

905,080.

A. M. JONES.
RAILWAY SAFETY APPLIANCE.
APPLICATION FILED DEC. 18, 1907.

Patented Nov. 24, 1908.
2 SHEETS—SHEET 1.

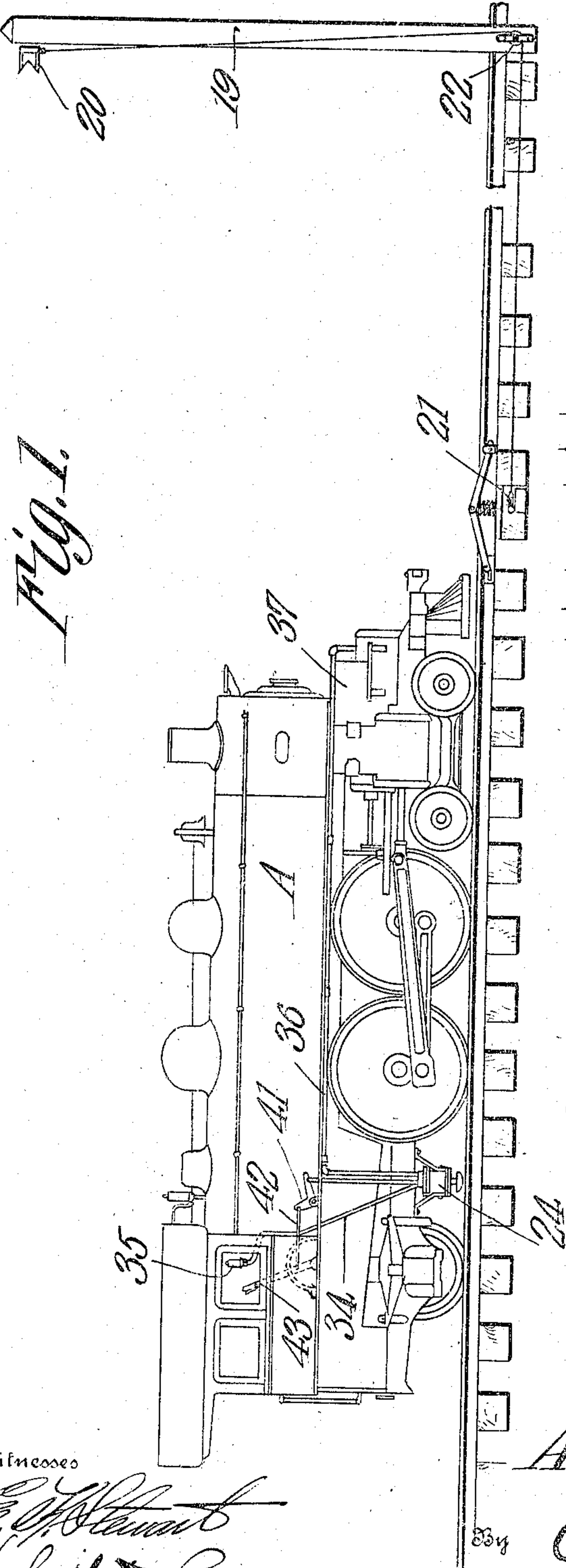


Fig. 1.

