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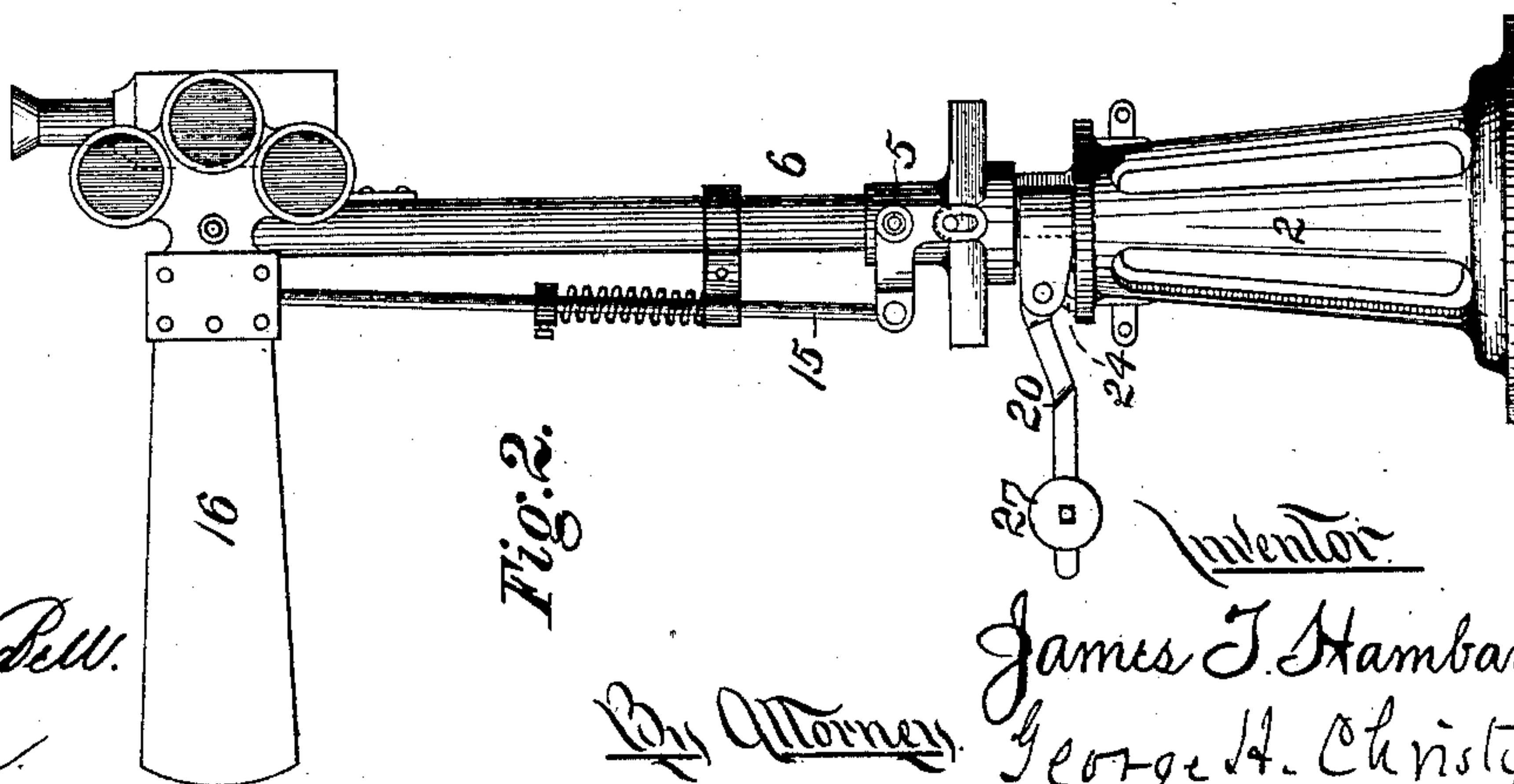
