

No. 754,038.

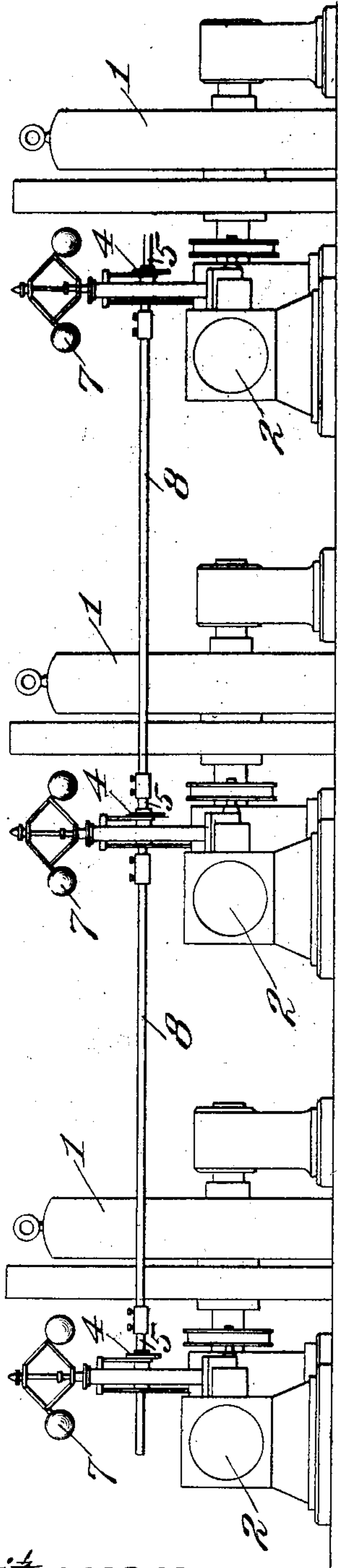
PATENTED MAR. 8, 1904.

P. DE C. BALL & C. L. WAKEFIELD.  
GOVERNING MECHANISM.

APPLICATION FILED MAR. 26, 1902.

