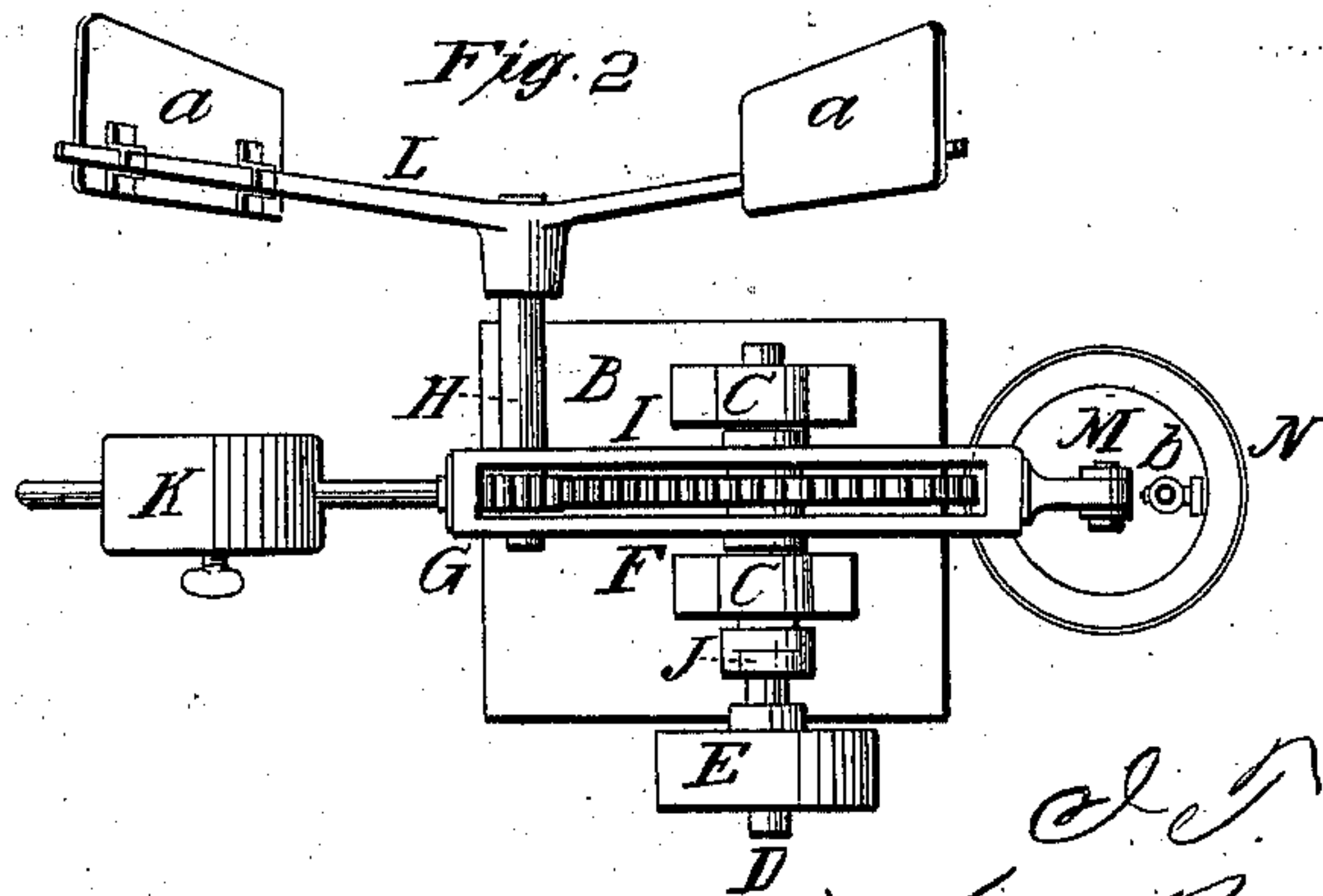
