

No. 786,923.

PATENTED APR. 11, 1905.

L. C. SMITH.  
PROCESS OF FORMING TUBES.  
APPLICATION FILED AUG. 10, 1903.



Fig. 1.

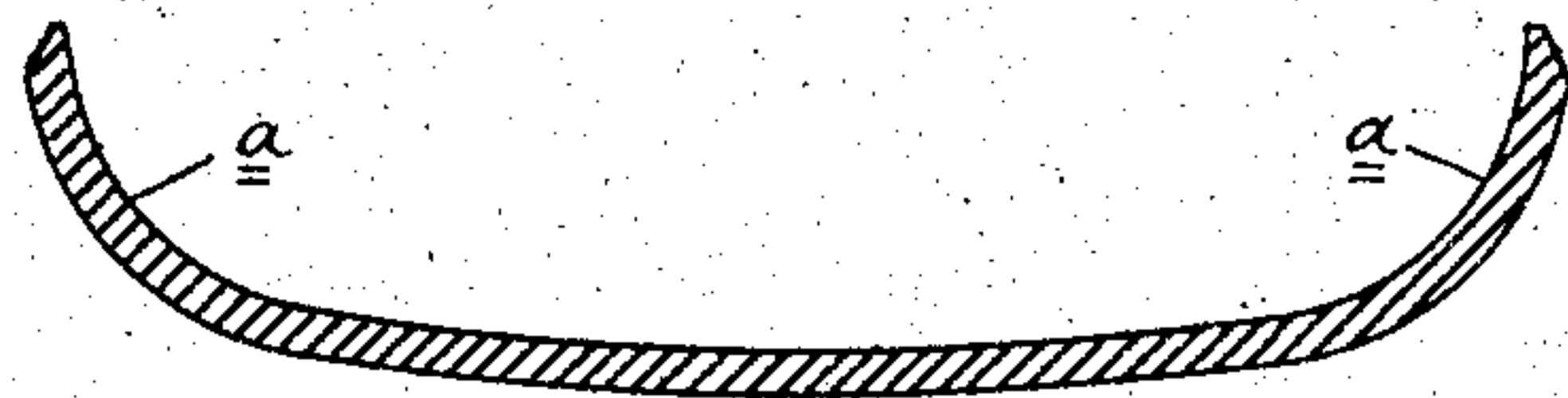


Fig. 2.

