

No. 669,496.

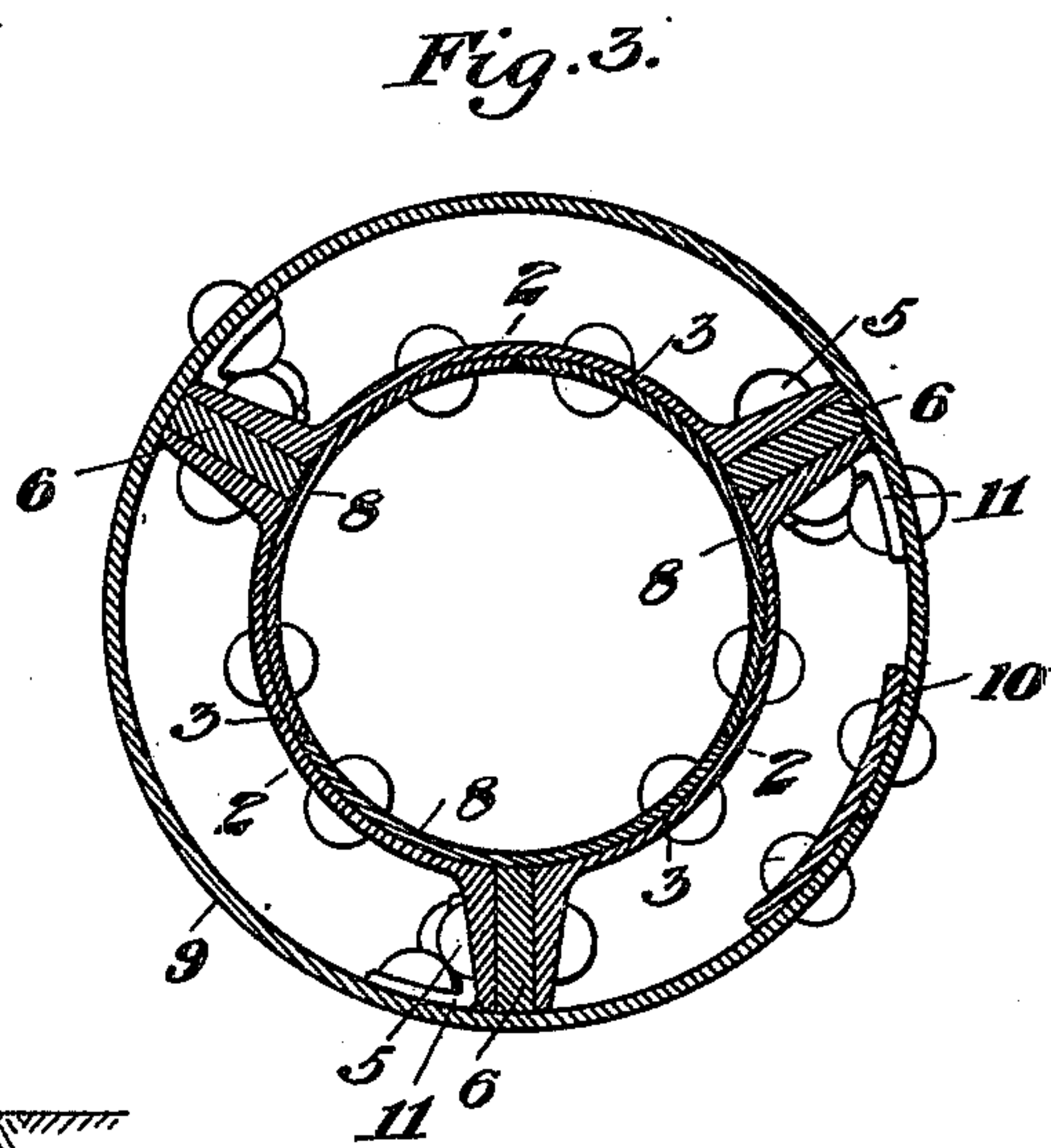
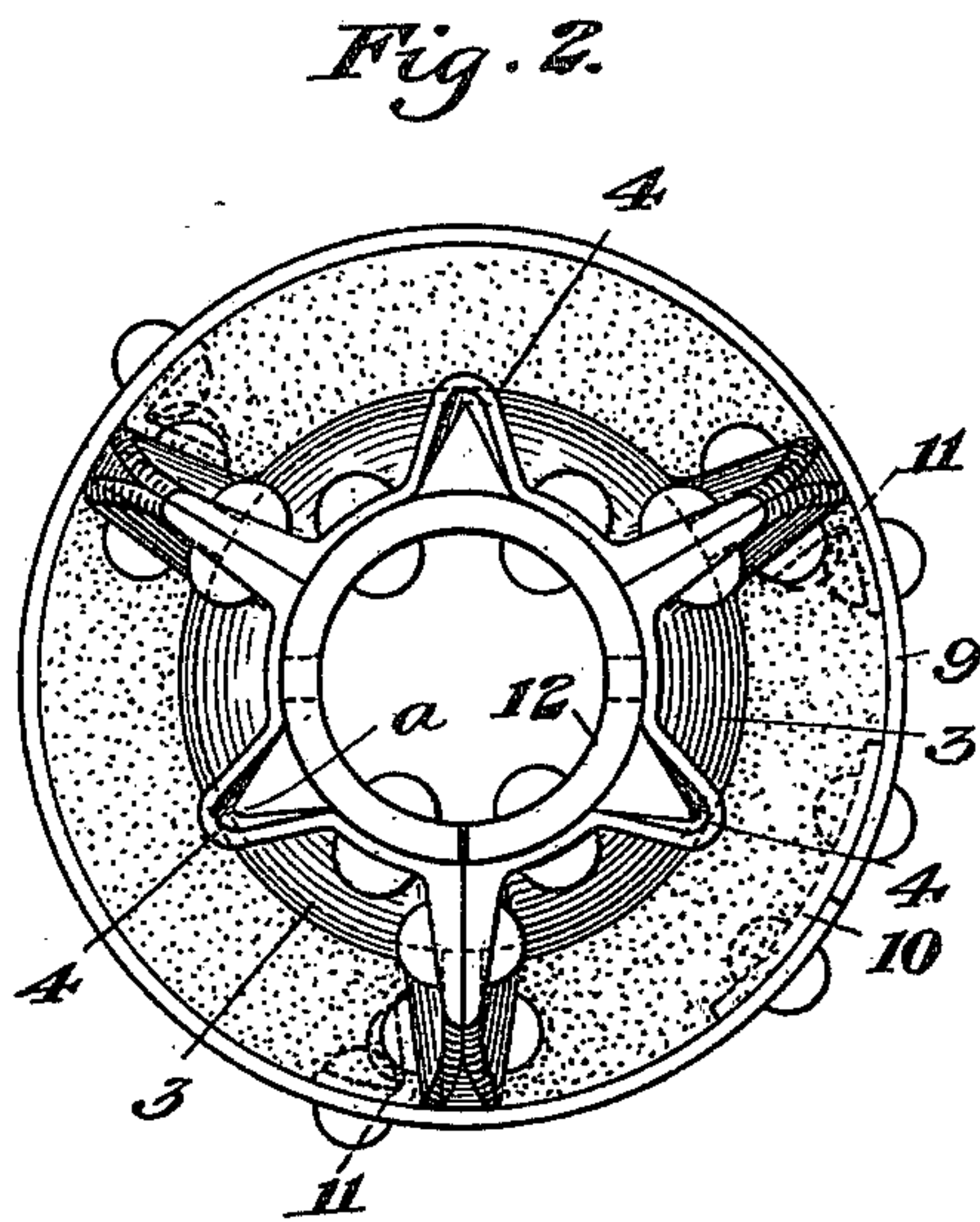