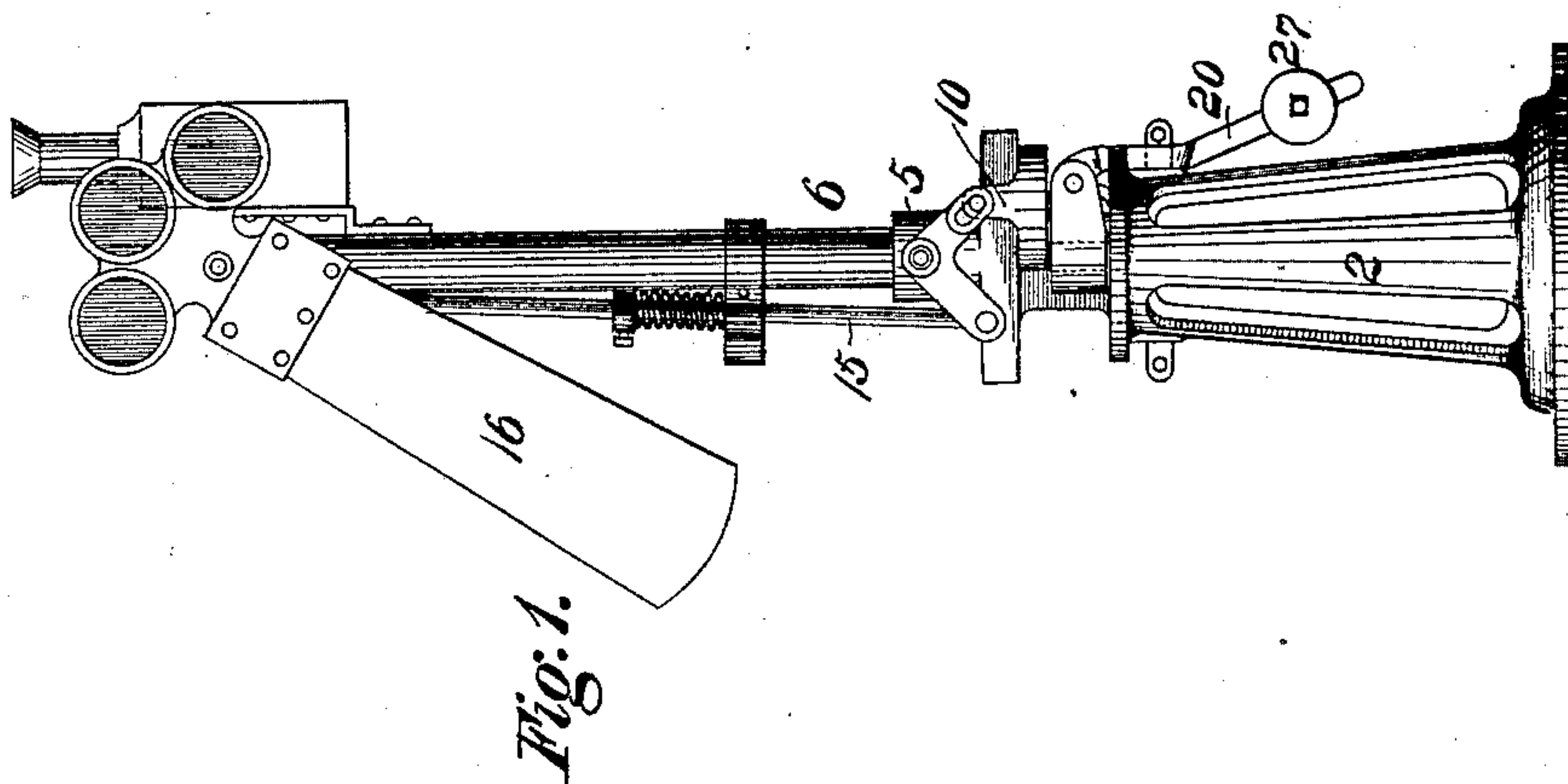
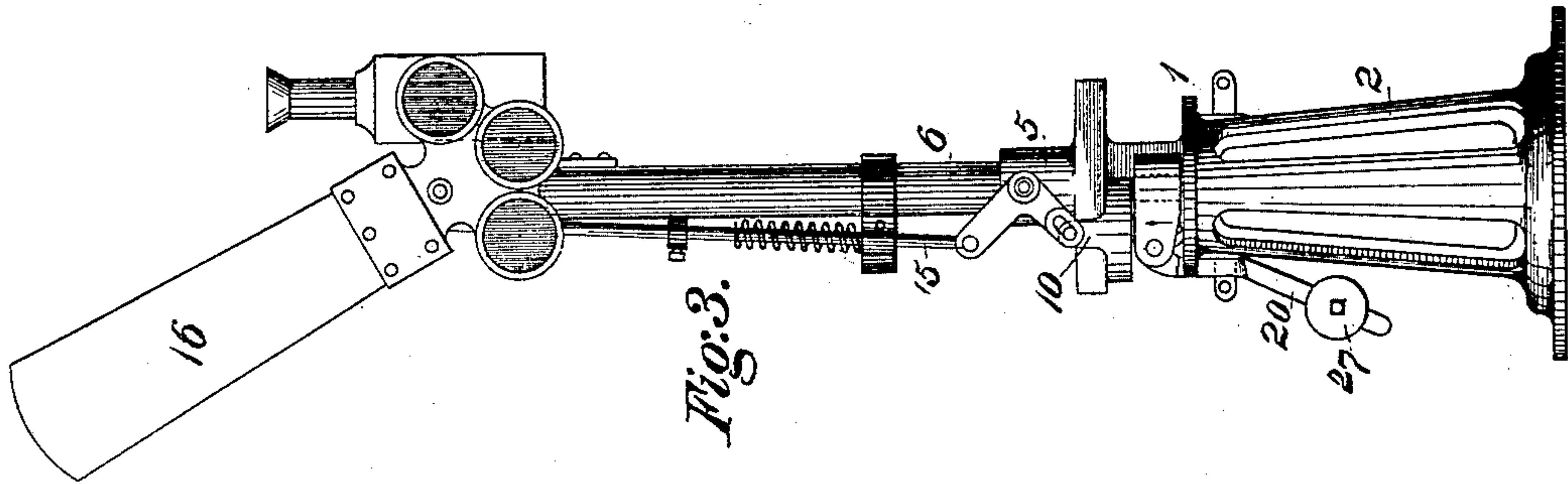
3 Sheets—Sheet 1.

