

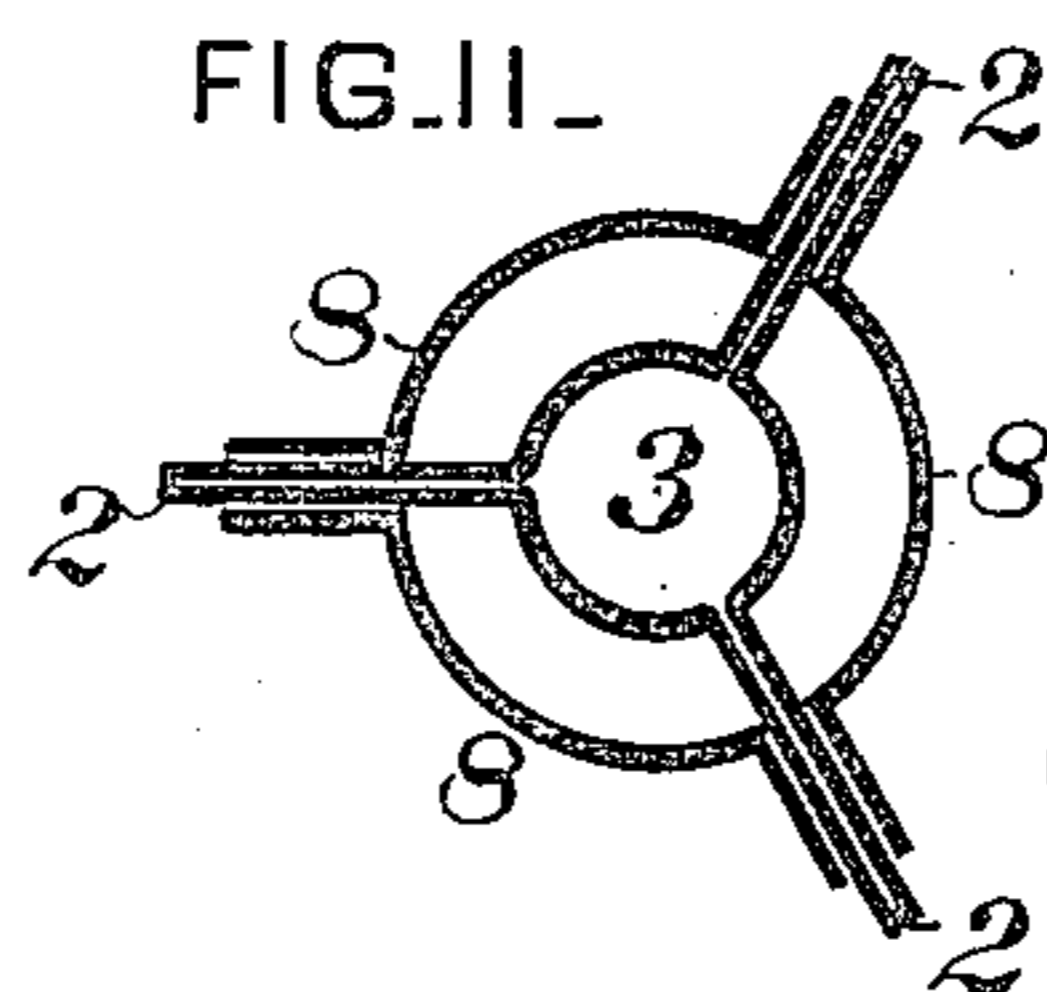
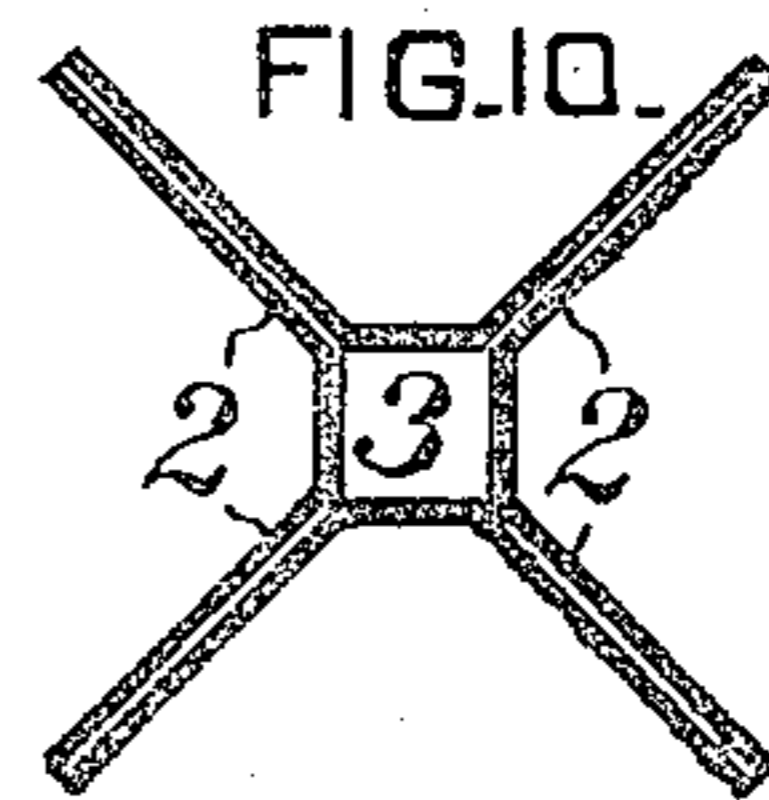
