

No. 786,188.

PATENTED MAR. 28, 1905.

J. L. BROWNLEE.

TROLLEY.

APPLICATION FILED JUNE 10, 1904. RENEWED JAN. 31, 1905.

3 SHEETS—SHEET 1.

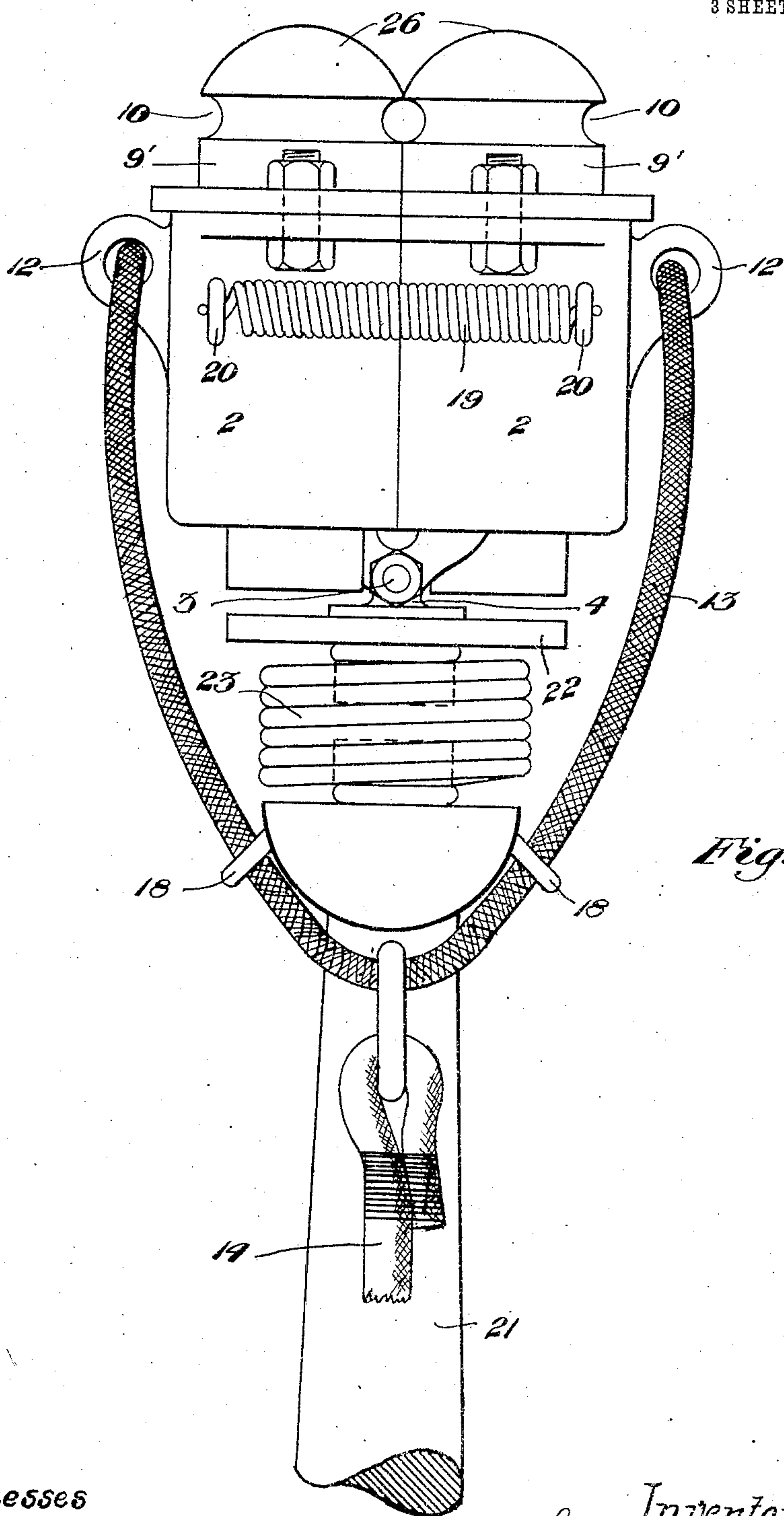


Fig. 1.

