No. 725,500. PATENTED APR. 14, 1903.

J. H. SNELL.

ENGINE GOVERNOR.

APPLICATION FILED JUNE 9, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 4.

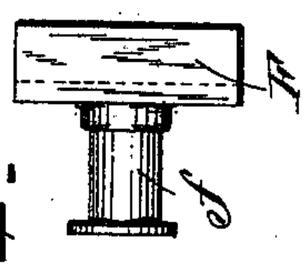


Fig. 2.

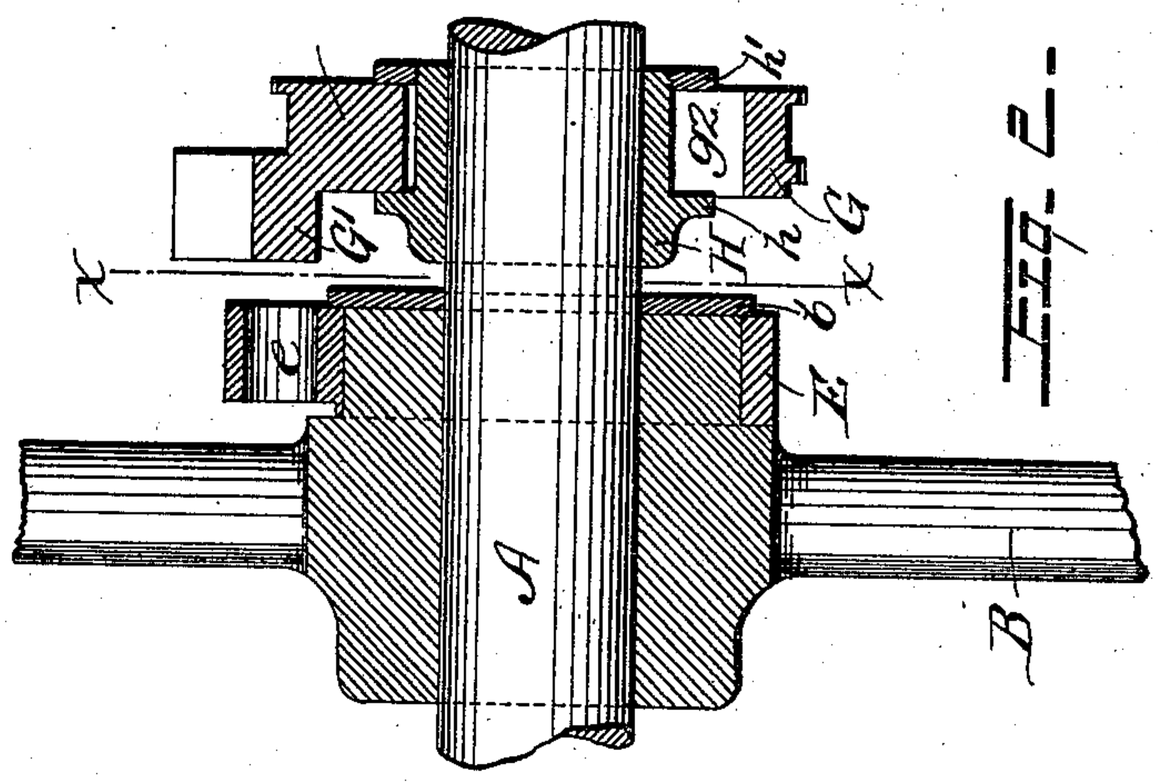
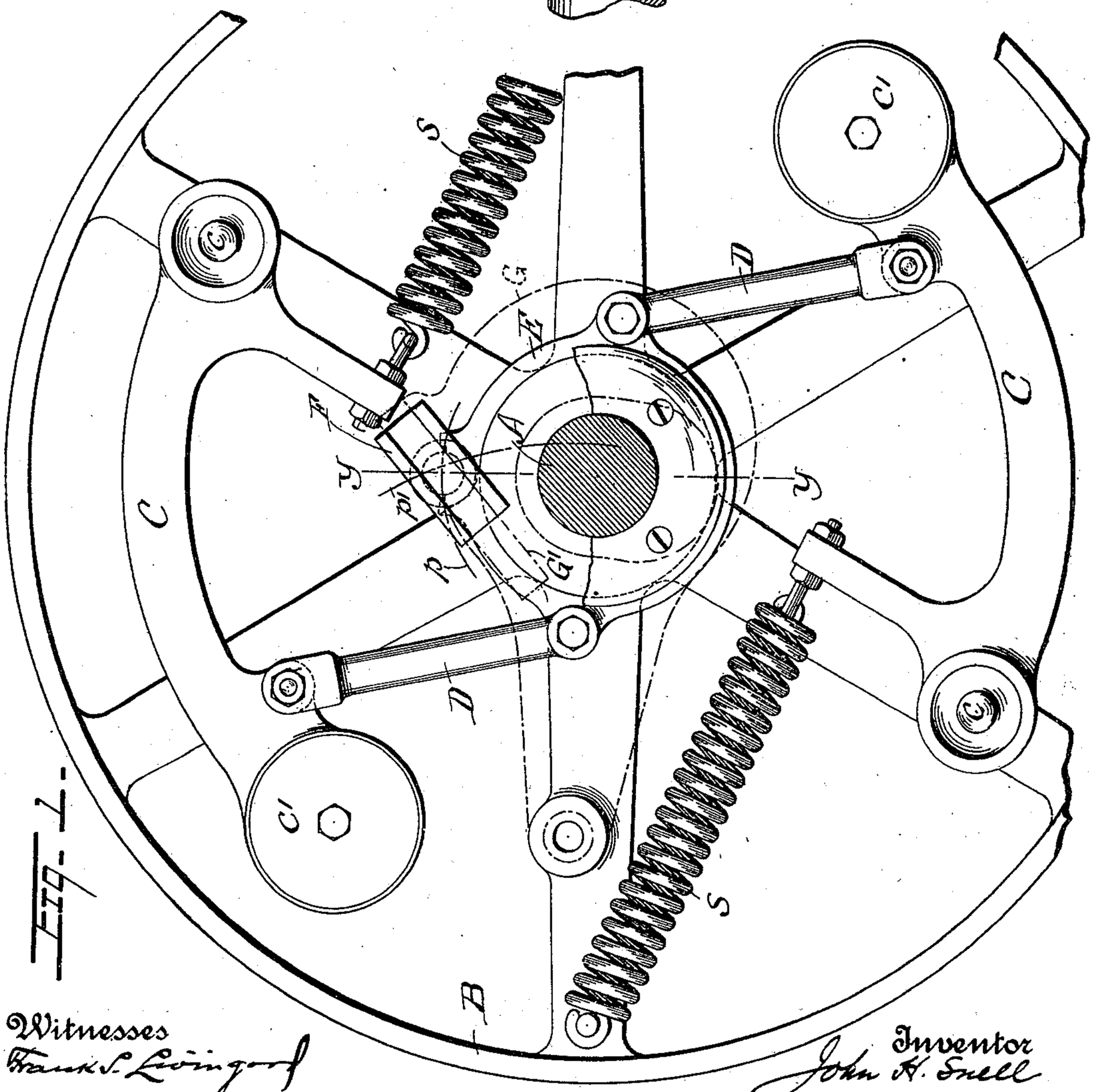


