

No. 669,459.

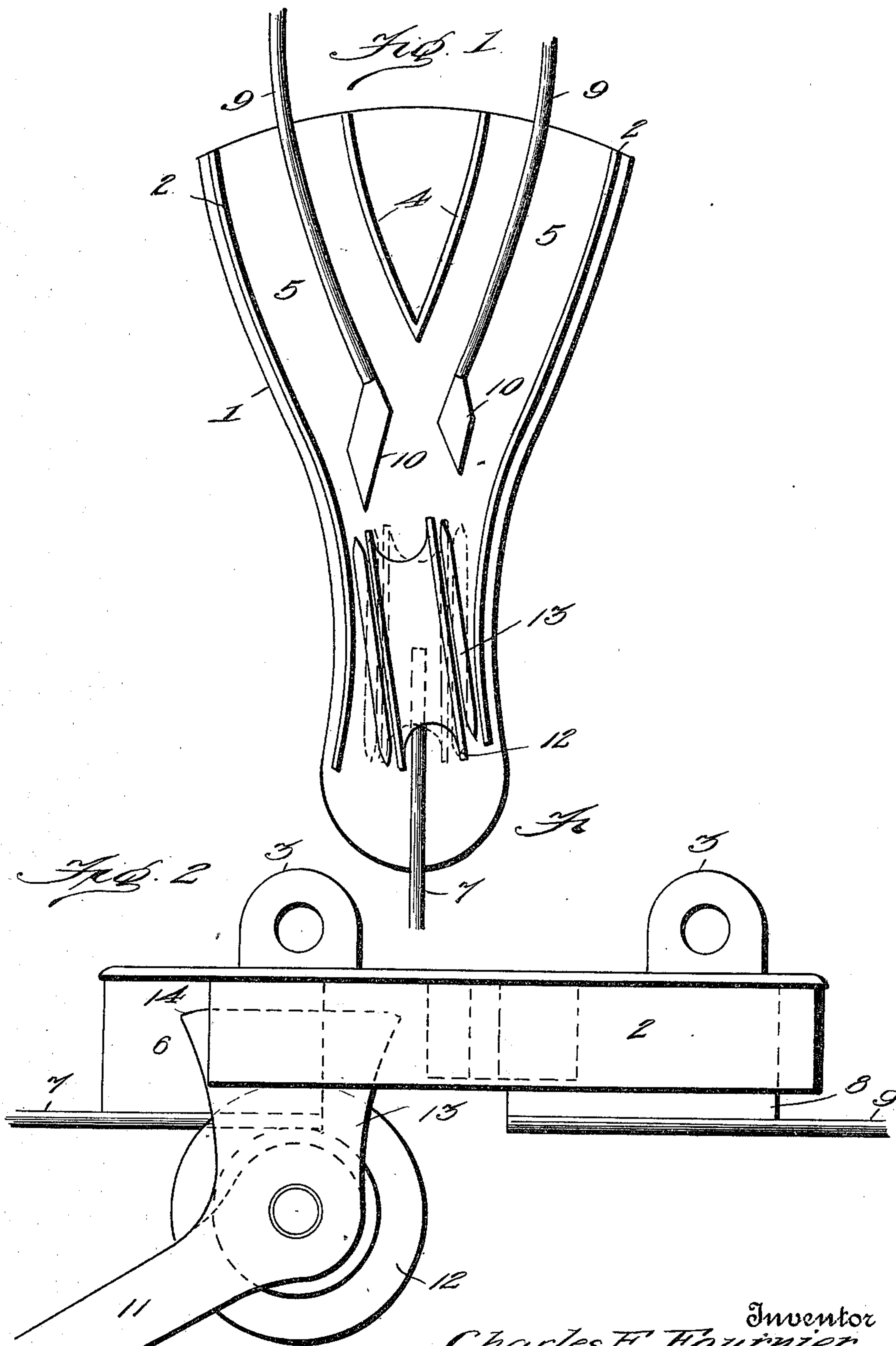
Patented Mar. 5, 1901.