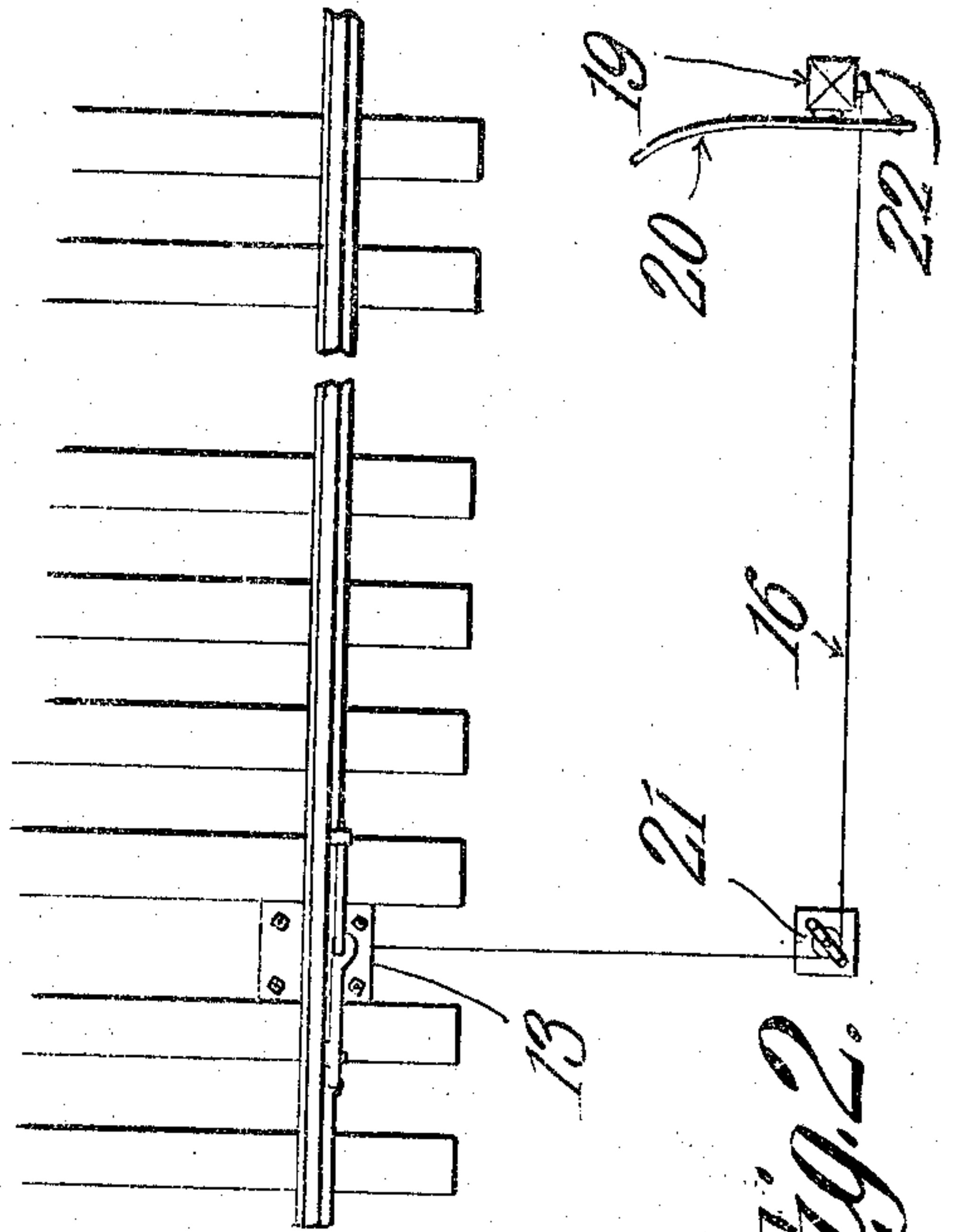


Fig. 2.

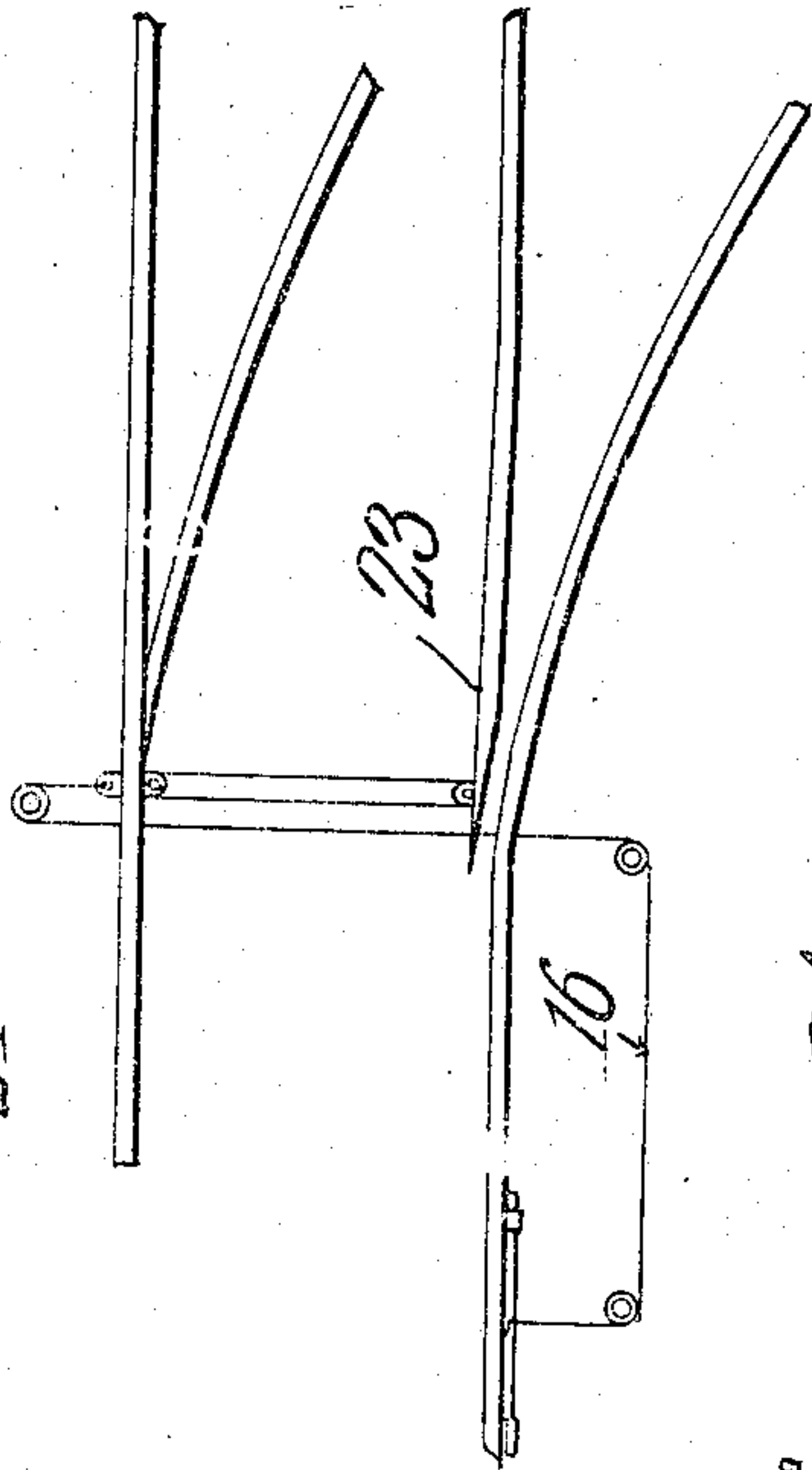


Fig. 3.