Witnesses

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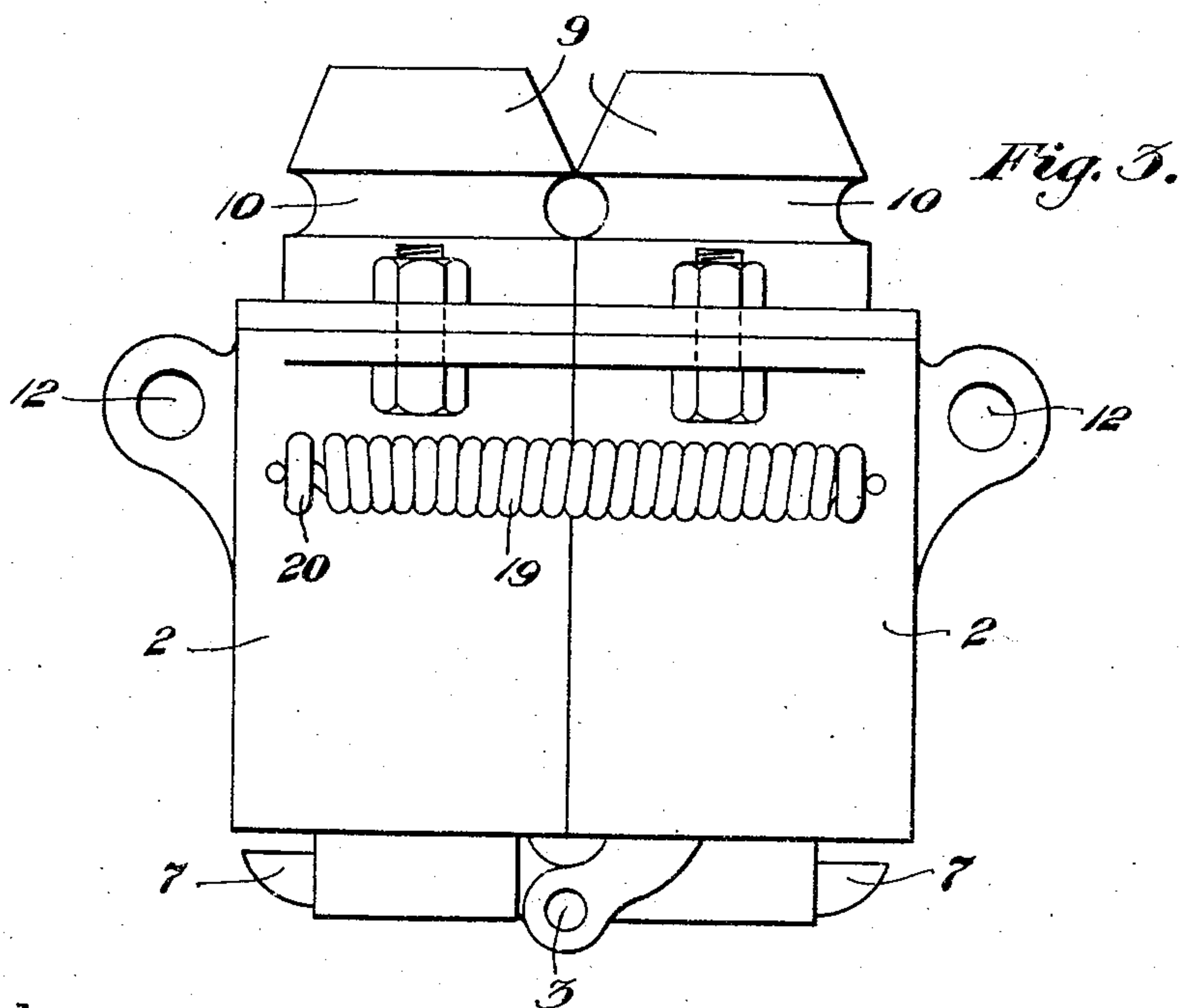