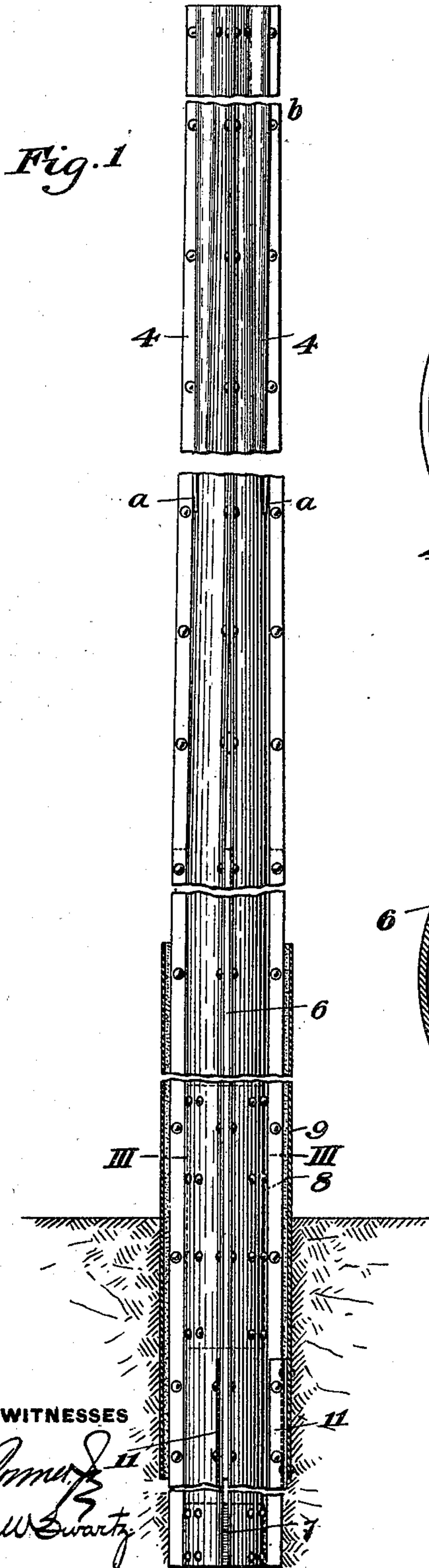
Patented Mar. 5, 1901.

