

No. 850,412.

PATENTED APR. 16, 1907.

W. J. BELL.

AUTOMATIC FLUID PRESSURE AND MOTOR CONTROLLER.

APPLICATION FILED JUNE 3, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

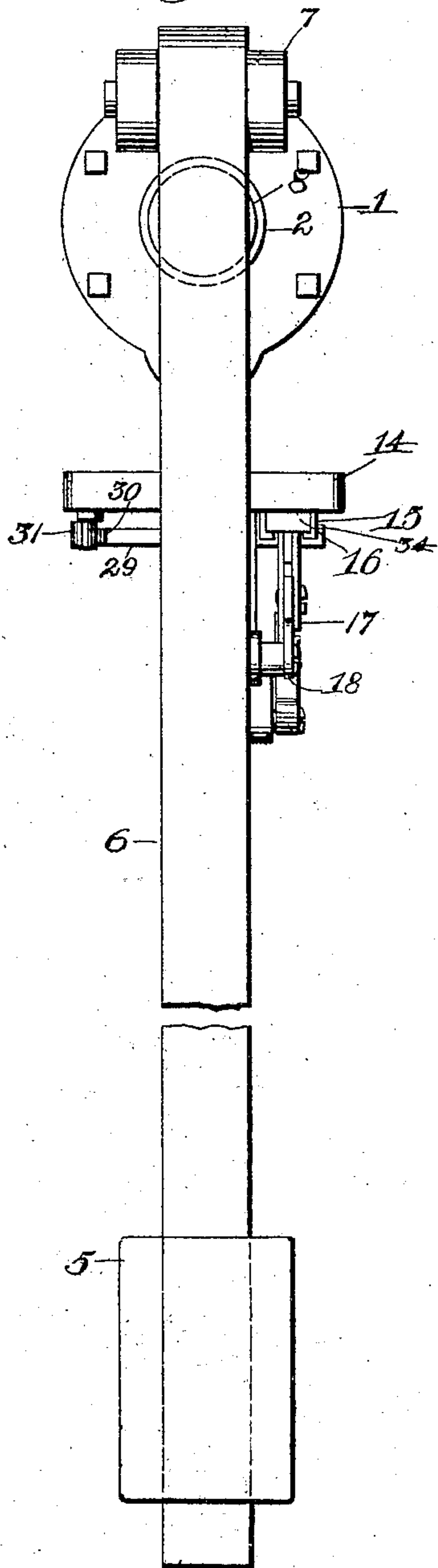
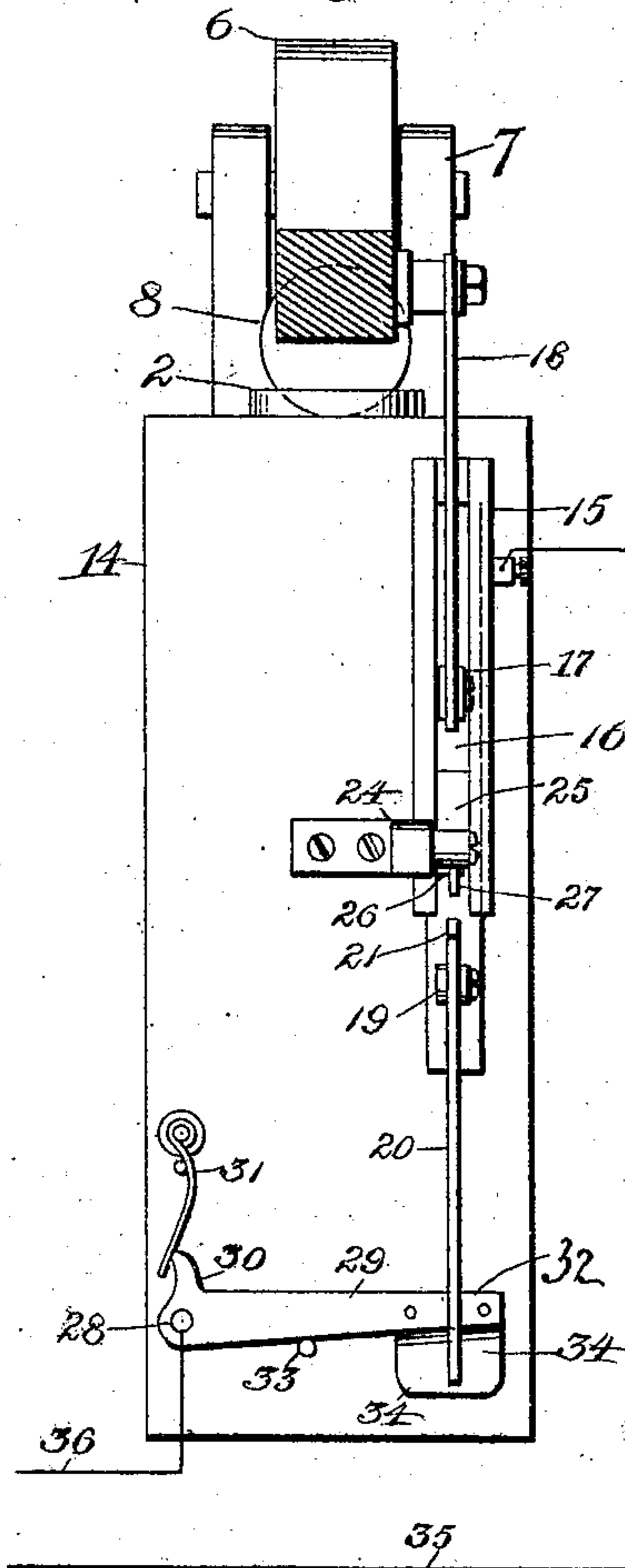


