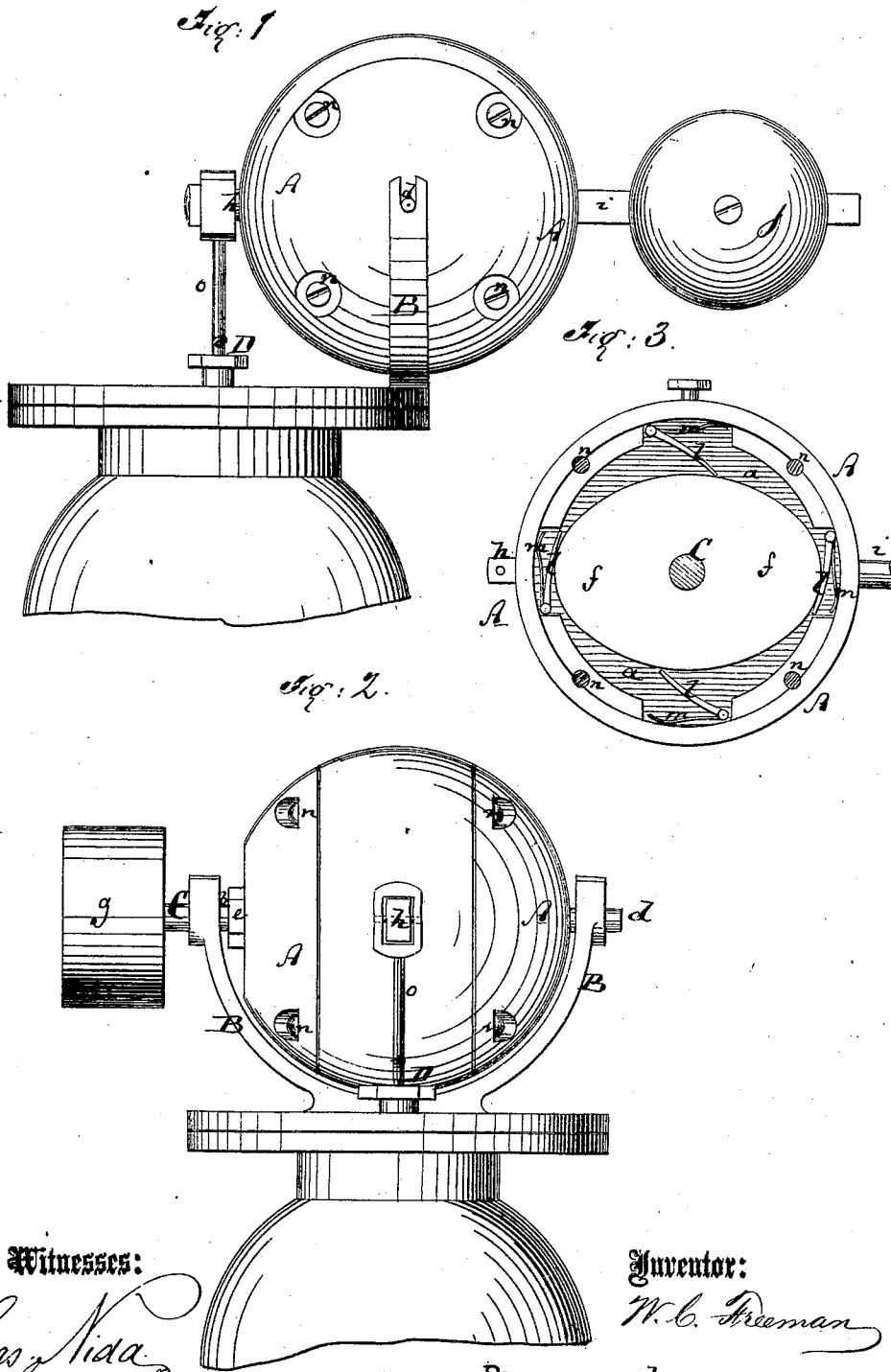


W. C. FREEMAN.

Improvement in Steam-Engine Governors.

No. 130,422.

Patented Aug. 13, 1872.



Witnesses:

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PER

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WILLIAM C. FREEMAN, OF LOUISIANA, MISSOURI.

IMPROVEMENT IN STEAM-ENGINE GOVERNORS.

Specification forming part of Letters Patent No. 130,422, dated August 13, 1872.

Specification describing a new and Improved Steam-Engine Governor, invented by WILLIAM C. FREEMAN, of Louisiana, in the county of Pike and State of Missouri.

Figure 1 represents a side view of my improved steam-engine governor. Fig. 2 is an end view, and Fig. 3 a vertical central section, of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new steam-engine governor in which the rotation of an eccentric within a chamber filled with a liquid, and having spring valves that bear against the eccentric, causes a movement of the surrounding vessel and a consequent adjustment of the steam-valve.

In the accompanying drawing, A represents a spherical or nearly spherical vessel, which contains a hollow chamber, *a*, within. This vessel is supported on a frame, B, by projecting trunnions *b* and *d*, as shown in Fig. 2, one of said trunnions *b* being part of a shaft, C, which enters the vessel A through a stuffing-box, *e*. The shaft C carries within the vessel A an eccentric, *f*, of suitable form. *g* is a pulley, or its equivalent, upon the shaft C, outside of the vessel A. When the shaft C is revolved by suitable means, and with suitable velocity, the eccentric *f* revolves within it. But the vessel A does not revolve with the shaft, as the latter turns loose in the stuffing-box. A projecting arm, *h*, of the vessel A connects, by a strap or rod, *o*, with the stem of the steam-valve D. Opposite to the arm *h* projects from the vessel a rod, *i*, upon which an adjustable weight, *j*, is secured. This weight holds the valve balanced in accordance with the desired degree of steam-pressure. Though not revolving with the shaft C, the vessel A can nevertheless vibrate on its trun-

nions whenever the balance between its valve D and weight *j* is disturbed. Within the chamber *a* are pivoted four, more or less, valves or plates, *l l*, which are, by springs *m m*, held in contact with the edge of the eccentric *f*. The entire chamber *a* is moreover filled with oil, or equivalent liquid. As the eccentric rotates in the chamber, it tends to crowd the surrounding liquid in the direction of its own motion against the circumference of the chamber *a*. As long as such motion does not exceed a certain speed, the effect upon the vessel A will not be noticeable. But whenever the eccentric turns too rapidly, the effect of the liquor thrown against the vessel A and valves *l* will be felt in causing the vessel to turn so as to shut the valve D. When the motion of the shaft C is too slow, the weight *j* will preponderate to open the valve. It will be noticed that the arm *h* and rod *i*, which are in line with each other, are at right angles to the shaft C, though they may be in the same horizontal plane as said shaft. The vessel A in order to admit the insertion of the valves *l*, eccentric *f*, shaft C, and of the liquid, is made in two or more sections, (three being represented in Fig. 2,) that are held together by means of screws or bolts *n n*.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The vibrating hollow vessel A, carrying the valve-connection *h*, the weighted rod *i*, and the rotary shaft C, and combined with the eccentric *f*, valves *l*, and springs *m*, substantially as herein shown and described.

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Witnesses:

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