J. LANZ.
SPAN WIRE POLE.

(Application filed July 21, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

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INVENTOR

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2 Sheets—Sheet 2.

Fig. 4.

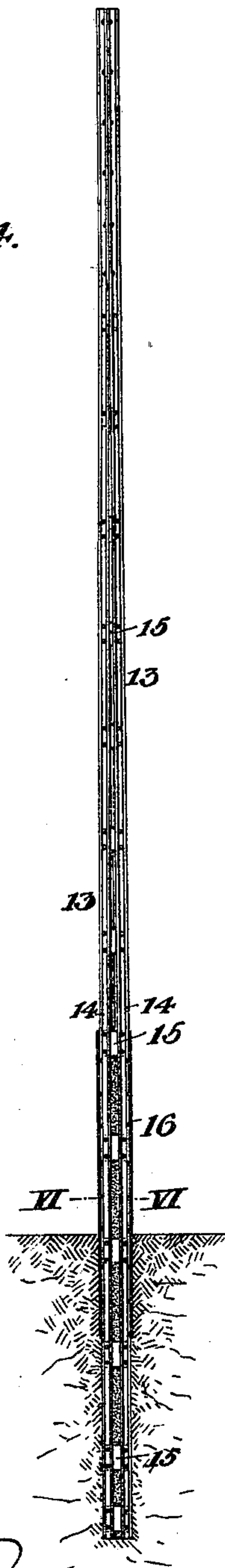


Fig. 5.

