

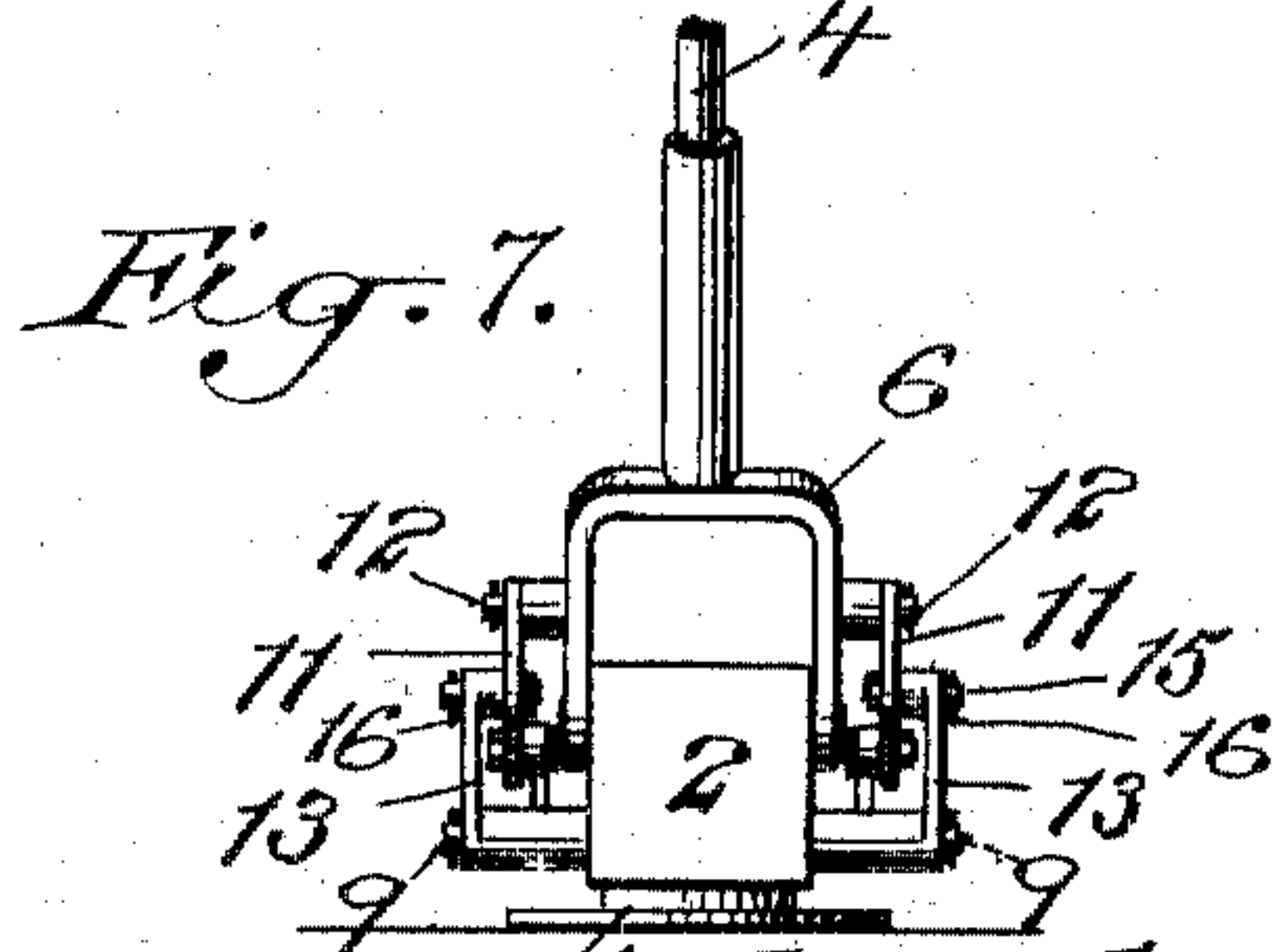
