

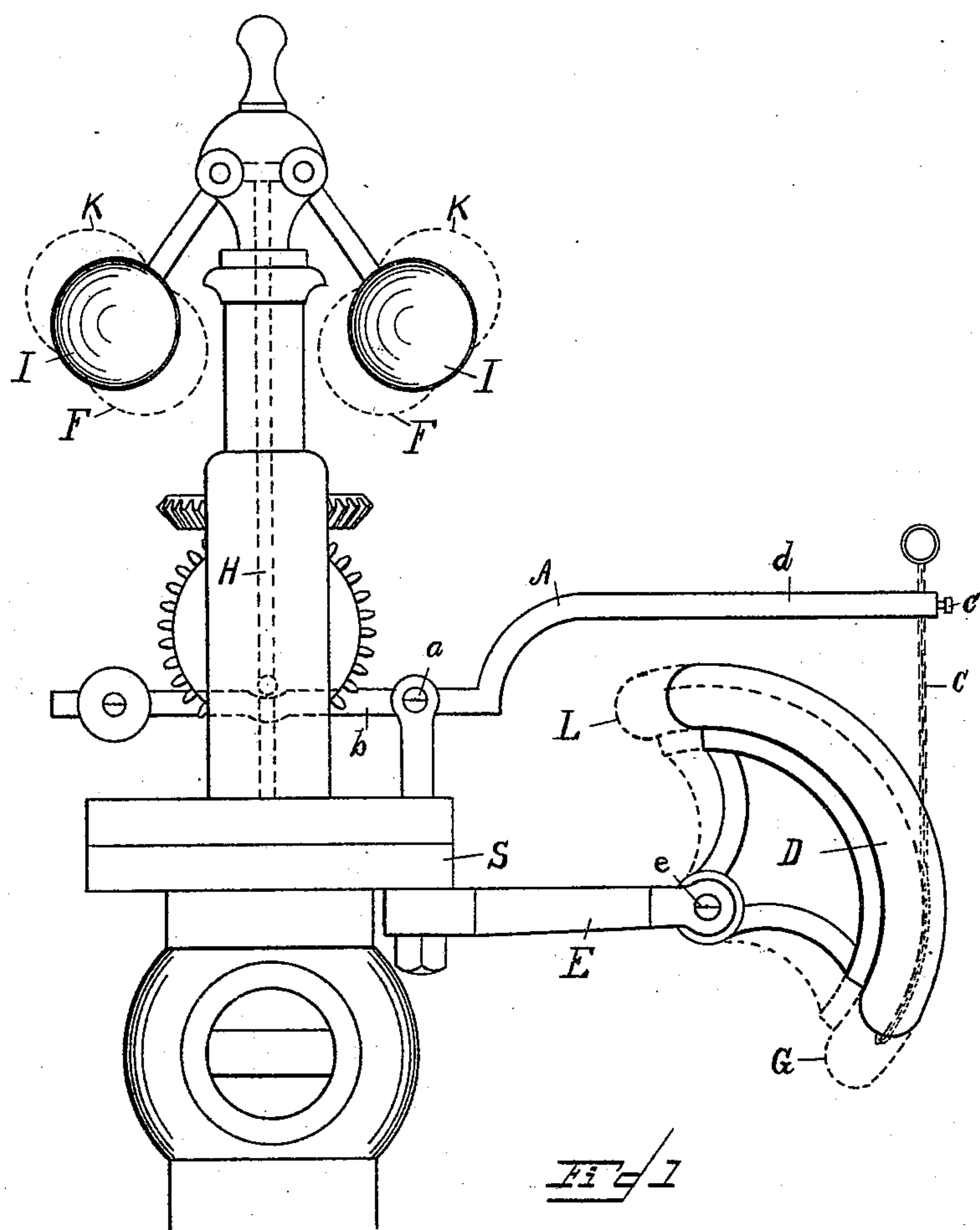
(No Model.)

2 Sheets—Sheet 1.

H. J. PAGE.
AUTOMATIC GOVERNOR REGULATOR.

No. 549,528.

Patented Nov. 12, 1895.