J. T. HAMBAY.

SWITCH STAND.

No. 318,726.

Patented May 26, 1885.



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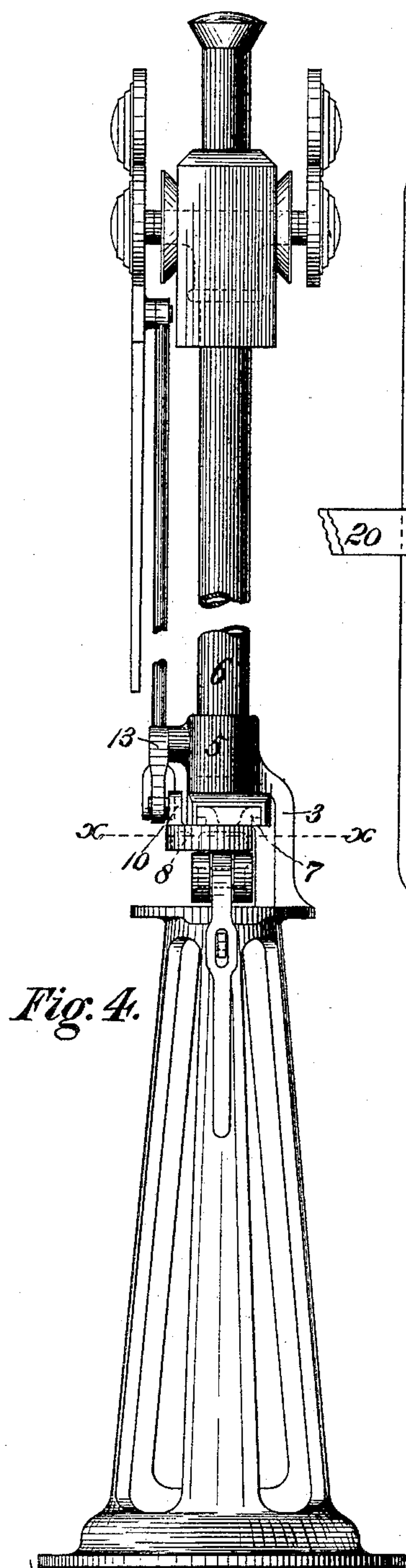


Fig. 4.