Fig. 2.



Witnesses

Walter J. Bell
Chas. W. Keegan

Inventor

Walter J. Bell

By Dudley Brown & Watson
his Attorneys

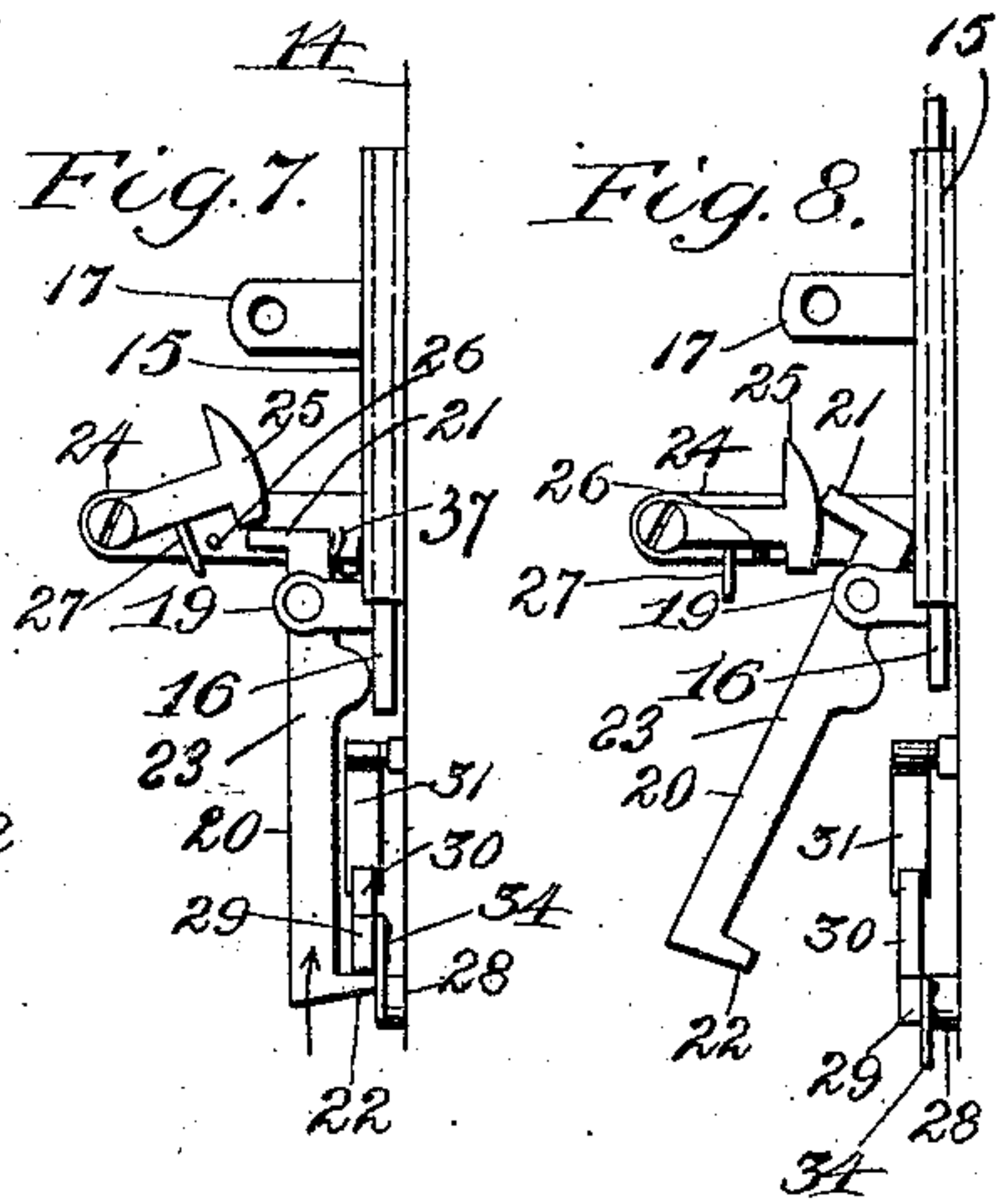
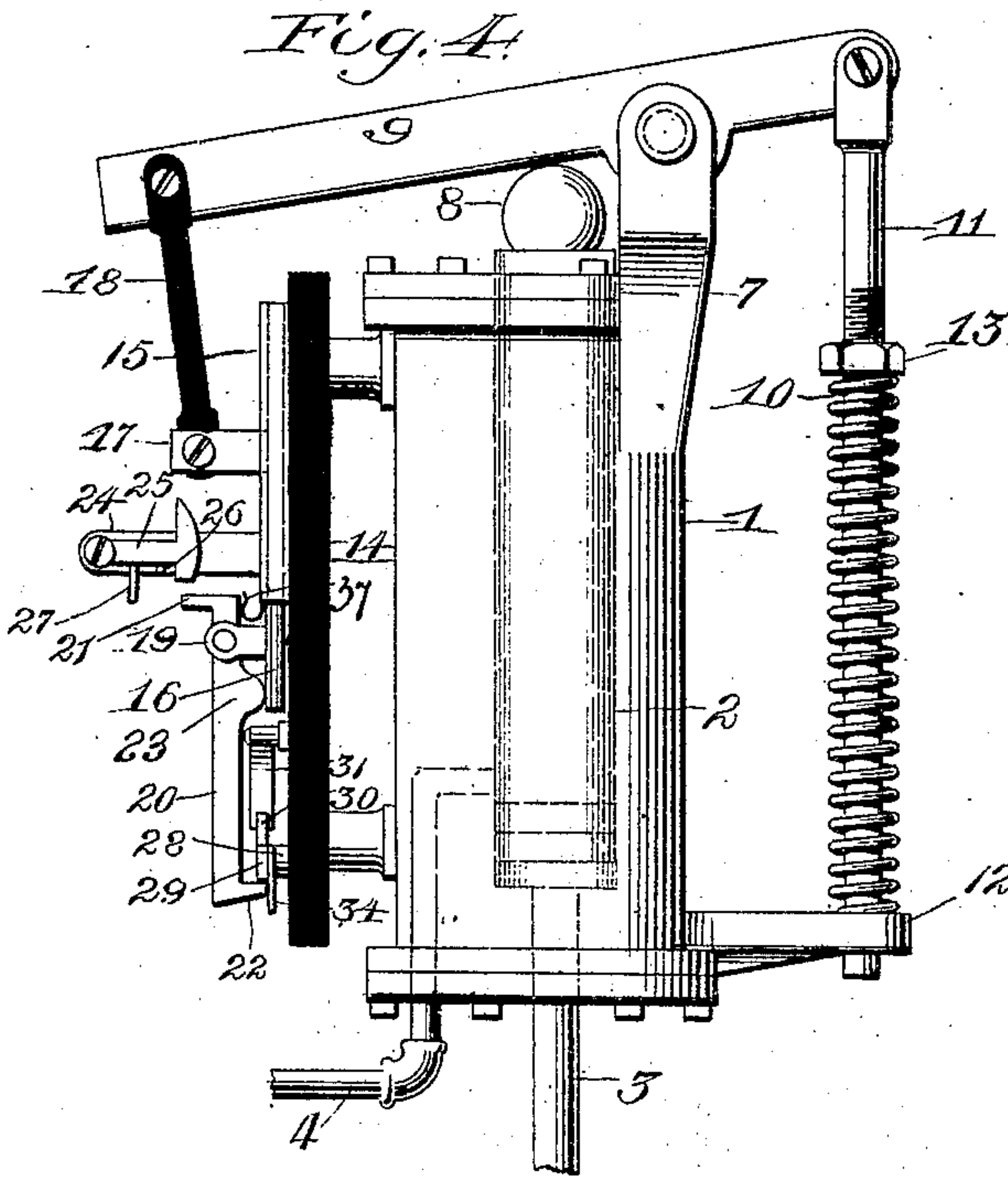
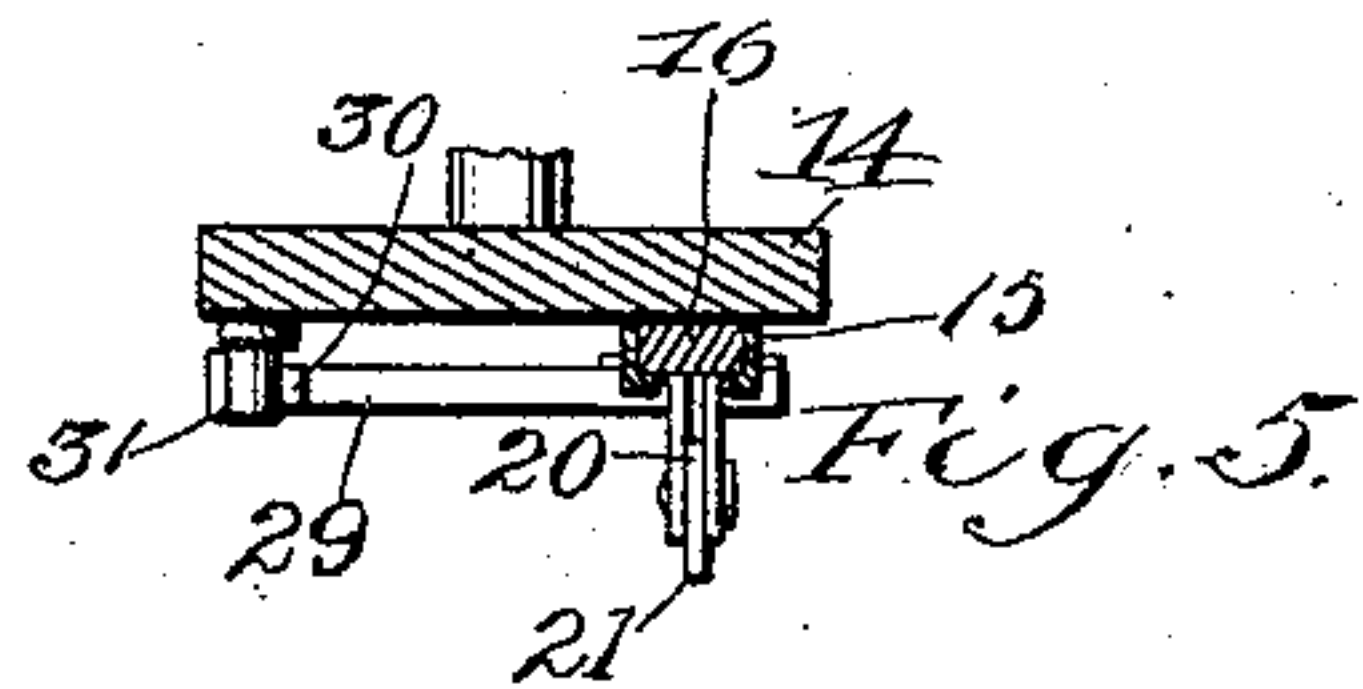
