

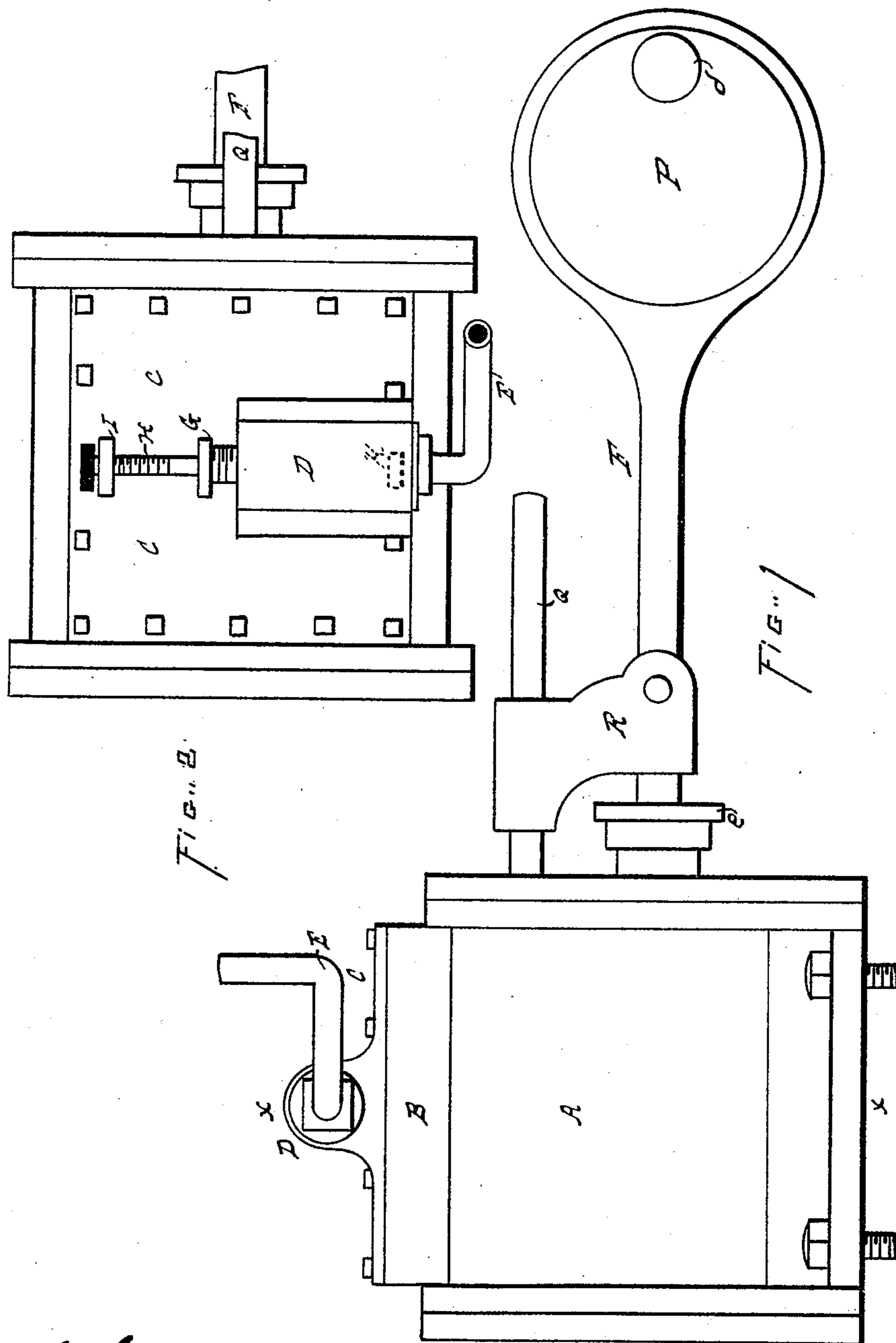
(No Model.)

2 Sheets—Sheet 1.

L. J. GENETT.
PUMP.

No. 436,232.

Patented Sept. 9, 1890.



Witnesses
Cyrie L. Thompson
Adelaide A. Anderson

Inventor
Louis J. Genett

(No Model.)

