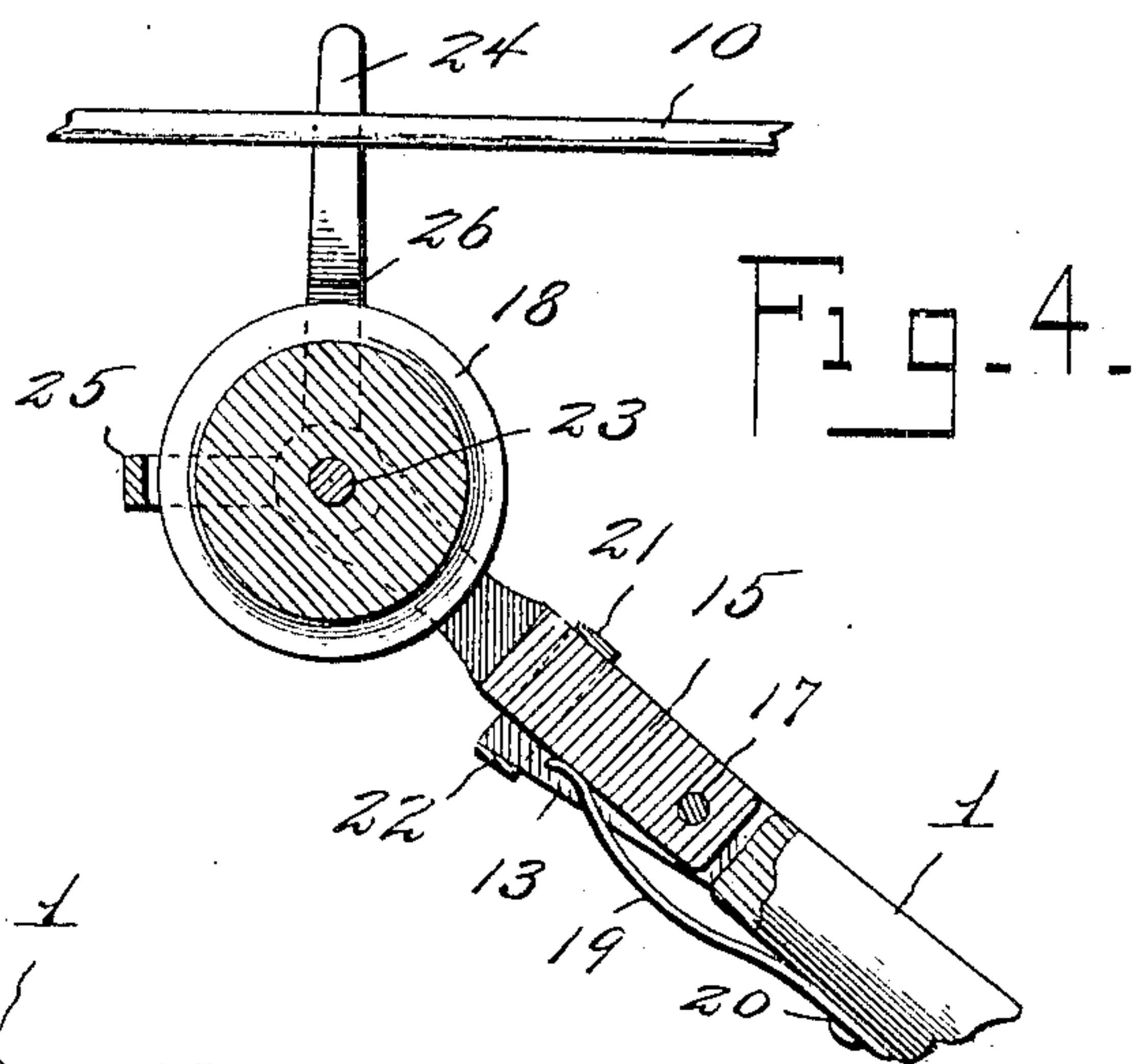
