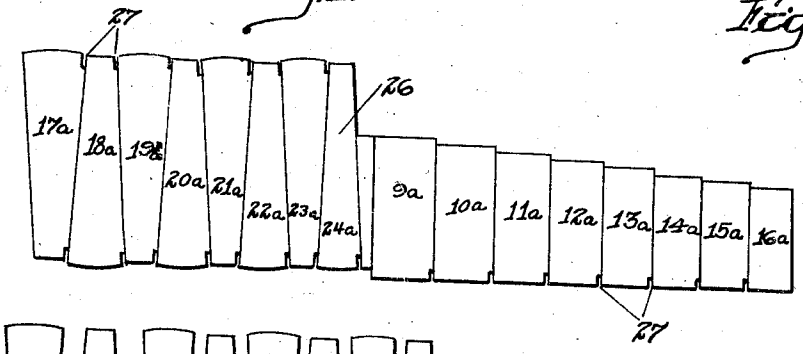


Fig. 4.

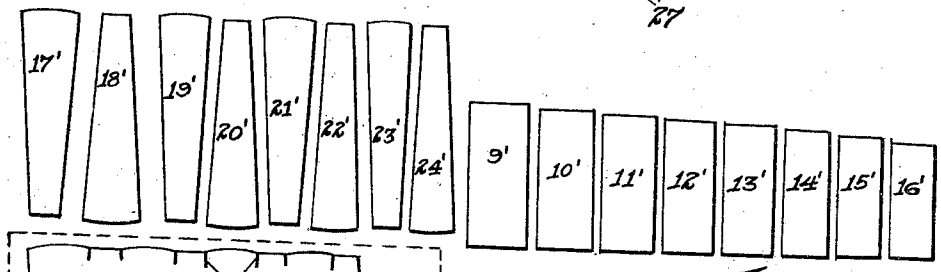


Fig. 6.

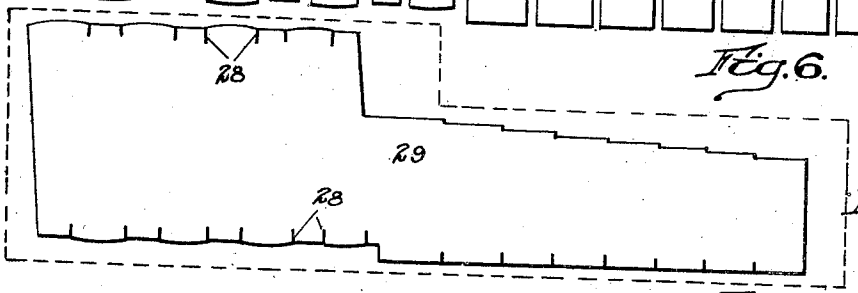


Fig. 5.

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UNITED STATES PATENT OFFICE.

BERTRAM P. SCOTT, OF WORCESTER, MASSACHUSETTS.

TEMPLATE FOR MAKING ORGAN PIPES.

Application filed July 3, 1923. Serial No. 649,258.

To all whom it may concern:

Be it known that I, BERTRAM P. SCOTT, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in the Templates for Making Organ Pipes, of which the following, together with the accompanying drawings, is a specification.

My invention relates to the manufacture of organ pipes, and has for its object to provide an improved means and method of manufacture, whereby organ pipes may be quickly and economically produced in large quantities. My invention has to do particularly with the manufacture of metallic organ pipes which are usually made in two parts from sheet metal. The body, or cylindrical portion of the pipe above the mouth, is rolled into tubular form from a rectangular metal blank, while the foot, or inverted conical portion below the mouth, is rolled from a metal blank having a form substantially an isosceles trapezoid. Obviously, the flat sheet metal blanks from which the body and foot portions of the pipes are rolled must be accurately laid out before cutting, and when producing a series of pipes in a certain stop, there is but little difference in size between many of the blanks. It has been customary heretofore to lay out, separately, the blanks for a series of pipes, on a large sheet of metal preparatory to cutting the same, which necessitates the expenditure of a large amount of time and labor.

By the present invention I propose to provide an improved means and method of manufacture whereby a large number of pipe blanks in a given stop can be quickly and economically laid out preparatory to cutting and rolling. The above and other advantageous features of my invention will hereinafter more fully appear, reference being had to the accompanying drawings, in which—

Figure 1 is a view showing in front elevation a number of different pipes in a stop each adapted to produce a different note.

Figure 2 is a view of the flat blank from which the body portion of one of the pipes shown in Fig. 1 is rolled.

Figure 3 is a view of the flat blank from which the foot portion of one of the pipes shown in Fig. 1 is rolled.

Figure 4 is a view illustrating the appearance of my improved template for laying out blanks from which the pipes shown in Fig. 1 are to be constructed.

Figure 5 is a view of a piece of sheet metal having blanks laid out thereon by the use of the template shown in Fig. 4.

Figure 6 is a view showing the blanks after they have been cut from the sheet shown in Fig. 5.

Like reference characters refer to like parts in the different figures.

Referring to Fig. 1 of the drawings, a number of organ pipes 1 to 8, inclusive, are shown, the pipes each being adapted to produce a different note in a given stop. The pipes 1 to 8, inclusive, consist of cylindrical body portions 9 to 16, inclusive, and conical foot portions 17 to 24, inclusive, the body and foot portions of each pipe being joined together at the mouth thereof.

