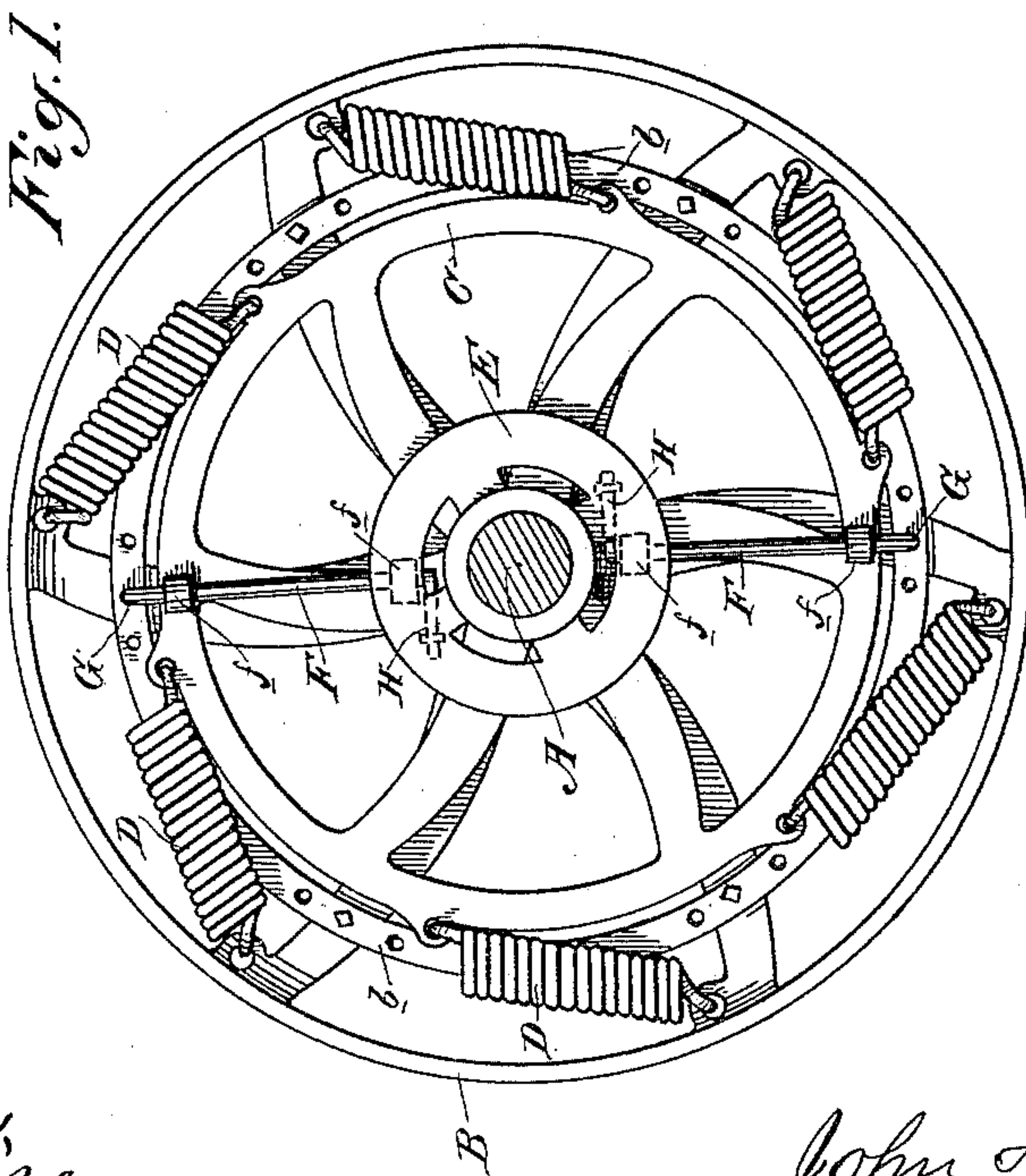