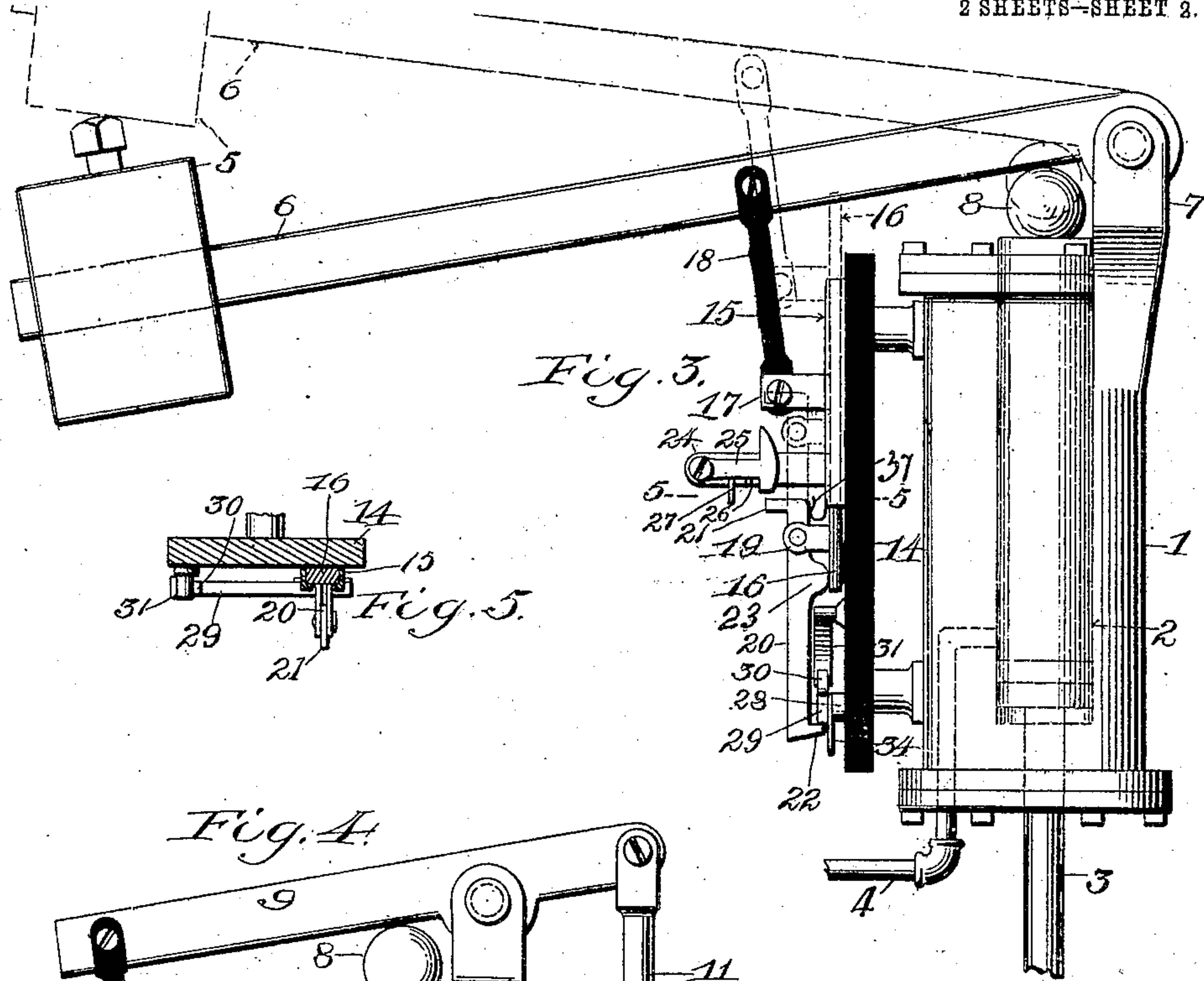
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