Witnesses
E. J. Stewart
Herbert D. Lawson.

Inventor
Albert M. Jones.
C. A. Snow & Co.
Attorneys

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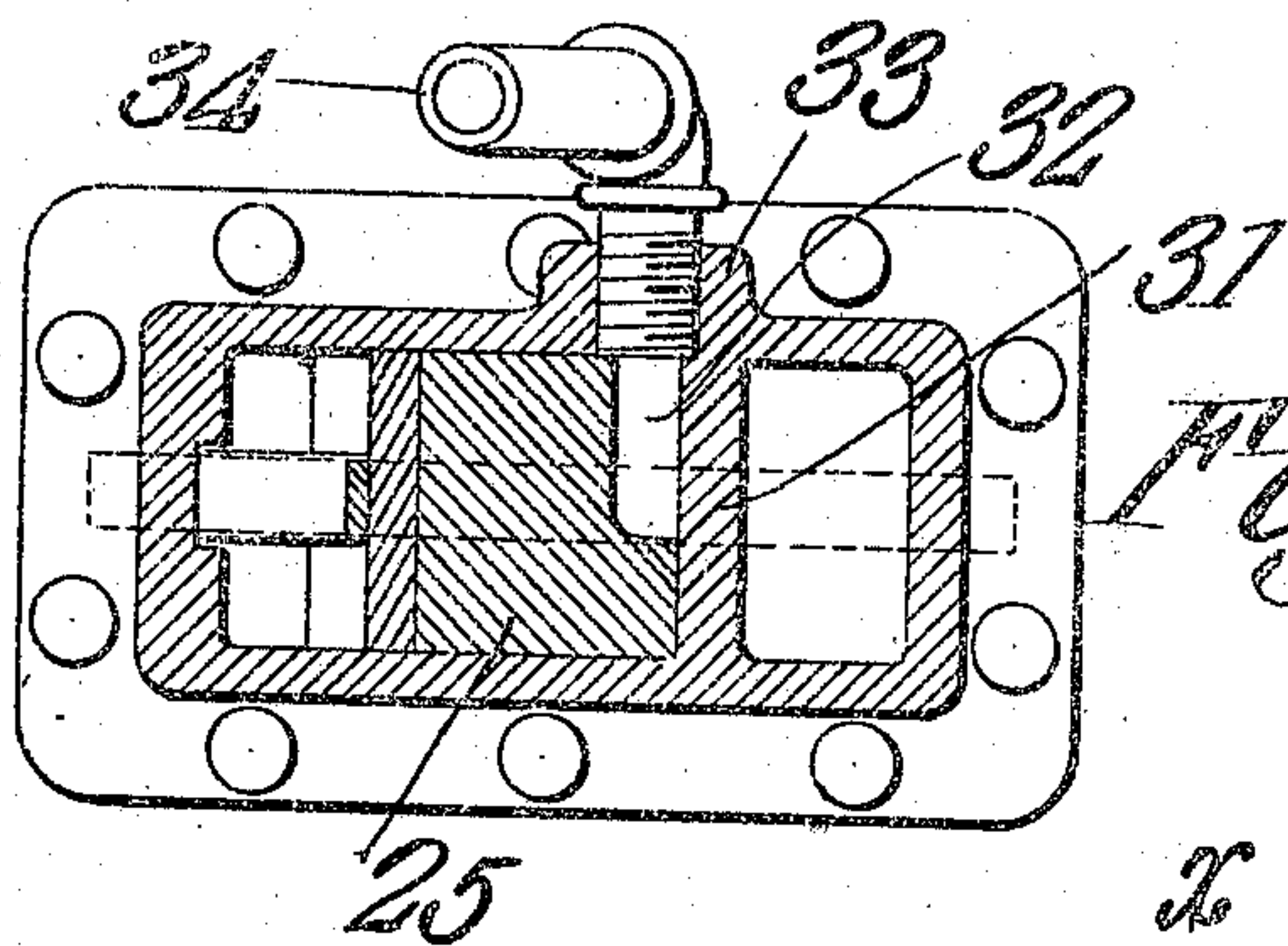