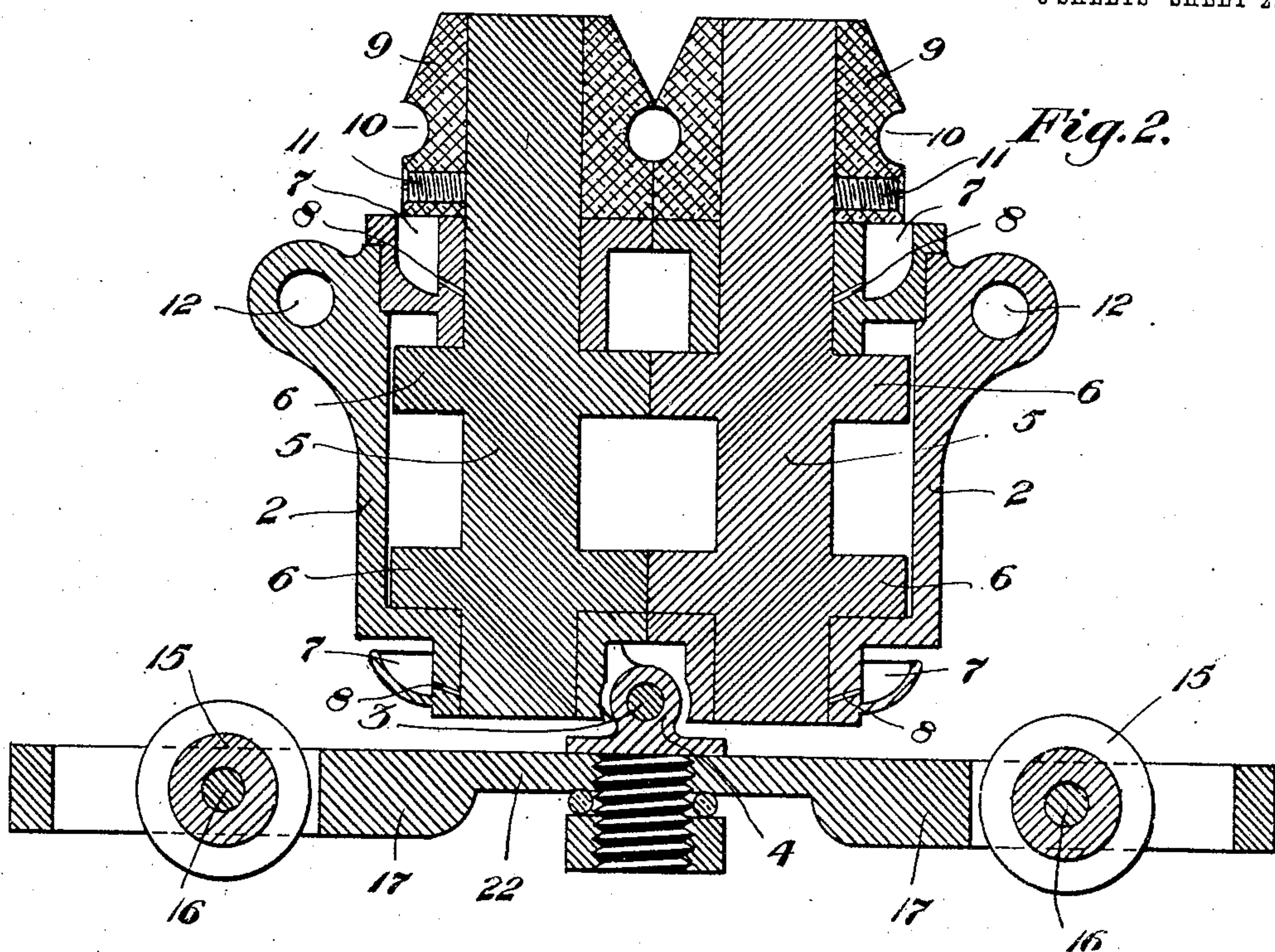
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Witnesses