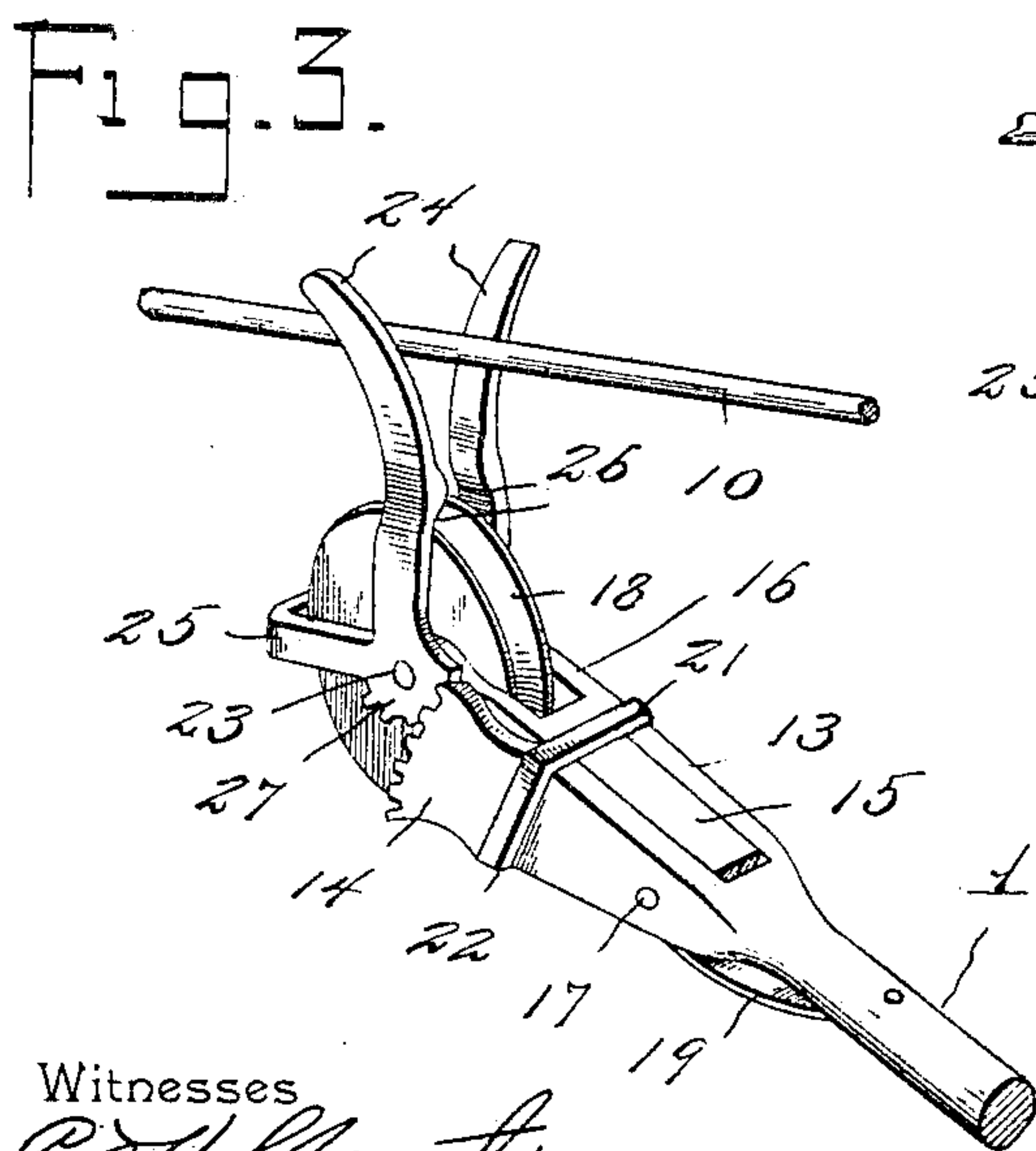
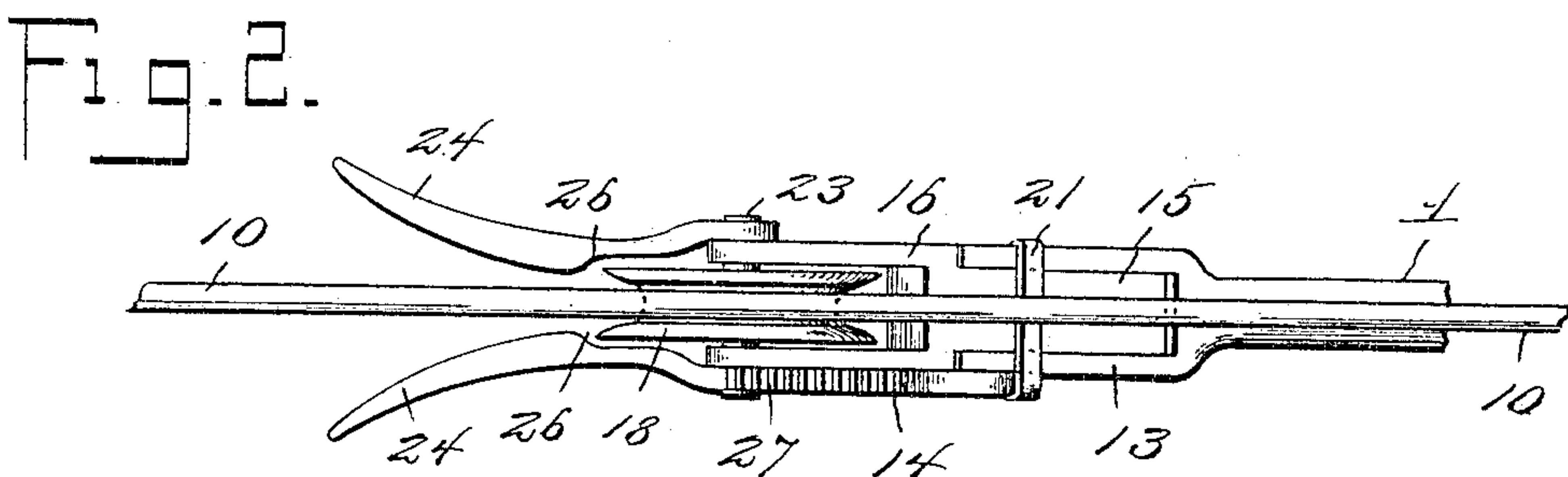