Witnesses
Jas Edmunds
S. M^c Bain

Inventor
Herbert J. Page
By P. J. Edmunds
Attorney

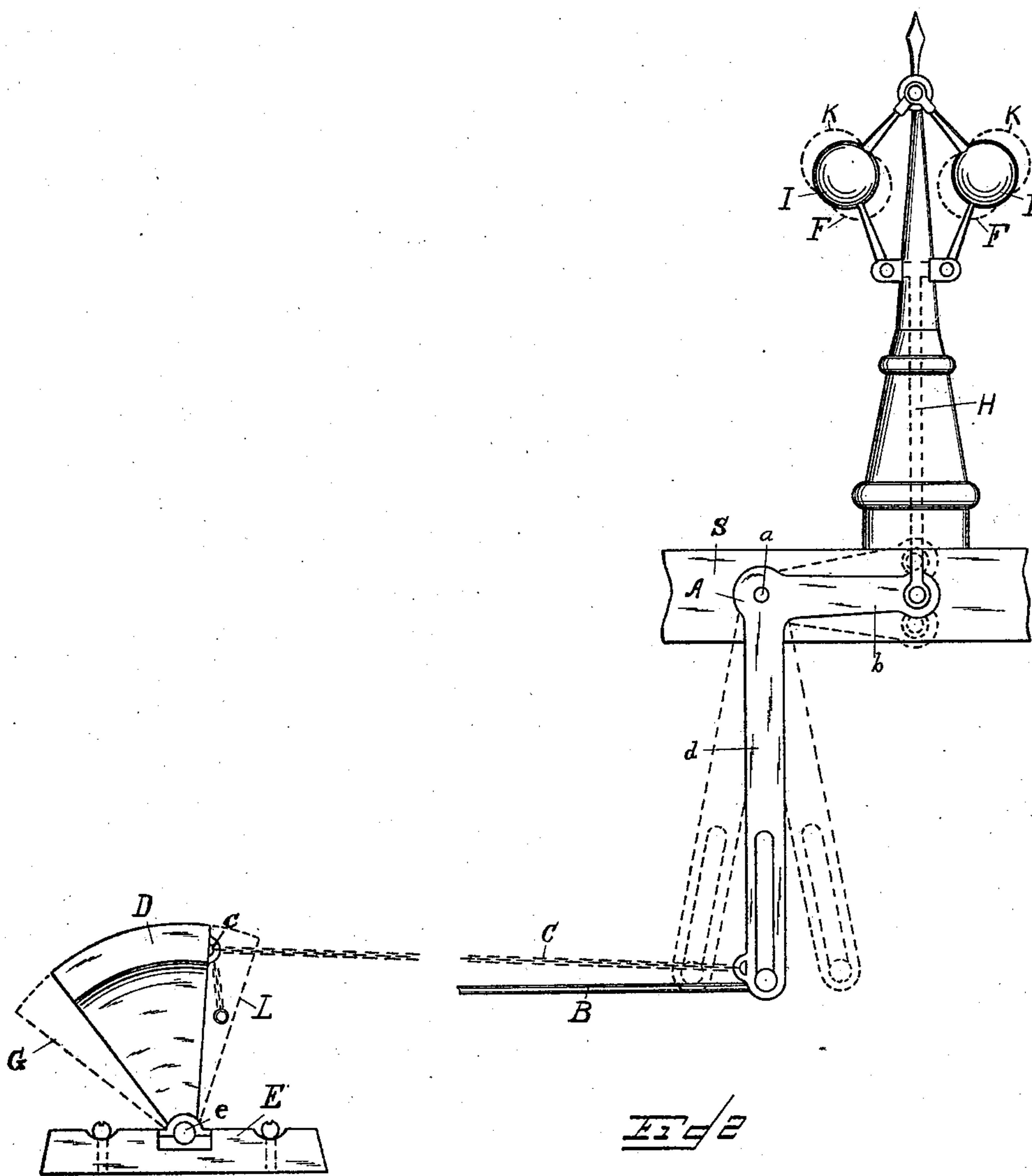
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UNITED STATES PATENT OFFICE.

HERBERT J. PAGE, OF ST. MARY'S, CANADA.

AUTOMATIC GOVERNOR-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 549,528, dated November 12, 1895.

Application filed May 4, 1895. Serial No. 548,177. (No model.)

To all whom it may concern:

Be it known that I, HERBERT J. PAGE, a subject of the Queen of Great Britain, and a resident of St. Mary's, in the Province of Ontario, Canada, have invented a new and useful Automatic Governor-Regulator, of which the following specification, taken in connection with the accompanying drawings, forms a full, clear, and exact description.