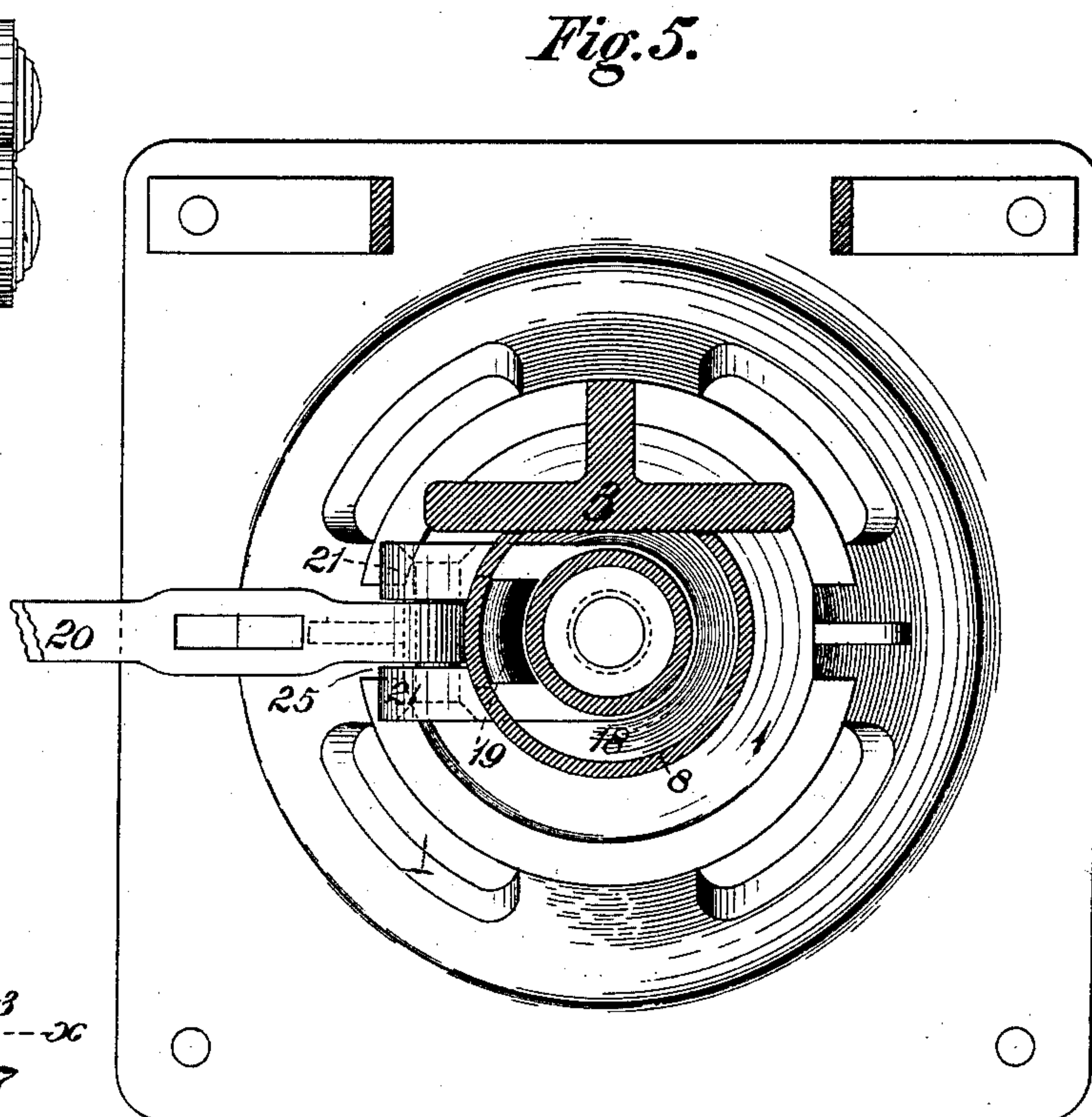


Fig. 5.