Fig. 1.



Witnesses
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D. M. Stewart

Inventor
John H. Snell
By
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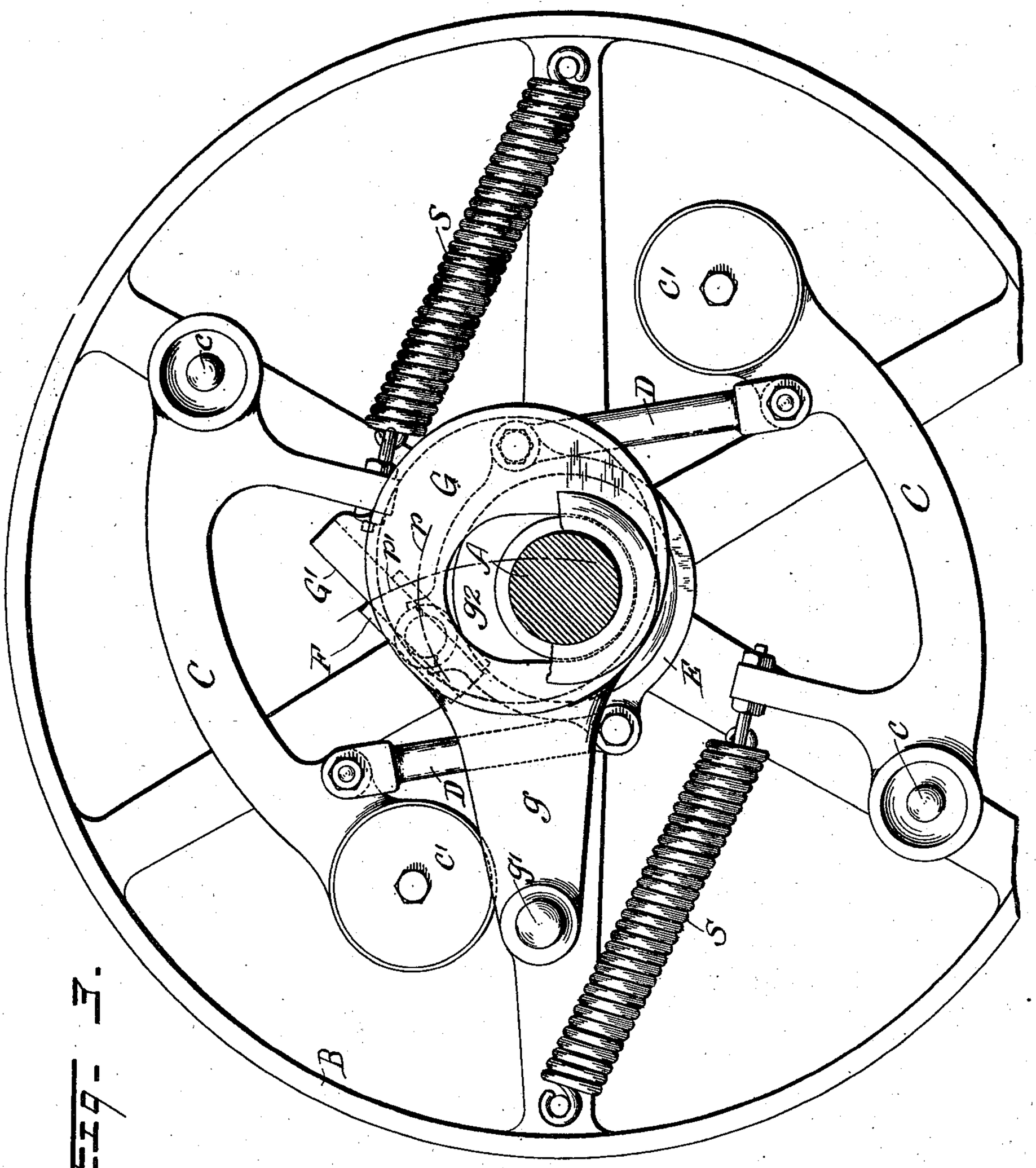

Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN H. SNELL, OF HAMBURG, PENNSYLVANIA, ASSIGNOR TO SNELL AND MEHARG, OF HAMBURG, PENNSYLVANIA, A FIRM.

ENGINE-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 725,500, dated April 14, 1903.

Application filed June 9, 1902. Serial No. 110,722. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. SNELL, a citizen of the United States, residing at Hamburg, county of Berks, State of Pennsylvania, have invented certain new and useful Improvements in Engine-Governors, of which the following is a specification.

My invention relates to that class of automatic cut-off governors in which the valve-operating eccentric mechanism is carried by the engine-shaft and the eccentricity automatically varied by connected centrifugal arms; and my object is to provide for effecting the automatic adjustment of the eccentric in a simple and effective manner and for securing a positive action of the valve at all times.

The invention is fully described in connection with the accompanying drawings, and the novel features are specifically pointed out in the claims.