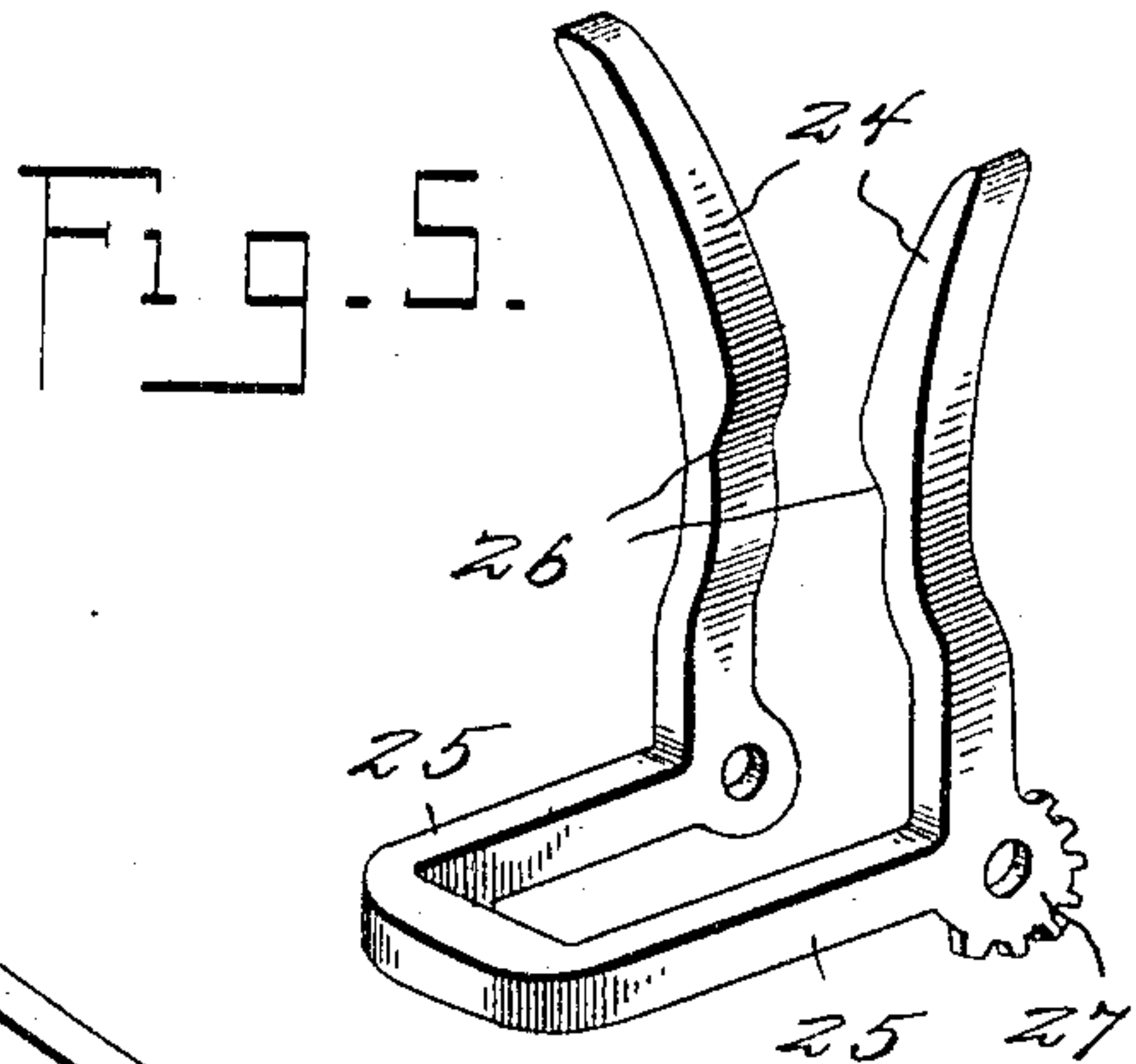