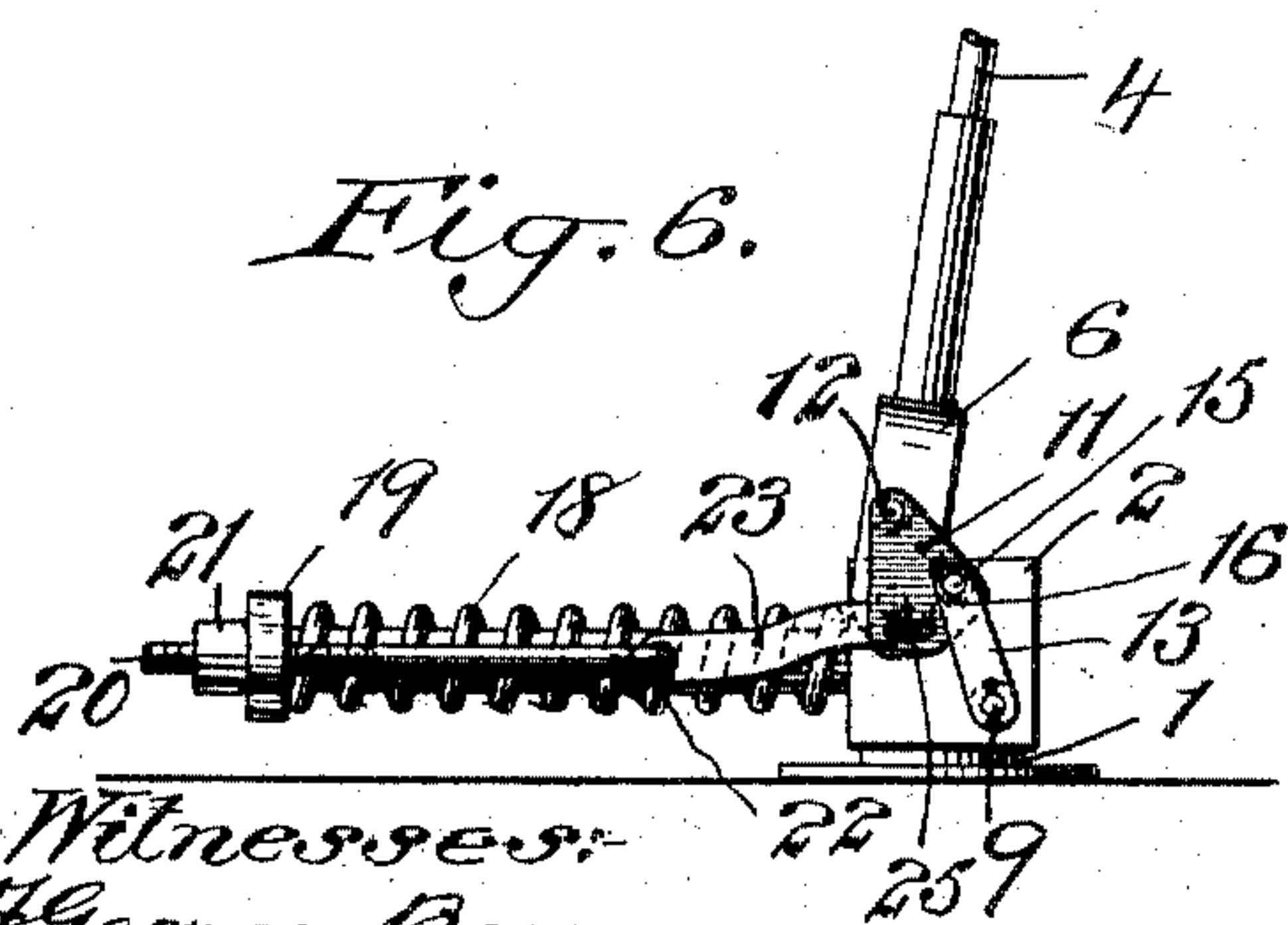
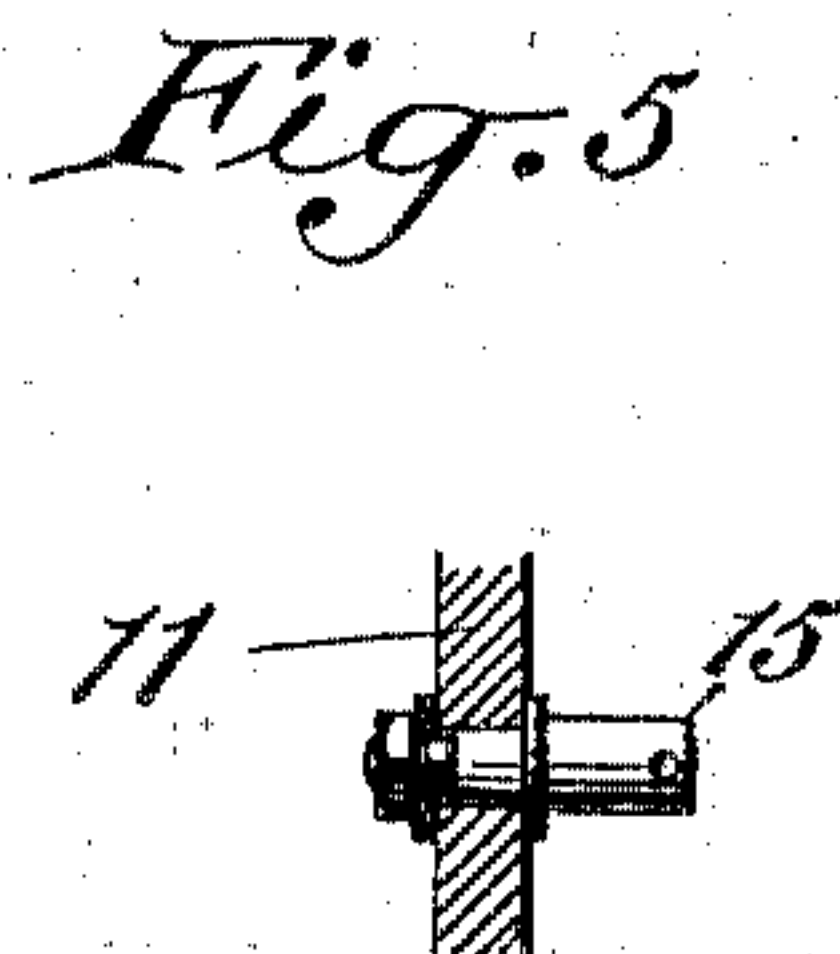