C. E. FOURNIER.  
ELECTRIC RAILWAY.

(Application filed June 7, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

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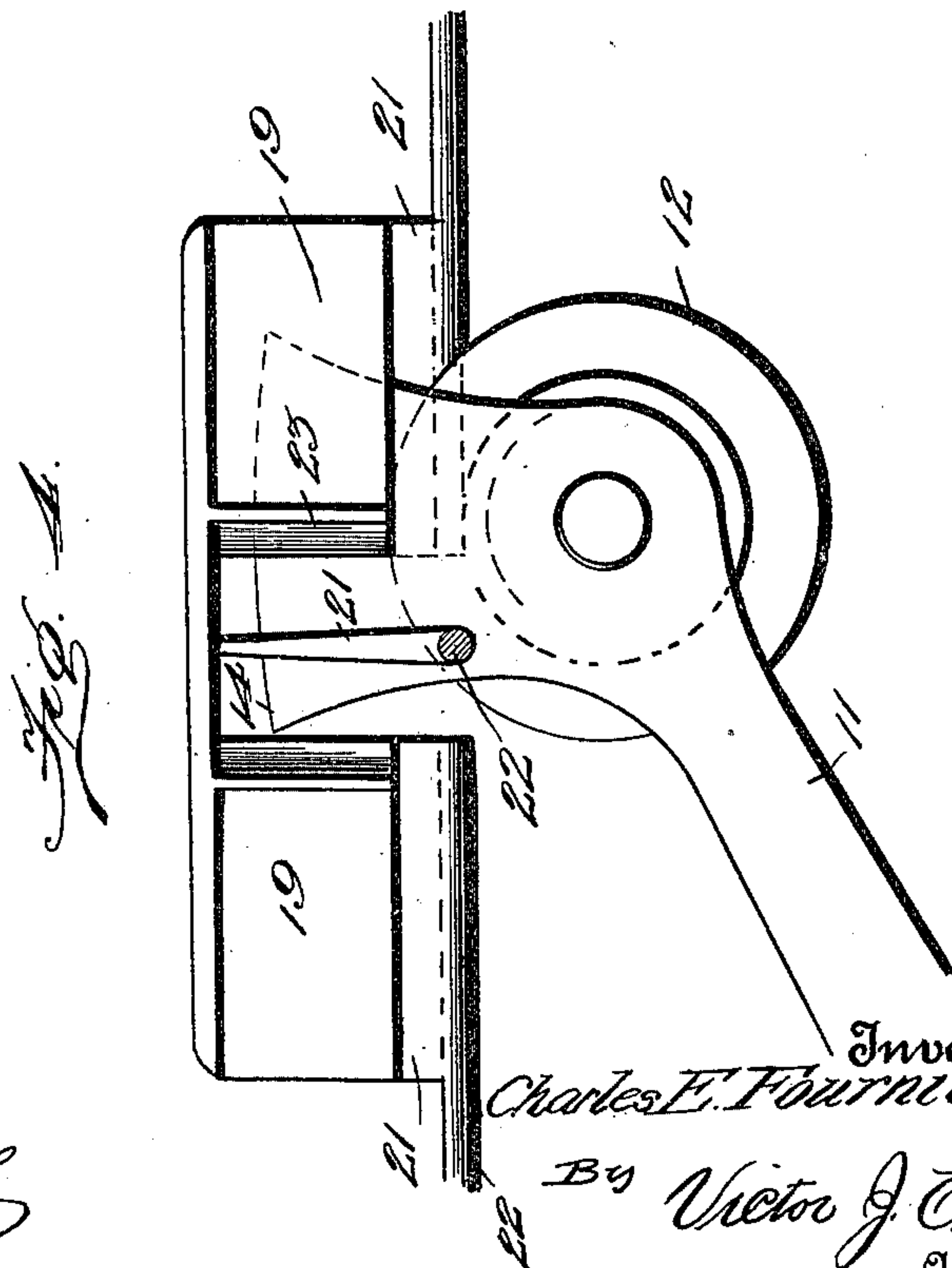
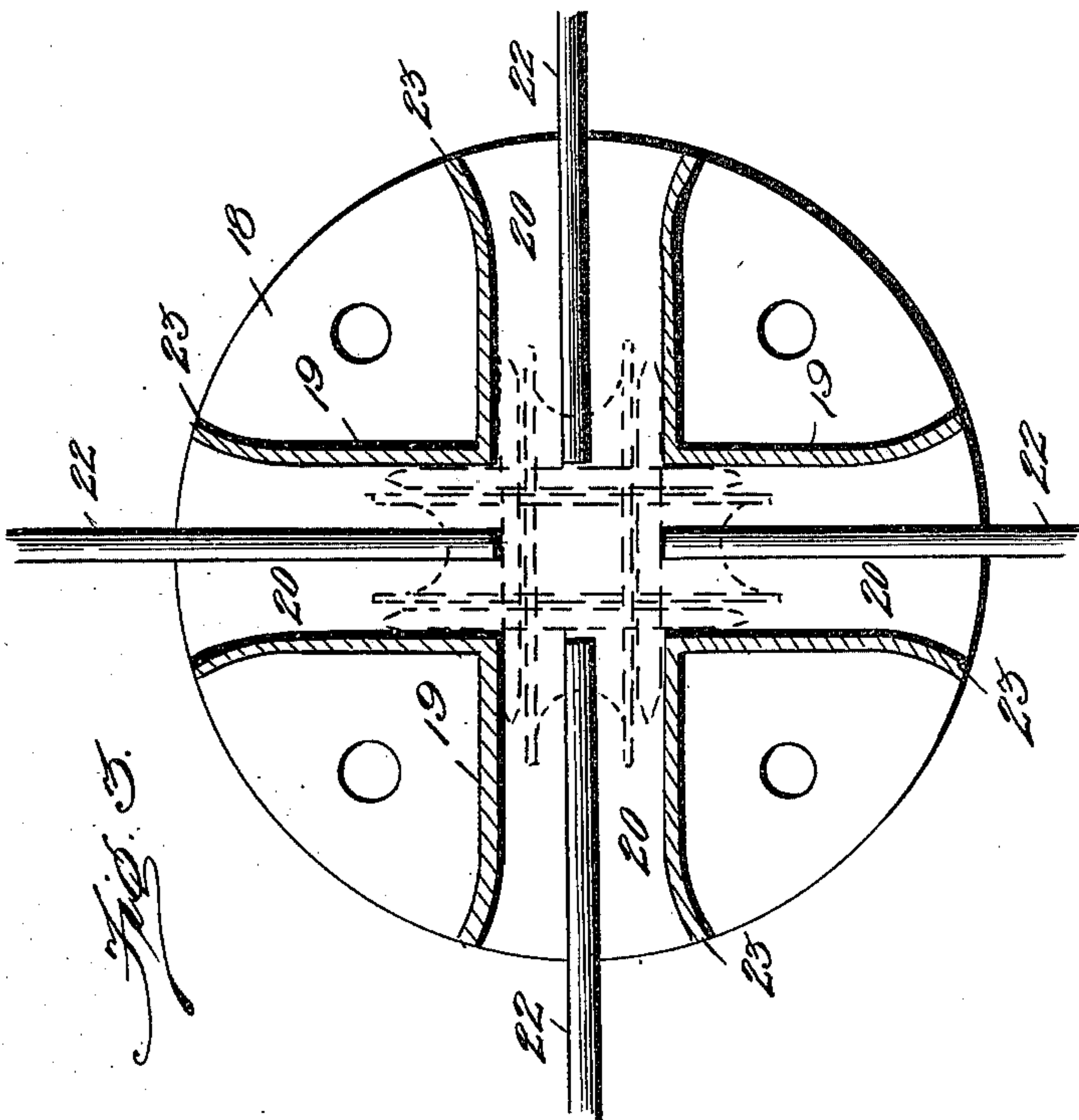
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