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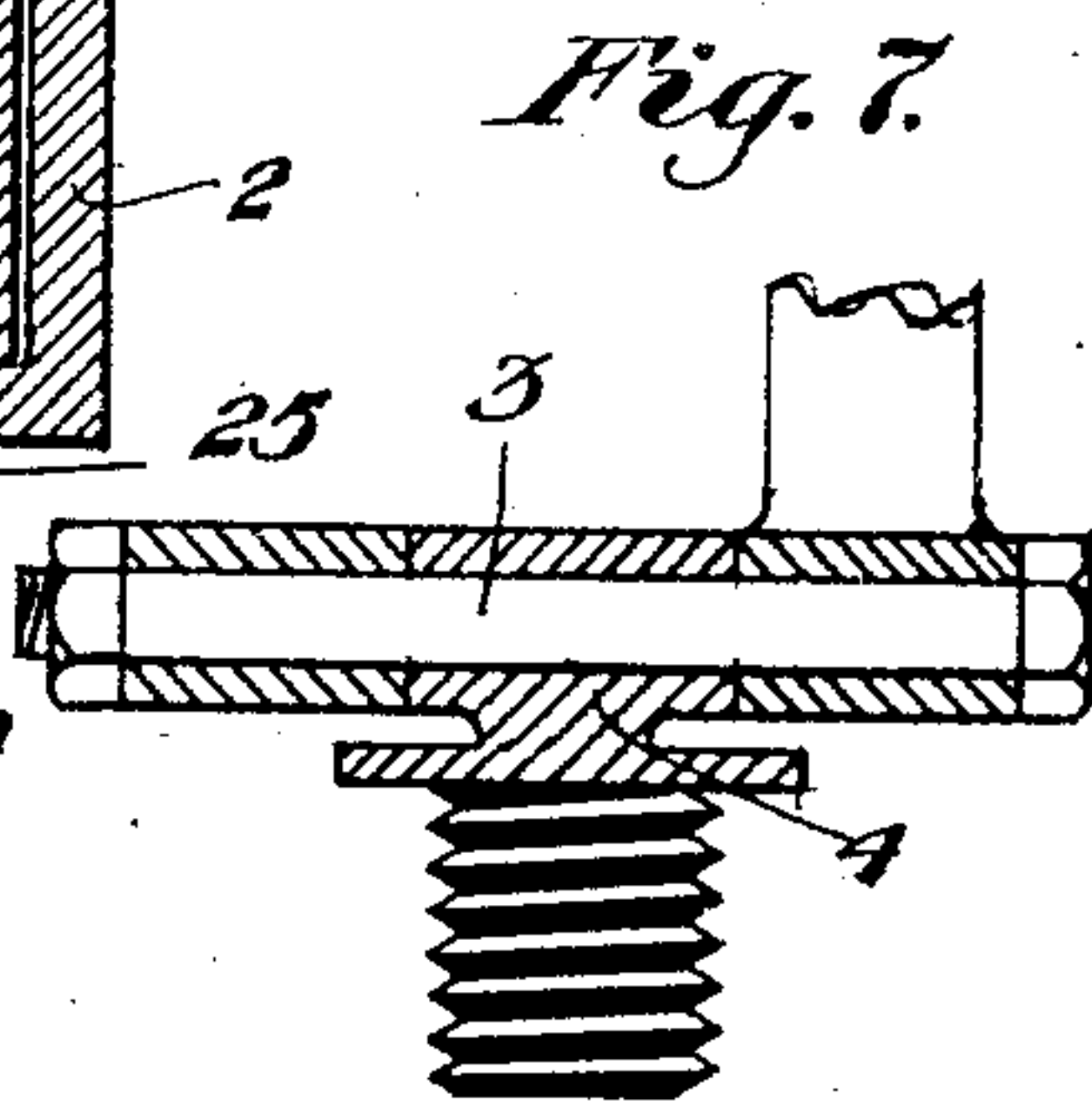