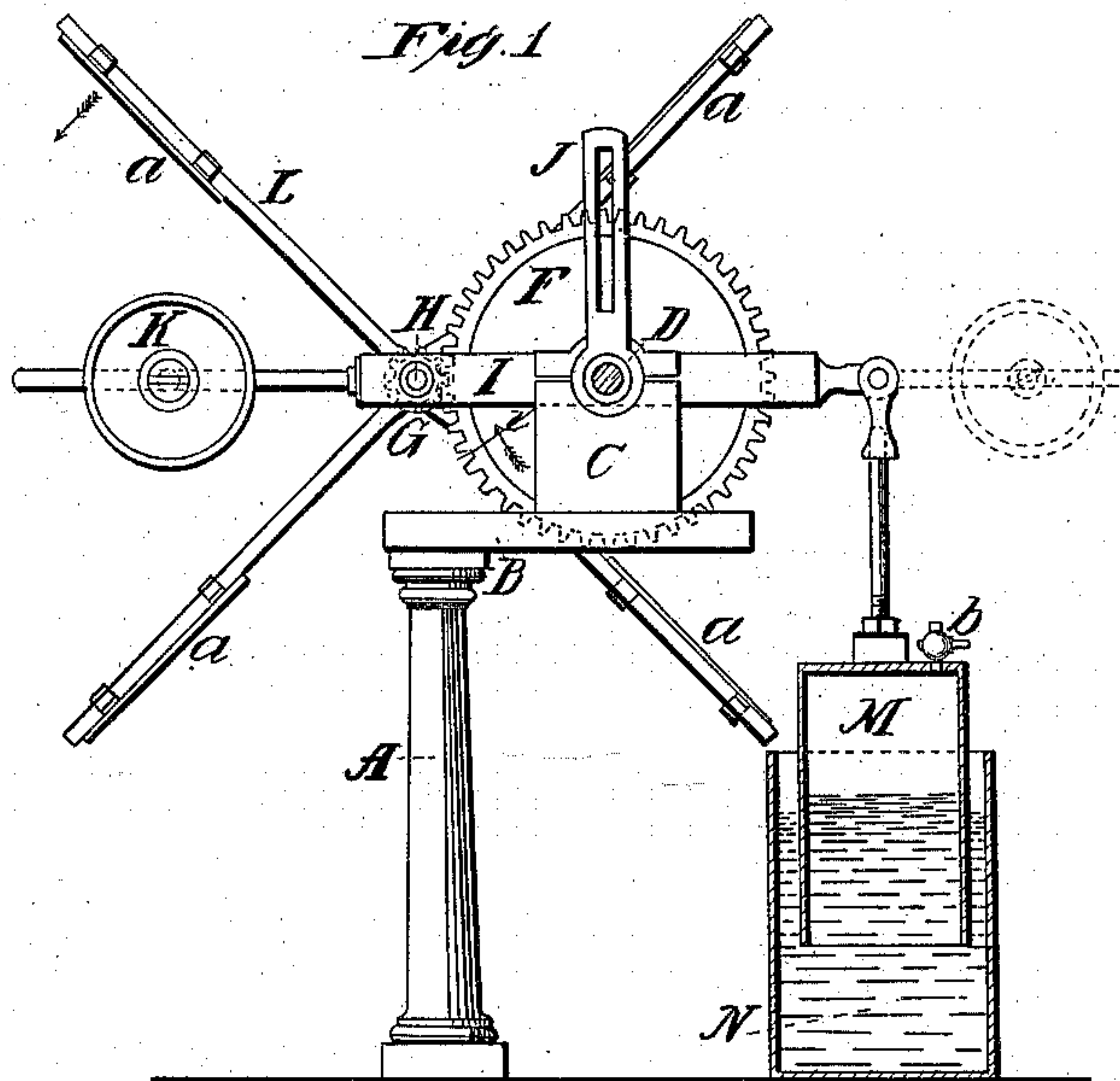