Referring now to Fig. 2, the blank from which the body portion 9 is rolled is illustrated as being spread out flat, and as the body portion 9 is cylindrical in form, its blank is substantially the form of a rectangle. The blank from which the conical foot portion 17 is rolled is illustrated in Fig. 3, as having been spread out flat, and this blank is an isosceles trapezoid with a segment of a circle added to the longer parallel side, said parallel side coinciding with the cord of said segment. In order that the foot portion 17 will properly fit the body portion 9, it is necessary that the upper edge 25 of the blank shown in Fig. 3 have the form of an arc, the center of which is the apex 0 of a triangle formed by continuing the sides of the blank, as indicated in dotted lines.

Obviously the body and foot portions of the other pipes 2 to 8, inclusive, are made from flat blanks shaped similarly to the blanks shown in Figs. 2 and 3, and in the previous manufacture of organ pipes it has been customary to lay out each of these blanks in accordance with the dimensions of the several pipes.

In carrying out my invention, I provide

a template 26, the area of which includes the combined surface areas of all the body and foot portions of the pipes 1 to 8, inclusive. In forming the template 26, a number of rectangles 9^a to 16^a, inclusive, are laid out, each rectangle having the exact dimensions of the flat blanks from which the body portions 9 to 16, inclusive, are rolled. A number of isosceles trapezoidal figures 17^a to 24^a, inclusive, are then laid out, each figure having the exact form of the flat blanks from which the foot portions 17 to 24, inclusive, are rolled. The complete template 26 will then have the approximate form shown in Fig. 4, that portion thereof including the figures 17^a to 24^a, inclusive, having a slightly scalloped appearance due to the curvature of the end surfaces of the figures. The upper and lower edges of the template 26 are then provided with narrow slots 27 at the points at which the rectangles 9^a to 16^a, inclusive, and the figures 17^a to 24^a, inclusive, join each other.

In carrying out the manufacture of organ pipes in accordance with my invention, the template 26 is first laid upon a sheet of metal from which it is desired to form the pipes. The workman then takes a scriber, or other similar marking tool, and marks the outline of the template 26 on the sheet. As each of the slots 27 is encountered, the marking tool enters therein and makes a mark on the sheet, as shown in Fig. 5, after which the template 26 is removed. The sheet is then cut around the marks, thus producing a balnk 29 containing enough material for making all of the pipes 1 to 8 inclusive.

The blank 29 is then cut at the marks 28 to provide a series of blanks 9′ to 16′ inclusive, for the body portions of the pipes, and a second series of blanks 17′ to 24′ inclusive, for the foot portions of the pipes. The blanks 9′ to 16′ inclusive, are then rolled into cylindrical form by any suitable means, and the blanks 17′ to 24′ inclusive, are rolled into conical form. The body and foot portions thus produced are then soldered, or otherwise secured together, to form a series of complete pipes similar to the pipes 1 to 8 inclusive. It is obvious that the concial foot portion rolled from the blank 17′ will exactly fit the cylindrical body portion formed from the blank 9′, because of the fact that the curvature of the upper edge 25′ of the blank 17′ is such as to provide an even edge when the blank 17′ is rolled. The same holds true of the remaining blanks for the body and foot portions, so that the workman will lose no time in fitting the parts of the tubes together after rolling them. The fact that the template 26 was originally laid out from previously fitted pipe portions insures that each set of blanks cut from the template will be identical in form, and that any foot portion made from the blanks 17′ to 24′ inclusive, will fit the corresponding body portion made from the blanks 9′ to 16′ inclusive.

From the foregoing it is apparent that by my invention I have provided an improved means and method of manufacture, whereby organ pipes and portions thereof may be produced in large quantities with a minimum expenditure of time and labor. Furthermore, the practice of my invention results in more accurate construction of the organ pipes made thereby, for the reason that the possibility of errors occurring in the laying out of the blanks for the body and foot portions is substantially eliminated by the use of my improved template.

I claim:

1. A template for the manufacture of organ pipes, the surface of which is made up of a number of contiguous rectangular figures and figures consisting of isosceles trapezoids with a segment of a circle added to the longer parallel side of each trapezoid, said parallel side coinciding with the chord of said segment.

2. A template for the manufacture of organ pipes, the surface of which is made up of a number of contiguous rectangular figures and figures consisting of isosceles trapezoids with a segment of a circle added to the longer parallel side of each trapezoid, said parallel side coinciding with the chord of said segment, and the edges of which are provided with notches at the points of division between the figures.

3. A template for the manufacture of organ pipes, the surface of which is made up of a number of contiguous rectangles plus a number of figures substantially trapezoids with the non-parallel sides contiguous and with the longer of the parallel ends of one trapezoidal figure contiguous to the shorter end of the next trapezoidal figure, so that the combined trapezoidal figures form substantially a rectangle.

4. A template for the manufacture of organ pipes, the surface of which is made up of a number of figures substantially isosceles trapezoids with the non-parallel sides contiguous and with the longer of the parallel ends of one trapezoidal figure contiguous to the shorter end of the next trapezoidal figure, so that the combined trapezoidal figures form substantially a rectangle.

5. A template for the manufacture of organ pipes, the surface of which is made up of a number of figures substantially isosceles trapezoids with the non-parallel sides contiguous and with the longer of the parallel ends of one trapezoidal figure contiguous to the shorter end of the next trapezoidal figure, so that the combined trapezoidal figures form substantially a rectangle with

the divisions between trapezoidal figures marked by slots.

6. A template for the manufacture of organ pipes, the surface of which is made up of a number of contiguous rectangles plus a number of figures substantially isosceles trapezoids with the non-parallel sides contiguous and with the longer of the parallel ends of one trapezoidal figure contiguous to the shorter end of the next trapezoidal figure, so that the combined trapezoidal figures form substantially a rectangle with the divisions between the first named rectangles and the divisions between the trapezoidal figures marked by slots.

BERTRAM P. SCOTT.