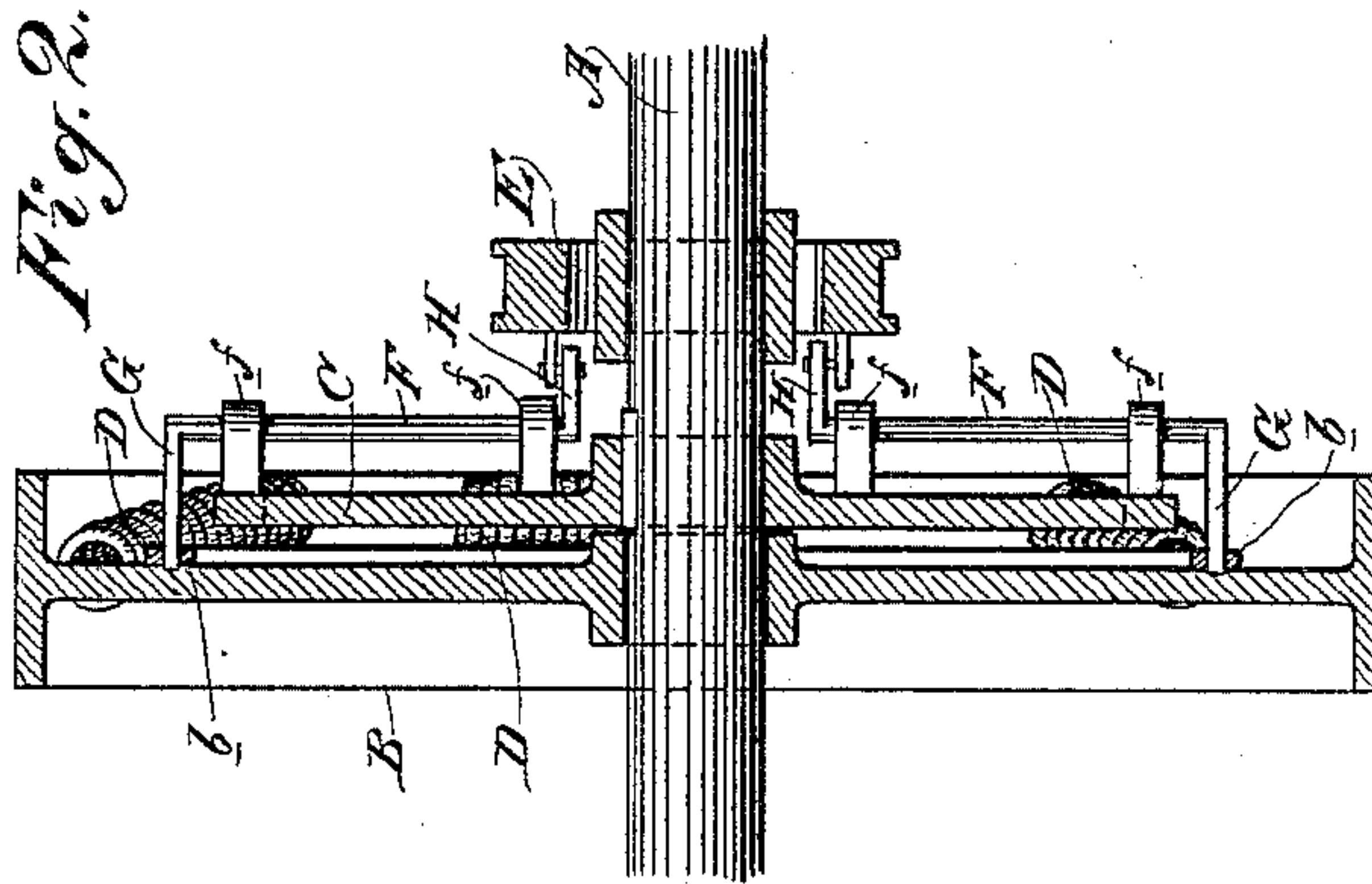