2 Sheets—Sheet 2.

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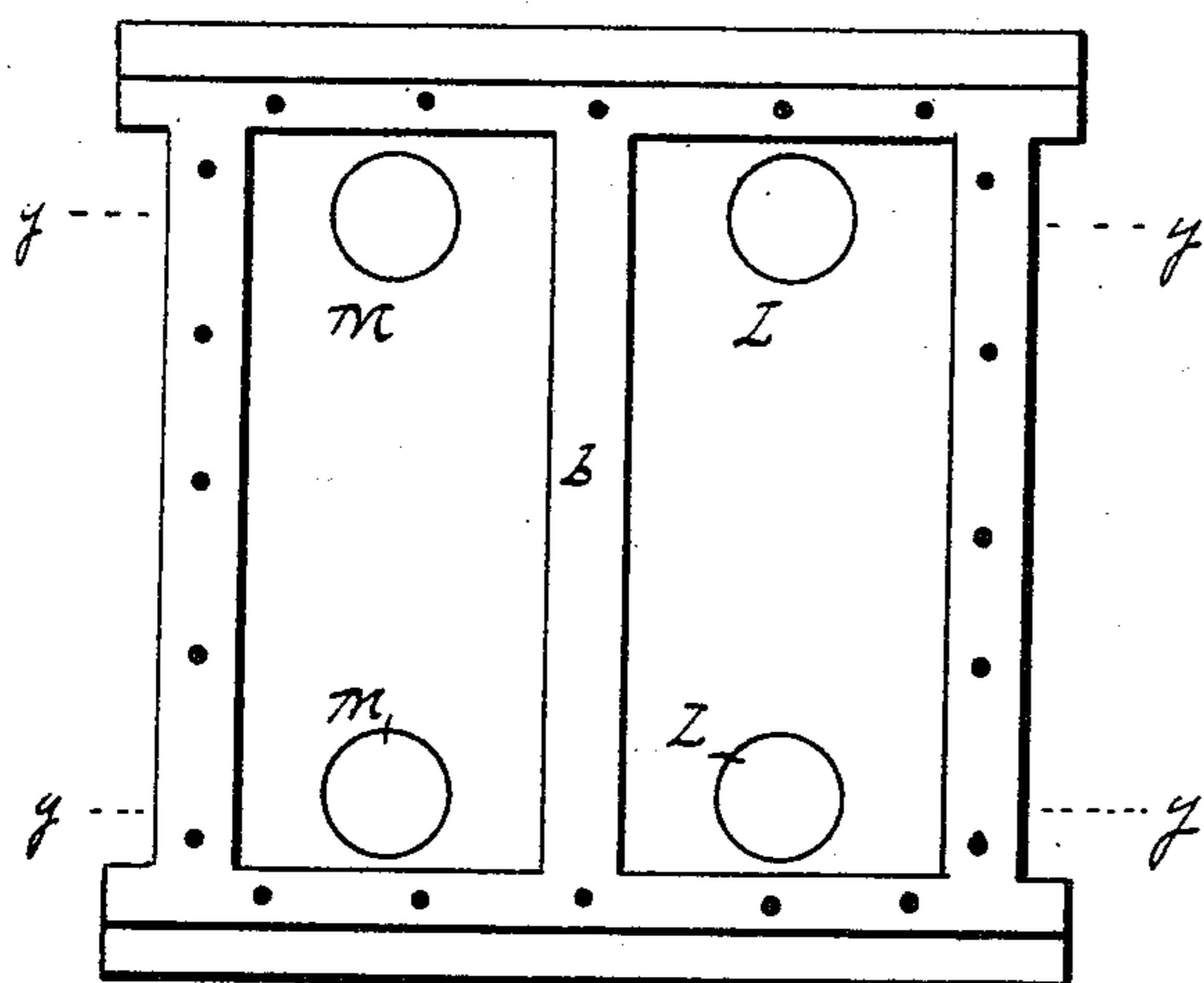