Fig. 5.

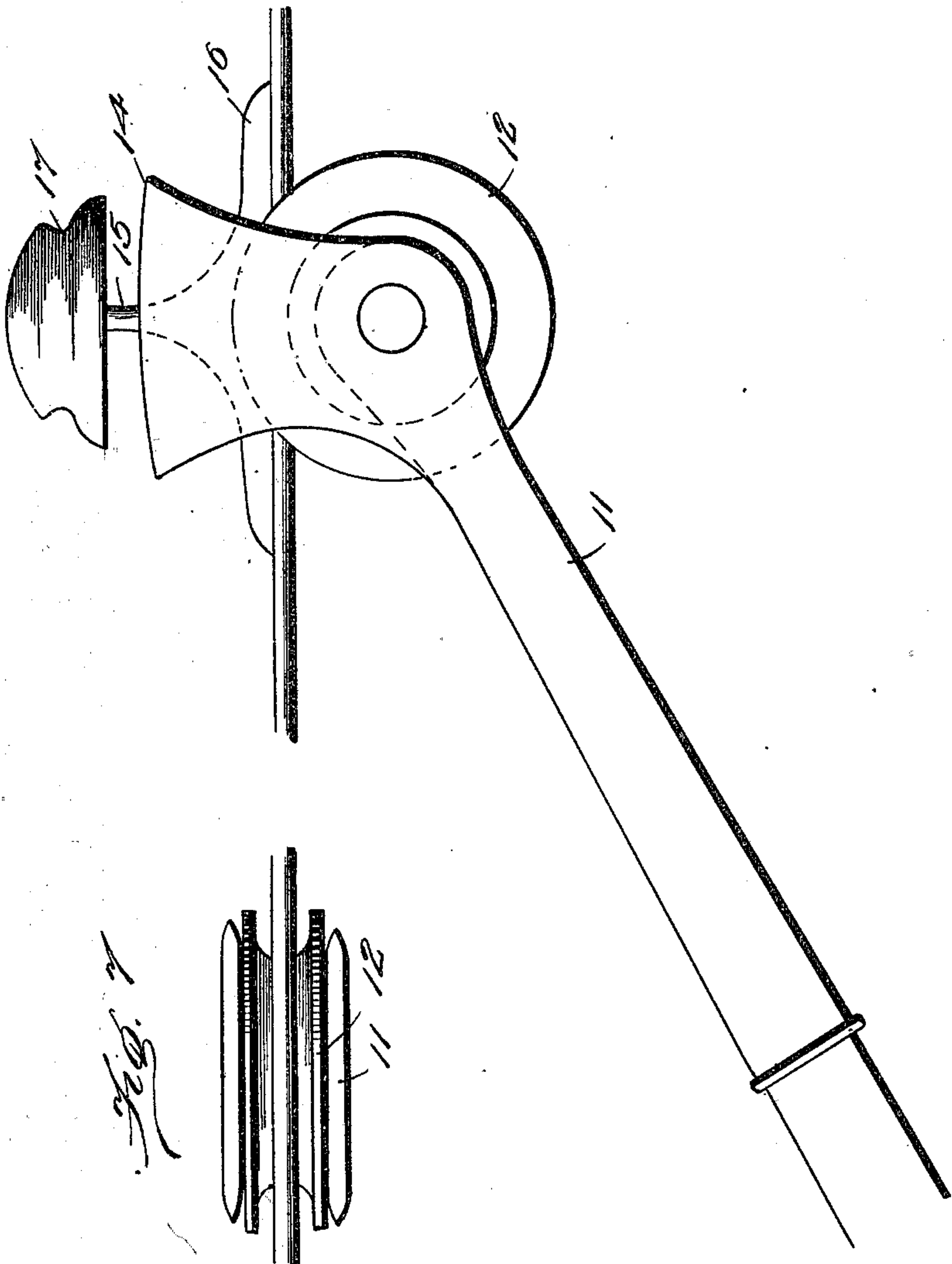
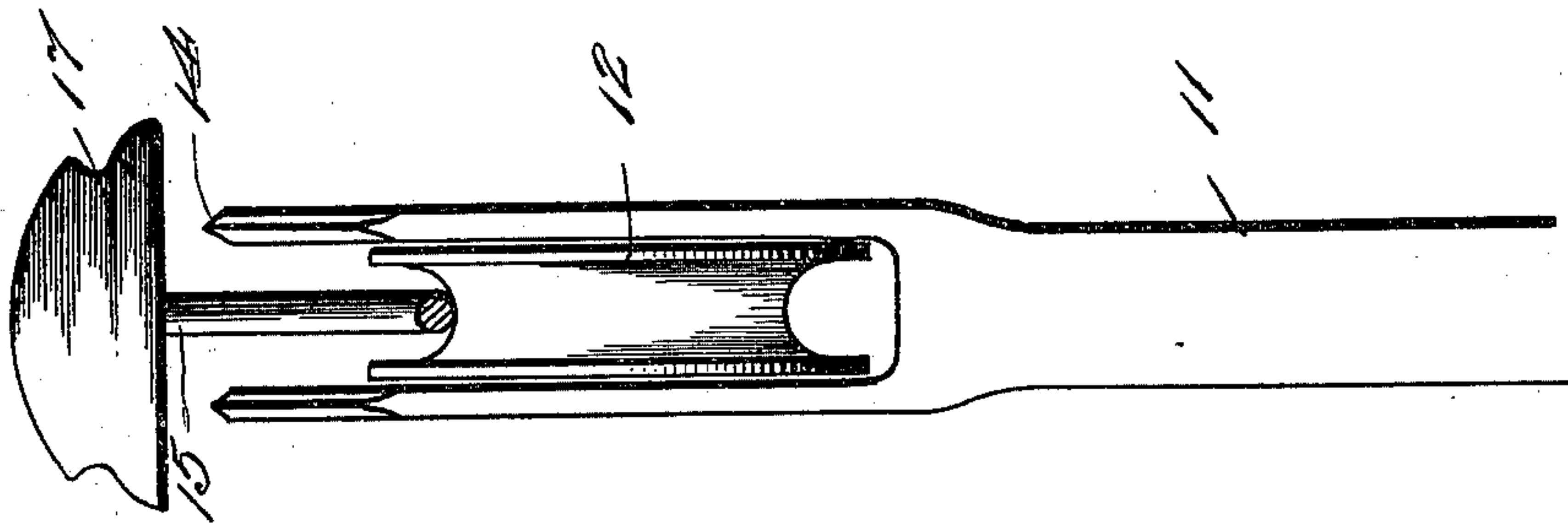