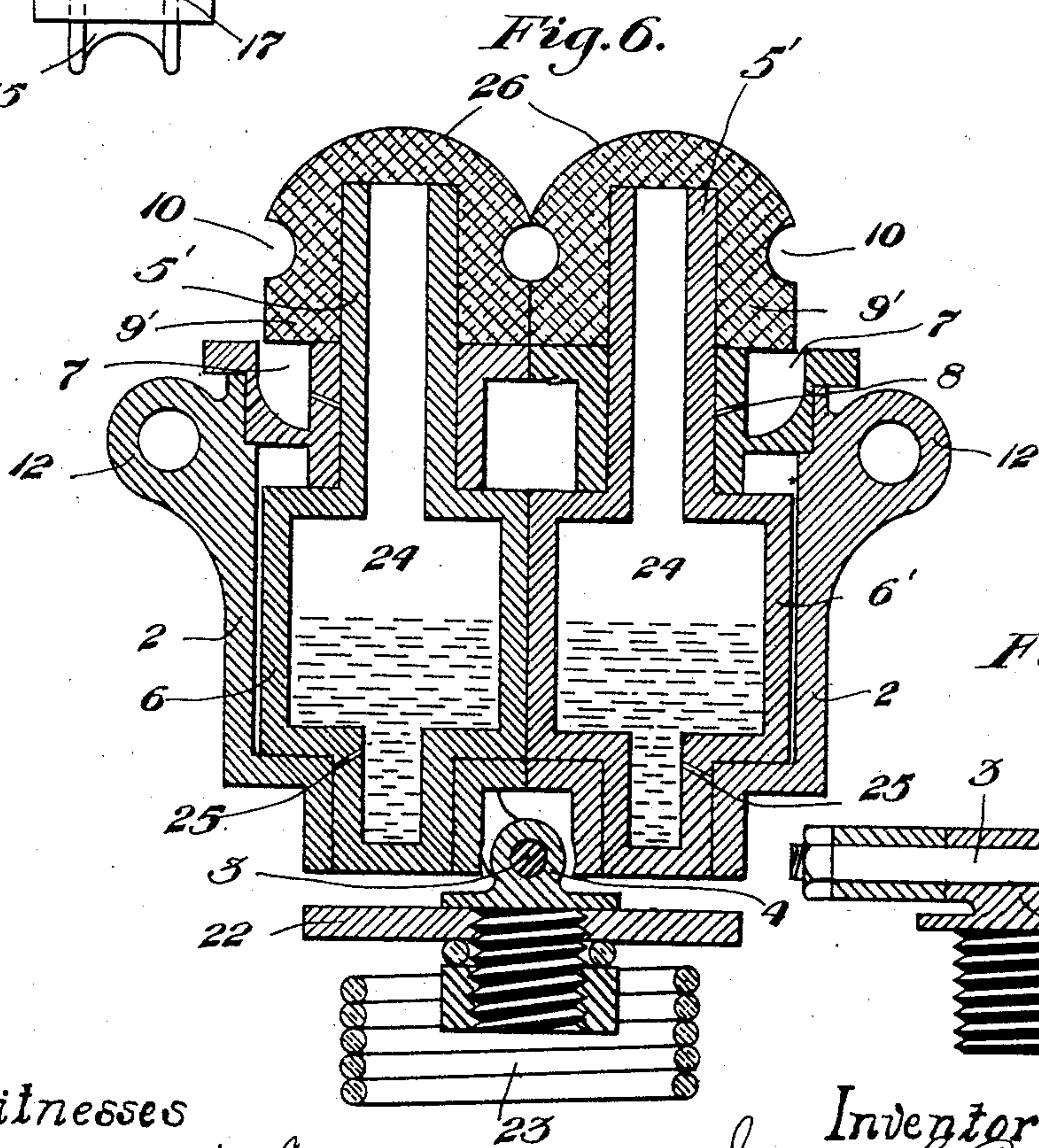
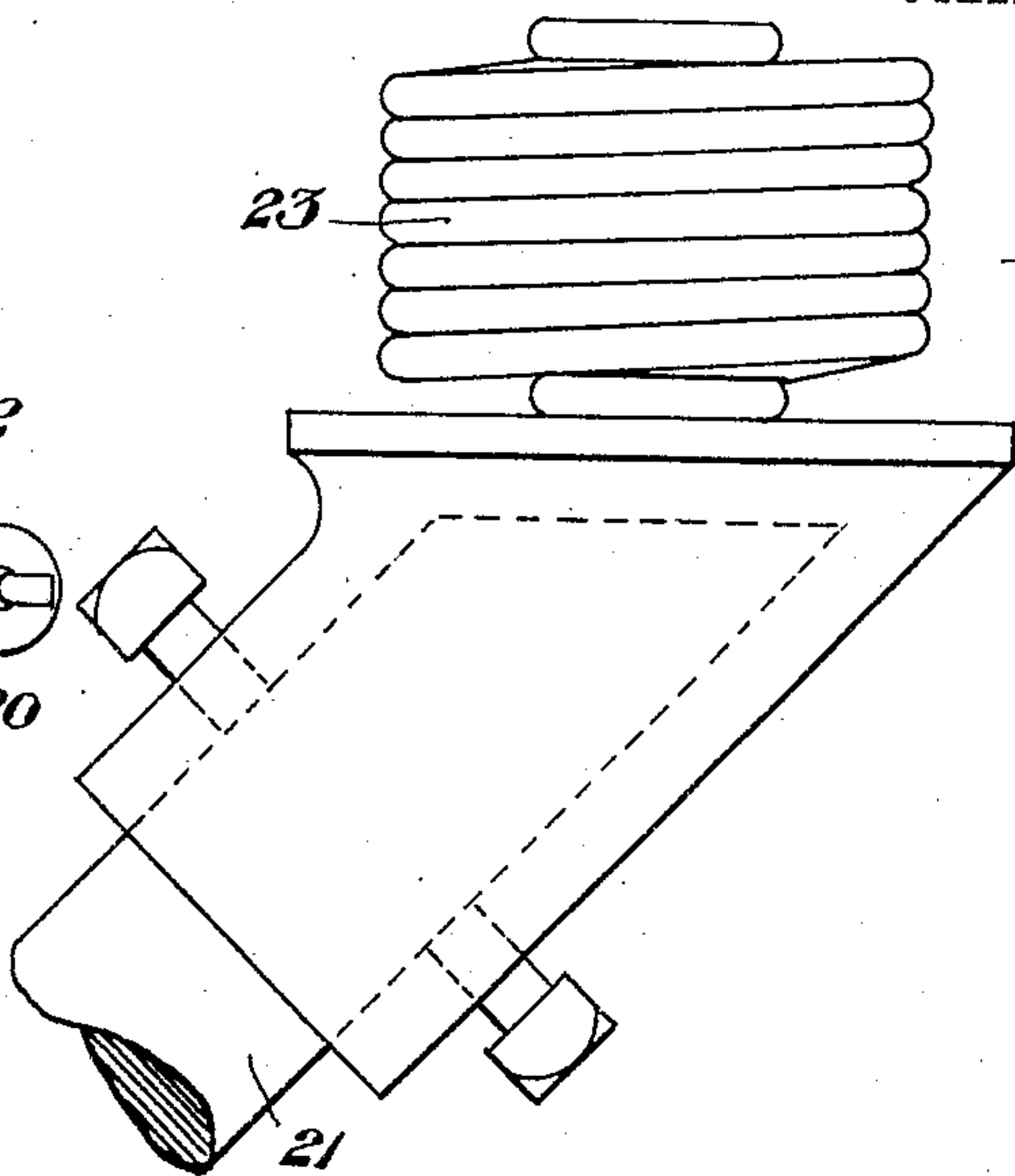
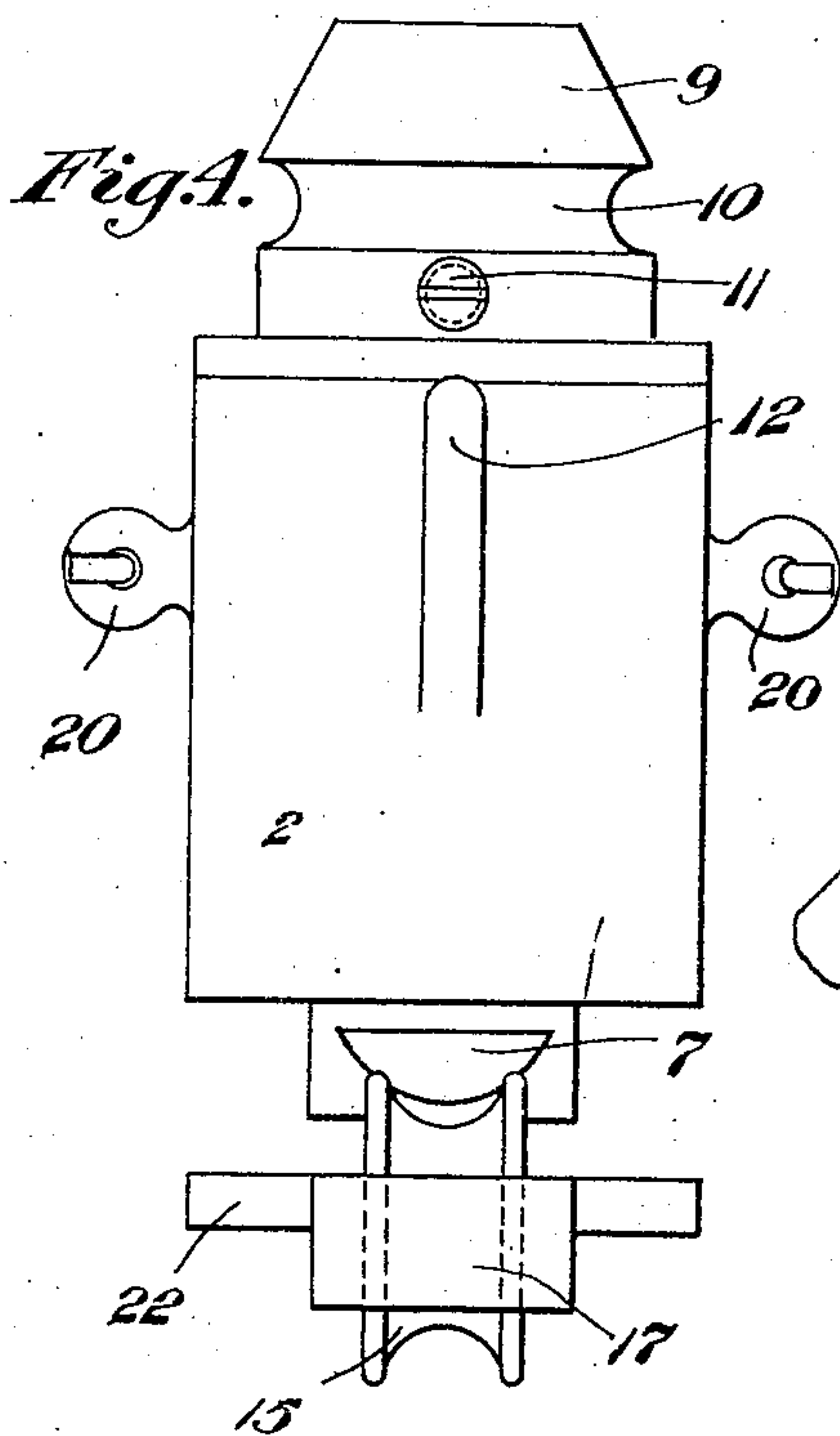
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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TROLLEY.