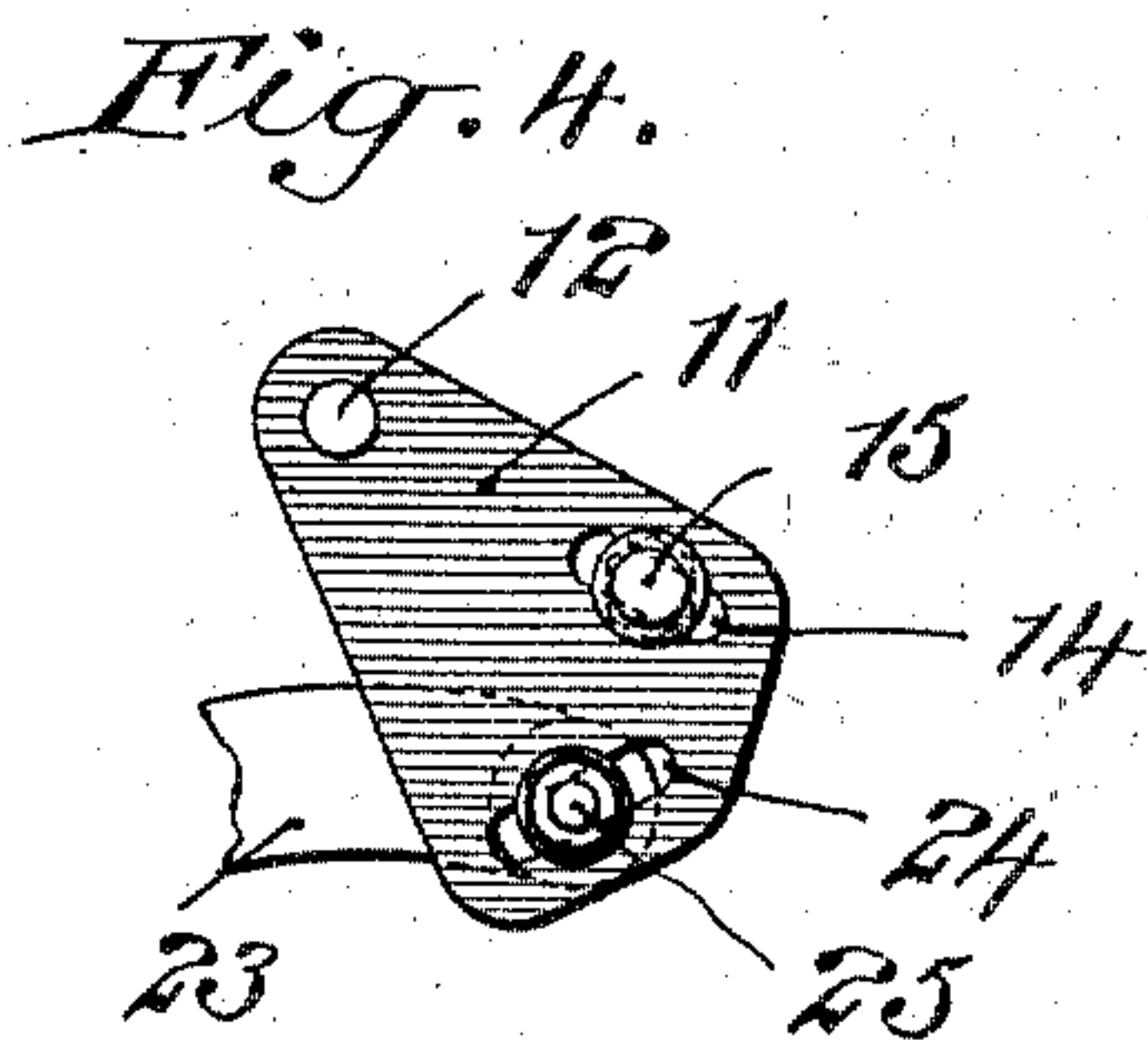