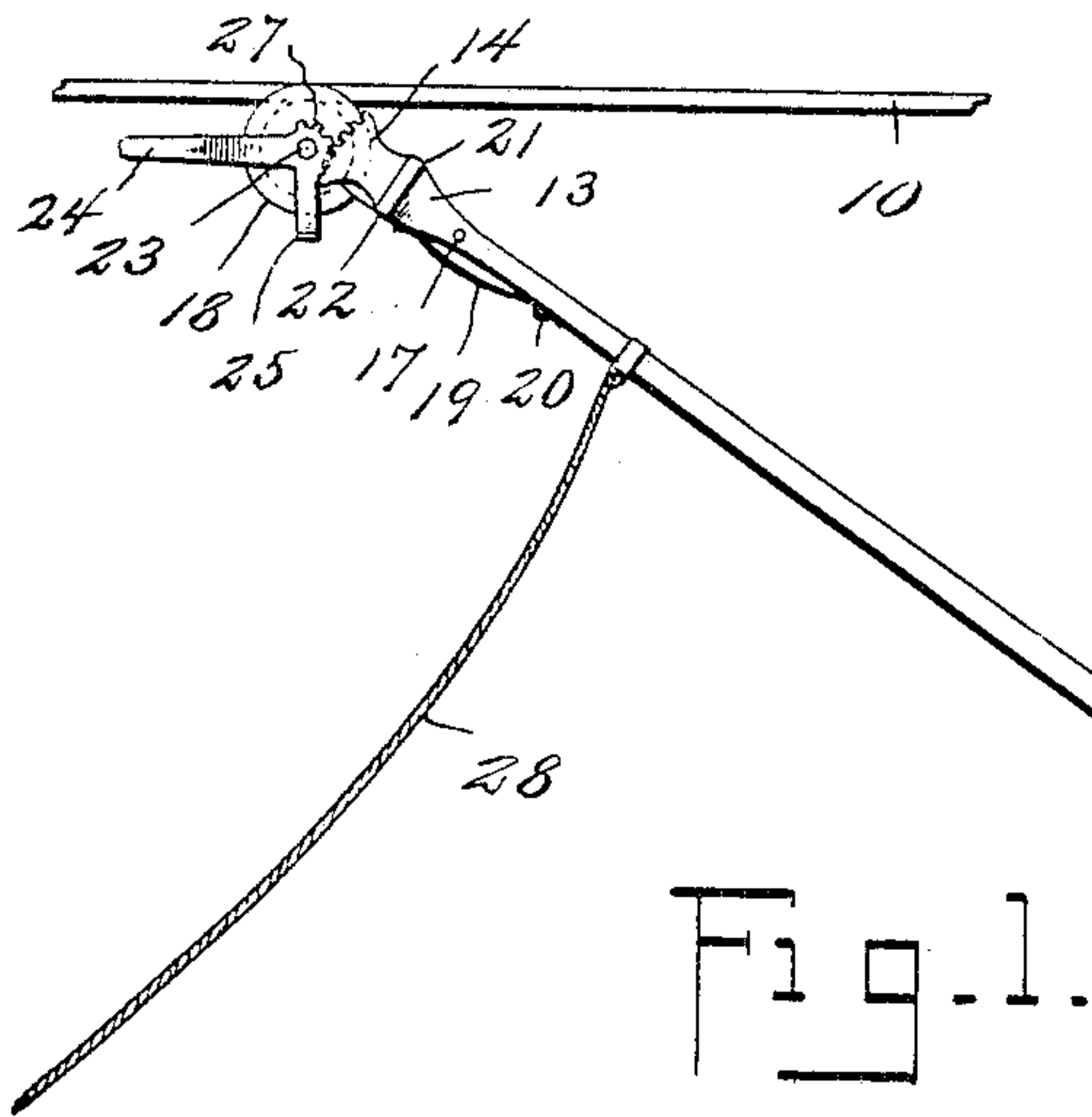