Fig. 4.



Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 669,459, dated March 5, 1901.

Application filed June 7, 1900. Serial No. 19,463. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES EUGENE FOURNIER, a subject of the Queen of Great Britain, residing at New London, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Electric Railways, of which the following is a specification.

This invention relates to new and useful improvements in electric railways; and its primary object is to provide means of novel construction adapted to suspend the wire in such a manner as to prevent the trolley from becoming accidentally displaced therefrom.

A further object is to provide means whereby the trolley may be guided to the proper wire at switches, crossings, &c., without removing the same from contact with the wire.

To these ends the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a bottom plan view of the switch-plate. Fig. 2 is a side elevation thereof. Fig. 3 is a bottom plan view of a crossing-plate. Fig. 4 is a section thereof. Fig. 5 is a side elevation showing the trolley in position upon a wire and a support for said wire. Fig. 6 is an end view thereof, and Fig. 7 is a top plan view of the trolley in position upon a wire.

Referring to said figures by numerals of reference, 1 is a casting of any desired form and especially adapted for use at switches, &c. This casting is provided at each side with a downwardly-extending wall or flange 2, which flanges extend parallel with the tracks above which the casting is suspended. This casting is supported in any suitable manner, as by means of ears 3, which may be secured to a suitable support. Parallel to the flanges 2, at a distance therefrom equal to the distance between the inner ends of the flanges 2, are walls 4, as shown, which project downward from the casting 1, forming two channels 5, each of which extends parallel to and above the center of one of the tracks.

Secured to the casting at a point midway between the inner ends of the flanges 2 is a

depending strip 6, to the lower edge of which is secured one end of a trolley-wire 7. This wire extends for a short distance between the flanges 2.