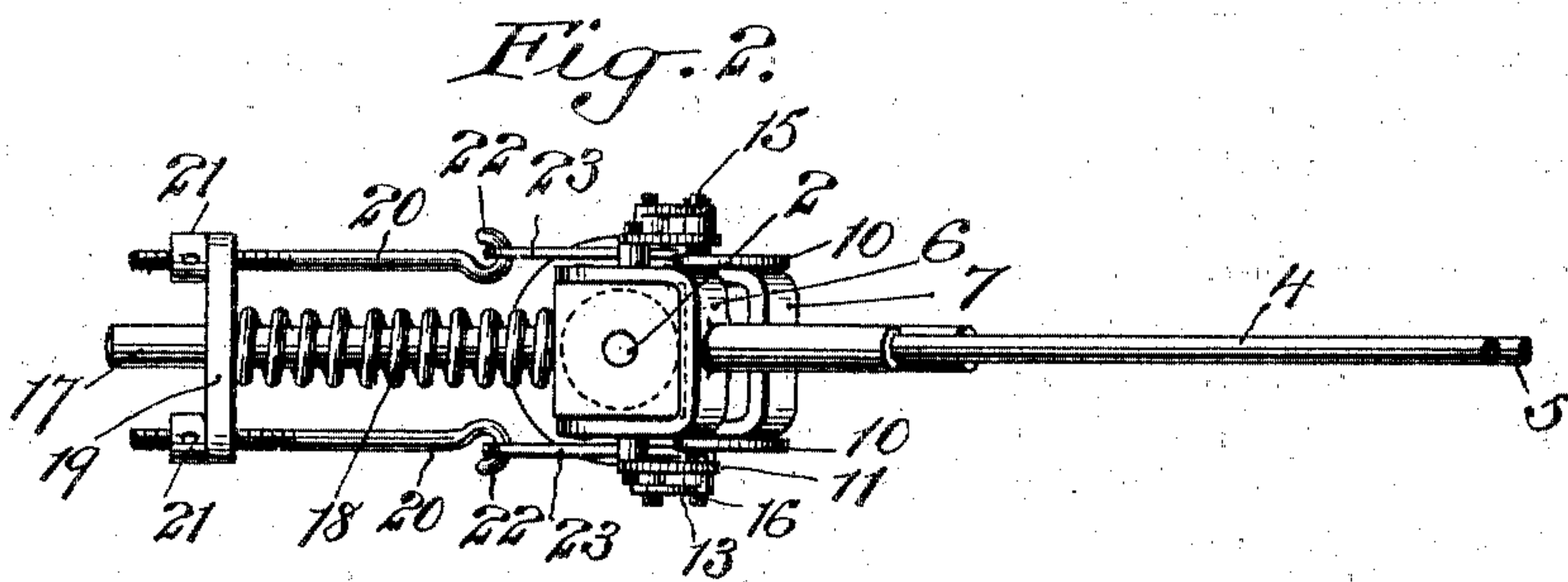