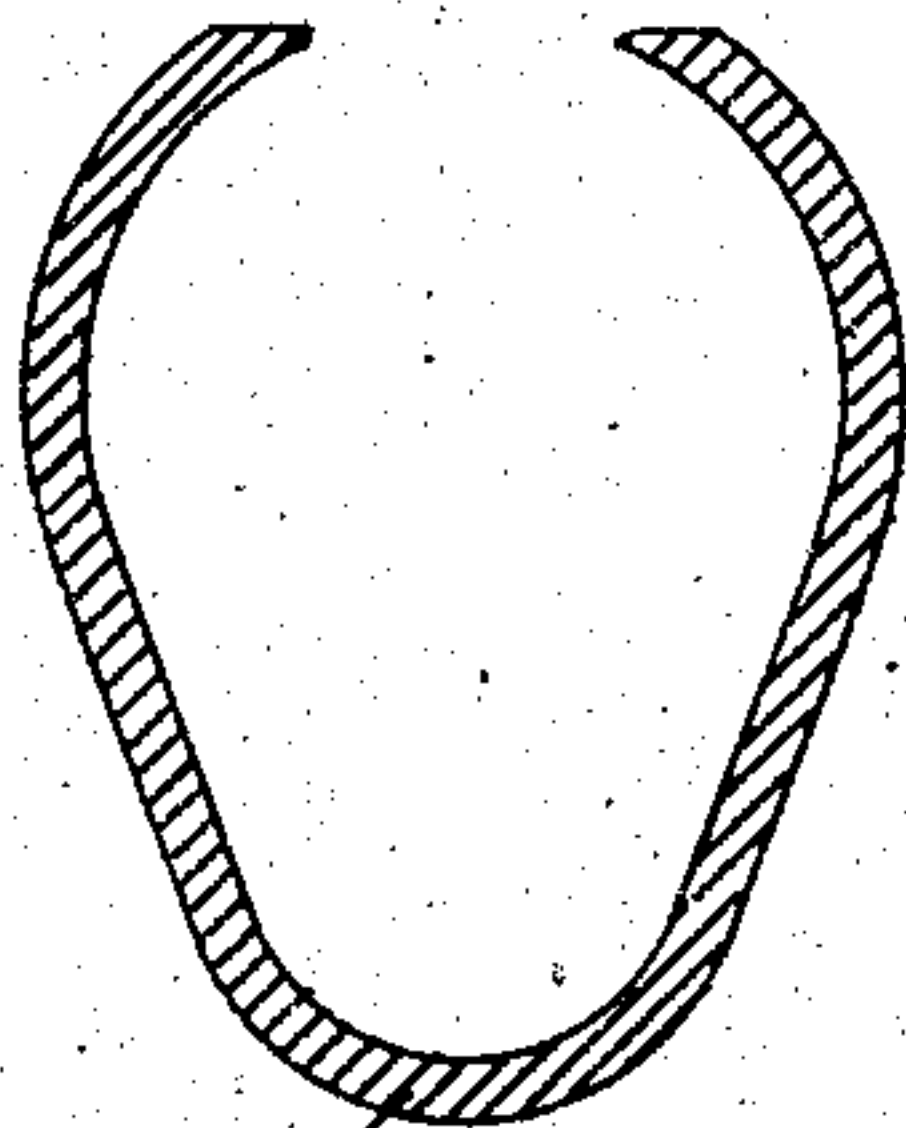


Fig. 3.

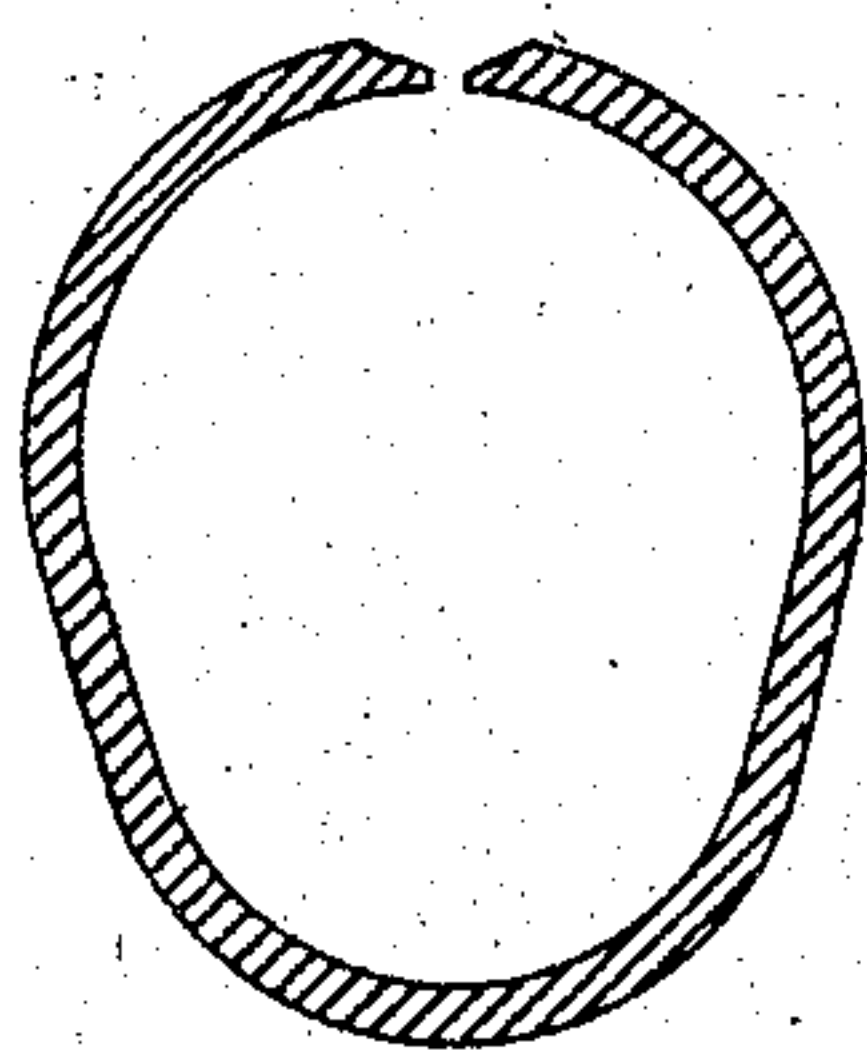


Fig. 4.

