

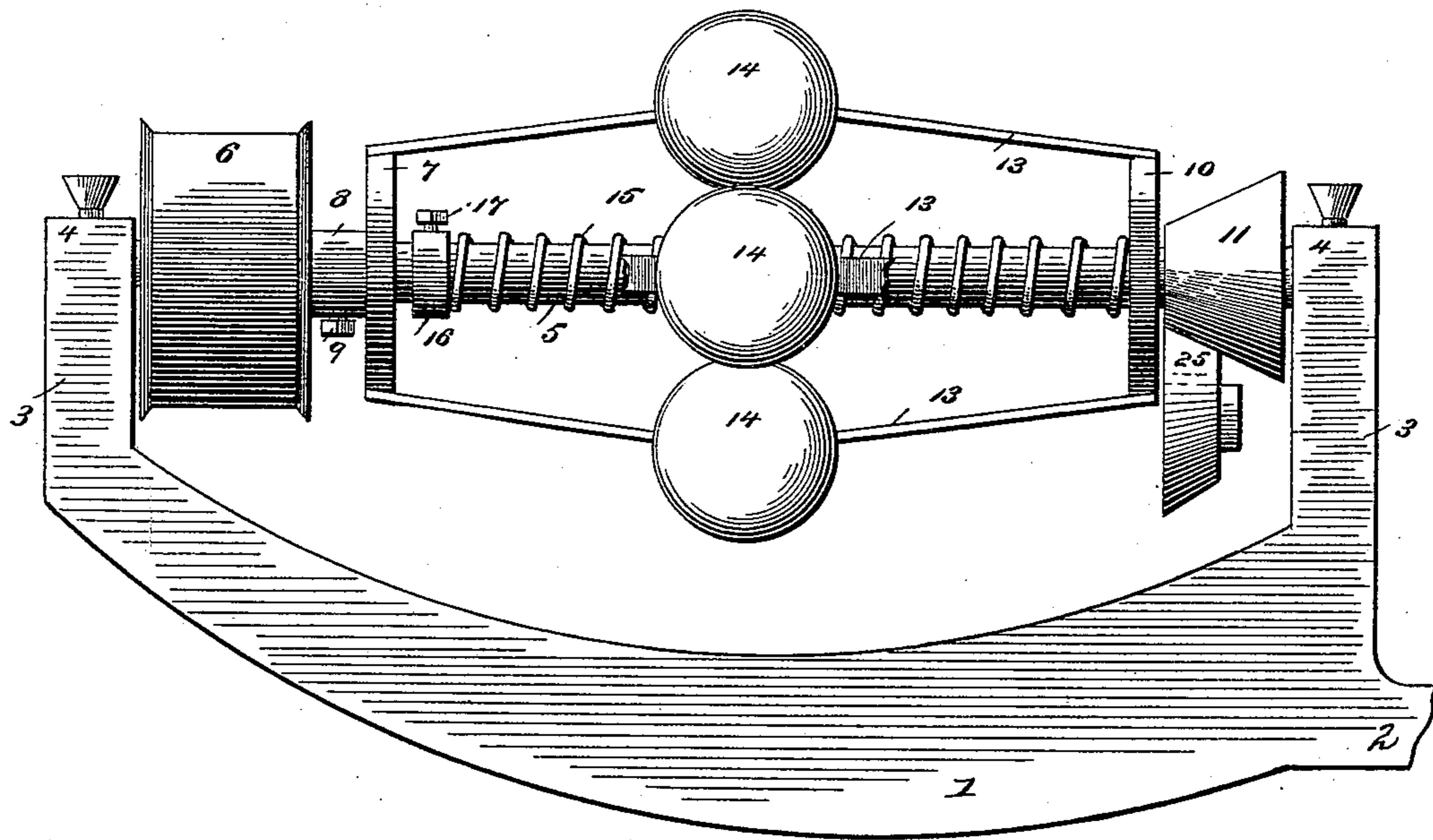
(No Model.)

