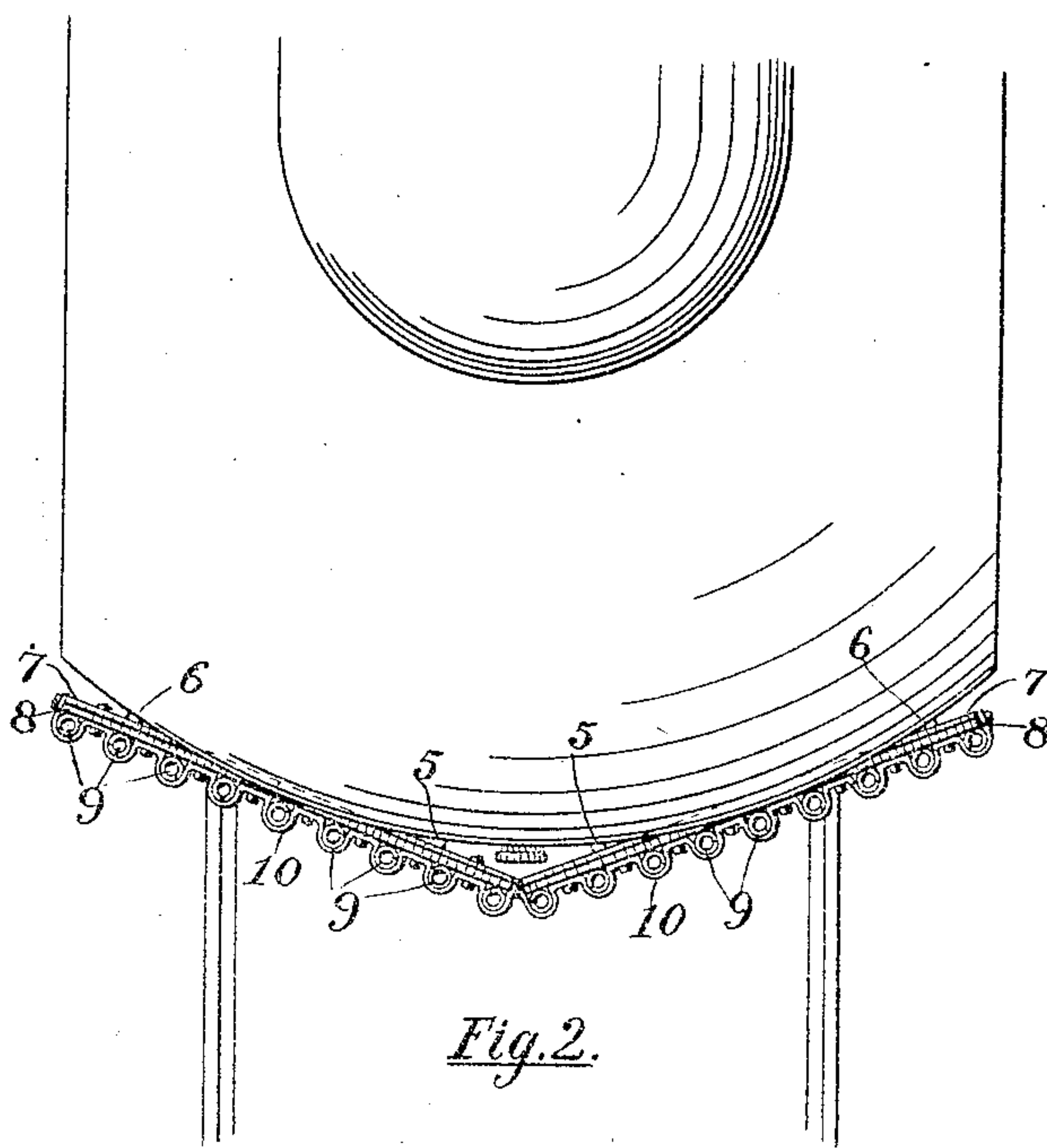