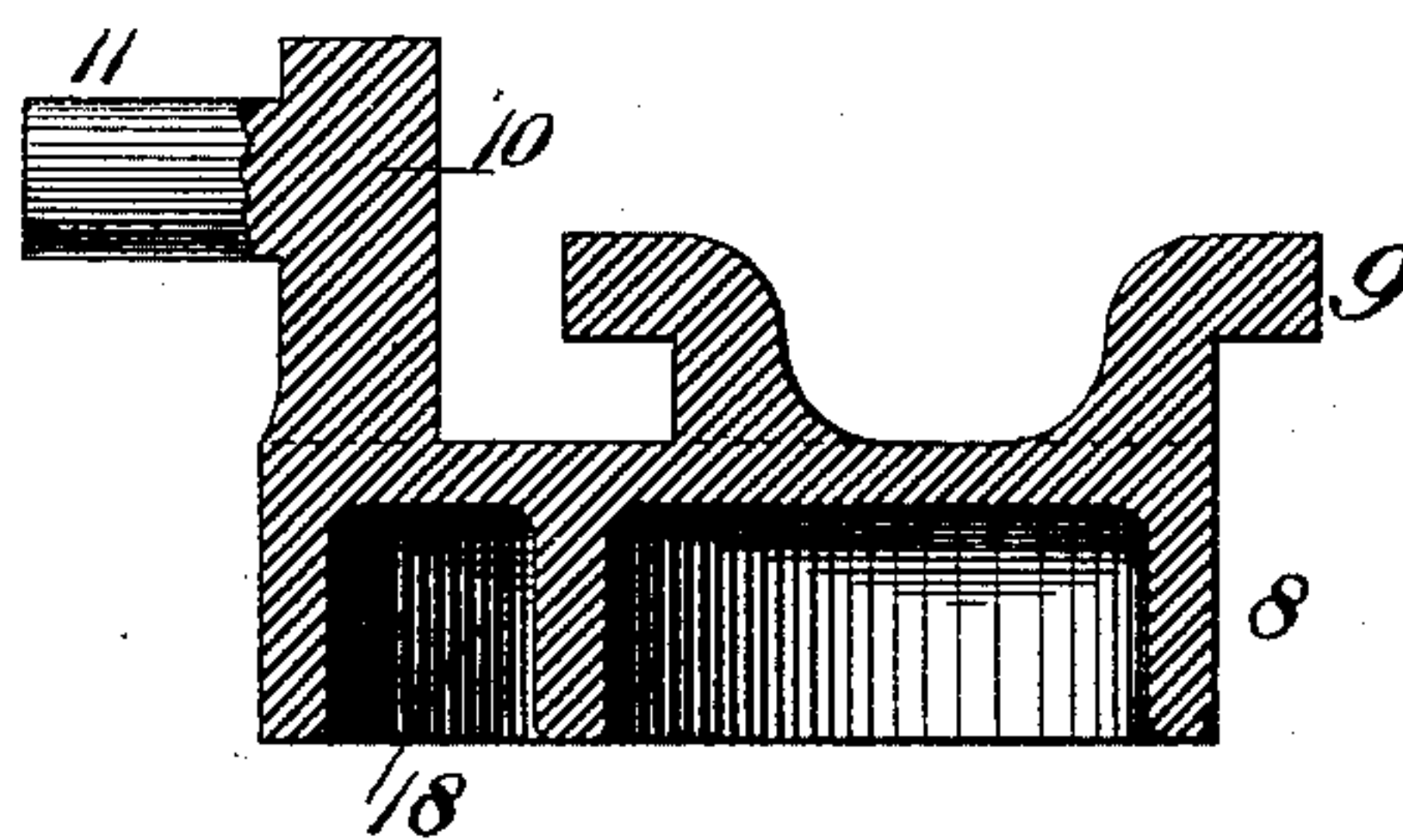


Fig. 6.

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3 Sheets—Sheet 3.