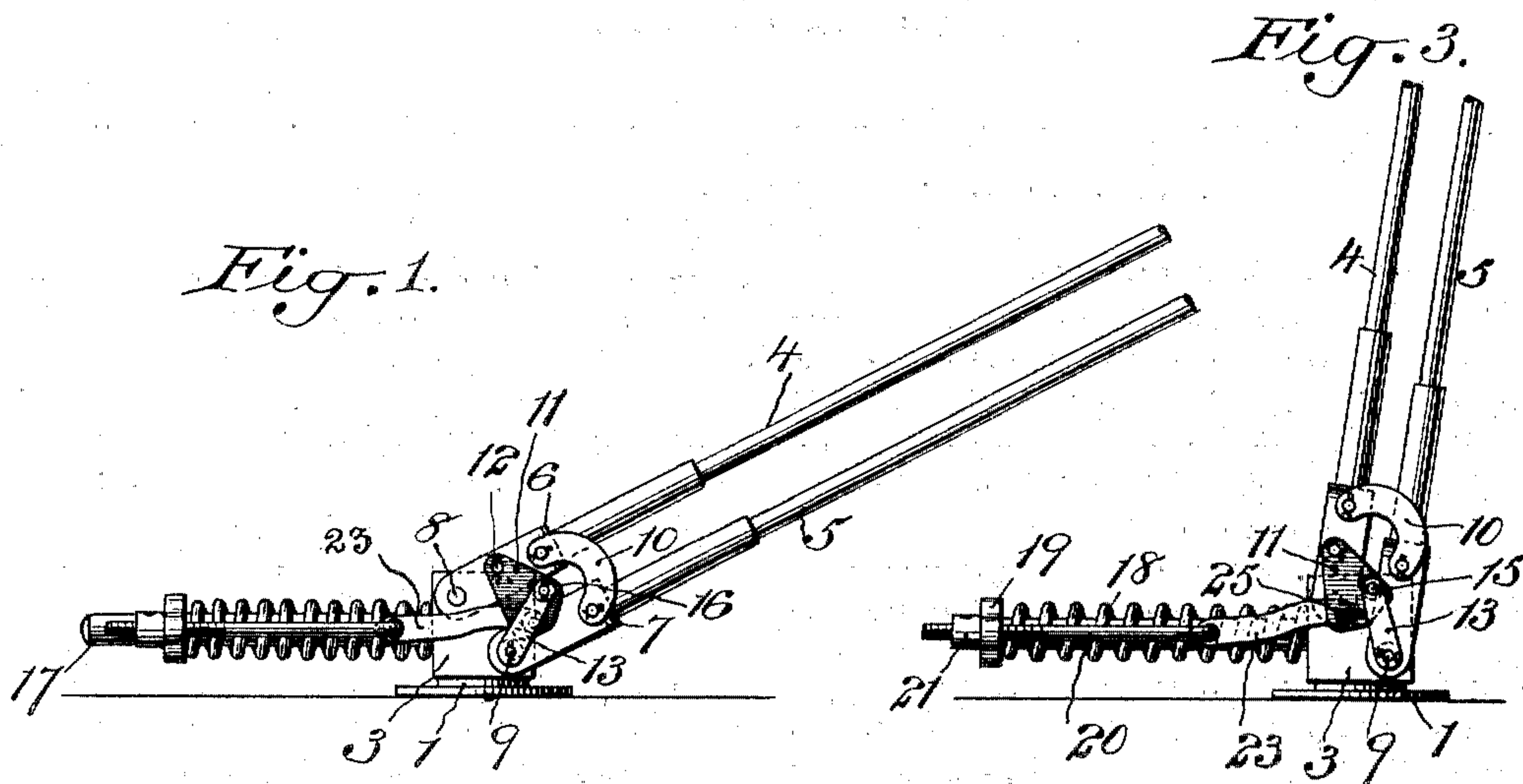
No. 767,018.