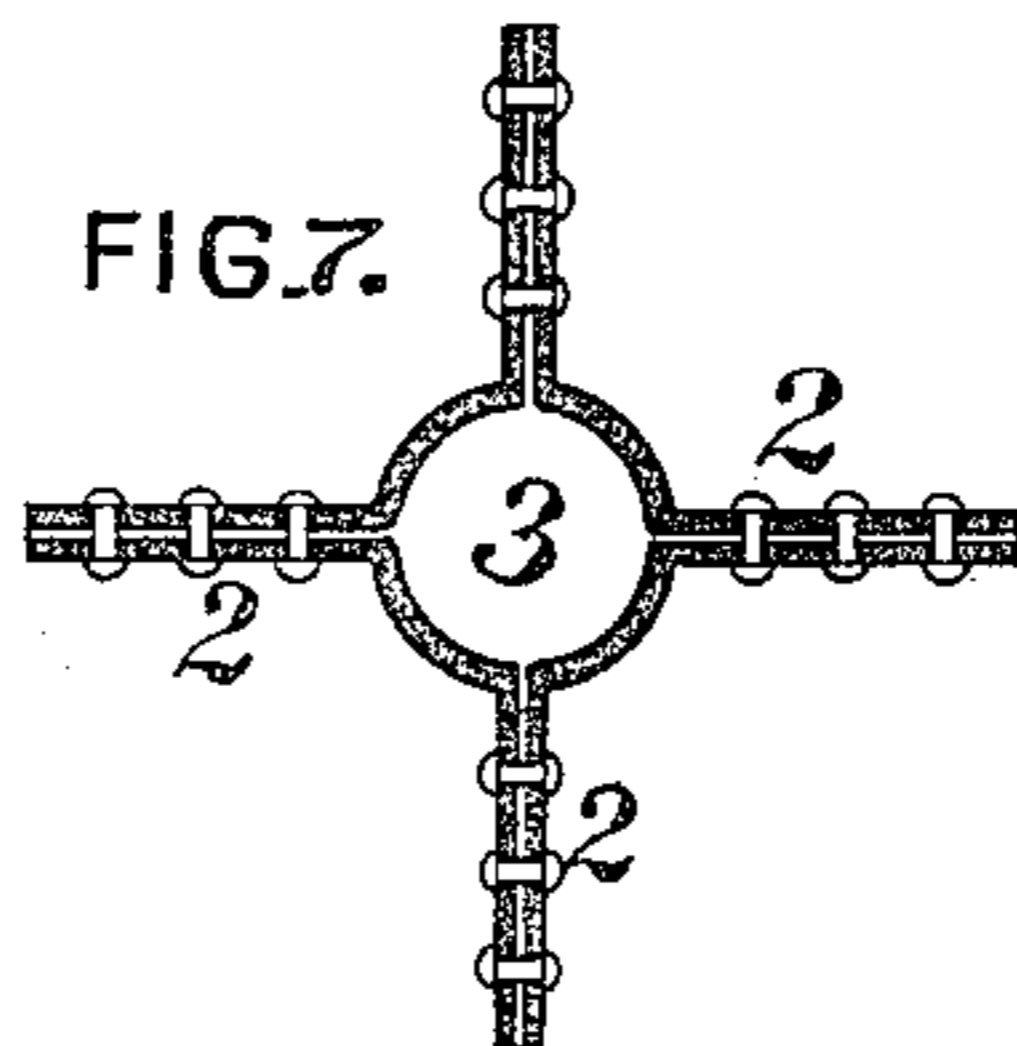
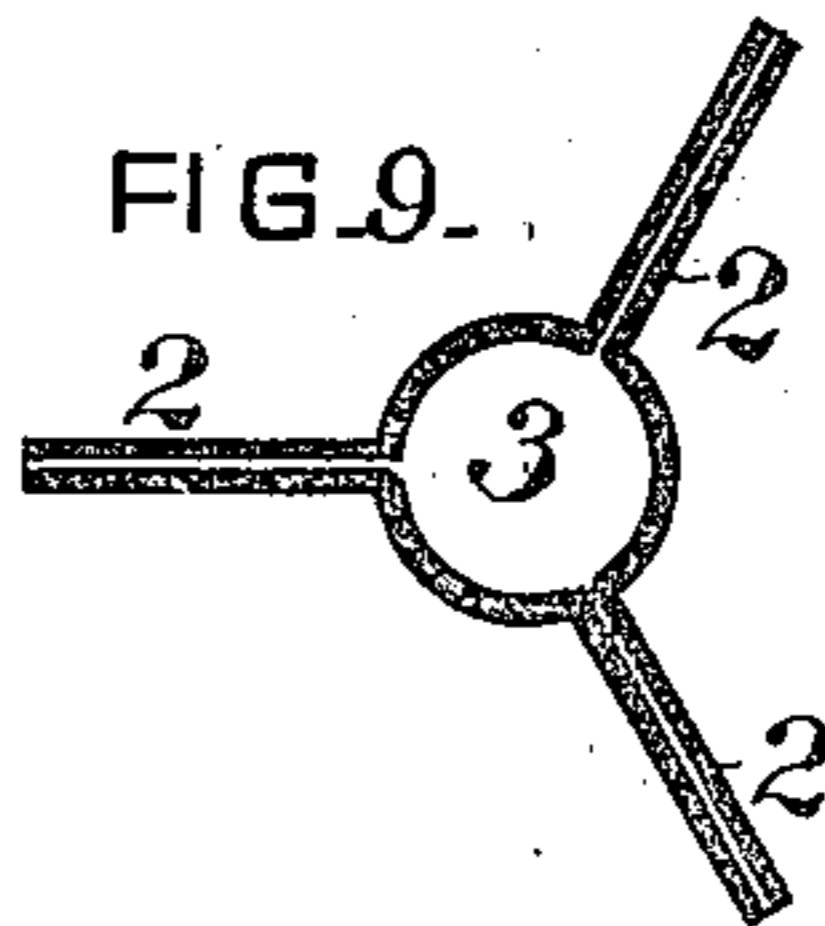