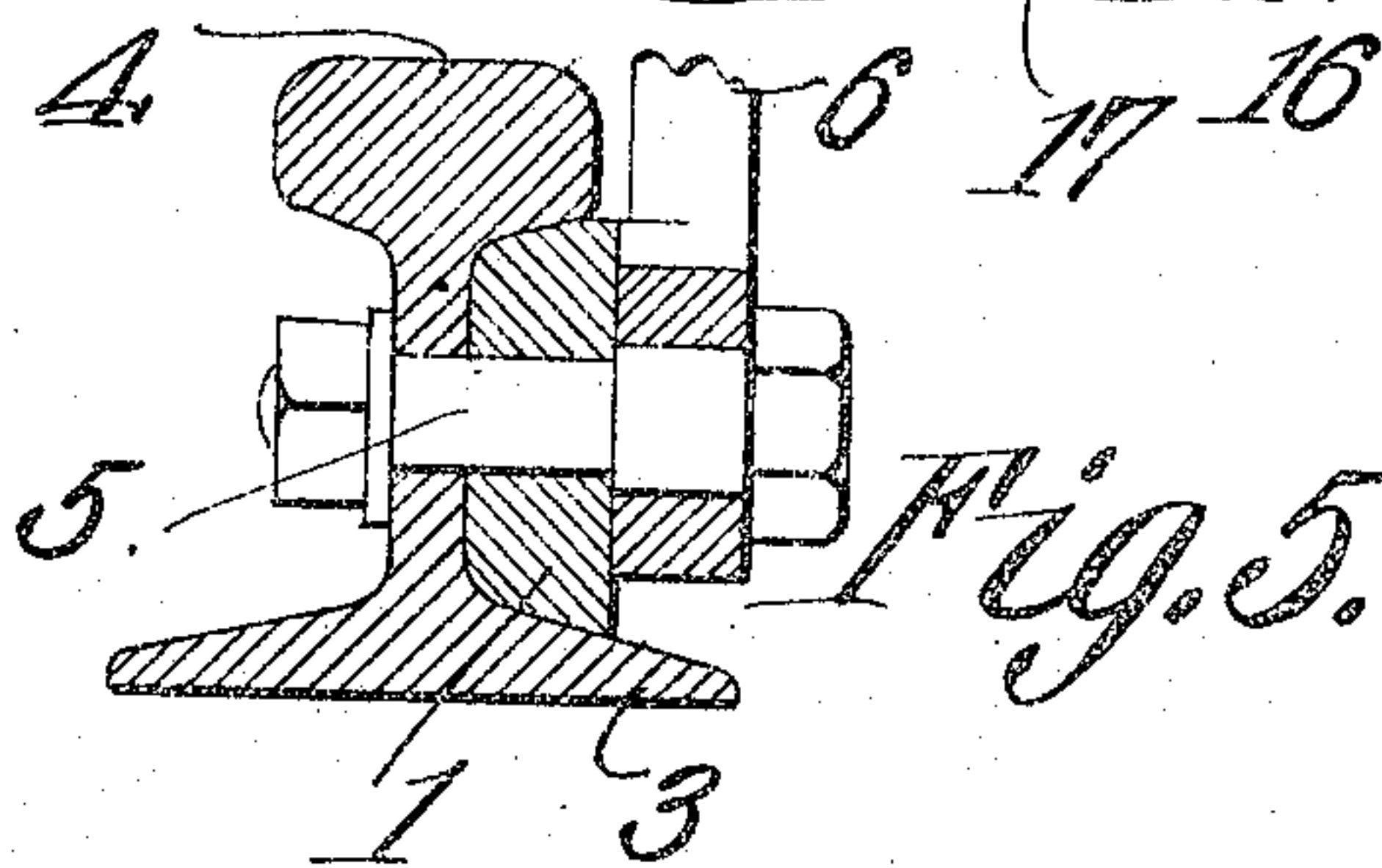
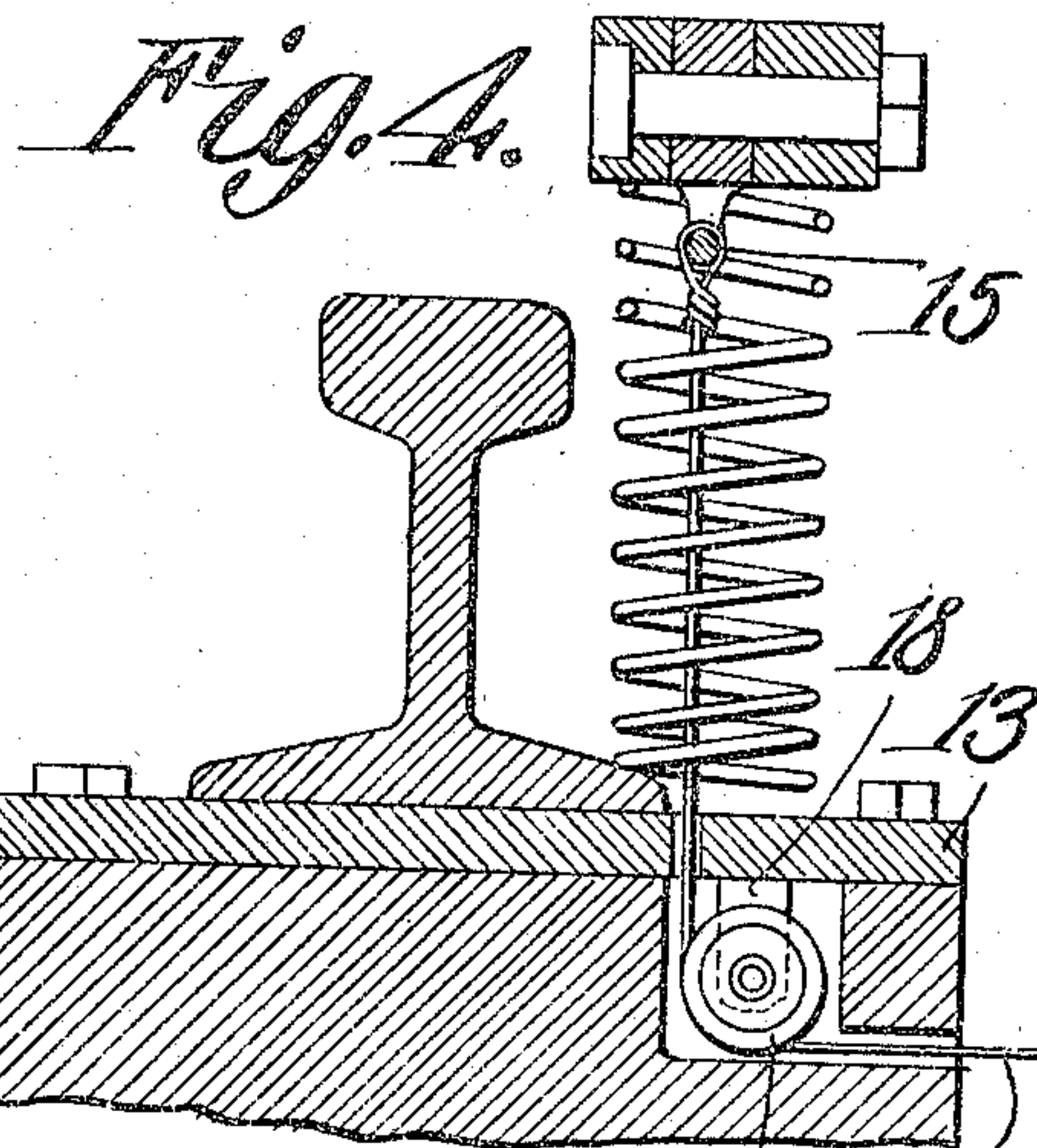
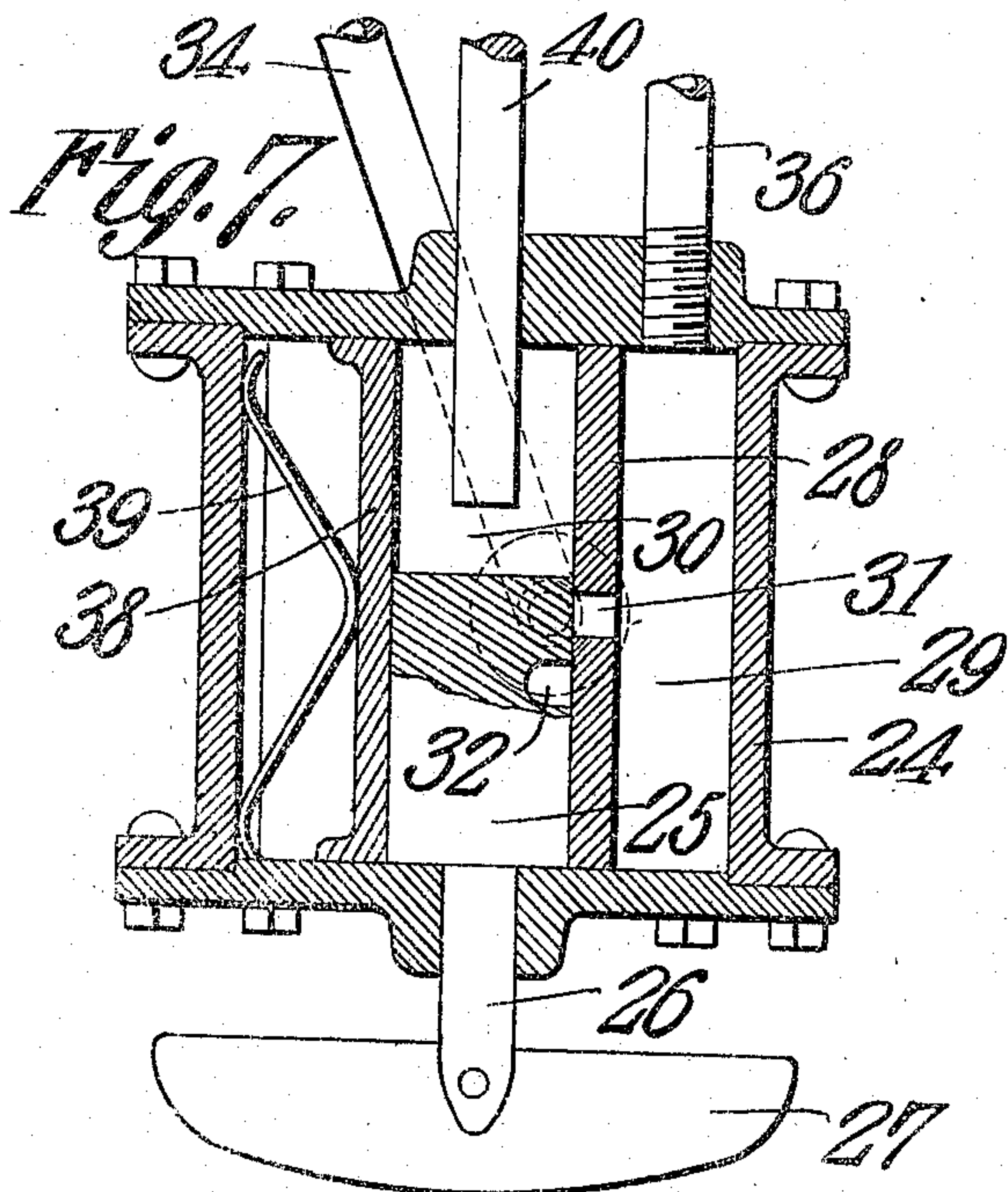