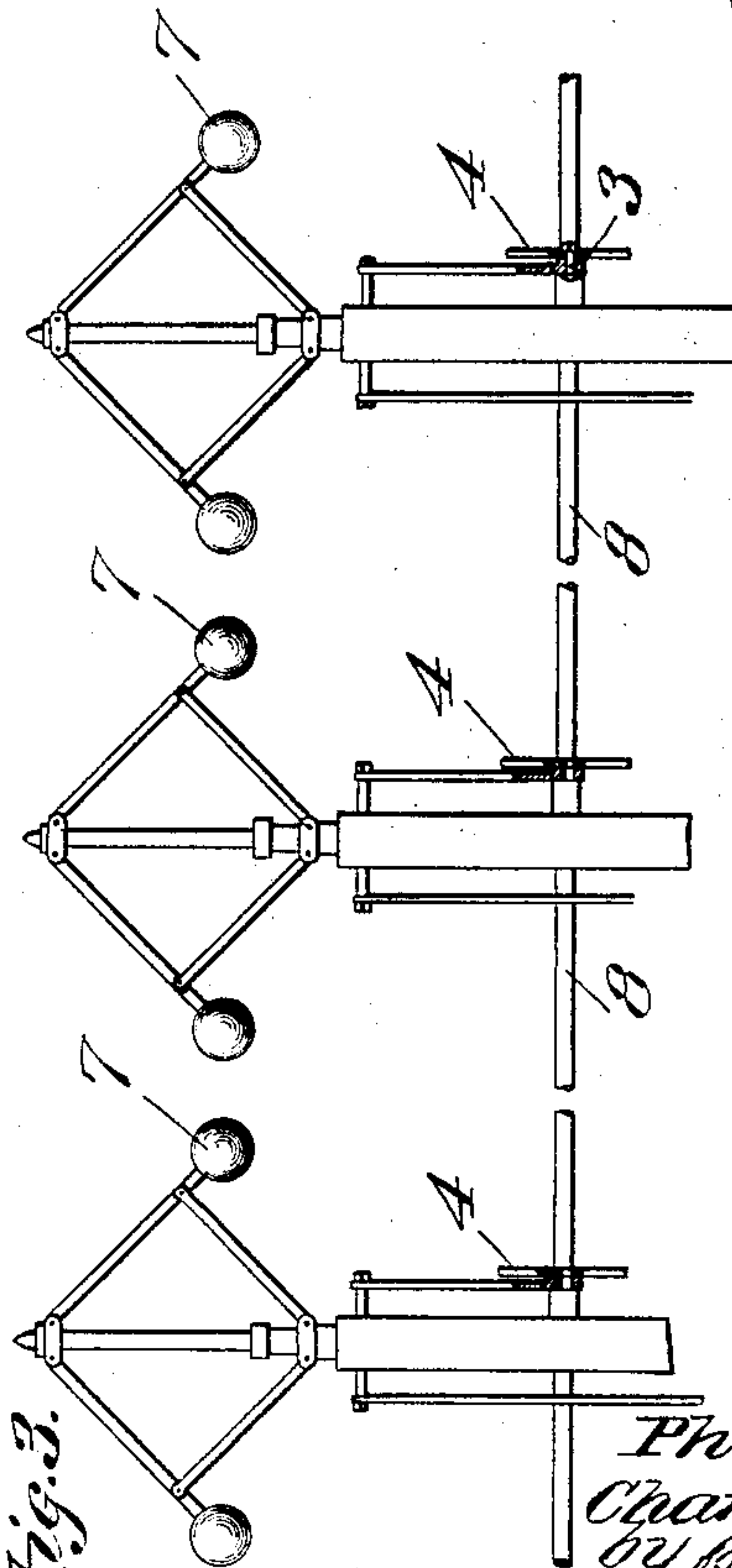
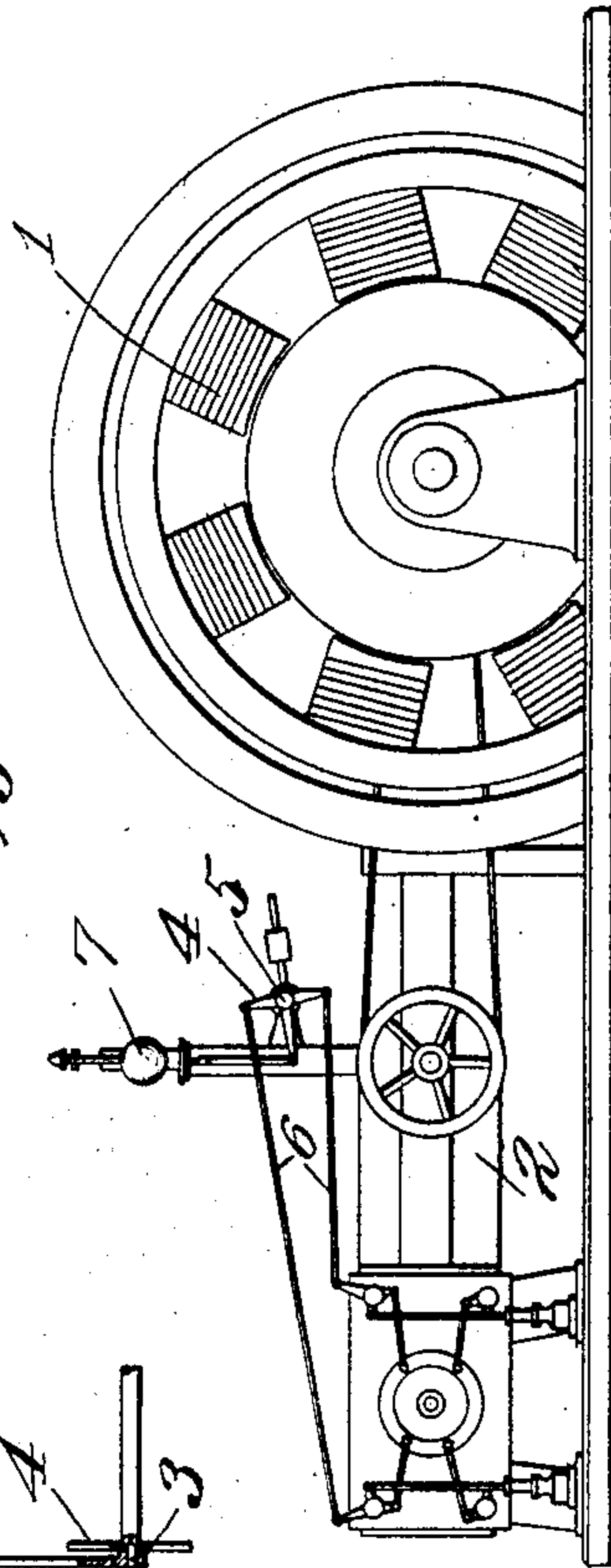
NO MODEL.

*Fig. 1.*



*Witnesses:*  
*G. A. Pennington*  
*Giles P. Moore*

*Fig. 2.*



*Fig. 3.*

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# UNITED STATES PATENT OFFICE.