SPECIFICATION forming part of Letters Patent No. 786,188, dated March 28, 1905.

Application filed June 10, 1904. Renewed January 31, 1905. Serial No. 243,466.

To all whom it may concern:

Be it known that I, JAMES L. BROWNLEE, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Trolleys, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view in end elevation of my improvement in separable trolleys. Fig. 2 is a vertical cross-sectional view showing a modified construction as to the upper bearing-knobs and the separating trolley-cord guides. Fig. 3 is a view in elevation, corresponding to the upper portion of Fig. 2. Fig. 4 is an edge view of Fig. 2. Fig. 5 is a detail view in elevation of the upper end of the trolley-pole, showing the spiral spring for supporting the trolley-base. Fig. 6 is a central vertical sectional view of Fig. 1 on a plane parallel with said view. Fig. 7 is a detail view of the hinge-mounting between the separable sides.

My invention relates to the class of trolleys for overhead conducting-wires as employed in street-railway service, and has for its objects to provide a device of this character which will retain its contact with the wire, will automatically open and close around obstructions, such as cross-wires, &c., and will facilitate the application of the trolley to the wire, while providing means for thorough lubrication of the working parts, together with an improved resilient mounting between the trolley-pole and base, with other features of improvement, more fully hereinafter set forth.

Referring to the drawings, 2 2 represent separable knob-supporting bearing-chambers hinged together at their lower portion upon a common hinge-pintle 3, mounted in an upwardly-projecting stud 4, which is held in any suitable manner upon the upper terminal of the trolley-pole. Within the sides 2 are rotatably mounted spindles 5 5, having hub portions 6 bearing against each other to facilitate their rotation and alinement with relation to each other. These spindles are

mounted in suitable bearings in the lower and upper portions of the separable chambers 2, said bearings being provided with oil-receiving reservoirs 7 7, adapted to contain a supply of lubricant and to deliver it through oil-holes 8 to the spindle-bearings. The upper bearings constitute the parts in which are formed the upper reservoirs 7 and are preferably made removable and are inserted in the chambers 2 in any suitable manner. The spindles 5 are provided at their upper ends with contact-knobs 9, having peripheral grooves 10, adapted to embrace the trolley-wire, as will be readily understood, these knobs being secured or affixed to spindles 5 in any suitable or preferred manner, as by set-screws 11. As will be observed, the upper portions of the knobs taper in the form of a truncated cone, thereby facilitating a ready application of the trolley to the wire. The chambers 2 are provided with laterally-extending eyes 12 12, to which are secured the terminals of an opening cord 13, as shown in Fig. 1, connected with the usual trolley-cord 14.