J. W. BROWN.  
CENTRIFUGAL SPEED GOVERNOR.

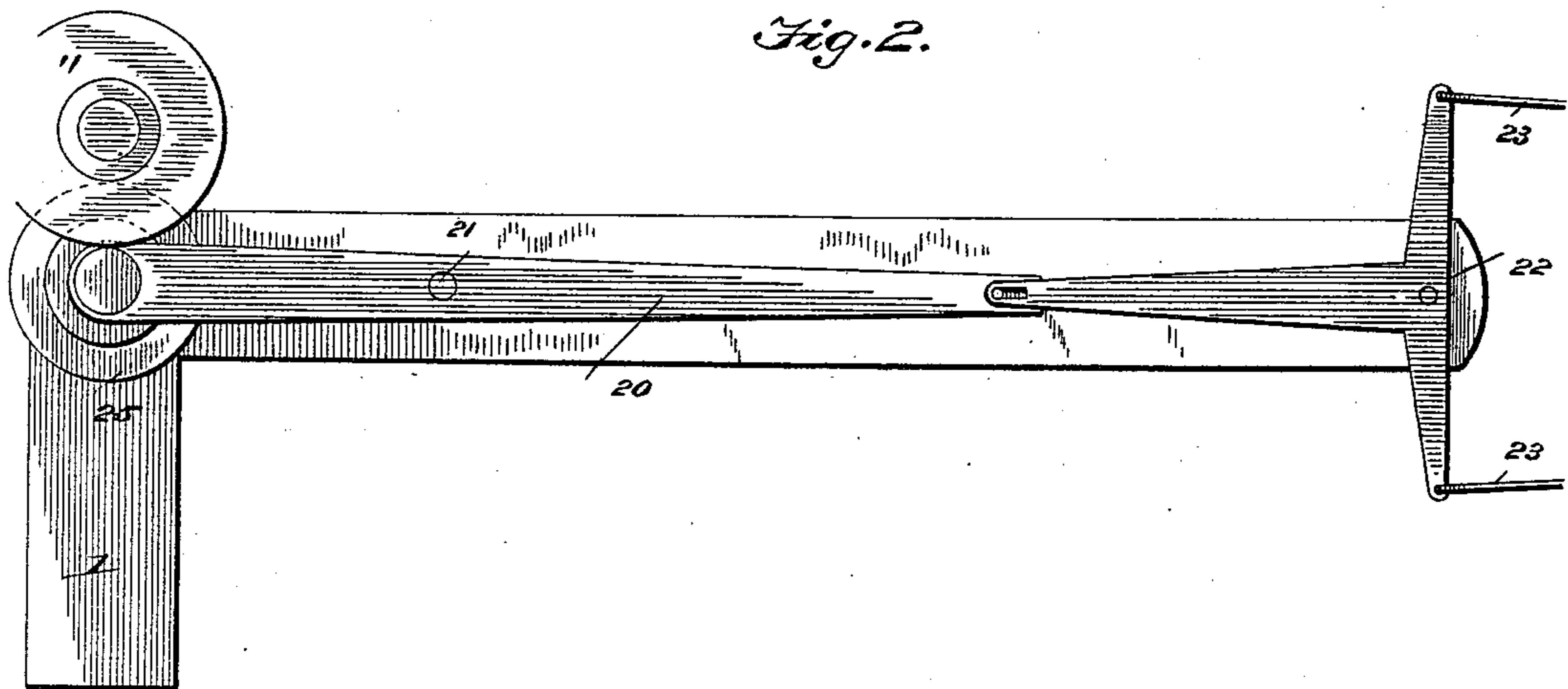
No. 449,729.

Patented Apr. 7, 1891.

*Fig. 1.*



*Fig. 2.*



Witnesses

*Wm. Ashurst*  
*C. S. Hoyer*

Inventor

*John W. Brown.*

By *this*

Attorney

*Wm. Moore.*

# UNITED STATES PATENT OFFICE.

JOHN W. BROWN, OF NEW ORLEANS, LOUISIANA, ASSIGNOR OF FOUR-FIFTHS  
TO JAMES M. HENNESSEY, ALBERT PAUL, AND RUBEN WILLIS KNICKER-  
BOCKER, ALL OF SAME PLACE.

## CENTRIFUGAL SPEED-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 449,729, dated April 7, 1891.

Application filed May 27, 1890. Serial No. 353,289. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WILLIAM BROWN, a citizen of the United States of America, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Centrifugal Speed-Governors, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in centrifugal speed-governors; and the object of my invention is the provision of a governor which will possess merit in points of simplicity, inexpensiveness, and efficiency.