No. 798,691.

PATENTED SEPT. 5, 1905.

J. MORROW.
TROLLEY FINDER.
APPLICATION FILED JULY 6, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

JERRY MORROW, OF WELLSTON, OHIO, ASSIGNOR OF ONE-HALF TO R. G. GRISWOLD AND C. C. WILLITS, OF QUINCY, MASSACHUSETTS.

TROLLEY-FINDER.

No. 798,691.

Specification of Letters Patent.

Patented Sept. 5, 1905.

Application filed July 6, 1904. Serial No. 215,541.

To all whom it may concern:

Be it known that I, JERRY MORROW, a citizen of the United States, residing at Wellston, in the county of Jackson and State of Ohio, have invented a new and useful Trolley-Finder, of which the following is a specification.

This invention relates to trolleys, and has for its object to facilitate the engagement of the trolley-wheel with the trolley-wire or conductor. In this connection it is designed to provide an improved guide capable of engaging the conductor-wire when the trolley-wheel is comparatively remote therefrom, so as to mechanically guide the wheel to the conductor in a simple and effective manner. It is also proposed to arrange the guide so as to lie below the horizontal plane of the conductor when the trolley-wheel is in engagement therewith, so as to avoid contact with crossovers and other obstructions, and to provide for automatically moving the guide into position for use when the trolley-wheel jumps or is otherwise disengaged from the conductor. The guide is also yieldable when in its upright position for directing the trolley-wheel to the conductor in order that it may brush past crossovers and other obstructions without damage thereto and to the guides when an attempt is being made to return the trolley-wheel to the conductor during movement of the car.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a trolley device constructed in accordance with the present invention. Fig. 2 is a detail plan view of the upper portion of the trolley-pole and the trolley-wheel in engagement with the conductor. Fig. 3 is a detail perspective view illustrating the trolley in position to engage the wire. Fig. 4 is a longitudinal sectional view thereof. Fig. 5 is a detail perspective view of the guide member detached.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

The trolley-pole 1 of the present device is of any common or preferred form, and at the upper end thereof there is a fork 13, which may be formed by bifurcating the upper extremity of the pole, with one side or member of the fork extended and formed into a toothed segment 14. Fitted within the forked portion of the pole is the shank 15 of a harp 16, there being a suitable pivot 17, piercing the shank and the members of the fork, whereby the harp is pivoted or hinged to the pole so as to swing in a vertical direction. The upper or outer end of the harp projects a suitable distance beyond the segment 14, and the usual grooved trolley-wheel 18 is mounted within this projected portion of the harp. A leaf-spring 19 is applied to the under side of the upper end of the trolley-pole and connected thereto, as at 20, with its upper free end bearing against the shank of the harp, so as to maintain an upward pressure thereon. Upper and lower cross-bars 21 and 22 extend across the outer ends of the forked members 13 in the path of the pivotal movement of the harp and form stops to limit said movement.