J. T. HAMBAY.

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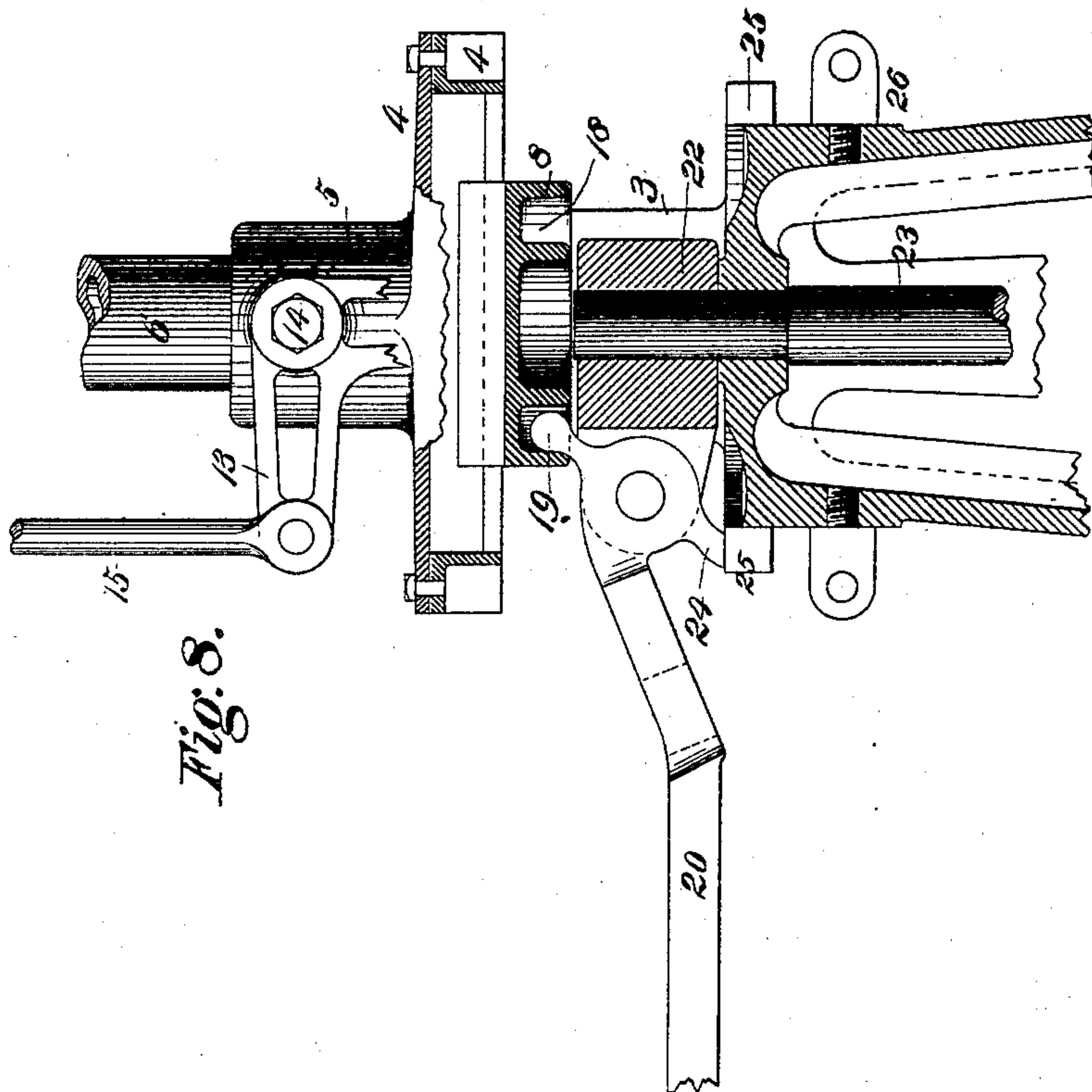


