

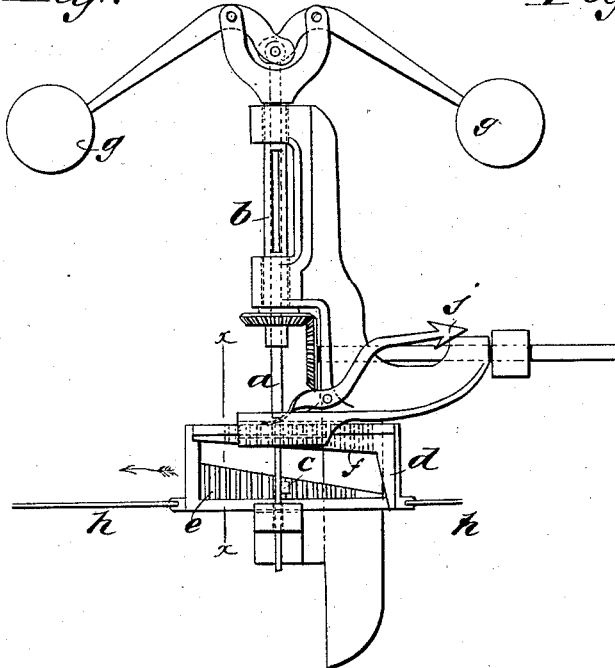
(No Model.)

W. J. RADLOFF.  
AUTOMATIC GOVERNOR.

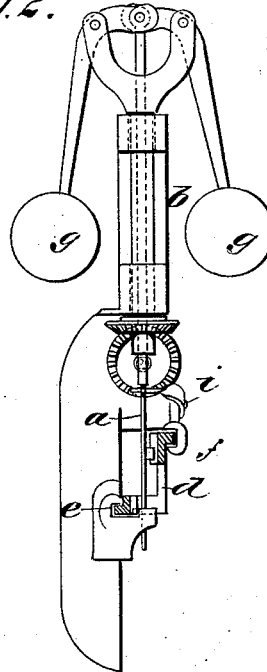
No. 302,426.

Patented July 22, 1884.

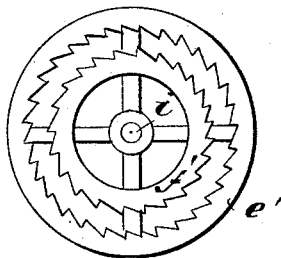
*Fig. 1*



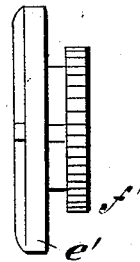
*Fig. 2.*



*Fig. 3*



*Fig. 4.*



WITNESSES:

*Francis McArdle.*  
*Edgewick*

INVENTOR:

*W. J. Radloff*  
BY *Munn & Co.*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

WILLIAM J. RADLOFF, OF RUDD, IOWA.

## AUTOMATIC GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 302,426, dated July 22, 1884.

Application filed March 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. RADLOFF, of Rudd, county of Floyd, Iowa, have invented a new and Improved Automatic Governor, of which the following is a full, clear, and exact description.

My invention consists of an improved contrivance of mechanism for use in connection with centrifugal ball-governor levers to automatically open and close wind-gates for grain-cleaners, to regulate the wind-currents, or to operate water-gates and throttle-valves of motive-engines, according as the speed of the governor rises and falls, the said apparatus being contrived to have much greater range of action than ordinary governors, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved governor. Fig. 2 is a side elevation of the said governor in a different plane and with a part sectioned on line *xx* of Fig. 1. Fig. 3 is a plan view, and Fig. 4 is a side view, of a modification of the regulator devices.

I contrive the extensible rod *a* of the revolving governor-spindle *b* with a single tooth, *c*, and arrange a sliding gate, *h*, consisting of two toothed racks, *e* and *f*, in connection with said spindle, to be shifted forward and backward by said tooth, according as it runs in a high or low position, in consequence of the ball-arms *g* running slow or fast. The racks range on opposite sides of the spindle, so that they will be moved in opposite directions by the tooth *c*, and one rack is located higher than the other, so that the tooth *c* will take effect on rack *f* when the governor is running slowly, and on *e* when running fast; and there is a certain space between the two racks, where the tooth *c* ranges when the governor is running at the proper mean of speed, so as not to take effect on either rack. The toothed racks are inclined on the sides next to the intermediate position of the tooth *c*, the inclinations being such that they recede from said plane in reverse of the direction the racks are shifted by the action of the tooth *c* on them, so that the said tooth will first take effect on the widest part of the rack, where the teeth are longest, and, after shifting the rack a little, will run out of gear and escape the shorter teeth, allowing the rack to stand until the

tooth *c* shifts further by a greater change of speed, and so on, thus enabling the racks to be let go and the gate or slide to be operated by them to be let stand, while the speed continues in uniformity with that which effected the setting of the same; consequently the racks will not be shifted to the extreme limit of their movement until the speed of the governor has reached its extremes; and it will be seen that the range of changes effected by the governor may be made very large by extending the length of the racks.

The valve-gate or other device to be operated by the governor is to be connected to the racks by the cords or wires *h*, to be extended thereto in any approved arrangement of guides, bell-cranks, or other means.

When the device to be shifted by the governor is to be worked by a rotating shaft, the circular toothed racks *e'* and *f'* may be substituted for the sliding racks *e* and *f*, the rod *a* and its tooth *c* being located between the racks, and the shaft to be turned being fitted in the hub *i*.

A pointer, *j*, may be suitably connected with the rod *a* to be shifted by it for indicating the speed of the governor by its position with relation to a scale or other gage.

This improved governor is designed more particularly for use to regulate the wind gates or slides of thrashing-machine cleaners, so that when the machine runs too fast the wind-blasts will not be so strong as to blow the good grain out with the waste; but it also may be used to regulate the water-gates of water-wheels, for steadying the motion of the wheels, and for other like purposes.

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

The combination, with the toothed extension governor-rod *a*, of a pair of movable toothed racks connected with the gate or valve to be regulated, and arranged on opposite sides of the rod and in different planes, to gear, respectively, with the said rod, according as the speed of the governor is fast or slow, said racks being inclined relatively to the plane of the median position of the tooth *c*, substantially as and for the purpose described.

WILLIAM J. RADLOFF.

Witnesses:

E. E. SMITH,  
WILLIAM GANGE.