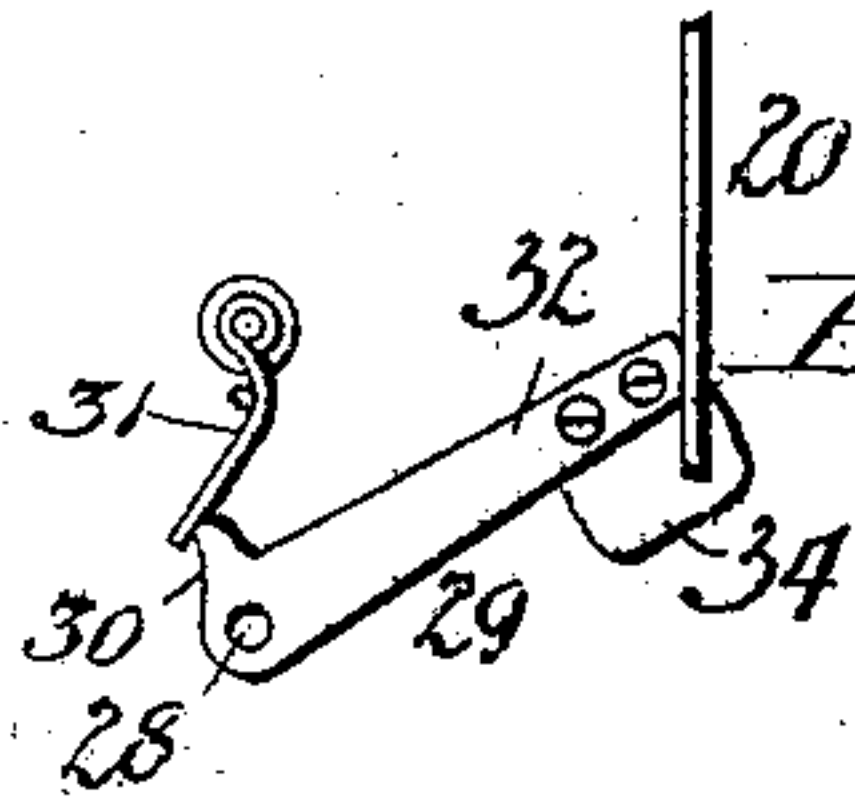
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Witnesses
W. J. Bell
C. Wheeler