Fig. 8.

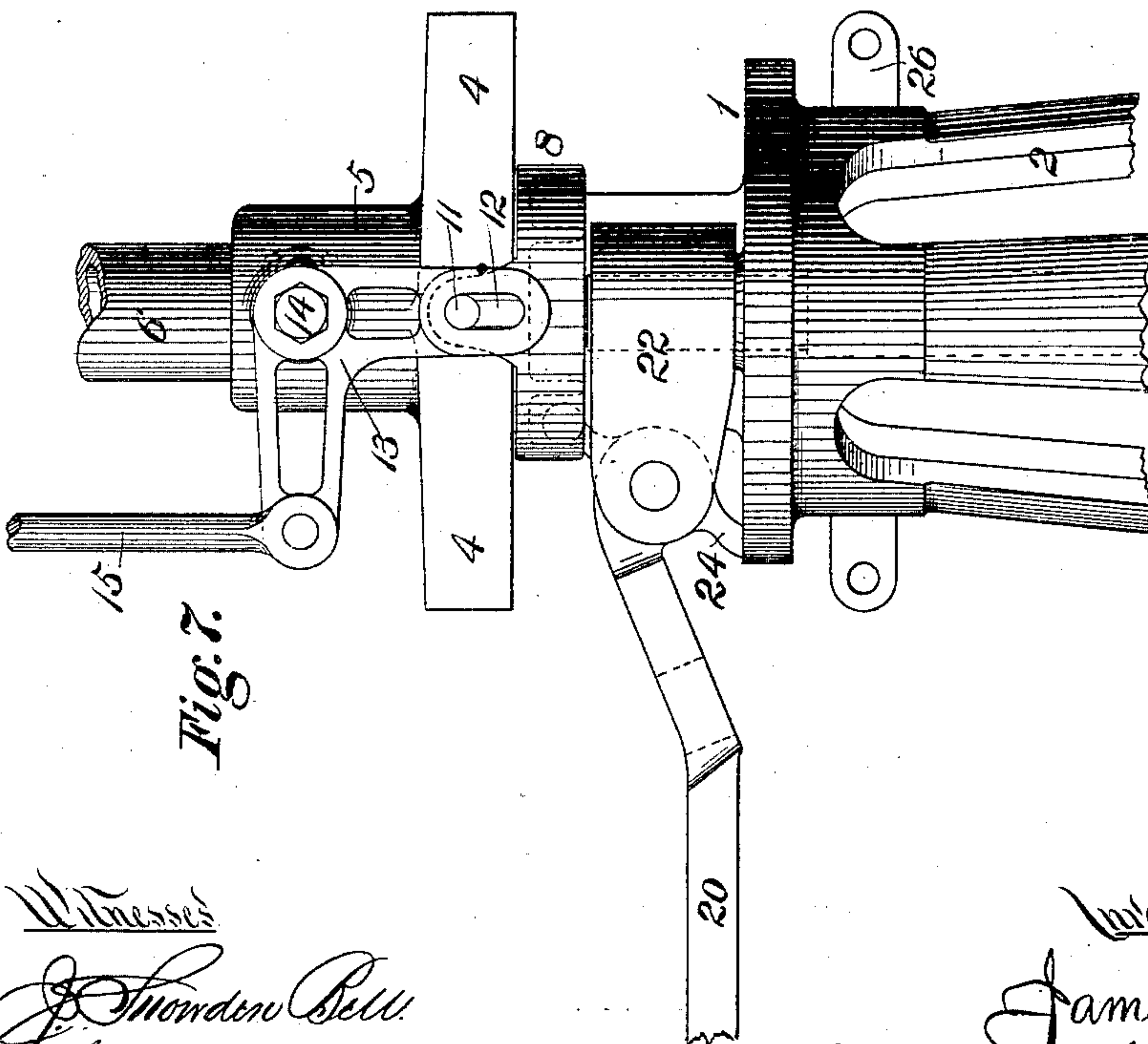


Fig. 7.

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UNITED STATES PATENT OFFICE.

JAMES T. HAMBAY, OF ALLEGHENY, ASSIGNOR TO THE UNION SWITCH
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SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 318,726, dated May 26, 1835.

Application filed July 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. HAMBAY, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Switch-Stands, of which improvements the following is a specification.

In the accompanying drawings, which make part of this specification, Figures 1, 2, and 3 are front or side elevations of my improved switch-stand, showing the positions of the semaphore corresponding to the different positions of the switch. Fig. 4 is an edge elevation of the switch-stand, the operating parts being in the position shown in Fig. 1. Fig. 5 is a transverse sectional view on the line *x x*, Fig. 4. Fig. 6 is a sectional detail view of the reciprocating signal-operating block. Figs. 7 and 8 are enlarged side and sectional elevations of the signal and switch operating mechanism, said mechanism being in the position shown in Fig. 2.

My improvement relates to an improvement in signal-switches, and has for its object the setting and locking of the signal at "danger" before the switch can be moved and the setting of the signal so as to indicate the position of the switch and the simultaneous locking of the switch in the position indicated by the signal, and is designed to protect the main line of a railroad at sidings, junctions, and cross-overs.

On the top plate, 1, of the frame or base portion 2 of the switch-stand is formed the bracket 3, which is formed with the horizontal overhanging plate 4, having on its upper side the socket 5, for the reception of the signal-supporting pillar 6.

In the under side of the overhanging plate 4 are formed ways 7, on which are supported the flanges 9, formed on the upper side of the sliding block 8. On one side of this block 8 is formed the upwardly-projecting lug 10, provided on its upper end with the horizontally-projecting pin 11. This pin engages the slot 12, formed in one arm of the bell-crank lever 13, said lever being pivoted to a stud, 14, projecting horizontally from the socket 5, and to the opposite end of the lever 13 is connected one end of the rod 15, the other end of the rod

being connected to the semaphore 16. This semaphore 16 is of the usual construction, except that it is provided with three different-colored glasses or lenses—*e. g.*, white, red, and green. Its short end is pivoted to the pillar 6 near its top, to which is also secured the lantern 17, said lantern being so located that the various lenses in the semaphore may be brought into line with the lenses in the lantern.

In the under side of the sliding block 8 is formed the circular groove 18, said groove extending entirely around the block, except where said block is cut away, as shown in Fig. 5, to allow of its reciprocation alongside of the bracket 3. Within this groove 18 is arranged the curved projection 19, formed on the inner end of the lever 20, which is pivoted between the arms 21 of the head-block 22, said head-block being secured on the upper end of the switch-shaft 23, extending up through an aperture in the center of the top plate, 1, of the frame of the switch-stand.

In the rear of the pivotal point of the lever 20 is formed the lug 24, adapted in certain positions of the head-block and lever 20 to rest upon the top plate, 1, near its periphery, and hold the lever in a horizontal position.

In diametrically-opposite sides of the periphery of the top plate, 1, are formed notches 25, which extend into said plate beyond the path of the lug 24; hence when the lever is in line with these notches there will be no support for the lugs 24, and the lever will drop into said notches, as shown in Figs. 1 and 3.

To the frame 2, below the notches 25, and in line therewith, are secured the lugs 26, which, when the levers drop into the notches 25, will pass through a slot formed in said lever, which may be fastened in this position. On the outer end of the lever 20 is secured a weight, 27, which will cause the lever to drop into the notches 25 when in line therewith.