FIG. 4

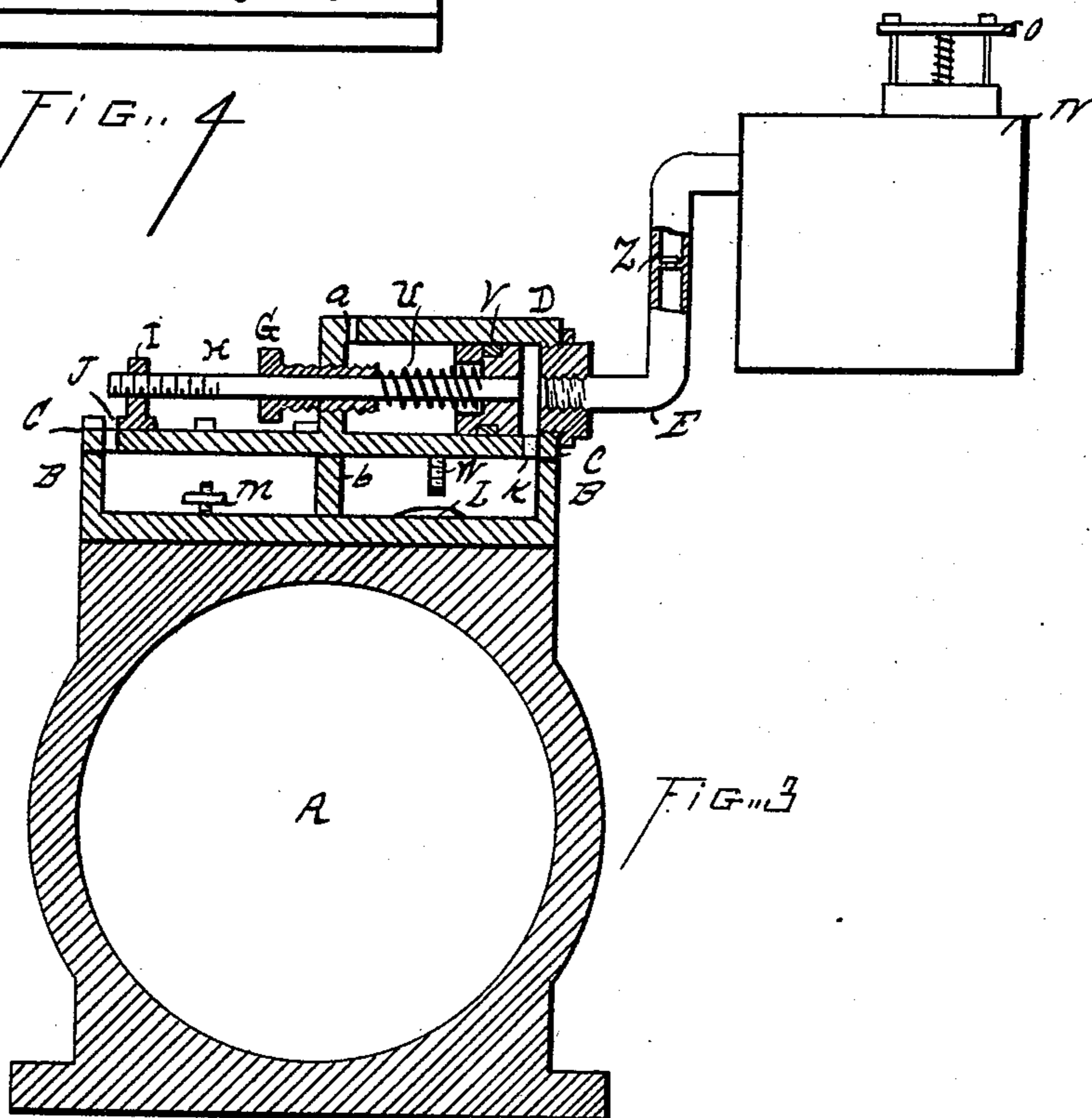
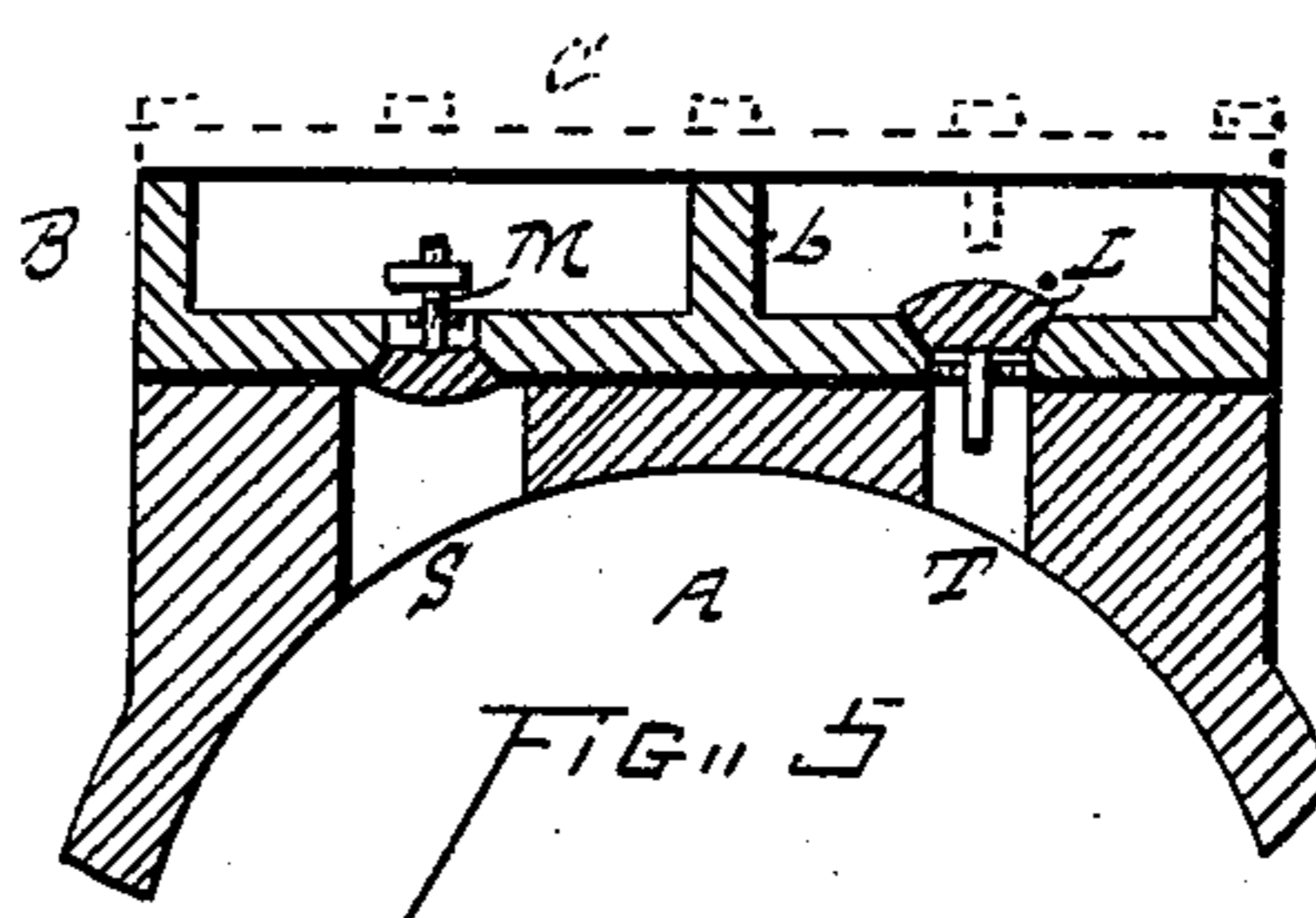