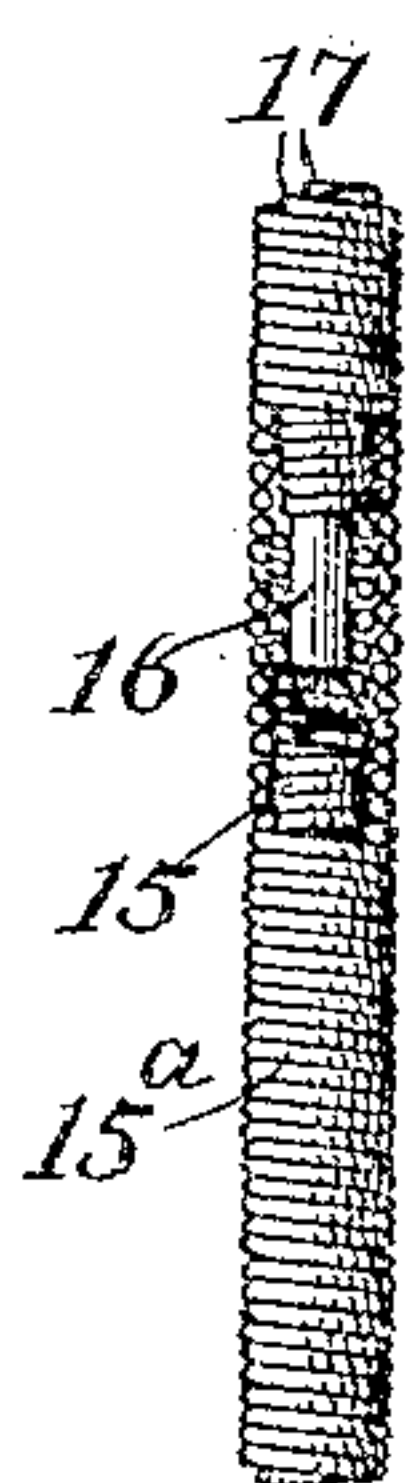
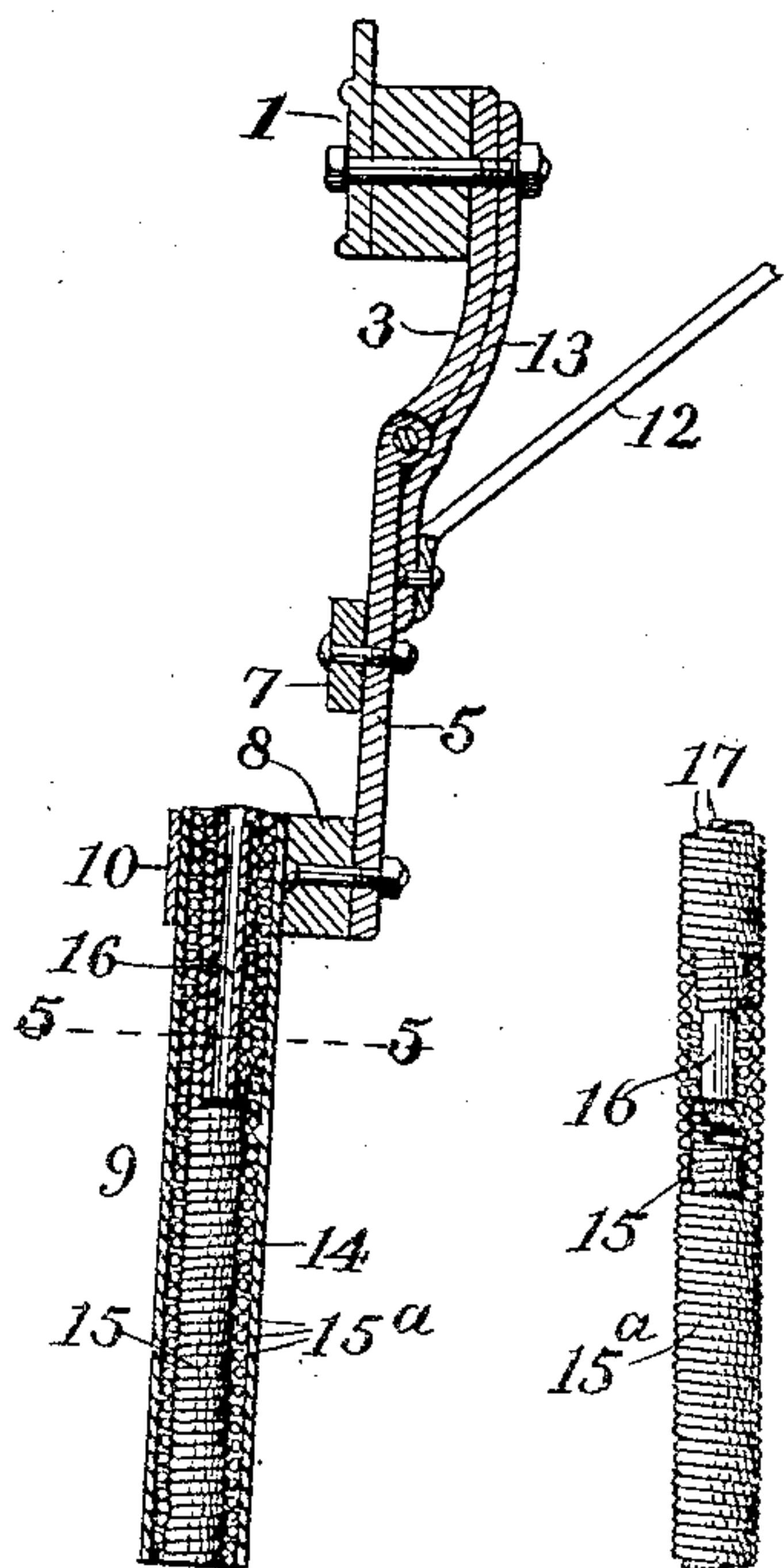