With this and such other ends in view as pertain to my invention it consists in the combination of devices and construction and arrangement of parts, as will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the same in the accompanying drawings, in which—

Figure 1 is an elevation from one side of a speed-governor constructed in accordance with my invention. Fig. 2 is a detail view of a portion of the governor.

Like numerals of reference denote corresponding parts in all the figures, referring to which—

1 designates the bracket or frame, which has an extension 2, by which it can be bolted or otherwise secured to the engine-frame, and two upwardly-extending arms 3, located a suitable distance from each other.

In the upper part of the arms 3 are provided bearings 4, in which is journaled the shaft 5, adapted to be rotated by a belt from the engine. 6 is the driving-pulley fitted on one end of said shaft and having a collar 7 secured thereto by an intermediate sleeve 8, through which sleeve passes the clamping-screw 9 to rigidly clamp the pulley and collar to the shaft. Near the other end of the shaft 5 is arranged a loose collar 10, which is free to slide on the shaft toward or from the rigid collar and pulley, and to this loose collar 10 is rigidly connected a large cone-shaped pulley 11, which is also fitted loosely on the shaft 5, but is free to move thereon with the loose collar. The rigid and loose collars 7 10 are

connected with each other by flat springs 13, a series of which is provided. Each flat spring is secured at its ends to the fast and loose collars, and each spring carries a ball-weight 14 at its middle, as shown. A coiled spring 15 is fitted around the shaft 5 between the fast and loose collars thereon, and this spring 15 has one end thereof secured rigidly to the shaft 5 by a collar 16, having a binding-screw 17, while the other end of this spring is connected to the sliding collar 10, so as to normally keep the sliding collar and its cone-pulley away from the fast collar and the driving-pulley.

20 designates a lever which is arranged substantially at right angles to the length of the shaft 5 and near one end of the same, so as to have its short arm terminate immediately below the cone-pulley 11, rigid with the sliding collar 10, said lever being fulcrumed on the frame 1 at an intermediate point of its length, as at 21. The long arm of this lever is connected to the horizontal arm of a three-armed lever 22, and the vertical arms of this lever 22 have connections 23, which are arranged to operate the regulating-valve of the engine. The short arm of the lever 20 carries a small conical roller 25, the width of the face of which is much less than the width of the large cone-pulley on the sliding collar, the inclination or angle of the faces of the pulley and roller being substantially the same in order to secure good contact between said parts and permit the large conical pulley to ride freely over the face of the roller in a direction at right angles to the lever of said governor and in the direction of the axes of the pulley and roller. When the speed of the governor exceeds the desired limit at which the ball-weights and springs are adjusted, the centrifugal force of the weights causes them to fly outward and thus draw upon the flat springs so as to bow or arch the same outward, which action of the springs moves the sliding collar toward the weights and the rigid collar and compresses the spiral spring. As the larger cone-pulley is rigid with the loose collar, said pulley partakes of the inward movement of the sliding collar and rides across the face conical roller, which is loosely

journalled on a pin fixed to the lever, whereby the lever is depressed and the three-armed lever 22 operated to close the valve partially to slacken the speed of the engine. As the speed  
5 decreases the ball-weights return to their normal position to allow the coiled spring and the loosely-connected sleeve and collar to ride on the shaft and raise the lever 20, which operates the three-armed lever 22.

10 I am aware that changes in the form and proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of my invention.

15 I claim as my invention—

1. In a centrifugal speed-governor, the combination of a shaft, a fast pulley and collar thereon, a loose sliding collar, the weights carried by springs which are connected to the  
20 fast and loose collars, a conical pulley fitted loosely on the shaft and rigid with the loose collar to move therewith, a lever beneath the

conical pulley, and a friction conical roller carried by said lever and contacting with the conical pulley, substantially as described. 25

2. In a centrifugal speed-governor, the combination of a shaft, the fast pulley and collar, the loose sliding collar, the flat springs secured to said fast and loose collars and carrying the ball-weights, the coiled spring fitted  
30 on the shaft and operating against the sliding collar, the conical pulley fitted loosely on the shaft and rigid with the sliding collar, a lever carrying a conical friction-roller which contacts with the conical pulley, and a three-  
35 armed lever connected to the first-mentioned roller-lever, substantially as described.

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

JOHN W. BROWN.

Witnesses:

GEO. C. PRÉOT,  
FRANK L. LEVY.