For the accommodation of the guide member of the present invention the shaft 23 of the trolley-wheel is projected at opposite sides thereof, and upon the projected ends of this shaft are pivotally supported the guide-arms 24, which have their lower ends connected by a pendent yoke 25, that normally embraces the under side of the wheel, so as not to interfere with the operation thereof. These guide-arms lie close to the sides of the trolley-wheel and diverge toward their outer ends, so as to constitute a fork having a comparatively wide space between the outer extremities of the arms in order that the latter may have a comparatively wide range of action to engage the trolley-wire or conductor and guide or direct the trolley-wheel to said wire. Adjacent the inner end of each guide-arm the inner face thereof is cut away or recessed, as at 26, to receive the adjacent peripheral portion of the trolley-wheel and permit of the adjacent outer portion of the arm lying in close proximity to the wire. The lower end of one of the arms is provided with a toothed segment 27 in mesh with the segment 14 on the trolley-pole. A suitable rope 28 depends

from the upper portion of the trolley-pole in the usual manner for convenience in drawing down and directing the trolley-wheel to the wire.

5 When the trolley is in engagement with the wire or conductor, as shown in Fig. 1 of the drawings, the trolley-wheel will be limited in its upward movement by the wire and the trolley-pole will be forced upwardly by
10 the usual springs (not shown) out of longitudinal alinement with the harp and through the medium of the meshed segments 14 and 27 the guide-arms 24 will be swung downwardly to a position beneath the trolley-wire,
15 so as to avoid crossovers and other obstructions. Should the trolley jump the wire or be drawn down out of engagement therewith, the spring 19 operates to swing the harp 16 upwardly into longitudinal alinement with the
20 pole, thereby moving the segment 27 over the segment 14, which results in swinging the guide-arms into a vertical position in readiness to engage the trolley-wire and guide or direct the trolley-wheel to the conductor-wire
25 when the trolley is again applied thereto. It will here be explained that when the guide-arms are in an upright position during the operation of engaging the trolley-wheel with the trolley-wire they are capable of yielding
30 rearwardly should they strike an obstruction, and in yielding rearwardly they will also swing the trolley-wheel and the harp downwardly upon the pivotal support 17, and thereby prevent injury to either of these
35 members.

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

40 1. The combination with a trolley-pole having a forked upper end, of a harp having its shank pivotally supported within the fork, a spring carried by the pole and bearing against the under side of the harp, a trolley-wheel
45 carried within the harp, a pair of guide-arms pivotally supported upon the opposite ends of the shaft of the trolley-wheel, a yoke connecting the arms across the periphery of the wheel, and meshed segments carried by one of the
50 arms and the fork of the pole.

2. The combination of a trolley-pole having a forked upper end, stops at the opposite open sides of the fork, a harp pivoted within the fork between the stops and limited in its swing by engagement with the individual stops, a
55 spring tending to force the harp toward one of the stops, a trolley-wheel carried within the harp, a pair of finder-arms embracing the trolley-wheel and pivoted upon the axle thereof, a yoke connecting the arms across the periphery of the trolley-wheel, and meshed segments carried by one of the arms and the fork
60 of the pole.

3. The combination of a trolley-pole, a stationary toothed member carried thereby,
65 a pivoted finder having teeth meshing with the teeth of the stationary toothed member, a pivotal harp carried by the pole, a trolley-wheel carried by the harp, stops carried by the pole at opposite sides thereof in the pivotal
70 path of the harp to limit its movement in opposite directions, and means tending to yieldably force the harp toward one of the stops.

4. The combination of a trolley-pole having a forked upper end with the opening of the
75 fork disposed vertically, stop-bars extending across the upper and lower open sides of the fork at the outer extremity thereof, a vertically-swinging harp having its shank portion pivoted within the fork below the stop-bars,
80 a spring carried by the pole with its free upper end bearing against the under side of the harp to yieldably force the latter toward the upper stop-bar, a trolley-wheel carried within the harp beyond the upper end of the pole, a
85 pair of finder-arms embracing the trolley-wheel and pivoted upon the axle thereof, means connecting the finder-arms across the periphery of the trolley-wheel, the outer extremity of one of the fork members being
90 formed into a toothed segment, and a toothed segment upon one of the finder-arms in mesh with the toothed segment of the trolley-pole.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
95 the presence of two witnesses.

JERRY MORROW.

Witnesses:

FRANK C. MORROW,
W. B. CHERINGTON.