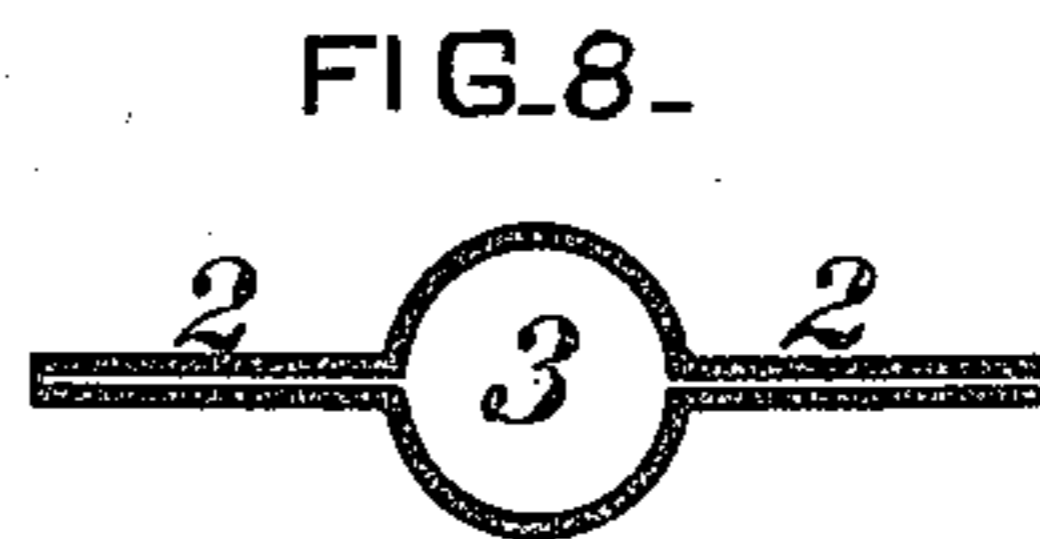
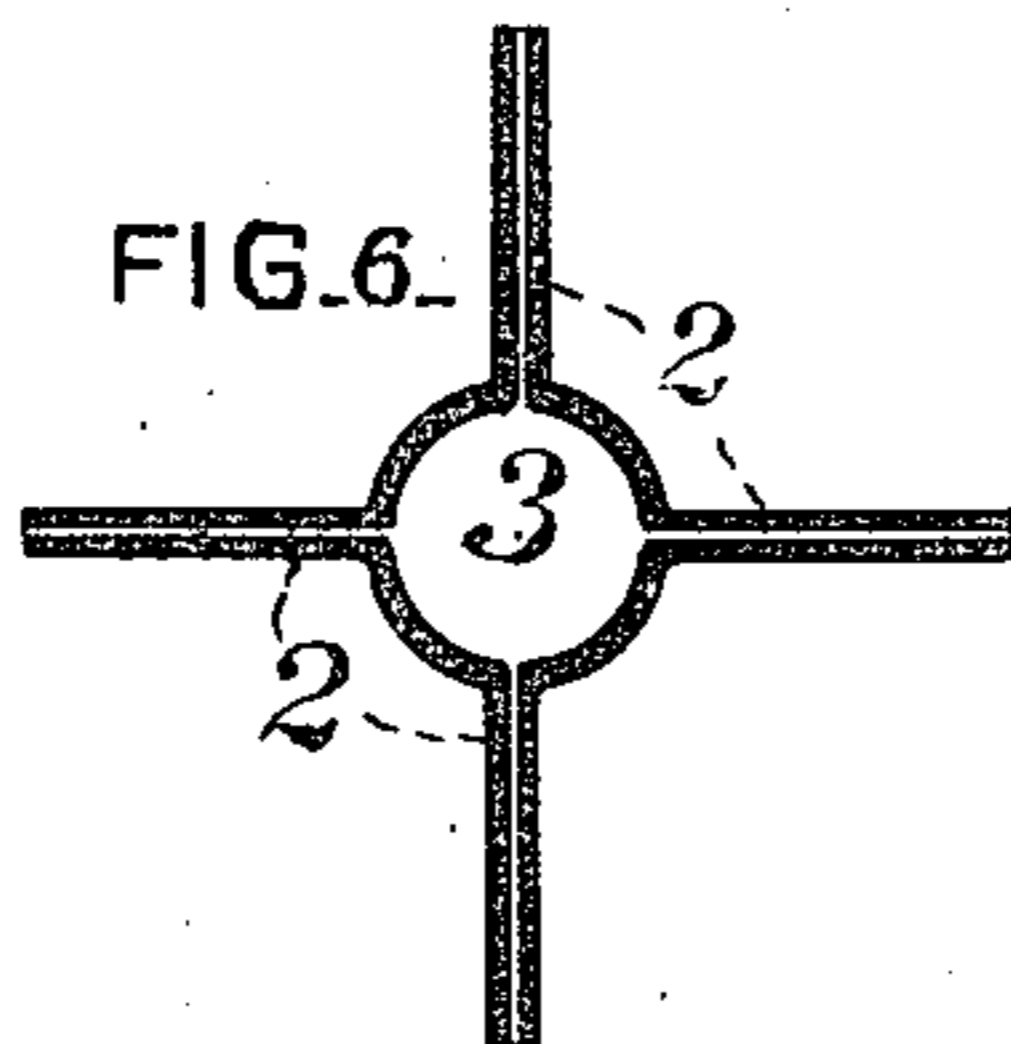
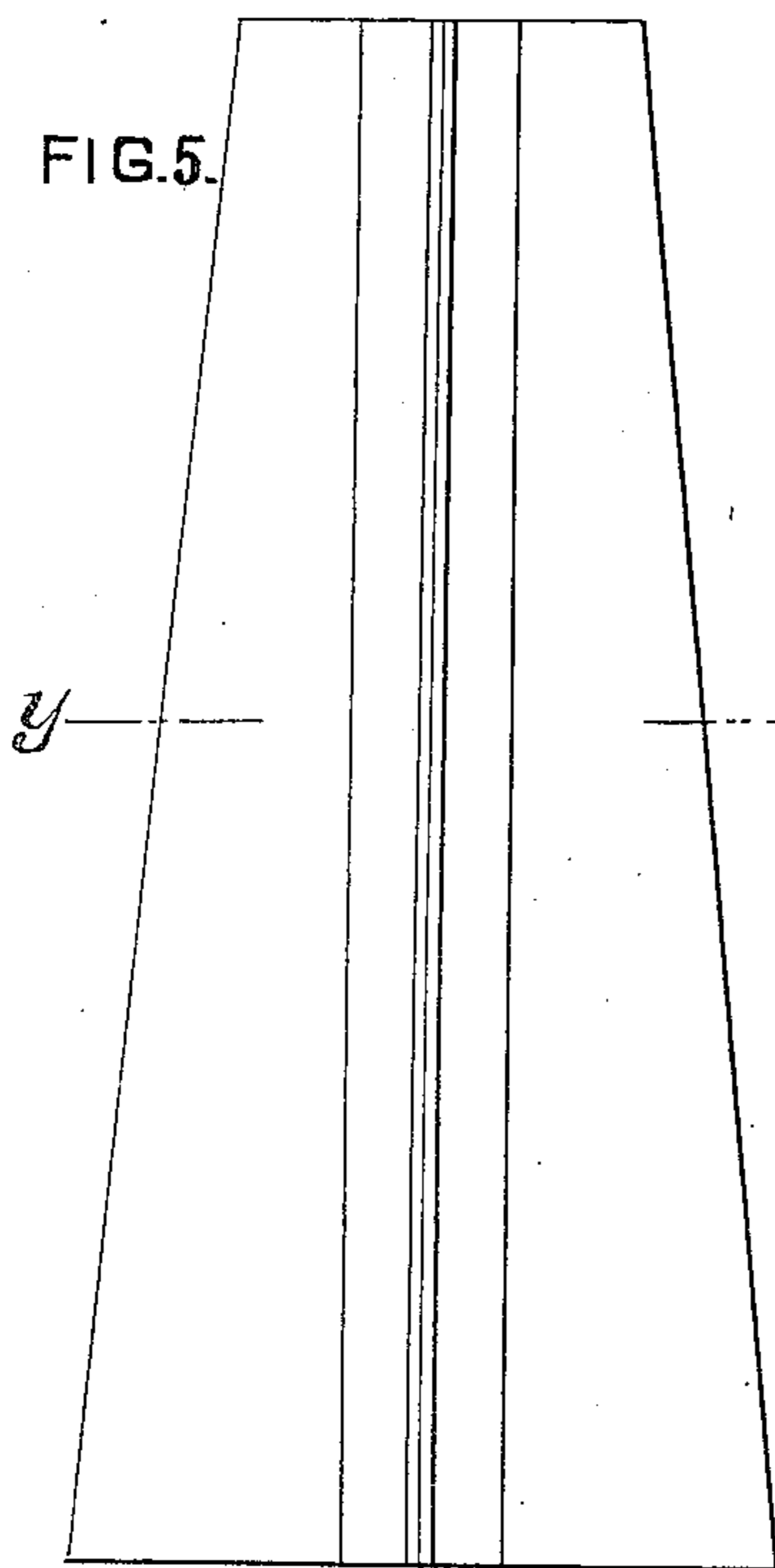