Fig. 8.

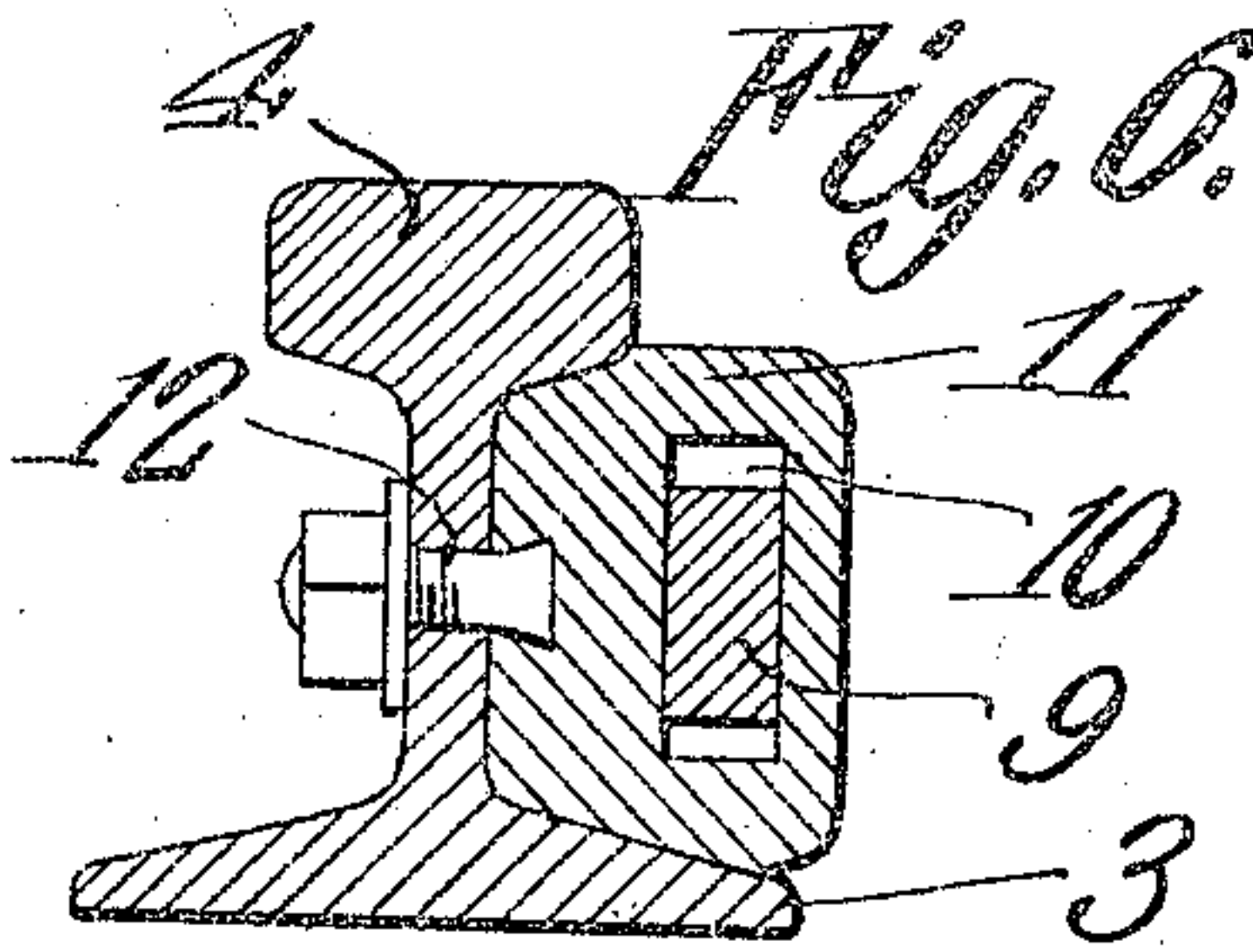


Fig. 6.