Secured to the casting 1, at the center of and parallel with each of the channels 5, is a strip 8, similar to the strip hereinbefore described, and to each of which is secured one end of a trolley-wire 9, said wires extending over their respective tracks. Each of the strips 8 terminates in a wedge-shaped projection 10, which extends toward the end of the wire 7, and is preferably of the peculiar form shown in Fig. 1.

A trolley of a novel construction is provided for use in connection with this device. This trolley 11 is provided with a wheel 12 of ordinary construction and has upwardly-extending parallel ears 13, which project to points above the upper surface of the wheel 12 and the upper edges of which are tapered downwardly, as shown at 14. These ears are also wedge-shaped in plan view at each end, as shown in Fig. 1.

In operation it will be seen that when a trolley enters between the flanges 2 via wire 7 the same will be turned slightly to the right or left, according to the direction which the car will take upon reaching the switch. It will be readily understood that such movement will bring the ears 13 into engagement with the projection 10 of the proper wire, said ears sliding upon the casting 1 and serving as runners until the said wire is reached and engaged by the wheel 12. In order to permit the ears 13 to overlap the sides of the wire at all points thereon, supports such as shown in Figs. 5 and 6 are provided, these being of greater length than the distance from the upper edges of the ears to the corresponding edge of the trolley-wheel. These supports each comprise a stem 15, having a narrow base 16, secured to the wire, and said stem preferably secured to an insulator. At crossing or other points where the wires intersect I provide a plate 18, substantially of the form shown in Figs. 3 and 4. This plate is provided with depending walls 19, arranged parallel to each other, so as to form communicating channels 20, arranged at the proper angle to each other. Within each of these channels, at the center thereof, is secured a



strip 21, to which is fastened one end of a wire 22. It will be understood that by this construction the ears of the trolley may pass unobstructed across the path of the wire intersecting its line of travel. The walls 19 are preferably turned outward at their outer ends, as shown at 23, to guide the trolley inward in the event of its contacting therewith. The ends of the wires may, as is obvious, be suitably connected, if desired, by means of wires, &c., extending over or through the casting.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations as may fairly fall within the scope of my invention.

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

1. The combination with a plate having walls depending therefrom and forming channels; of a strip secured in one of said channels; a strip secured in each of the other channels, the free edges of said strips lying in the same plane at a point below the free edges of the walls; a tapered block arranged at the end of one of the strips and terminating at a point above the lower edges of the walls; and a wire secured to each strip.

2. The combination with a plate having walls depending therefrom forming channels and a wire suspended in each channel; of a trolley; a wheel thereon; ears upon opposite sides of the wheel and extending past the edge thereof; and tapered ends to the ears, said ears being adapted to slide upon the plate at points between the ends of the wires.

3. The combination with a plate having walls depending therefrom and forming chan-

nels; a strip secured within each of said channels and depending below the walls thereof; a tapered block secured to the inner end of one of the strips; and a wire secured to each strip; of a trolley; a wheel thereon; ears upon opposite sides of the wheel and extending past the edge thereof; and tapered ends to the ears, said ears being adapted to slide upon the plate at points between the inner ends of the strips.

4. The combination with a plate having converging walls depending therefrom and forming a channel, inner walls forming branch channels; a strip secured within each channel and extending below the walls; wedge-shaped projections at the inner end of each strip and the branch channels terminating at a point above the lower edges of the walls; and the wires fastened to said strips; of a trolley; a wheel thereon; ears upon opposite sides of the wheel and extending above the upper edge thereof; said ears adapted to slide upon the plate at points between the strips; and tapered ends to said ears adapted to engage either of the tapered blocks.

5. The combination with a plate; of ears extending upward therefrom; walls depending from the plate and forming a forked channel; depending strips arranged longitudinally within the channel and its forks and extending below the walls of the plate; a tapered block secured to the inner end of each strip of the forks, said blocks arranged at points above the lower edges of the walls, apices to the blocks at opposite sides of and at points equidistant from a line extending in alinement with the central strip of the channel; and a wire secured to each strip.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES EUGENE FOURNIER.

Witnesses:

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