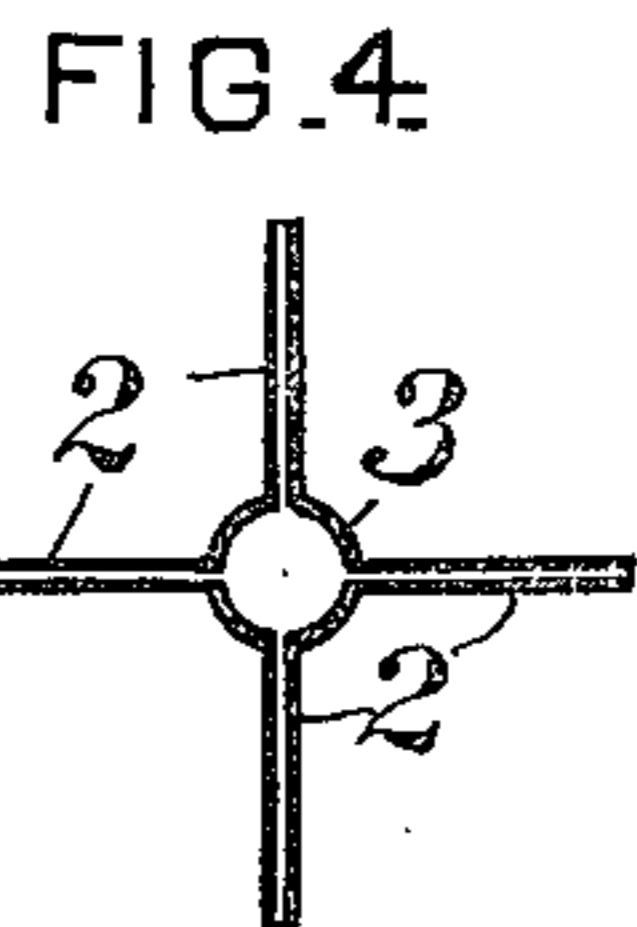
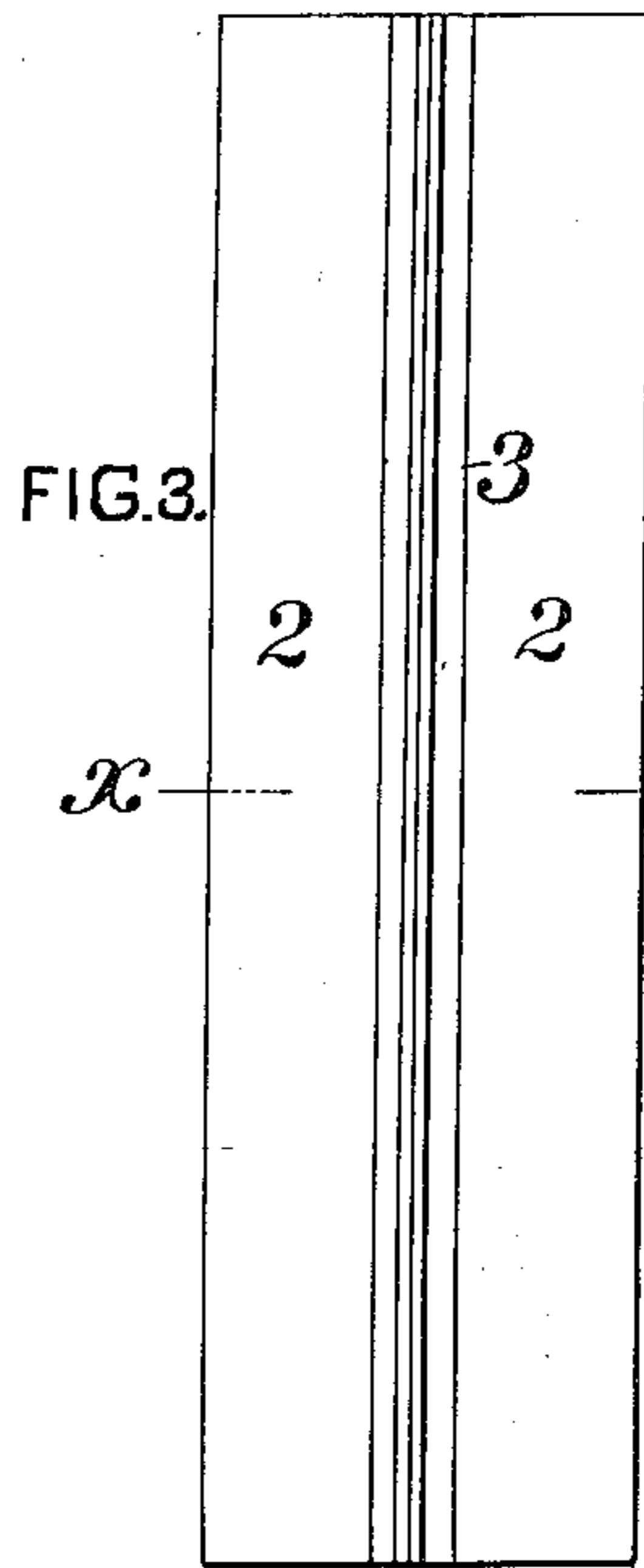