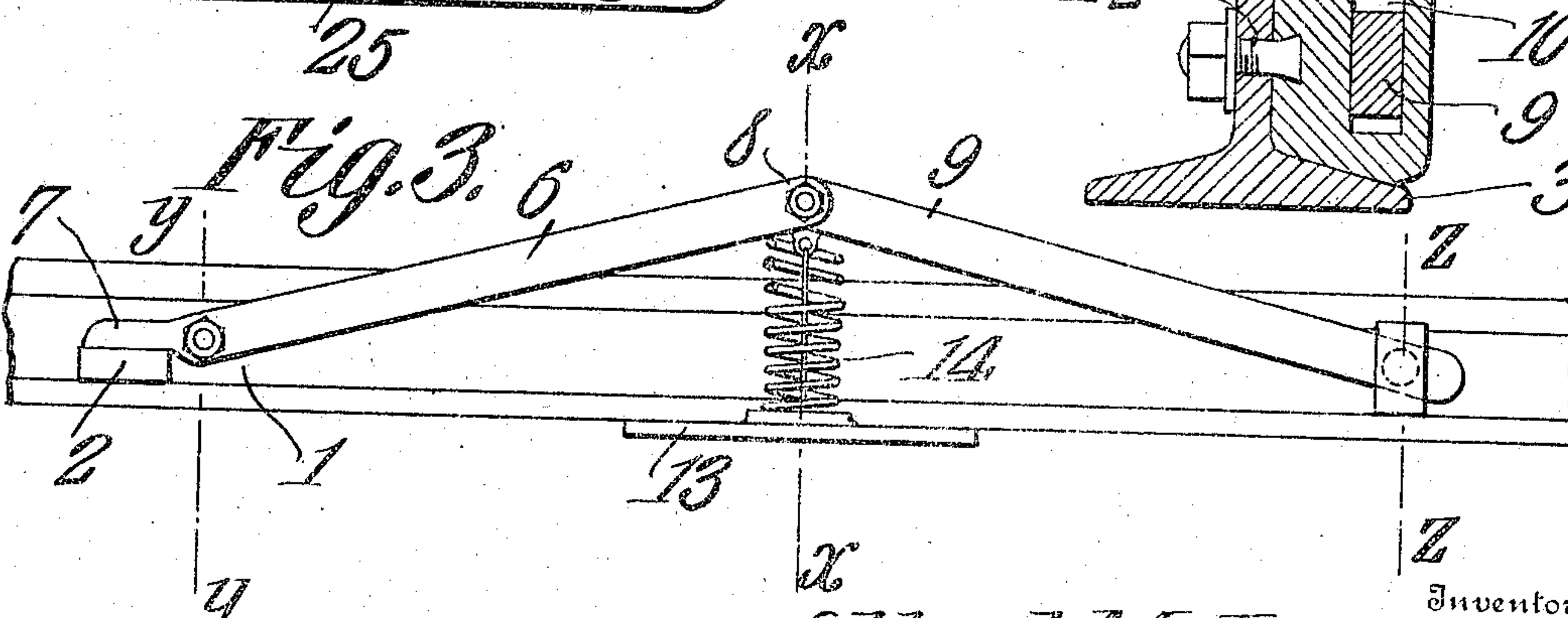


Fig. 3.

Witnesses
Edmund Lawrence
Herbert Lawrence

Inventor
Albert M. Jones.
By *Edmund Lawrence*
Attorneys

UNITED STATES PATENT OFFICE.

ALBERT M. JONES, OF HAGERSTOWN, MARYLAND, ASSIGNOR OF ONE-SIXTH TO ALBERT J. LONG, ONE-SIXTH TO LEON R. YOURTEE, AND TWO-THIRDS TO JOSEPH K. HOFFMAN, OF HAGERSTOWN, MARYLAND.

RAILWAY SAFETY APPLIANCE.

No. 905,080.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed December 18, 1907. Serial No. 407,034.

To all whom it may concern:

Be it known that I, ALBERT M. JONES, a citizen of the United States, residing at Hagerstown, in the county of Washington and State of Maryland, have invented a new and useful Railway Safety Appliance, of which the following is a specification.

This invention relates to railway safety appliances and its object is to provide means whereby a signal, either visual or audible, may be operated upon a locomotive in the event of its approaching an open switch or a block in which a danger signal is displayed.

Another object is to provide means of novel construction disposed close to the track and designed when a switch is open or a danger signal is displayed to project upward into the path of an operating member carried by the locomotive, said member being disposed to direct compressed fluid into a visual or other alarm device located upon the engine.

Another object is to provide mechanism of this character which is simple, durable, and efficient, and may be readily installed upon a locomotive in ordinary use and in connection with switches and semaphores such as now utilized without necessitating any changes in the construction or arrangement of the parts.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a side elevation of the complete apparatus used in connection with a semaphore arm. Fig. 2 is a plan view of the semaphore arm and the tripping member connected thereto. Fig. 3 is an enlarged side elevation of said tripping member. Fig. 4 is an enlarged section on line $x-x$, Fig. 3. Fig. 5 is an enlarged section on line $y-y$, Fig. 3. Fig. 6 is an enlarged section on line $z-z$, Fig. 3. Fig. 7 is an enlarged vertical section through the valve casing carried by the engine. Fig. 8 is a horizontal section therethrough. Fig. 9 is a plan view showing the apparatus applied to a switch.

Referring to the figures by characters of reference, 1 designates a base plate having

an outstanding stop lug 2 and this plate is designed to fit snugly between the base flange 3 and the head 4 of a rail and to be secured in position by means of a bolt 5 extending through the web of a rail. This bolt constitutes the fulcrum of a lever 6 which has an arm 7 extending therebeyond at an angle thereto, said arm being disposed to abut against the stop lug 2 when the lever 6 is inclined upwardly above the rail as indicated in Fig. 3. The lever 6 has its upper end forked as indicated at 8 and pivotally mounted within this fork is a link 9 the free end of which is loosely mounted within a slot 10 extending through a guide block 11. This guide block is designed to fit snugly between the head 4 and base flange 3 of a rail and to be secured against the web of said rail by means of a bolt 12 cast into the block as shown in Fig. 6. A plate 13 is extended under the rail and below the connected ends of lever 6 and link 9 and mounted on this plate is a coiled spring 14 upon which the fork 8 bears. An eye 15 extends downward from the upper end of link 9 and connected to it is a flexible device 16 such as a cable, chain or the like, which extends downward through the coil and under a pulley 17 journaled below plate 13 between hangers 18.