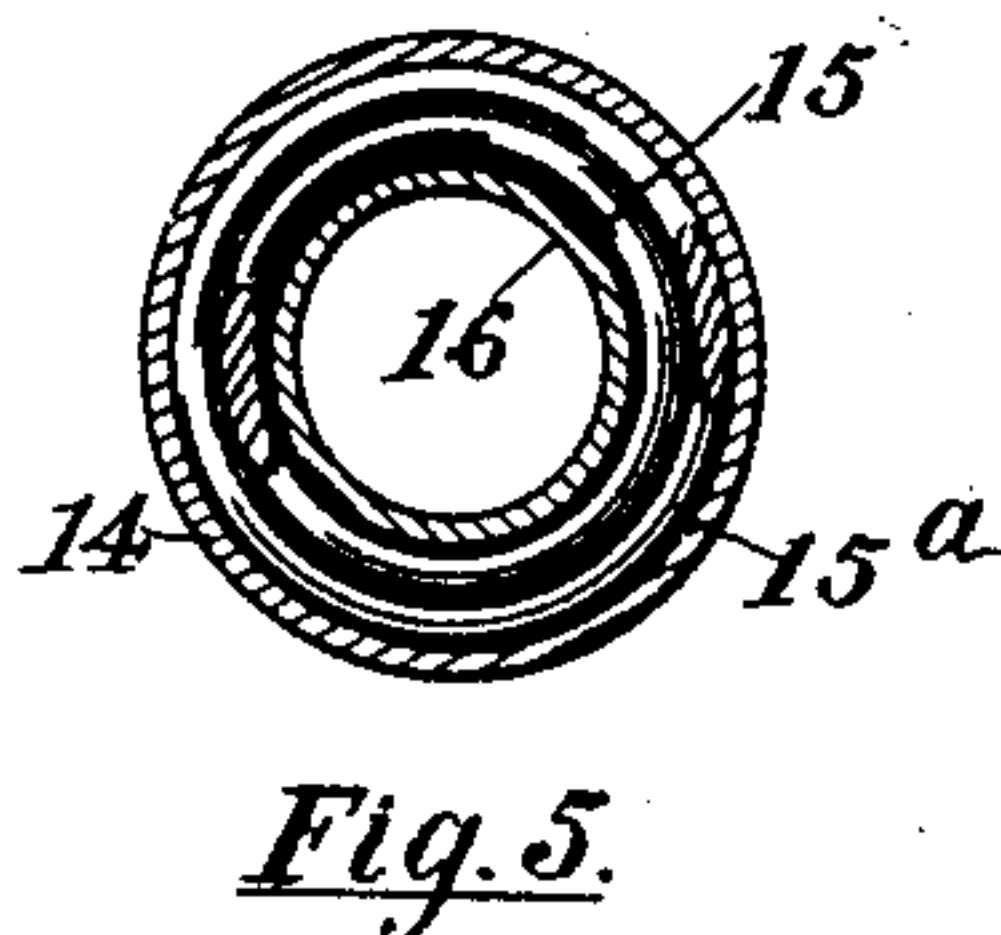