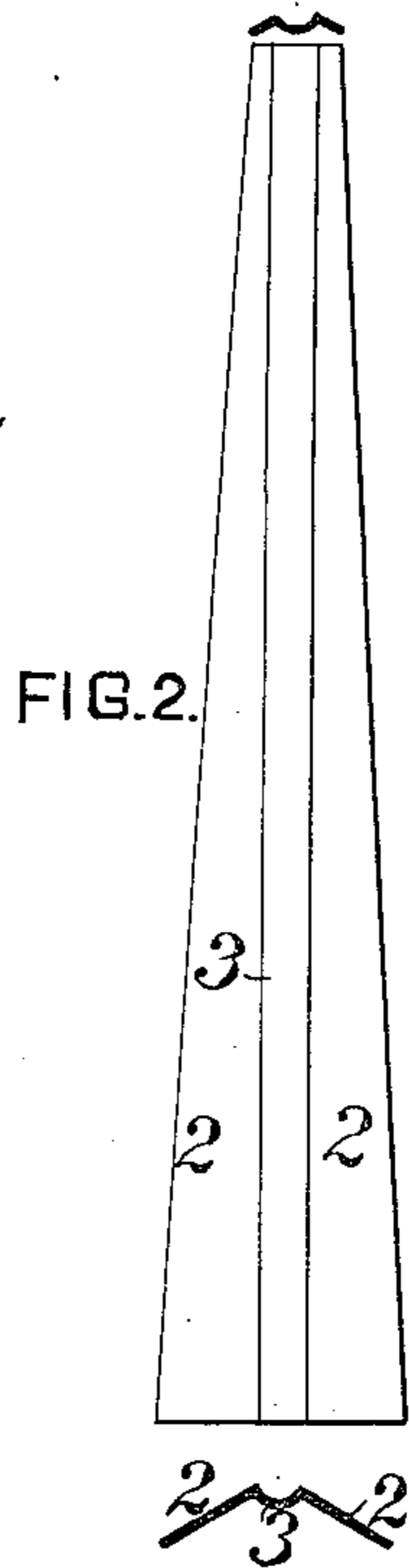
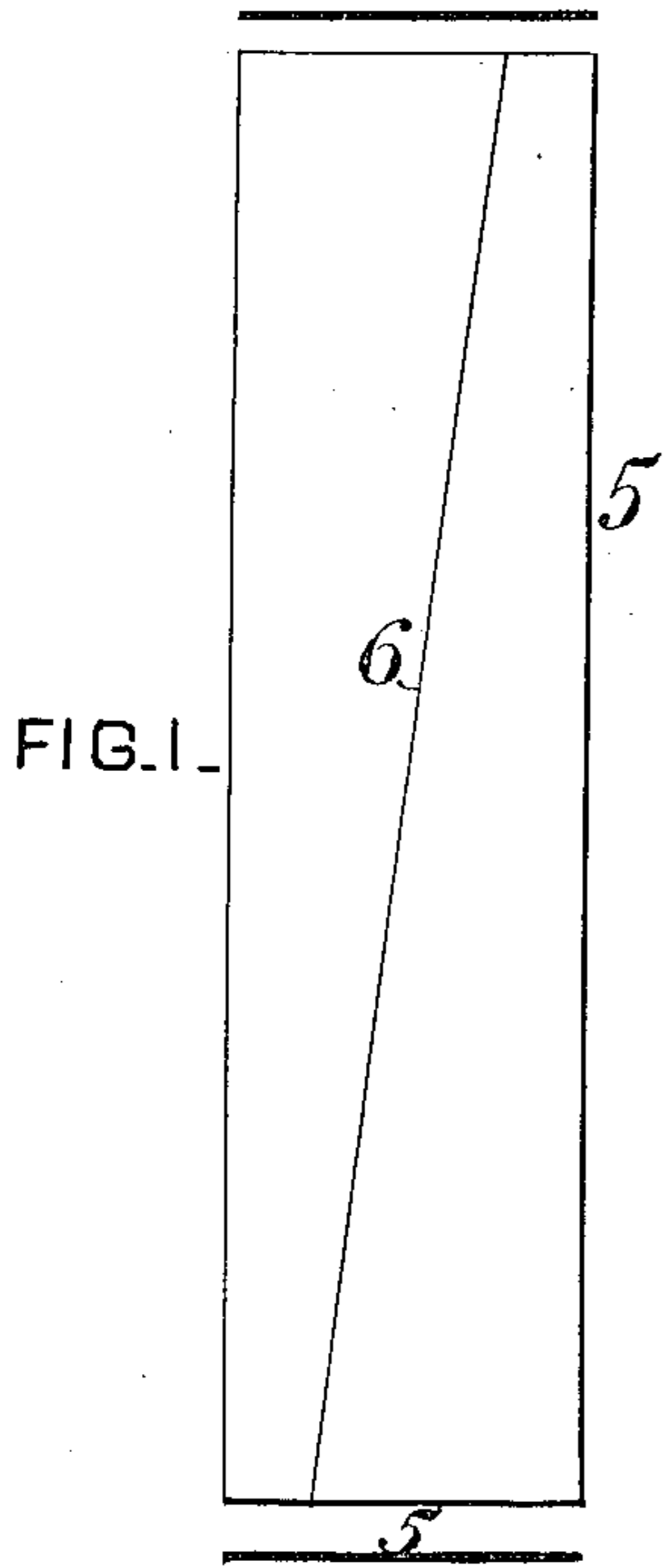
(No Model.)