Figure 1 is an elevation showing the engine-shaft in cross-section on the line $x\,x$ of Fig. 2, the centrifugal arms and connected rotary sleeve being shown in cut-off position and the position of the pendulum-eccentric merely indicated by dotted lines. Fig. 2 is a cross-section on the line $y\,y$ of Fig. 1, showing in addition the pendulum-eccentric and its guide-sleeve, which are cut away in Fig. 1, and omitting the pivoted guide-block of the rotary sleeve. Fig. 3 is a front elevation showing the eccentric in full-throw position. Fig. 4 shows the guide-block separately.

A represents the engine-shaft, to which the governor wheel or carrier B is secured.

C C are centrifugal arms pivoted to the wheel B at c c, respectively, provided with weights c' c' and connected by links D D with a rotary sleeve E, loosely mounted on the hub of the wheel B, so as to be turned thereon by the movement of the centrifugal arms, which movement is controlled, as usual, by adjustable springs S. A collar b serves to retain the sleeve E in proper longitudinal position.

The pendulum-eccentric G is located on the shaft adjacent to the outer face of the rotary sleeve E with its arm g pivoted at g' to the wheel B. Its movement across the shaft within the limits permitted by its slotted or oblong opening g^2 is guided by flanges h and h' on sleeve H, carried by the shaft. The eccentric strap and rod employed, as usual, to convey movement from the eccentric to the valve are not shown.

My invention consists, essentially, in the improved means provided for operating the pendulum-eccentric from the centrifugal arms C C through the rotary sleeve E to automatically vary its throw. In order to transmit movement from the rotary sleeve E to the eccentric, I provide a lateral projection on the former near its periphery to operatively engage the eccentric. I arrange that the path p of this projection when the latter is turned with the sleeve E shall intersect the arc p' in which the pendulum-eccentric swings, and I provide this eccentric on its inner face with a slideway G′, arranged at an incline, as shown, to said paths p and p'. This slideway on the eccentric is preferably formed by a guide-bar integral with or rigidly secured to it, and the engaging projection on the rotary sleeve consists, as shown, of a grooved block F, pivotally secured thereto by means of a cylindrical shank f, rotatably mounted in a lateral perforation e in said sleeve E.

In operation the movement of the centrifugal arms C C either outward or inward through the links D D, turns the sleeve E, and the projecting block F, pivotally carried by the latter and engaging the slide-bar G′ of the eccentric G, moves the latter in one direction or the other, as the case may be, across the shaft A, thus changing the throw of the eccentric as required. The inclined arrangement of the slideway G′ allows the eccentric to be thus moved with ease by the rotation of the sleeve E, yet effectually locks the eccentric in any position to which it is so moved against any strain brought upon it in moving the valve, thereby insuring positive action upon the valve.

It is evident that the form of the slideway on the eccentric and of the engaging projec-

tion on the rotary sleeve may be changed and the construction otherwise modified without departing from my invention.

What I claim is—

1. The combination with the governor wheel or carrier and the centrifugal arms, of a pendulum-eccentric provided with an inclined slideway extending across the arc in which said eccentric swings, and a loose sleeve rotatively connected to said arms and operatively engaging said slideway to shift the eccentric whereby the latter is locked against movement due to the valve-operated strain thereon, substantially as set forth.

2. The combination with the governor wheel or carrier and the centrifugal arms, of a loose sleeve rotatively connected to said arms and provided with a lateral projection near its periphery, and a pendulum-eccentric provided with a slideway engaging said sleeve projection, the latter being arranged to swing in an arc approximately at right angles to that in which the eccentric swings and said slideway being inclined to both of said arcual paths substantially as and for the purpose set forth.

3. The combination with the governor wheel or carrier and the centrifugal arms, of a loose sleeve rotatively connected to said arms and provided with a laterally-projecting grooved guide-block pivoted thereto, and a pendulum-eccentric provided with a relatively fixed slideway arranged at an incline to the arcual path of said pivoted guide-block and operatively engaged by the latter substantially as and for the purpose set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN H. SNELL.

Witnesses:

GEO. F. MEHARG,

WM. A. EVANS.