This invention relates to a certain new and useful speed-regulator for the governors of steam-engines, water-wheels, and the like, and has for its object to provide a device whereby said governors may be automatically regulated to run at a uniform rate of speed under varying loads and steam-pressures; and this invention consists of a weight in the form of a segmental plate or bar arranged above its pivotal support, which plate or bar is instantly and automatically adjusted by the governor to move more or less to either side of its pivotal support to increase or decrease its resistance to the governor, and also of the combination, with the above, of a flexible connection for said plate or bar with the governor-spindle and to adapt it to set or regulate the speed or for the purpose of adapting a single device to regulate governors of different speeds.

In order that my improvements may be better understood, I have illustrated in the accompanying drawings an automatic speed-regulator constructed according to my invention, in which—

Figure 1 is a side elevation of a governor and an automatic speed-regulator embodying my invention. Fig. 2 shows the application of same to another form of engine and governor.

In the drawings, S designates a suitable support for the governor, H the governor-spindle, and I I the governor-balls.

A designates a lever pivotally supported on the stud *a*, the latter being secured to the support S. The arm *b* of said lever A is pivotally connected with the governor-spindle H. C designates a chain or other flexible or yielding connection, which extends from and connects the arm *d* of said lever A with the segmental bar or plate D, and *e* represents suitable means for adjusting or varying the length of the connection.

D designates a weight bar or plate, which

may be in the form of any segmental part of a circle or other geometric figure and pivotally supported on the pivot *e*, the latter being held in place and supported by an arm or support E.

In Fig. 1 the governor-spindle H is connected with the valve-gear, (not shown,) and in Fig. 2 the lever A is connected by the connecting-rod *b* with the valve-gear. (Not shown).

The operation is as follows: When the load is increased or the steam-pressure reduced, the governor-balls will take the lower position, (designated by dotted line F,) and with the attachment of this segmental bar or plate D in the form shown the resistance to the centrifugal force of the governor-balls is increased or becomes greater, because the segment D is adjusted to the position shown by dotted line G, or a greater portion thereof will be adjusted to the side of its pivotal support opposite to or against the governor. Consequently this greater portion will act as an increased resistance to the centrifugal force of said governor-balls; and if the load should be reduced or the steam-pressure increased the governor-balls would take the higher position, (designated by dotted line K,) and with the attachment of this weight D the resistance to the centrifugal force of the governor-balls is reduced or becomes less, because the segmental bar D is adjusted to the position shown by dotted line L, or a greater portion thereof will be adjusted to the same side of its pivotal support as the governor. Consequently this will reduce the resistance of the segmental bar or plate D to the centrifugal force of said governor-balls, because the portion of the weight on the same side of its pivotal support as the governor will counteract an equal weight on the side of the segmental plate opposite to the governor. As a result, this weight, operating as described, offers less resistance to the governor as the latter tries to lift it, so that as the governor experiences greater difficulty in raising the balls to a higher plane the weight to be lifted becomes lighter, and this segmental bar or plate offers greater resistance to the governor on its reverse action, thus securing a more constant action of the governor, and consequently a more regular speed of the engine.

In order to regulate different speeds with

the one device, additional weights, segmental plates, or bars may be secured to the one in use or pivotally supported on the pivot *e*, or said segmental plate or bar *D* may be adjusted
5 more or less to either side of its pivotal support. When setting the speed by adjusting the segmental bar or plate *D* toward the dotted line *G*, this plate or bar acts as a resistance or is set against or regulates a governor
10 of a higher speed. The reverse result would be accomplished by setting said segmental bar or plate in the direction of the dotted line *L*.

The constructions herein shown and described I have found by experiment to give
15 the best results; but the segmental bar or plate may be formed of a straight or curved bar, plate, or tube and with or without an enlarged weighted rim, (without an enlarged
20 weighted rim by constructing this device of a segmental plate and distributing the weight equally over said plate;) or this segmental bar may be in the form of a circle or wheel the rim of which is weighted unequally; or
25 this segmental plate or bar may be connected

with the trip-shaft of another form of engine or be connected with a counter-shaft and an arm from this shaft or from the segmental bar or plate engaging with the governor-spindle, so that, while I prefer the construction shown, 30 I do not limit myself to the details thereof, as they may be modified in various ways without departing from the spirit of my invention.

Having thus described my invention, I claim— 35

In a governor regulator the combination of a suitable support, a lever pivoted on said support, and connected at one end with the governor spindle, a segmental weight pivoted on said support, a flexible connection between 40 the segmental weight and the free end of the pivoted lever, and suitable means for adjusting the connection substantially as shown and for the purpose set forth.

In testimony whereof I have signed in the 45 presence of the two undersigned witnesses.

HERBERT J. PAGE.

Witnesses:

P. J. EDMUNDS,
S. MCBAIN.