2 Sheets—Sheet 1.

J. S. SEAMAN.  
MANUFACTURE OF POSTS, POLES, &c.

No. 466,012.

Patented Dec. 29, 1891.



WITNESSES:

Danwin S. Wolcott  
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INVENTOR,

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by George H. Christy  
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(No Model.)

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FIG. 12.

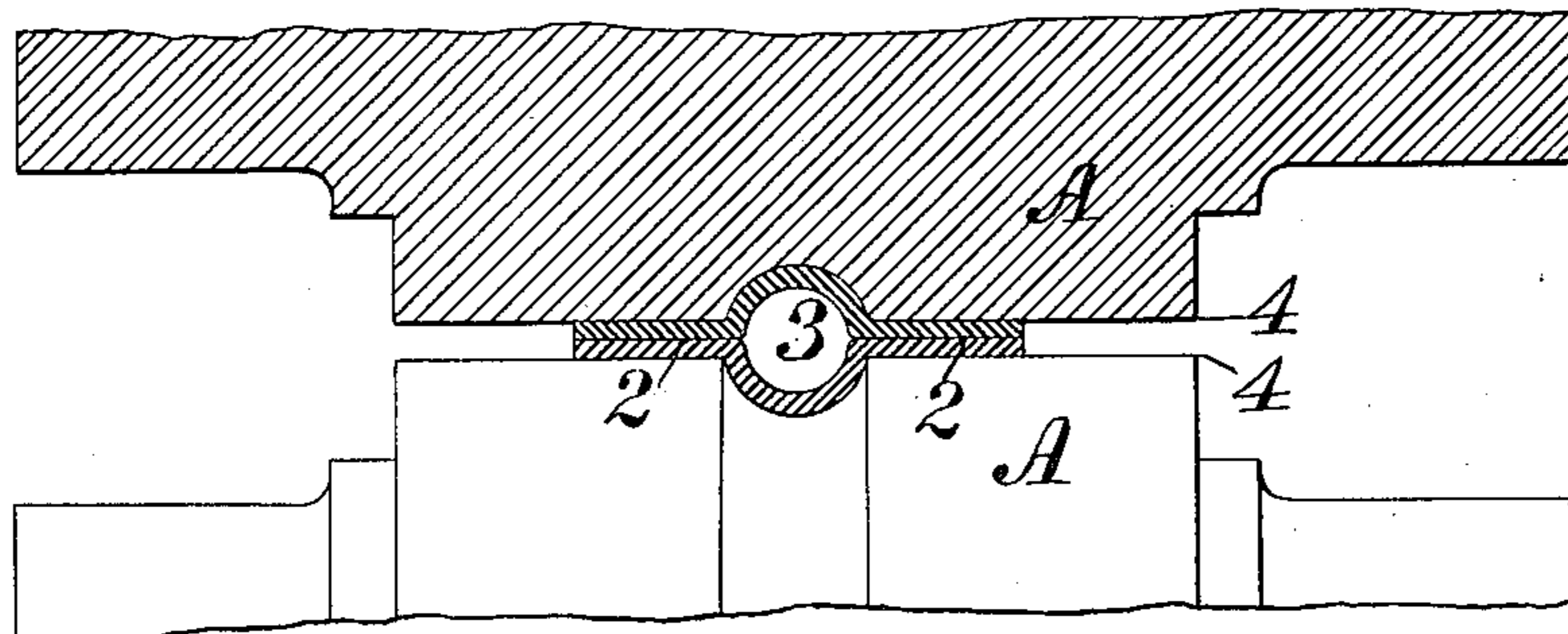


FIG. 13.