Inventor
Walter J. Bell
By Dudley, Thomas & Watson
his Attorneys

UNITED STATES PATENT OFFICE.

WALTER J. BELL, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO LEON F. MOSS, OF LOS ANGELES, CALIFORNIA.

AUTOMATIC FLUID-PRESSURE AND MOTOR CONTROLLER.

No. 850,412.

Specification of Letters Patent.

Patented April 16, 1907.

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To all whom it may concern:

Be it known that I, WALTER J. BELL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Automatic Fluid-Pressure and Motor Controllers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the actuation more particularly of railway appliances—for example, switches, signals, gates, and the like—by fluid-pressure a diminution of pressure follows each application of power to move the switching or other element, requiring the frequent and in some instances the constant operation of the pressure-creating means. It is desirable from the standpoints of economy and durability that the operation of the pressure-creating means, in lieu of being constant, be coincident with the reductions in pressure, and I have devised an appliance electromechanical in character which operates automatically by variations in pressure to control the circuit of an electric motor forming a part of the pressure-creating means, whereby the pressure of the fluid, either air or liquid, is maintained practically constant and proper actuation of the switching or other element is at all times assured.

The nature of the invention will be readily comprehended, reference being had to the following detailed description and to the accompanying drawings, illustrating the invention in its preferred form of embodiment, it being understood that various modifications may be made therein without exceeding the scope of the concluding claims.

In the drawings, Figure 1 is a top plan view of an automatic fluid-pressure and motor controlling appliance embodying the invention. Fig. 2 is a front elevation of the same. Fig. 3 is a side elevation of the same. Fig. 4 is a detail view showing a modification. Fig. 5 is a sectional view on line 5 5 of Fig. 3. Figs. 6, 7, and 8 are detail views showing certain parts in different positions.

Referring to the drawings by numerals, 1 designates a vertical cylinder in which is slidably arranged a piston 2, elevated by fluid under pressure entering the cylinder at its

base by a pipe 3, connected with a motor-operated pump or compressor. Where liquid is employed to move the piston, a return-pipe 4 is provided, which pipe communicates at its upper end with the interior of the cylinder and is uncovered when the piston reaches a predetermined height. The piston is elevated against its own weight and a weight 5 on a lever 6, pivoted in a bracket 7 on the cylinder. Interposed between the piston and lever is a ball 8, seated in a recess in the top of the piston-stem. The weight is shiftable along the lever to regulate the resistance offered to the pressure and is held in its adjusted position by a set-screw or the like. In Fig. 4 is shown another form of lever 9, employed in connection with a resistance-spring 10, coiled around a rod 11, the latter being pivoted at its upper end to the lever and passing at its lower end loosely through an apertured lug 12, projecting from the lower end of the cylinder. The spring is interposed between the lug and a tension-regulating nut 13.

Supported from the cylinder, at the front thereof, is a plate 14, of insulating material, on which is secured a guide 15, slidably confining a bar 16. The bar is provided with two bifurcated lugs, the upper one, 17, having pivotal connection with one end of a rod 18, of insulating material, the other end of the rod being pivoted to the lever 6 or 9. To the other lug 19 on the bar 16 is pivoted a swinging contact 20, having oppositely-extending end projections 21 22 and an intermediate projection 23, serving, with the bar, to limit movement of the contact in one direction. Pivoted on an arm 24, extending from the plate 14, is a shoe 25 of T form; the top of the head being curved or beveled, as shown. The rise and fall movements of the shoe are limited by the engagements with a pin 26 on the arm 24 of the shoe and a finger 27, carried by the shoe.

Pivoted at 28 on the plate 14 is a contact 29 in the form of a bell-crank lever, one relatively short arm 30 of which is engaged by a flat spring 31 to normally press the longer arm 32 against a stop 33. The end of the arm 32 is in the path of the projection 22 of the swinging contact, and said end is provided on its inner side with a depending plate 34, whereby the projection may hook under the arm and contact with the plate 34. Wires 35 36 lead, respectively, from the

all times regardless of conditions