The apparatus hereinbefore described is designed to be placed a considerable distance from a switch or a semaphore arm cooperating therewith. In Figs. 1 and 2 a signal device has been shown in connection with said apparatus, said device consisting of a standard 19 on which is mounted a semaphore arm 20 designed to be operated in any ordinary or preferred manner to indicate danger. The flexible element 16 after leaving the pulley 17 is extended around pulleys 21 and 22 and thence upward along the standard 19 to the arm 20. The connection 16 is so attached to the arm 20 that when said arm is moved in a position to indicate danger the connection 16 becomes slack and permits the spring 14 to push the lever 6 and the link 9 upward as indicated in Fig. 3. When, however, the semaphore arm is moved to indicate a clear track it pulls upon connection 16 so as to pull downward on the lever 6 and compress spring 14 thus bringing the fork 8 below the upper surface of the rail.

If desired, instead of connecting the flexible element 16 to a semaphore arm, it may be connected to a switch 23 as indicated in Fig. 9, the same being so disposed that when the switch is opened element 16 will become slack and permit spring 14 to raise lever 6 whereas when the switch is closed it will pull on the element 16 and cause the lever 6 to be swung downward below the top of the rail.

The parts hereinbefore described are designed, when lever 6 is held in raised position, to operate a signal apparatus carried by a locomotive traveling along the track in the direction of the semaphore or switch. This alarm apparatus, as shown by the drawings, consists of a casing 24 carried by the locomotive A at one side thereof, said casing being provided with an angular plunger 25 provided with a stem 26 which projects downward through the bottom of the casing. This stem has a shoe 27 connected to its lower end and designed, when the plunger is in its lowest position, to move into contact with and to ride upward upon the lever 6 should the same be in raised position. To facilitate this upward movement of the shoe the lower face thereof is preferably rounded as clearly indicated in Fig. 7.

The casing 24 is provided with a partition 28 which divides said casing into a receiving compartment 29 and a plunger compartment 30. A door 31 is formed within this partition and a by-pass 32 is formed in one face of the plunger and is designed, when said plunger is raised to a certain position, to register with port 31 and to also register with an outlet port 33. A pipe 34 extends through this outlet port and into the cab of the engine, the same being provided with a whistle 35 or other air operated signal. An air inlet pipe 36 extends from the air tank 37 of the locomotive to the compartment 29. In order that the plunger may be frictionally held in any position to which it is shifted a follower 38 is mounted to move transversely within the casing 24 and is held clamped against the plunger by means of a spring 39.

A rod 40 is slidably mounted within the upper portion of the casing 24 and directly above the plunger 25 and is connected to a bell crank lever 41 designed to be actuated through a rod 42 from a lever 43 preferably located within the cab.

When it is desired to set the alarm apparatus lever 43 is actuated so as to push rod 40 downward against plunger 25 and shift said plunger and its shoe 27 to their lowermost positions. Rod 40 is then raised by means of lever 43 so that the upward movement of plunger 25 will not be interfered with. Should lever 6 be raised by reason of an open switch or the display of a danger

signal as heretofore described the shoe 27 upon the approaching locomotive will strike and ride upward upon said lever 6 and force the plunger 25 upward until the by-pass 32 registers with ports 31 and 33. Air will be promptly directed from the tank or reservoir 37 and pipe 36 into pipe 34 and to the whistle 35 or other signal device and as the plunger 25 is held in shifted position by the follower 38 it will be apparent that this whistle or other signal device will continue to sound or operate until the engineer lowers the plunger 25 in the manner heretofore described. The operation of the signal 35 will thus always indicate the presence of danger. It is of course apparent that should no danger signal be displayed or should the switch be closed the lowered shoe 27 will not be operated because lever 6 will be lowered out of the path of said shoe.

Although a lever 43 and its connection have been shown and described for returning the plunger 25 to its lowermost position, it is to be understood that any other suitable means may be employed in lieu thereof. Although the part 27 has been shown as a slidable shoe it is to be understood that if preferred a wheel, spring or other device may be employed in lieu thereof.

What is claimed is:

1. The combination with a motor carried signal; of means for actuating the same comprising a yielding supported normally inclined tripping device, means for limiting the movement of said device in one direction, and a movable traffic controlling means cooperating with said device and disposed when shifted out of "danger" position to move the tripping device out of operative position.

2. The combination with a motor carried signal; of means for operating the same comprising a pivoted spring supported tripping lever, a link pivotally connected thereto, a guide for the link, separate means for detachably connecting the lever and guide to a rail, movable traffic controlling means, and a flexible connection between said means and the tripping device.

3. The combination with traffic controlling means and a tripping device cooperating therewith, said device being disposed to automatically assume an operative position when the controlling means is in a predetermined position; of motor carried means comprising a casing, a reservoir, a signal, pipe connections between the signal and casing and between the reservoir and casing, a plunger for establishing communication between said connections, means connected to the plunger and cooperating with the tripping device for actuating said plunger, and spring pressed means within the casing for frictionally engaging the plunger to hold it in shifted position.

4. The combination with traffic controlling means and a tripping device cooperating therewith, said device being disposed to automatically assume an operative position
5 when the controlling means is in operative position; of motor carried means comprising a signal, means shiftable by the tripping device for directing an operating agent to the signal, and spring pressed means for fric-

tionally engaging said shiftable means for binding it in shifted position.

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

ALBERT M. JONES.

Witnesses:

GEO. S. FOCKLER,
ALBERT J. LONG.