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## GOVERNING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 754,038, dated March 8, 1904.

Application filed March 26, 1902. Serial No. 100,009. (No model.)

*To all whom it may concern:*

Be it known that we, PHILIP DE C. BALL, residing at St. Louis, Missouri, and CHARLES L. WAKEFIELD, residing at Dallas, county of Dallas, Texas, citizens of the United States, have invented a certain new and useful Improvement in Governing Mechanisms, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view showing a plurality of engines and generators in end elevation, the present invention being applied. Fig. 2 is a side elevation of one of the engines and the generator operated thereby, and Fig. 3 is a fragmentary detail view showing that only one of the governors is in operative connection with the speed-regulating mechanism and that operative connection can be made between any one of the governors and said speed-regulating mechanism.

This invention relates to governing mechanisms, and more particularly to means for governing a plurality of motors, such as steam-engines, whereby said motors are compelled to operate in unison. As shown, for example, by the patents to Edison, No. 273,493, of March 6, 1883, and No. 365,465, of June 28, 1887, it has heretofore been proposed to cause a plurality of motors to operate in unison by providing each of the several motors or engines with a governor which controls its valves and by connecting the valves or speed-regulating mechanisms of the several engines so that movement of any one governor is transmitted to the speed-regulating mechanisms or valves of each of the several engines. Such a construction, however, is unsatisfactory, for the reason, among others, that each engine of the series is subject to the regulation of a plurality of governors and should one engine increase its speed at the time that another engine decreases its speed the governors of said engines simply act oppositely upon the shaft which connects the valve mechanisms, and therefore the valve mechanisms

are not operated and the whole purpose of the governing mechanism is defeated.

The object of our invention is to overcome the difficulties above mentioned and to provide for uniform and satisfactory operation of the speed-regulating mechanisms of all of the engines of the series at all times.

To these ends and also to improve generally upon mechanisms of the character indicated the invention consists in the various matters hereinafter described and claimed.

Referring now more particularly to the drawings, 2 indicates the motor or engine, which is here illustrated as driving a generator 1 of the alternating type and of any desired construction, the steam-engine illustrated being of the well-known Corliss type. Each engine is of course provided with the usual speed-regulating mechanism, including the valves, the rock-shaft 5, the rock-arm 4, rigidly connected to said rock-shaft, and the links 6, such a construction being old and well known. The said rock-shafts 5 are rigidly connected to the shaft 8, so that actuation of said shaft serves to actuate each of the speed-regulating mechanisms, including the valves of the engines.

One of the engines is provided with a governor 7 of any well-known type, which is connected, as by the removable bolt 3, with the before-mentioned rock-shaft 4. This governor is driven from its engine in the usual manner, and operation of said single governor serves to uniformly actuate the valves of the several engines. The valves of all of the engines are regulated from a single source, and there is nothing to interfere with the operation of the single governor, so that proper control of the valves is insured at all times.

We prefer to mount a governor 7 upon each engine, as is usual; but the governor of only one engine is connected to the shaft 8. In this manner all of the engines are controlled by only a single governor, as desired; but should it for any reason be desired to disconnect the engine of the series whose governor has been employed to actuate the shaft 8 any one of the other governors can be operatively connected to said shaft.



As will be clearly apparent from the foregoing, our invention contemplates the control of a series of motors by only a single governor as distinguished from a mechanism 5 which controls a series of motors by each of a plurality of governors. In the latter-mentioned construction opposite movement of two of the governors only serves to strain the mechanism and effects no regulation of the valves 10 at the very time that regulation is most needed, while with our construction uniform control of all the valves is insured at all times.

We are aware that minor changes in the construction, arrangement, and combination of 15 the several parts of our device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of our invention.

Having thus described the invention, what 20 is claimed as new, and desired to be secured by Letters Patent, is—

The combination with a plurality of inde-

pendent motors, a rock-shaft, a speed-regulating mechanism for each of said motors and mounted on said rock-shaft, a governor for 25 each of said speed-regulating mechanisms and means for effecting detachable connection between each of said governors and its speed-regulating mechanism, comprising a rock-arm rigidly connected to said rock-shaft, a link, 30 and a removable bolt engaging the link and rock-arm.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

PHILIP DE C. BALL.

CHARLES L. WAKEFIELD.

Witnesses to signature of Philip De C. Ball:

GALES P. MOORE,

GEORGE BAKEWELL.

Witnesses to signature of Charles L. Wakefield:

N. J. MARTYN,

LEE WELLS.