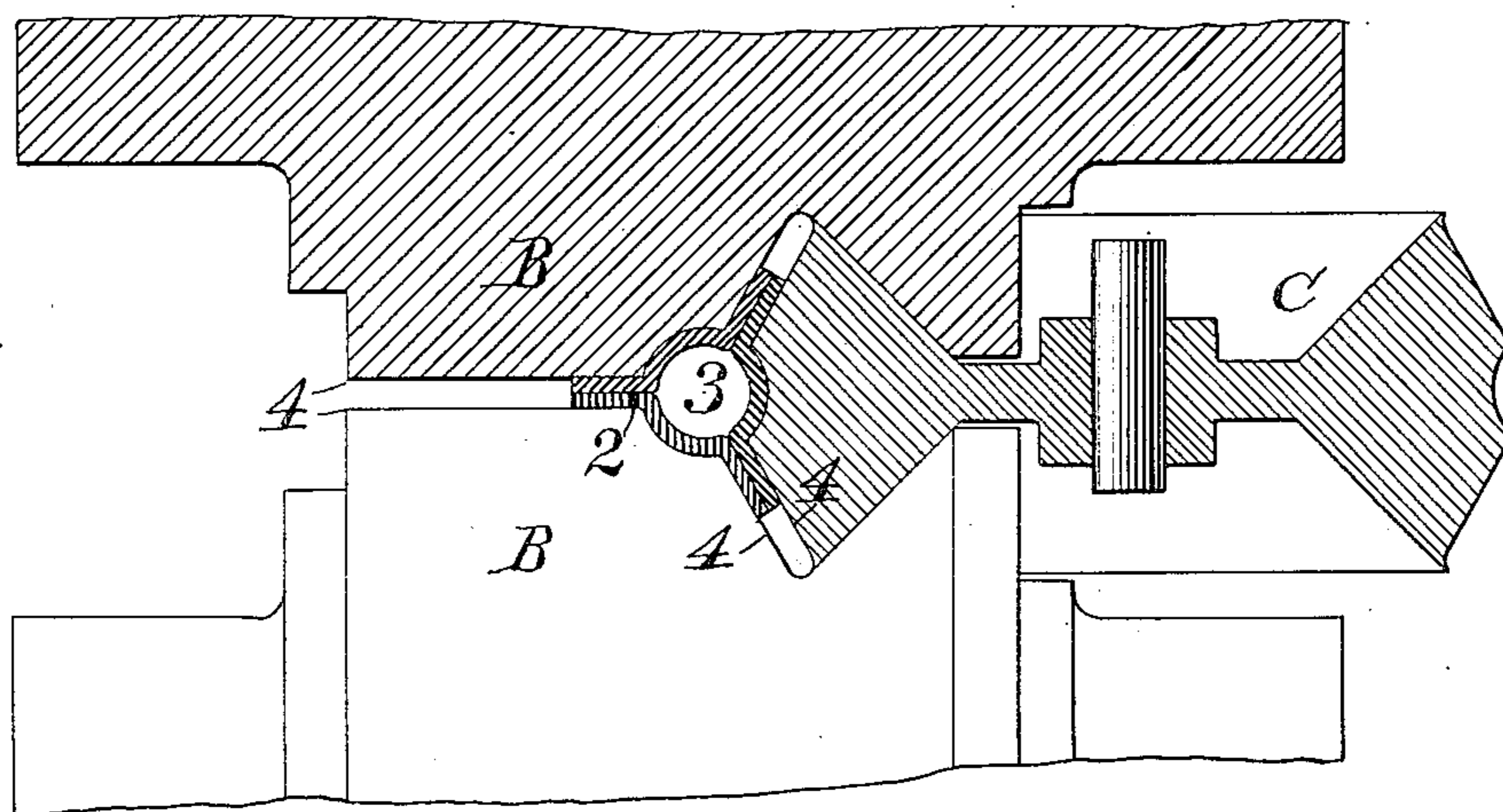
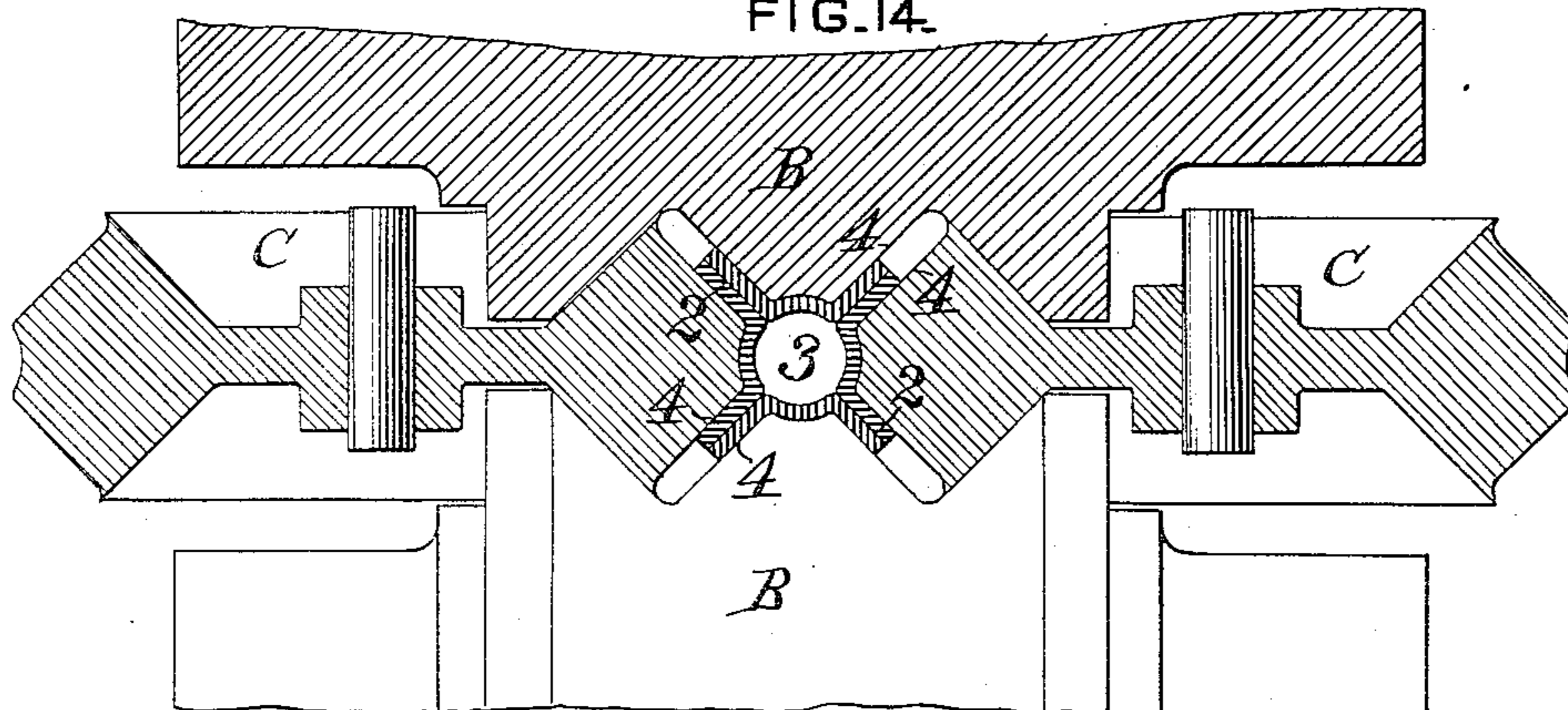


FIG. 14.



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# UNITED STATES PATENT OFFICE.

JOSEPH S. SEAMAN, OF PITTSBURG, PENNSYLVANIA.

## MANUFACTURE OF POSTS, POLES, &c.

SPECIFICATION forming part of Letters Patent No. 466,012, dated December 29, 1891.

Application filed June 16, 1891. Serial No. 396,471. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH S. SEAMAN, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in the Manufacture of Posts, Poles, &c., of which improvements the following is a specification.

The invention described herein relates to certain improvements in the manufacture of posts, pillars, telegraph-poles, &c., and has for its object a construction or form of post or pole capable of withstanding great transverse strains, and which can be easily and cheaply manufactured; and the invention also has for its object certain improvements in the method of manufacturing such posts or poles.

In the accompanying drawings, Figure 1 shows plan and end views of the metal plates and the blanks cut therefrom in manufacturing my improved post or pole. Fig. 2 is a plan view of one of the blanks after being bent to shape. Figs. 3 and 4 are views in elevation and cross-section of a form of a post or pillar, having its flanges welded together. Figs. 5, 6, and 7 are views in elevation and cross-section of my improved form of post or pillar, the plane of section of Figs. 6 and 7 being indicated by the line *x x*, Fig. 5. Figs. 8, 9, and 10 are cross-sectional views showing different modifications of my improved post. Fig. 11 is a view similar to Fig. 9, showing the manner of bracing or re-enforcing the post or pillar. Figs. 12, 13, and 14 are sectional elevations of portions of rolls adapted for welding the flanges of various shapes of my improved post or pole.