FIG. 3

Witnesses
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UNITED STATES PATENT OFFICE.

LOUIS J. GENETT, OF MARQUETTE, MICHIGAN, ASSIGNOR OF PART TO FRED-
ERICK FREI, PETER FREI, AND HERBERT MOORE, ALL OF SAME PLACE.

PUMP.

SPECIFICATION forming part of Letters Patent No. 436,232, dated September 9, 1890.

Application filed June 26, 1889. Serial No. 315,582. (No model.)

To all whom it may concern:

Be it known that I, LOUIS J. GENETT, of Marquette, in the county of Marquette and State of Michigan, have invented a new and
5 useful Improvement in Pumps, of which the following is a specification.

My invention consists in an improvement in air-pumps, hereinafter fully described and claimed, and is intended more particularly to
10 be used for compressing air for air-brake purposes, though of course it may be used for any purpose in which it is applicable.

Figure 1 is a side elevation; Fig. 2, a plan view; Fig. 3, a vertical section on line *x x*, Fig.
15 1; Fig. 4, a plan view of the valve-chest with the cover removed; and Fig. 5, a partial section on lines *y y*, Fig. 4.

A represents a cylinder having the ordinary heads, and having therein a piston (not shown)
20 and piston-rod projecting through the stuffing-box *e* at one end of the cylinder.