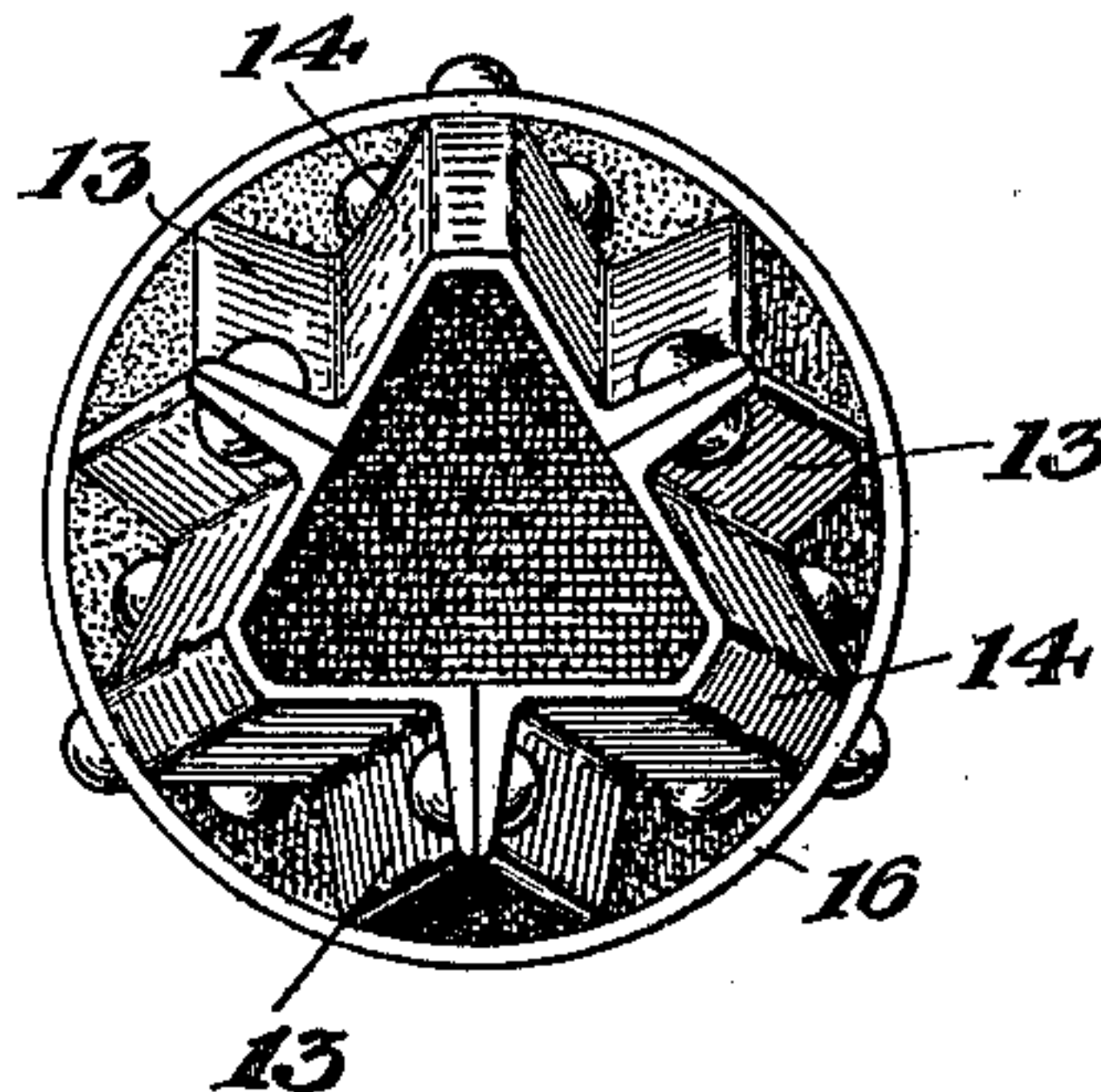
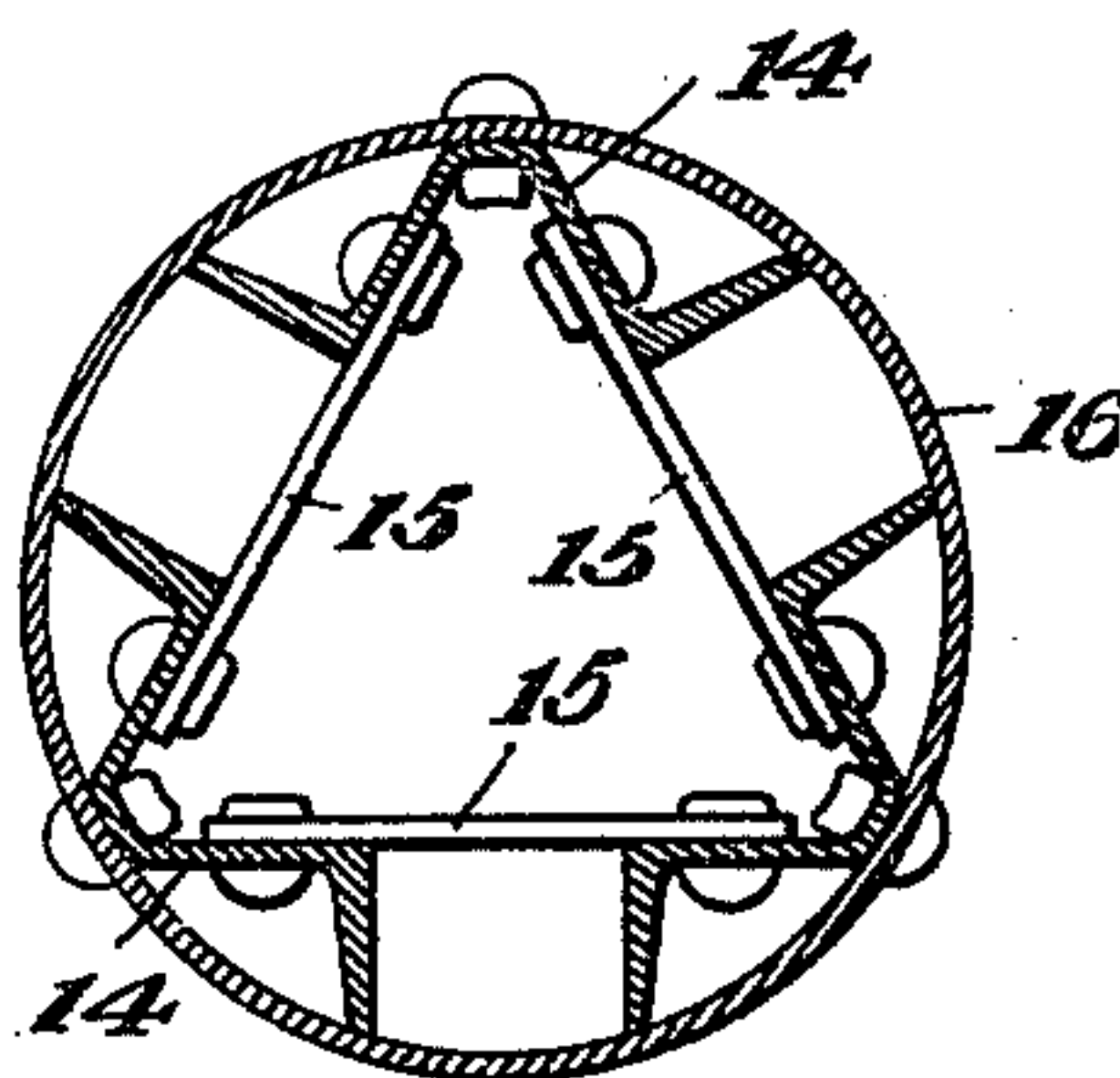