PATENTED AUG. 9, 1904.

B. STENVALL.
TROLLEY STAND.

APPLICATION FILED NOV. 10, 1903.

NO MODEL.



Witnesses:
George Barry
Henry Thieme

Inventor:
Bruno Stenvall
by attorneys Brown & Leland

UNITED STATES PATENT OFFICE.

BRUNO STENVALL, OF NEW YORK, N. Y.

TROLLEY-STAND.

SPECIFICATION forming part of Letters Patent No. 767,018, dated August 9, 1904.

Application filed November 10, 1903. Serial No. 180,592. (No model.)

To all whom it may concern:

Be it known that I, BRUNO STENVALL, a citizen of the United States, and a resident of the borough of Bronx, in the city and State of New York, have invented a new and useful Improvement in Trolley-Stands, of which the following is a specification.

My invention relates to an improvement in trolley-stands, and has more particularly for its object to provide means for exerting a constant tension in its different angular positions.

A further object is to provide a device of the above character in which the tension to be exerted on the trolley-pole may be adjusted to suit different requirements.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents the trolley-stand in side elevation with the pole at one angle with respect thereto, the pole comprising two connected members. Fig. 2 is a top plan view of the same. Fig. 3 is a side view showing the pole in a different angular position. Fig. 4 is an enlarged view of one of the connecting-levers, showing the means for adjustably securing the other lever and the spring connection. Fig. 5 is a detail section showing the means for locking one of the connecting-pins to one of the levers. Fig. 6 is a view in side elevation of the trolley-stand, showing a single trolley-pole member; and Fig. 7 is a back view of the same.

The support of the trolley-stand is denoted by 1, and it is provided with an uprising stud-axle 2, upon which the trolley-pole-carrying block 3 is pivoted to rotate horizontally.

The trolley-pole represented in Figs. 1, 2, and 3 comprises two members 4 and 5, provided with forks 6 and 7, which embrace the block 3, the ends of the forks being hinged at 8 and 9, respectively, to the block. The two members 4 and 5 are connected by links 10, so that any movement imparted to the member 4 will be imparted to the member 5 of the pole. On each side of the block 3 a lever 11 is hinged at 12 to the fork 6 of the pole member 4. A lever 13 is also provided upon each side of the block 3, which lever 13 is hinged to the block at its lower end—in the

present instance on the pivot 9 of the pole member 5. The upper end of the lever 13 is adjustably hinged to the lever 11 as follows: The lever 11 is provided with a slot 14, extended radially from the pivotal axis 12 of the lever. A pin 15 is adjustably clamped in different positions toward and away from the pivotal axis 12 along the slot 14. This pin 15 passes through the end of the lever 13, and the lever 13 is held thereon by a suitable key 16. A guide-bar 17 projects forwardly from the front of the block 3, upon which bar is located an expansion-spring 18, the outer end of which presses against a collar 19, embracing the said bar. This collar 19 is adjustably connected to the levers 11 upon both sides of the block 3 as follows: A hook-bar 20 passes through the collar 19 and is provided exterior to the collar with an adjusting-nut 21, which has a screw-threaded engagement with the hook-bar. The hook 22 of the bar engages one end of a link 23, the other end of which link is adjustably secured to the lever 11 as follows: The lever 11 is provided with a laterally-elongated slot 24, within which a pin 25 is adjustably clamped. This pin 25 passes through the end of the link 23, the said end being held thereon by a suitable key.