On the lower end of the shaft 23 is secured a crank-arm, to which is attached a rod connected with the switch-rails.

The operation is as follows, and in describing the operation I will start with the switch-rails in line with the rails of the main and the switch stand with its connections in the position shown in Fig. 1, the semaphore being

inclined downwardly and indicating "main line safe." By turning the lever 20, and with it the head-block 22, the switch-shaft 23 is also turned, thereby moving the switch-rails; but before said lever can be turned it is necessary to raise the outer end of the lever to a horizontal position to remove it from one of the notches 25, in which it normally rests when the switch-rails are in line with either the rails of the main line or with those of the siding. In raising this lever the projection 19, located in the groove in the sliding block 8, is moved inward, thereby sliding the head-block on the flanges of the overhanging plate 4. As the head-block moves, the crank-lever 13, connected at the head-block as above described, is turned on its pivot, thereby raising the semaphore to a horizontal or "danger" position. (Shown in Fig. 2.) The lever 20 having been raised from its notch, and having thereby set the signal at "danger," as above described, it is now turned around in a horizontal plane to rotate the switch-shaft. During this rotation the lever is kept in its horizontal position and the signal is kept at "danger" by the lug 24, resting upon the top plate, 1. As soon as the lever is turned into line with the opposite notch, by which time the switch-rails have been brought into line with the rails of the siding, the lever is turned down into this notch by the operator, and during this movement the projection 19 is moved outward, carrying with it the sliding block 4, thereby turning the bell-crank lever 13, and throwing the semaphore into an upwardly-inclined position, as shown in Fig. 3, indicating not only that the switch-rails are in line with the siding-rails, but that they are locked in that position. It will be observed that it is necessary to set the signal to "danger" before the switch-rails can be shifted, as the signal is set by the switch-lever when it is raised to allow of its horizontal rotation, and that the signal is kept at "danger" until the switch-rails are locked in one of its two operative positions; and it will be further noticed that the act of locking the switch sets the signal in a position that indicates the position of said switch-rails, whether in line with the rails of the main line or those of the siding.

A further characteristic of my invention consists in the construction that automatically locks the switch and sets the signal as soon as the lever is turned to such a position that the switch-rails are in one of their two positions, thereby avoiding the danger of the switch being left unlocked by the operator.

I claim herein as my invention—

1. In a switch-stand, a rotating switch stem or shaft, in combination with a lever pivoted to said shaft, and adapted to lock the shaft as against rotary motion, and a signal operated by said lever in its locking and unlocking movement on both sides of the switch-stand, substantially as set forth.

2. In a switch-stand, a rotating switch stem or shaft, in combination with a lever pivoted to said shaft, and adapted to lock the shaft as against rotary motion, a signal adapted to be set at "danger" by the lever in its unlocking movement, and mechanism for holding the signal at "danger" until the switch has been changed, and then shifting the signal to indicate the position of the switch, substantially as set forth.

3. In a switch-stand, a rotating switch stem or shaft, in combination with a lever pivoted to said shaft, and adapted to lock the shaft as against rotary movement, a signal, and mechanism having permanent connection to the lever and signal, said mechanism being so constructed as to be operated by the unlocking movement of the lever to set the signal at "danger," and by the locking movement of said lever to set the signal in such position as to indicate the position of the switch-rails, substantially as set forth.

4. In a switch-stand, a rotating switch stem or shaft, in combination with a lever pivoted to said shaft and adapted to lock the shaft as against rotary movement, a signal mechanism having permanent connection to the lever and signal, said mechanism being so constructed as to be operated to set the signal to "danger" and to such positions as will indicate the position of the switch-rails by the vertical movement of the lever, and mechanism for holding the signal at "danger" during the horizontal movement of the lever, substantially as set forth.

5. In a switch-stand, a rotating switch stem or shaft, in combination with a signal operated independent of the switch, a lever pivoted to the switch-shaft and connected to the signal, and adapted when the switch-rails are in operative positions to automatically lock said switch and to set the signal, substantially as set forth.

6. In a switch-stand, a rotating switch stem or shaft, in combination with a lever pivoted to said shaft, a sliding block having continuous engagement with the lever, and an oscillating signal connected to said block, substantially as set forth.

7. In a switch-stand, a frame or support provided with a peripherally-notched top plate, in combination with a rotating stem or shaft, a weighted lever pivoted to said shaft and provided with a lug adapted to rest on said top plate, a sliding block connected to the lever, and an oscillating signal connected to the sliding block, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JAMES T. HAMBAY.

Witnesses:

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DARWIN S. WOLCOTT.