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN LANZ, OF PITTSBURG, PENNSYLVANIA.

SPAN-WIRE POLE.

SPECIFICATION forming part of Letters Patent No. 669,496, dated March 5, 1901.

Application filed July 21, 1899. Serial No. 724,625. (No model.)

To all whom it may concern:

Be it known that I, JOHN LANZ, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Span-Wire Poles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly broken away, of my improved column. Fig. 2 is a top plan view of the same, and Fig. 3 is a cross-section on the line III III of Fig. 1. Fig. 4 is a sectional side elevation of another form of my improved pole. Fig. 5 is a top plan view of the same, and Fig. 6 is a cross-section on the line VI VI of Fig. 4.

My invention relates to built-up columns or poles, and more especially to those used for span-wires for electric railroads; and its object is to obtain a simple, cheap, and strong construction therefor, which shall also be neat and ornamental in appearance.

In the accompanying drawings I show in Figs. 1, 2, and 3 a pole composed of three channels 2, the web 3 of each channel being bent into outwardly-curved form and the upper portion of such web being formed with a central trough portion 4, which is gradually increased in depth from the point *a*, where it begins, to the point *b* near the top of the pole. From the point *b* the pole is straight to its top. The channels are secured together by rivets 5, passing through their flanges and through filler-plates 6 between the flanges and which extend throughout the lower straight portion of the pole. For a thirty-foot pole this lower straight portion is preferably about fifteen feet in length. The lower portion of the pole, which is under ground, may be left open between the flanges, if desired, and secured together by inside connectors 7 (shown in Fig. 1) and riveted or otherwise secured to the webs of the channels. I preferably employ at the ground-level an inside strengthening-shell consisting of three plates 8, whose ends abut together between the joints of the channels and are riveted through their webs. This shell preferably extends about one foot above the ground-level and one foot below, thus strengthening the pole at the point of greatest strain. I also