R represents a cross-head attached to the piston-rod and running on the guide Q, and F represents a pitman pivoted to the cross-head
25 R and operated by an eccentric P, secured on the shaft *d*, which shaft may be the axle of a car when the pump is applied to working car-brakes.

B represents a valve-chest, which is provided
30 with a tight-fitting cover C, secured thereto, and the valve-chest is provided with the partition *b*, running lengthwise of the cylinder, which divides the valve-chest into two compartments, in one of which are two inlet-ports
35 S S at opposite ends of the valve-chest, communicating with the ends of the cylinder, and each provided with an inwardly-opening check-valve M, as shown in Fig. 5. The other compartment of the valve-chest is provided
40 with two outlet-ports T, communicating with the respective ends of the cylinder, each of which is provided with an outwardly-opening check-valve L, as shown in Fig. 5.

J represents an air-inlet port through cover
45 C, and K represents an air-outlet port through said cover C, these two ports being on opposite sides of the partition *b*.

W represents a stop on the under side of cover C to limit the upward motion of check-
50 valve L, there being one of these stops for each check-valve L.

The outlet-port K discharges into one end of a small cylinder D, formed on the top of cover C, or else formed separate from said cover and bolted thereto.

V represents a piston in the cylinder D, having a piston-rod H, which extends through the end of the cylinder D and has its outer end threaded to engage with the shank of a slide-valve I, adapted to close the air-inlet port J. 55

U represents a coil-spring encircling that portion of piston-rod H which is within cylinder D, and G represents a hollow screw in the end of said cylinder D, through which the piston-rod passes, and the inner end of which
60 bears against the end of spring U, the only function of screw G being to compress the spring U to the desired strain. It is evident that for screw G any other device by which the tension of spring U may be regulated may
65 be substituted.

a represents a pin-hole in cylinder D to prevent compression of air in that part of said cylinder in which the spring U is contained. If the spring mechanism be made loose, the
70 pin-hole *a* may be omitted.

N represents a reservoir for compressed air, having therein a safety-valve O, and connected with the end of cylinder D by a pipe E, in which there is preferably a check-valve Z, 80 adapted to permit air to pass from cylinder D into the reservoir N, but to prevent its return. It is evident that the cylinder D may be connected directly with the reservoir N, so that air compressed by the pump will not traverse
85 said cylinder in passing to the reservoir.

The operation of my invention is as follows: The pressure desired to be carried in the reservoir N is fixed, and the tension of the spring U is then so regulated that the pressure of
90 said spring against the piston V equals the total pressure against the face of said piston at the desired pressure in the reservoir. For instance, if the pressure in the reservoir is to be one hundred pounds and the area of piston V is one inch, the spring U is regulated
95 to exert a pressure of one hundred pounds against said piston. The inlet-port J being open when the shaft *d* is started, it reciprocates the piston in cylinder A, and at each
100 forward and return stroke of said piston air is drawn into said cylinder through inlet-port

J and one of the inlet-ports S, the valve M in said port opening, while the air in the other end of the cylinder A is compressed and forced out through one of the ports T, the valve L
5 therein opening for that purpose and passes through the outlet-port K, cylinder D, and pipe E into the reservoir N. So long as the pressure in the reservoir N remains below the tension of spring U the parts will remain in
10 the position shown in Fig. 3, in which the air-inlet J is open to admit air to the valve-chest, and the operation of compressing air into said reservoir will continue; but as soon as the pressure in reservoir N increases beyond the
15 tension of spring U the piston V will be forced to the left, Fig. 3, against the resistance of spring U, and will carry slide-valve I over the inlet-port J, thus closing said port and preventing the further admission of air to the
20 pump. In this condition the piston in cylinder A will run without doing any work until

the pressure in reservoir N falls below the tension of spring U, when said spring will force the piston V back to the point shown in Fig. 3, thereby opening the inlet-port J
25 and permitting the operation of compressing air to continue.

What I claim as my invention, and desire to secure by Letters Patent, is—

In combination with an air-pump and res-
ervoir, an air-inlet port controlled by a slide-
valve, a cylinder connected with the reser-
voir and having therein a piston whose rod
is connected with the said slide-valve of the
air-inlet port and normally held against the
35 pressure in the reservoir by a spring, substantially as shown and described.

LOUIS J. GENETT.

Witnesses:

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