In Figs. 6 and 7 I have shown the member 5 of the pole removed, showing the device applied to a single member. This does not require any change whatever in the construction or arrangement of the parts.

By the connection of the spring with the levers as herein shown and described the pole is held under a constant tension in its different angular positions. Furthermore, the connection between the spring and the levers may be adjusted both by means of the adjusting-nut 21 of the hook-bars, and also by the adjustment of the links 23 laterally with respect to the axes of the levers 11. The upper ends of the levers 13 may also be adjusted toward and away from the axes of the levers 11.

In my device the arrangement of levers and spring is such that the levers work on the toggle principle, the three pivots 12, 15, and 9 of the levers being brought nearly into alinement when the pole approaches the ver-

tical position. When the pole is in this position, less tension is required to hold the pole at the predetermined pressure against the wire because of the toggle arrangement of the levers, and the spring is therefore extended, thus causing it to lose some of its power. As the pole is swung toward its horizontal position the toggle connection of the levers will be brought into such a position that it will require a greater tension of the spring to hold the pole at the predetermined pressure against its wire. The spring, therefore, is compressed the predetermined amount for increasing its tension to accomplish this result. The adjustable connection between the link 23 and the levers is for insuring the relative adjustment of the several parts to produce the results above described.

What I claim is—

1. A block, a trolley-pole hinged thereto, a combination of levers hinged to the block and pole and a spring carried by the block so connected to the levers as to exert the same tension on the pole when the pole is in its different angular positions.

2. A block, a trolley-pole hinged thereto, a combination of levers hinged to the block and pole, a spring carried by the block so connected to the levers as to exert the same tension on the pole when the pole is in its different angular positions and means for adjusting the tension of the spring.

3. A block, a trolley-pole hinged thereto, a combination of levers hinged to the block and pole, a spring carried by the block and an adjustable connection between the spring and levers whereby the spring is caused to exert the same pressure on the pole when the pole is in its different positions.

4. A block, a trolley-pole hinged thereto, a lever hinged to the pole, a lever hinged to the block and first-named lever and a spring so connected to the first-named lever as to exert a constant tension on the pole in its different positions.

5. A block, a trolley-pole hinged thereto, a lever hinged to the pole, a second lever hinged to the block and adjustably hinged to the first-named lever and a spring so connected to the

first-named lever as to exert a constant tension on the pole in its different angular positions.

6. A block, a trolley-pole hinged thereto, a lever hinged to the pole, a lever hinged to the block and first-named lever, a spring carried by the block and a connection between the spring and first-named lever adjustably secured to the first-named lever, the arrangement being such that the spring will exert a predetermined constant tension on the pole in its different angular positions.

7. A block, a trolley-pole hinged thereto, a lever hinged to the pole, a second lever hinged to the block, the free end of the second-named lever being adjustably connected to the first-named lever toward and away from the axis of the first-named lever, a spring carried by the block and a connection between the spring and block adjustably secured to the first-named lever laterally with respect to its axis, the connection between the spring and pole being such as to exert a predetermined constant tension on the pole in its different angular positions.

8. A block, a trolley-pole comprising two members hinged to the block, a link connecting the two members and spring-actuated means carried by the block exerting a constant tension on the pole in its different angular positions.

9. A block, a trolley-pole hinged thereto, a guide-bar projecting forwardly from the block, a spring thereon and a collar on the bar engaged by the spring, a combination of levers hinged to the block and pole and a connection between the collar and the levers whereby the spring is caused to exert a predetermined constant tension on the pole in its different angular positions.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 2d day of November, 1903.

BRUNO STENVALL.

Witnesses:

FREDK. HAYNES,
HENRY THIEME.