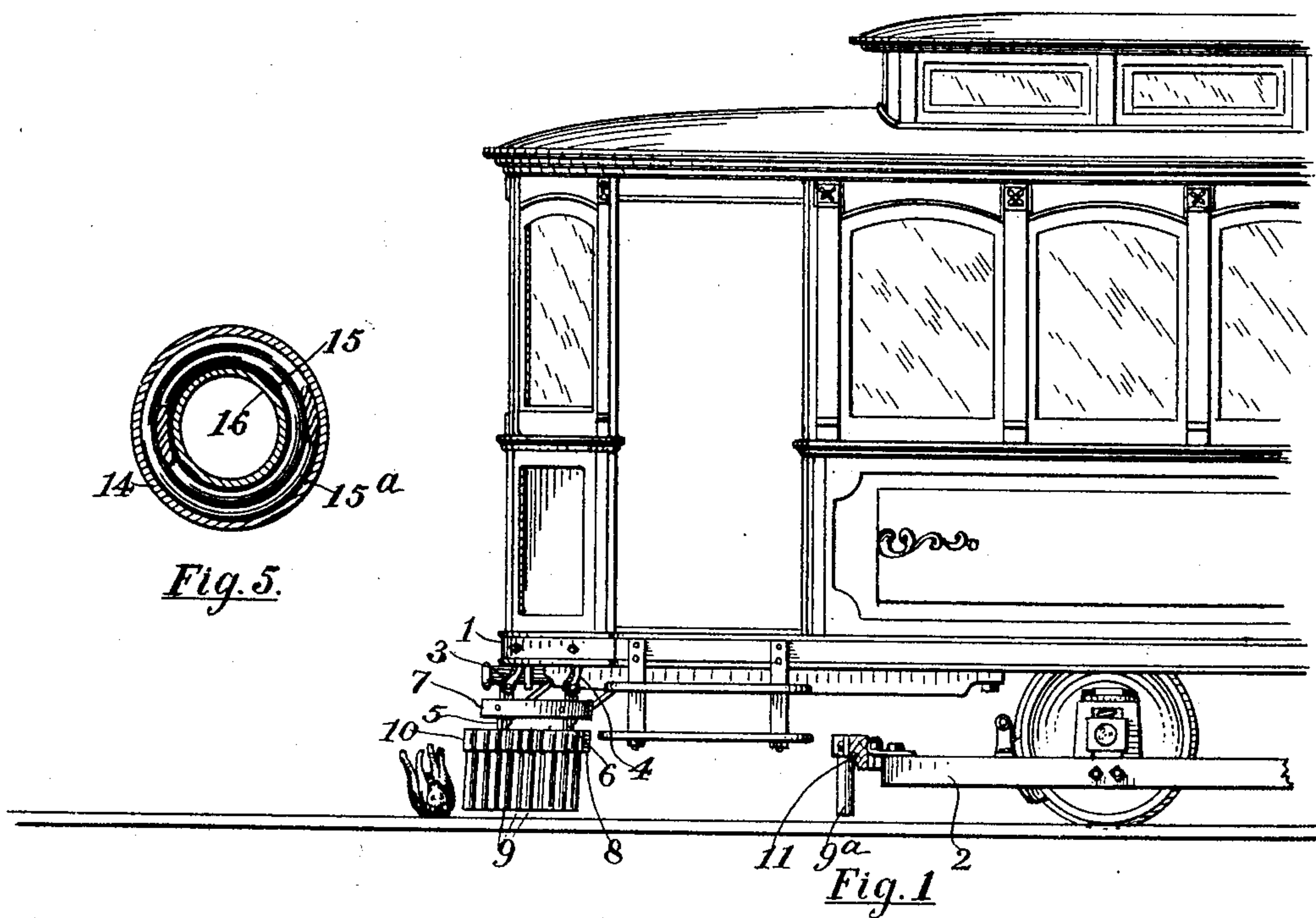