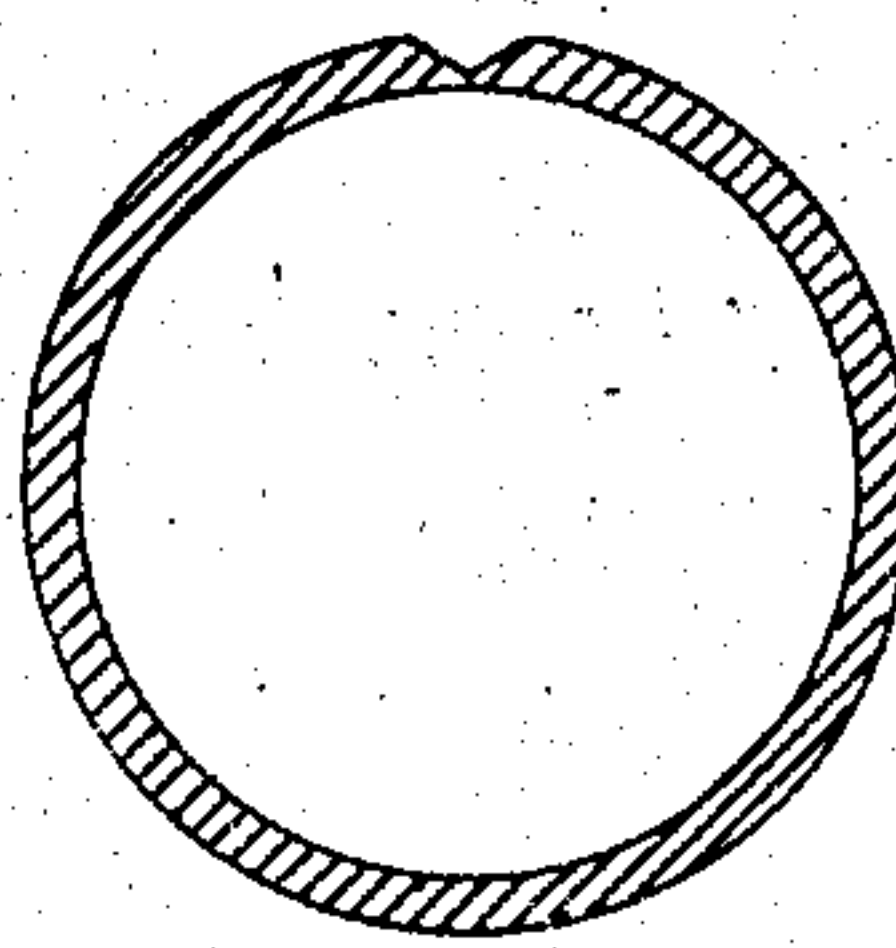


Fig. 5.

WITNESSES

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# UNITED STATES PATENT OFFICE.

LESTER C. SMITH, OF ROME, NEW YORK.

## PROCESS OF FORMING TUBES.

SPECIFICATION forming part of Letters Patent No. 786,923, dated April 11, 1905.

Application filed August 10, 1903. Serial No. 169,048.

*To all whom it may concern:*

Be it known that I, LESTER C. SMITH, of Rome, in the county of Oneida and State of New York, have invented certain new and  
5 useful Improvements in Processes of Forming Tubes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to  
10 make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The object of my invention is to provide a  
15 process of forming tubes from strips of sheet material in four passes through rollers.

In the drawings, Figure 1 shows a trans-versed section of the strip of material to be operated upon. Fig. 2 shows the same at the  
20 completion of the first operation. Fig. 3 shows the same after the second operation. Fig. 4 shows the same after the third operation, and Fig. 5 shows the completed tube after the fourth operation.

25 The important point to be accomplished in forming tubes by the method herein set forth (or for that matter by any method) is to have the meeting edges of the strip so closed that any tendency to spring apart is obviated, and  
30 the meeting edges, in fact, press against each other with considerable pressure instead of having the tendency to spring apart or separate.

In carrying out my process of forming tube  
35 the first operation consists in turning in the edges of the strip to a circle substantially the same as that of the completed tube and as indicated at *a a*. The second operation consists in giving a comparatively sharp trans-

verse bend to the strip through the middle 40 and forming the middle to a circle, as indicated at *b*, less than that of the completed tube. The third operation consists in closing the tube into a substantially oval form with the  
45 meeting edges in the larger end of the oval. The final operation consists in forming the last-mentioned oval tube into a circular one. The tube thus formed will have the edges  
50 pressing against each other instead of springing apart and in proper condition for soldering or brazing the two meeting edges together to form the closed pipe.

By the process herein described a tube of the character mentioned may be formed without the use of a mandrel or core around which  
55 to operate.

What I claim as new, and desire to secure by Letters Patent, is—

The process of forming a tube from a strip of sheet material in four operations, which  
60 consists, first, in turning in the edges of the strip to a curvature substantially that of the circle of the completed tube; second, in bending the strip along the middle to a curvature  
65 less than that of the circle of the completed tube; third, closing the tube into an oval form with the meeting edges in the large end of the oval, and, fourth, forming the last-mentioned  
70 form into a circular form, substantially as set forth.

In witness whereof I have affixed my signature, in presence of two witnesses, this 4th day of August, 1903.

LESTER C. SMITH.

Witnesses:

H. J. ROWLAND,  
JOHN E. BIELBY.