(No Model.)

J. F. KIRBY.  
GOVERNOR.

No. 436,938.

Patented Sept. 23, 1890.



Witnesses,  
J. H. Nurse  
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# UNITED STATES PATENT OFFICE.

JOHN F. KIRBY, OF SAN FRANCISCO, CALIFORNIA.

## GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 436,938, dated September 23, 1890.

Application filed July 18, 1890. Serial No. 359,206. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. KIRBY, a citizen of Canada, residing in the city and county of San Francisco, State of California, have invented an Improvement in Governors; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the general class of governors, the object of which is to regulate the speed of an engine.

It consists in the novel construction and arrangement of parts hereinafter fully described, and specifically pointed out in the claims.

The object of my invention is to provide a governor adapted to regulate the engine to the work to be performed, being dependent for its action upon said work, in contradistinction to that class of governors which are dependent upon the speed of the engine for their operation.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a front elevation of my governor. Fig. 2 is a vertical section of same.

A represents the engine-shaft. Upon this shaft is mounted the large wheel B, which, however, is not directly secured to the shaft, but is loose thereon. Firmly keyed to the shaft is a wheel C, which is connected with the wheel B by means of springs or cushions D. Mounted and adapted to slide longitudinally of the shaft is a disk E, from which connections may be supposed to extend to and operate the valves of the engine. Mounted in suitable bearings *f*, which are secured to the spokes of the wheel C, are rock-shafts F. The outer ends G of these shafts are bent at right angles and are connected with the wheel B. Their inner ends H are also bent and are connected with the sliding disk E.

Now the operation of these parts as far as described is as follows: Around the outer wheel B is to extend the belt by which the power of the engine is taken and through which it does its work. Now when the engine-shaft is caused to rotate, the wheel C, fast thereon, rotates with it, and through the springs D effects the rotation of the wheel B; but on account of these springs, which are

affected more or less by the amount of work imposed upon the wheel B, there is an independent movement of said wheel B relative to the wheel C on the engine-shaft, and this movement of said wheel, depending for its extent upon the amount of work to be done, is transmitted through the rock-shafts F and their bent ends to the disk E, which is thereby caused to move longitudinally on the shaft, and thereby to regulate the valves of the engine. In order to set these valves properly initially, I may have a band *b* connected with the spokes of the wheel B in such a manner that it may be when released of the connections turned axially sufficiently in either direction and again secured to the spokes, and to this band the outer bent ends G of the rock-shafts F are connected, whereby the initial position of the sliding disk E is defined. It will thus be seen that the regulation of the engine depends upon the amount of work to be performed and not upon its speed.

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

1. In a governor, the combination of a wheel loose upon the engine-shaft and connected with the work, a wheel fast upon the engine-shaft and connected by springs or cushions with the loose work-wheel, a sliding piece, and rock-shafts between the work-wheel and sliding piece, having their opposite ends connected with the loose and fixed wheels, whereby the independent movement of said work-wheel, due to the springs connecting it with the fast wheel, is transmitted to the sliding piece and the latter moved to regulate the valves, substantially as herein described.

2. In a governor, the combination of the wheel B, loose on the engine-shaft, the wheel C, fast thereon, the springs connecting the two wheels, the sliding disk E, to be connected with the engine-valves, and the rock-shafts carried by the fixed wheel and having bent ends connected with the wheel B and with the sliding disk, substantially as herein described.

3. In a governor, the combination of the wheel B, loose on the engine-shaft, the wheel C, fast thereon, the springs connecting said wheels, the sliding disk E on the engine-shaft

to be connected with the valves, the rock-  
shafts F, carried by the fast wheel, the bent  
inner ends of said shafts connected with the  
sliding disk, the bent outer ends of said shafts,  
5 and the adjustable ring on the wheel B, with  
which said outer ends are connected, substan-  
tially as herein described.

In witness whereof I have hereunto set my  
hand.

JOHN F. KIRBY.

Witnesses:

S. H. NOURSE,

H. C. LEE.