No. 779,404.

PATENTED JAN. 10, 1905.

W. W. ANNABLE.  
LIFE PRESERVER FOR RAILWAY CARS.

APPLICATION FILED MAY 18, 1904.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WARREN W. ANNABLE, OF GRAND RAPIDS, MICHIGAN.

## LIFE-PRESERVER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 779,404, dated January 10, 1905.

Application filed May 19, 1904. Serial No. 208,662.

*To all whom it may concern:*

Be it known that I, WARREN W. ANNABLE, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Life-Preservers for Railway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in life-preservers for railway-cars, and more particularly for street-cars; and its object is to provide a device that will remove an animal or person from the path of the car without serious injury to the same and to provide the device with various new and useful features hereinafter more fully described, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents the front end of a street-car with my device attached and shown in side elevation; Fig. 2, a plan view of the same; Fig. 3, an enlarged detail in vertical section; Fig. 4, a detail of one of the fingers with the outer tube omitted, and Fig. 5 an enlarged transverse section of the same on the line 5 5 of Fig. 3.

Like numerals refer to like parts in all of the figures.

1 represents the platform of the car, and 2 the truck-frame of the same, both as usually constructed. To the front platform are attached suitable downwardly and forwardly projecting hangers, (indicated at 3 and 4,) to which are attached downwardly-extended arms 5 by means of rule-joint hinges that are adapted to turn forward and upward and are rigidly held in downwardly-extended position by means of back supports 13 and brace-rods 12, as indicated in Fig. 3. To the lower ends of these arms 5 are attached horizontal bars 7 and 8. 9 represents flexible fingers which extend vertically and close to the pavement and are rigidly secured to the bar 8 at their upper ends by clips 10. These bars meet end to end at the middle of the front of the car and diverge outward and backward at each

side and are independently hung on the arms 5. The fingers 9 operate somewhat like a broom and sweep any animal, person, or other obstruction diagonally forward and outward, and thus clear the same from the track without permitting it to get under the car or serious injury thereto. To successfully accomplish this result and at the same time make these fingers sufficiently rigid, they are constructed as follows: 14 is an outer covering of rubber hose or other suitable yielding material, within which is a double spring-coil 15 and 15<sup>a</sup>, the same being wound, beginning at the top and extending downward to the bottom, forming an inner coil 15, and thence continuing outside the inner coil back to the top again, as at 15<sup>a</sup>, whereby both ends of the wire comprising the coils are at the top, and the coils are integrally connected at the bottom. The coils are further supported near the upper end for a portion of their length by means of a core 16, preferably of some rigid material, such as the iron pipe, and the respective fingers are arranged parallel and at suitable intervals. On the forward end of the truck-frame 2 is a transverse bar 11, attached thereto by a rule-joint hinge, and to this bar are attached similar fingers 9<sup>a</sup>, which also provide an additional guard at the front of the truck. These fingers by virtue of the substantially fixed distance between the truck-frame and the pavement can be extended quite close to the latter, and thus catch any very small obstruction that might pass under the fingers 9. It is to be understood that the car is provided with like devices at its respective ends and can be run in either direction. The device at whichever end may be the rear of the car may be raised by any convenient means, (not shown,) if preferred; but in the event that they are not so raised they will freely pass over any obstruction by virtue of the hinge-joints, which permit them to move freely rearward and upward.

In operation if any obstruction is upon the track these strong flexible fingers 9 will act to remove the same after the manner of the sweeping operation of the broom, and thus prevent the same from passing under the car and becoming injured thereby. Should the



fingers strike the pavement by virtue of any undue downward movement of the car or depression in the track, their flexible character will prevent any injury thereto, as they will not only yield rearwardly, but by virtue of the slight space between the turns of the coils they will yield vertically as well. I do not consider the outer covering of rubber hose as essential. It may be omitted and the device will operate quite satisfactorily.

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

1. In combination with a car, a series of vertically-disposed spring-fingers; comprising coils of spring wire, elastic coverings for said coils, and means for supporting said spring-fingers in front of the car.

2. In combination with a car, a series of vertically-disposed spring-fingers each comprising a number of coils of flexible wire, said coils being arranged concentric, and also being integral at the lower end and having both ends of the wire terminating at the upper end of the coils, and means for supporting said fingers in front of the car.

3. In combination with a car, hangers attached to the front thereof, downwardly-extending arms connected to the hangers by rule-joints, a bar attached to the lower end of said arms and extending horizontally, and flexible fingers attached to the bar and extending downward therefrom to near the pavement.

4. In combination with a car, a series of coiled springs arranged parallel to each other and substantially vertical, a bar supporting said springs and attached to the upper ends

thereof, a reinforcing-core in the upper part of each spring, and means for attaching the bar to the front of the car.

5. In combination with a car, hangers attached to the platform thereof, downwardly-projecting arms pivoted to the hanger by rule-joints, bars attached to the lower ends of said arms and diverging outward and rearward from the center of the platform, flexible fingers attached to the bars and extending downward therefrom, said fingers comprising concentric coiled springs and reinforcing-cores in the upper ends of the springs.

6. In combination with a car, hangers attached to the platform and extending downward therefrom, arms hinged to the lower ends of the hangers and extending downward, backing-plates at the rear of the hangers and arms, brace-rods supporting the backing-plates, bars attached to the lower ends of the arms, and coiled springs attached to the bars and extending downward therefrom.

7. In combination with a car, a series of vertically-disposed coiled springs, flexible tubular coverings for the springs, two horizontal bars extending diagonally outward and rearward from in front of the center of the platform, arms supporting the bars, hangers attached to the platform of the car, and pivoted to the arms, backing-plates engaging the hangers and arms, and braces to support the backing-plates.

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

WARREN W. ANNABLE.

Witnesses:

LUTHER V. MOULTON,  
GEORGIANA CHACE.