*J. T. Lospen,*

*Governor,*

*N<sup>o</sup> 83,516.*

*Patented Oct. 27, 1868.*



*Witnesses:*

*A. Heller*  
*A. Krimer*

*Inventor:*

*J. T. Lospen*  
*per Brown & Corbett*  
*attys*



# United States Patent Office.

JOSEPH THEODOR LOSSEN, OF WURZBURG, BAVARIA.

*Letters Patent No. 83,516, dated October 27, 1868.*

## IMPROVEMENT IN GOVERNORS FOR STEAM AND OTHER ENGINERY.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOSEPH THEODOR LOSSEN, of Würzburg, in the Kingdom of Bavaria, have invented a new and useful Improvement in Power-Regulators; of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents a sectional elevation of a power-regulator constructed in accordance with my improvement, and

Figure 2, a plan of the same.

Similar letters of reference indicate corresponding parts.

This, my improved power-regulator, which is applicable as a governor to control the throttle-valve of a steam-engine, and to other purposes, consists in a certain arrangement or combination of mechanism, whereby, on rotary motion being communicated to a shaft from the engine, or other motor, said shaft, or spur-wheel carried by it, is made to set in rotary motion, by a pinion in gear with the spur-wheel, a secondary shaft, hung on or to turn in a balanced or weighted lever, which secondary shaft carries arms provided with vanes, so that, on the speed of the motor being increased or diminished beyond the velocity it is required to move, an increase or diminution of resistance is met with by the fan against the air, which causes the lever carrying the secondary shaft to rise or fall, and in so doing to regulate, by an arm and other suitable connections, the speed of the motor, as, for instance, by controlling the throttle-valve of an engine; and the invention furthermore consists in a combination, with such an arrangement, of a shell or air-vessel, connected with the lever carrying the secondary shaft, and open at its lower end, so that on immersion of the open end of the shell in a vessel containing water or other fluid, said shell, by its expulsion of air from or within it, as it rises and falls, will serve to correct the too great sensitiveness of the governor or regulator.

Referring to the accompanying drawing, A represents a column carrying a table, B, on which are erected journal-boxes C C, that serve, directly or indirectly, to carry a horizontal shaft, D, which is caused to revolve, as indicated by the arrow *x*, by or through a pulley, E, from the engine or other motor. This shaft D carries a spur-wheel, F, which gears with a pinion, G, fast on a shaft, H, which has its bearings in a lever, I, that is free to vibrate or turn on the shaft D, and that, by an extension of its collar or bearing through the one journal-box C, carries an arm or lever, J, from which connection may be made to regulate the throttle-valve of the engine or other device controlling the speed of the motor.

The lever I has adjustable on it, at its pinion-end, a weight, K, and if desired, a similar weight may be

applied to the opposite end of said lever, while the pinion-shaft H, which runs in said lever, carries arms L, having any desired number of vanes *a*. Connected with the opposite end of the lever I, to which is the pinion G, is a shell, M, of an inverted-bucket form, being open below and closed above, or having its communication above, with the outside air, established and regulated by a cock, *b*. This air-shell or vessel is partially immersed in a vessel, N, containing water or other suitable fluid.

From this description it will be seen that the lever I, being balanced or set by the weight or weights on the end or ends of it, to occupy a fixed or certain position, when the wheel F is rotated in direction of the arrow *x*, at a velocity as acquired from the engine or motor, when running at its regular or desired speed, no motion of the lever J takes place to move the throttle-valve or other device, so as to alter the velocity of the engine or motor, but, supposing the latter to be unduly quickened, then the increased resistance, as encountered by the vanes *a* of the arms L against the air, causes such a pressure or resistance to be thrown upon the pinion G, in its gear with the wheel F, as that the pinion-end of the lever I is raised, and the lever J moved to act, say, upon the throttle-valve of the engine in such manner as to check the speed of the latter. On the other hand, a lowering of the speed of the motor, causes, by the diminished resistance encountered by the vanes *a*, of the arms L, the pinion-end of the lever I to fall, and so to open the throttle-valve to quicken and adjust the velocity of the engine. The air-bucket or shell M, as it is raised or lowered by the action of the lever I within the fluid in the vessel N, serves to operate as a check against too great sensitiveness on part of the regulator, and by the adjustment of the tap or cock *b*, so as to admit of a quicker or slower expulsion of air from the shell M, or more rapid or retarded suction through it, the action of the shell M, as a regulator of sensitiveness, may be adjusted to the greatest nicety.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The arrangement of the spur-wheel F, pinion G, weighted lever I, and vane-arms L, substantially as shown and described.

2. The inverted bucket or air-shell M, having an air-cock, *b*, and vessel N, in combination with the spur-wheel F, pinion G, weighted lever I, and vane-arms L, substantially as herein set forth.

In witness whereof, I have hereunto set my hand, this 25th day of July, 1868.

JOSEPH THEODOR LOSSEN.

Witnesses:

PETER BARSHEL,  
CIR. STODJEL.