preferably use an outer cylindrical shell 9, consisting of a plate bent into circular form, with its ends abutting together and secured by inner plates 10, riveted through them. This shell is secured to the pole by angle-plates 11, riveted to the shell and to the flanges of the channels, or in any other desirable way. The shell fits around the outside of the straight lower portion of the pole and preferably extends about two feet under ground and four feet above ground. Concrete is filled in between the pole and this outer shell, which thus helps to strengthen the pole and acts as a wheel-guard. Between the straight lower portion of the pole and the tapered upper portion there is a short open space between the flanges, which flanges may be secured together throughout this portion by rivets extending through the flanges and through washers or filler-blocks between them. At the upper end of this open space the trough portions of the webs begin and extend upwardly, gradually growing deeper toward the top. The top may be finished by an open ring 12, riveted within the channel, and which prevents change of diameter when clamps or other fixtures are applied. Any cover-plate or ornament may be secured to this end of the pole. The gradually-tapering trough portions of the web tend to spread apart the lower straight portions of the channels unless these are bent during the forming of the troughs, and the pole may be made with the lower portions of the channels spread apart in pyramidal form and secured together by inside connectors, such as 7, the flanges not being joined. The fillers between the flanges may be in the form of plain bars or may be T or angle irons and may be made of different lengths and thickness, graduated according to the strain.

In Figs. 4, 5, and 6 I show another form of my invention in which I employ three channels 13, whose webs 14 are bent into trough form and are not tapered. In the lower portion of this pole the flanges of the channels are spread apart from each other and are secured together by inner plates 15, riveted through the sides of the troughs. For a thirty-foot pole this straight portion will extend about ten feet from the lower end of the pole. For the next fifteen feet the channels are bent in gradually toward each other, giv-

ing a tapered portion, until the flanges meet at about five feet from the top, this top portion being straight, with the flanges riveted directly together. In this form also I may
 5 use a pipe 16, surrounding the portion of the pole at the ground-level and riveted to the troughs, this pipe extending about four feet above ground and two feet below. It will be noted that in all of the channels shown the
 10 flanges are considerably thicker than the webs. This is of material advantage, since the metal is thus spread farther away from the center of the pole, which is thus strengthened.

15 The advantages of my invention result from the obtaining of a hollow column of general tubular or pipe form without the welding together of successive sections. The channels may be easily bent up in dies to give the
 20 desired form, and the column is easily and cheaply made. At the same time it is of great strength and presents an attractive appearance.

Many changes may be made in the form
 25 and arrangement of the parts without departing from my invention, since

What I claim is—

1. A column, having a straight lower portion and tapered upper portion, said column
 30 being composed of channels, the upper portions of whose webs are provided with tapering trough portions; substantially as described.

2. A hollow pole composed of channels with
 35 outwardly-curved webs and a curved inner strengthening-plate secured in contact with the inner faces of the channels, and crossing the joint; substantially as described.

3. A tapered pole having a lower straight

portion, composed of channels with outwardly-extending flanges and outwardly bent or curved webs, the meeting edges of the channels being spaced apart throughout the lower
 40 straight portion of the pole, the upper portions of the webs having tapering trough portions; 45 substantially as described.

4. A pole having a lower straight portion and an upper tapering portion, and a strengthening-casing surrounding at least a part of the straight portion and riveted thereto, the
 50 top of the casing being open to allow the introduction of cement, substantially as described.

5. A hollow pole of pipe form composed of channeled shapes, the webs of the channels
 55 surrounding the hollow center, and a surrounding casing secured to the shapes; substantially as described.

6. A hollow pole of general pipe form composed of channeled shapes, having inside tie-
 60 plates secured to the webs; substantially as described.

7. A hollow pole of general pipe form, composed of channeled shapes, with inner tie-
 65 plates secured to the inner faces of their webs, and a surrounding casing secured to the pole; substantially as described.

8. A hollow pole composed of channeled shapes having trough-shaped webs spaced
 70 apart from each other, and inner plates connecting the shapes and secured to the trough-shaped webs; substantially as described.

In testimony whereof I have hereunto set my hand.

JOHN LANZ.

Witnesses:

T. M. REDMAN,
 C. C. BITTNER.