In the construction shown in Fig. 2 grooved sheave-wheels 15 are rotatably mounted on pins 16 in laterally-extending arms 17, connected with the base of the trolley, while in Fig. 1 the cords 13 are merely passed downwardly through guiding-eyelets 18. In either construction a downward pull of the trolley-cord 14 opens the chambers 2 upon their hinge-bearings 3, separating the contact-knobs 9, thus releasing them from the trolley-wire immediately before the trolley is lowered. Tension-springs 19 are secured to suitable retaining-abutments 20 on each side of the chambers 2, which springs automatically close the chambers together and cause the knobs to embrace around the wire. Between the upper end of the pole 21 and the trolley-supporting base 22 I preferably insert a coiled spring 23, the opposite ends of which are clamped to the top of the pole and to its base in any suitable or preferred manner, and when thus mounted the trolley is allowed a considerable amount of lateral movement, always being approximately maintained in its normal vertical position. This is a fea-

ture of considerable advantage in reducing and absorbing shocks due to inequalities or from any other causes.

In Fig. 6 I have shown a modified construction wherein the spindles 5' are made hollow, provided with elongated hollow rotating cylindrical bearing portions 6', having lubricant-containing cavities 24, adapted to deliver oil to the lower bearings through oil-holes 25, the upper bearings being lubricated in the same manner as already described. This construction is also lighter and avoids the necessity of the outer oil-chambers 7, while more securely inclosing the oil in the interior. This view, and likewise Fig. 1, also shows the upper portions of the knob 9' as rounded or dome-shaped at the top, (indicated by numeral 26,) which construction is of advantage in providing smooth rounded surfaces for initial contact with the trolley-wire in applying the trolley.

The operation will be readily understood from the foregoing description. The trolley is easily applied to the wire, retaining its gripping action while in use, and insuring good contact entirely along the wire, while it is automatically released upon a down pull immediately before the trolley-pole is lowered. It will be understood that the trolley-pole is to be mounted upon any suitable spring-actuated mounting adapted to exert pressure upwardly against the wire and to permit of lateral deflection in turning curves, &c., in the well-known manner.

The invention may be changed or varied by the skilled mechanic without departing from it, and all such changes or variations are to be considered as within the scope of the following claims.

What I claim is—

1. A trolley provided with separable spindle-supporting devices and spindles rotatably mounted therein provided with contacting devices, substantially as set forth.

2. A trolley provided with separable spindle-supporting devices and spindles rotatably mounted therein provided with rotating contacting devices, substantially as set forth.

3. A trolley provided with separable spindle-supporting devices and spindles rotatably mounted therein provided with rotating contact devices provided with annular grooves adapted to engage the trolley-wires.

4. A trolley provided with separable spindle-supporting devices and spindles rotatably mounted therein provided with rotating-contact devices provided with annular grooves adapted to engage the trolley-wires with upwardly-tapering terminals.

5. A trolley provided with separable spin-

dle-supporting devices and spindles rotatably mounted therein provided with rotating contact devices provided with annular grooves adapted to engage the trolley-wires with upwardly-tapering longitudinal terminals, substantially as set forth.

6. A trolley provided with separable spindle-supporting chambers provided with oil-cavities and spindles rotatably mounted therein provided with rotatable contacting knobs, substantially as set forth.

7. The combination of a trolley-pole, a resilient base-support, a base and separable hinge spindle-supporting chambers mounted thereon carrying spindles provided with contacting knobs, substantially as set forth.

8. The combination of a trolley-pole a resilient base-support, a base and separable hinged spindle-supporting chambers mounted thereon carrying spindles provided with contacting knobs with means for separating the chamber and knobs and spring devices adapted to draw them together, substantially as set forth.

9. The combination with a supporting-base, of separable hinged chambers, spindles rotatably mounted therein provided with bearing-peripheries and terminal contacting knobs provided with annular walls engaging the grooves, substantially as set forth.

10. The combination with a base, of separable hinged chambers mounted thereon, hollow spindles mounted in said chambers provided with oil-cavities, and carrying grooved rotatable contact-knobs, substantially as set forth.

11. The combination with a supporting-base, of separable hinged chambers, spindles rotatably mounted therein provided with bearing-peripheries and terminal contacting knobs provided with annular walls engaging the grooves, with means for separating the chambers and spindles, and retracting springs adapted to hold them into operative engagement substantially as set forth.

12. The combination with a base, of separable hinged chambers mounted thereon, hollow spindles mounted in said chambers provided with oil-cavities, and carrying grooved rotatable contact-knobs means for separating the chambers and spindles, and means for retracting the contacting knobs, to operative position, substantially as set forth.

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

JAMES L. BROWNLEE.

Witnesses:

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C. M. CLARKE.