In manufacturing posts, pillars, or poles of the class to which my improvement belongs—*i. e.*, those having a hollow body portion with external radial flanges—it has been the universal custom to secure the flanges of the several sections forming the post or pillar together by rivets. This method requires considerable labor and time, and thereby greatly increases the cost of manufacture.

In the practice of my invention the blanks or sections 1 of a post, pillar, or pole are, after being bent to the required shape and placed in proper relation to each other, heated in a suitable furnace to a welding-heat and then passed through between suitable rolls, as

shown in Figs. 12, 13, and 14. When manufacturing posts or poles having only two flanges 2, the welding-rolls A may be constructed as shown in Fig. 1—*i. e.*, with a groove or pass in each roll of such dimensions as compared with the diameter of the body portion 3 of the post or pole as will permit of the body portion passing freely through the same—while the plain portions of the rolls on each side of the groove or pass compress the flanges 2 tightly and cause them to weld together. In manufacturing posts, poles, or pillars having three or more flanges a mill having its rolls constructed and arranged as shown in Figs. 13 and 14 and as is described and claimed in Letters Patent Nos. 318,513 and 400,495, granted to me May 26, 1885, and April 2, 1889, respectively, is preferably employed. This mill consists of two horizontal rolls B and one or two vertical rolls C, the latter operating between and being driven by the horizontal rolls, as fully set forth in said Letters Patent. The horizontal and vertical rolls are provided with grooves or passes permitting of the free movement of the body portions of the posts, pillars, or poles, and with plain parallel faces 4, adapted to engage and compress the flanges 2 together. As described in said Letters Patent, the adjustment of the vertical rolls is effected by and dependent upon the adjustment of the horizontal rolls. This manner of uniting the flanges of the parts or sections composing the post, pole, or pillar forms them into an integral structure more rapidly and with much less labor than the riveting process heretofore employed; and, further, it is desirable where the post or pole is subjected to great transverse strains to connect the flanges at as many points as practicable to prevent the outward buckling of the flanges on the side of the compressive strain; but under the old practice of riveting the number of rivets employed is necessarily limited. The welding of the flanges effects their union at all points without any weakening thereof.

In making posts, poles, or pillars tapering from the base to the top it has been customary to make the body portion tapering—*i. e.*, of gradually-decreasing diameter from the bottom to the top—while the flanges were made of a uniform width or projection from the

body portion throughout their entire length. It will be readily understood by those skilled in the art that it is practically impossible to weld the flanges of a post or pillar having a tapering body portion by means of rolls, as hereinbefore described. In order to provide for the manufacture of posts, poles, &c., having a larger bearing at the bottom than at the top in the manner hereinbefore described—  
 10 *i. e.*, by welding the flanges together—I form them with a body portion of uniform diameter from bottom to top, while the flanges gradually decrease in width from the bottom to the top, as shown in Fig. 5. The body or  
 15 cylindrical portion of the posts or pillars being of uniform diameter, they can be readily passed through the grooves of the rolls shown in Figs. 12, 13, and 14, the flanges being compressed by the plain portions of the rolls, as  
 20 hereinbefore described.

In making these tapering posts, pillars, or poles, it is preferred to cut a plate of metal, as 5, Fig. 1, of a width sufficient to form two blanks on a diagonal line, as 6. The blanks  
 25 thus formed are then bent by any suitable mechanism into the form shown in Fig. 2 with a central longitudinal groove or gutter either circular or square in cross-section and lateral flanges increasing in width from end  
 30 to end. The form of section shown in Fig. 2 is adapted for the manufacture of poles or posts having three flanges, but can be slightly modified, as will be readily understood by those skilled in the art, in accordance with  
 35 the character of the pole or pillar desired—*i. e.*, with two, three, or more flanges—and with a circular or square body portion, as shown in Figs. 6, 8, 9, and 10.

Posts, poles, and pillars thus constructed  
 40 will have as stable a bearing at their base as those having a tapering body portion, and will present, by reason of their wider flanges, greater resistance as against lateral strains. While it is preferred to unite the sections  
 45 having a uniform body portion and tapering flanges by means of welding, as hereinbefore described, any other suitable means for uniting such sections may be employed.

Where the pole or pillar is subjected to  
 50 great strains, they may be re-enforced by sections 8, as shown in Fig. 11. The re-enforcing-sections are constructed in the same manner as the sections of the main or interior post, except that the body portion is bent on

an arc of larger radius and the flanges are made narrower. If desired, the flanges of the re-enforcing sections may be welded to the flanges of the interior post or pole or may be riveted thereto.

I claim herein as my invention—

1. In a post, pillar, or pole, the combination of a series of two or more sections, each section having a central groove or gutter and lateral flanges, the flanges of said sections being welded together, substantially as set forth.

2. In a post, pole, or pillar, the combination of a series of two or more sections, each section having a central groove or gutter of uniform dimensions and lateral flanges decreasing in width from end to end, the flanges of said sections being secured together, substantially as set forth.

3. In a post, pillar, or pole, the combination of a series of two or more sections, each section having a central groove or gutter of uniform dimensions and lateral flanges decreasing in width from end to end, the flanges of said sections being welded together, substantially as set forth.

4. In a pole, pillar, or post, the combination of a series of two or more sections, each section having a central groove or gutter and lateral flanges, the latter being secured together, and braces or re-enforces consisting of metal plates provided with central grooves or  
 85 gutters and lateral flanges, said braces fitting between the flanges of the pole or post sections and having its flanges secured to the flanges of said sections, substantially as set forth.

5. As an improvement in the art of manufacturing tapering posts, pillars, or poles, the method herein described, which consists in cutting a metal plate of uniform width on a diagonal line, forming a central groove or gutter in the blanks thus formed and thereby forming flanges gradually decreasing in width from end to end, arranging two or more of the shaped sections with their flanges in contact, and then securing said flanges together, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOSEPH S. SEAMAN.

Witnesses:

DARWIN S. WOLCOTT,  
 R. H. WHITTLESEY.