(No Model.)

G. BEANE.

GOVERNOR ATTACHMENT.

No. 304,597. Patented Sept. 2, 1884.

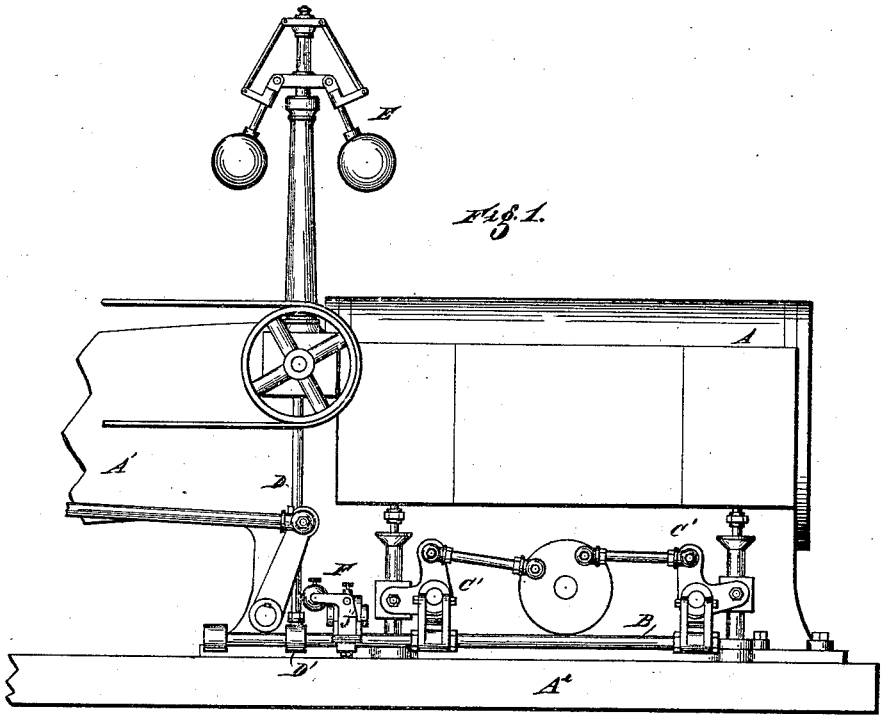

Fig. 1.

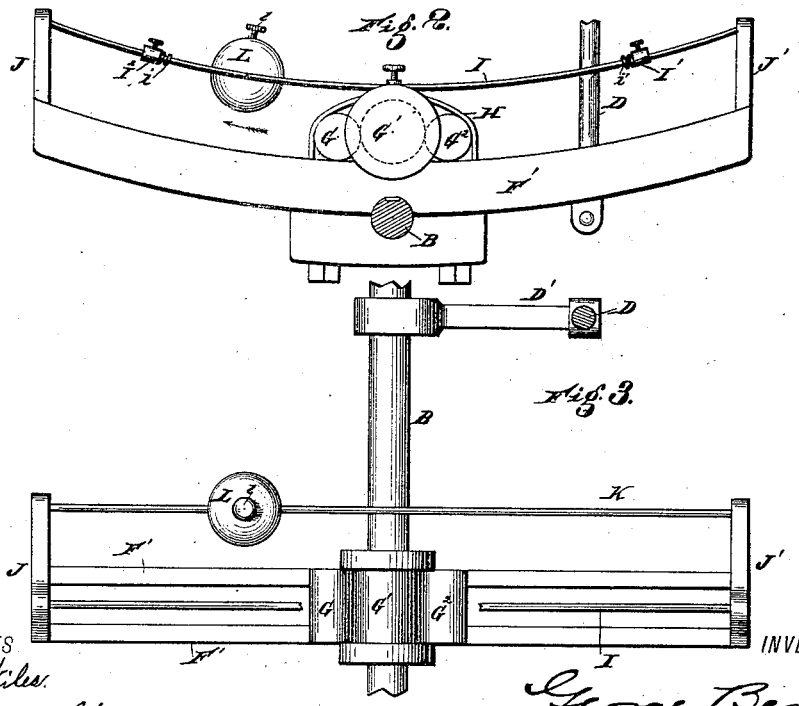

Fig. 2.

Fig. 3.

WITNESSES

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GEORGE BEANE, OF WINDSOR, ONTARIO, CANADA.

GOVERNOR ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 304,597, dated September 2, 1884.

Application filed February 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BEANE, of Windsor, county of Essex, Province of Ontario, Canada, have invented a new and useful Improvement in Governor Attachments; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists of the combinations of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a device embodying my invention, showing my improved automatic governor attachment in end elevation. Fig. 2 is a side elevation of said attachment. Fig. 3 is a plan view of the same.

The object of my invention is to provide an automatic governor attachment for steam-engines, more especially adapted for application to a Corliss engine. However, I do not limit myself to this engine in particular, as I contemplate its application to any engine to which it may be adapted.

Heretofore there has been a tendency with various engines when they have a light load to run too fast, the ordinary governors not being found sufficiently operative to check them under these circumstances as is found desirable. On the other hand, a tendency has existed, when the engine is loaded too heavily, for the engine to run too slow, the ordinary governor being inadequate to prevent this occurrence. So, also, when the load is varied suddenly, one of these extremes is likely to be produced. I have especially noticed these tendencies in the running of electric-light machinery, in which case too great speed is likely to produce too great a current of electricity, which in turn causes the dynamos to flash, and is likely to cut the lights out upon the line. In case the engine was loaded too heavily it has a tendency to slow up to such a degree that a too light current is produced to support the lights as desired. It is of great importance, therefore, that engines used for this and other purposes should be so governed as to run with a very great degree of steadiness, whether loaded lightly or heavily. Various means have been used to overcome the difficulties enumerated, many of which have been insufficient and others not automatic.

It is the purpose of my invention to provide an automatic governor attachment to assist the governor in its ordinary use, so as to increase the steadiness of the engine in all instances.

I carry out my invention as follows: In the drawings, A represents the cylinder. A′ is a portion of the frame. A^2 is the bed. B is the rocker-bar for operating the cut-off mechanism. C and C′ represent a cut-off mechanism, more particularly that in use upon a Wright-Corliss engine. I have illustrated my invention in connection with such cut-off mechanism, but would expressly have it understood that I do not confine it to use in this connection alone. D is the vertical governor-rod, connected to the rocker-bar by a crank-arm, D′. E is an ordinary governor, mounted upon the governor-rod D. All these parts are such as are ordinarily employed in the engine referred to.

F is my improved automatic governor attachment, consisting of tracks F′, clamped upon the rocker-bar B. These tracks I prefer to construct in a suitable arc of a circle.

G, G′, and G^2 are rollers mounted upon the tracks F′. I prefer to use three of these rollers, as shown, for the reason that a single roller might be too sensitive, whereas the employment of three, as shown, having the middle one of larger diameter, serves to obviate this difficulty. I do not limit myself to the employment of any definite number of rollers in this connection, as my invention contemplates the employment of one or more, as may be desired. In case three are employed, it may be found desirable to provide a clamp, H, to hold them in suitable relations to each other. This clamp may be sleeved in any suitable manner upon a stop-rod, I. I prefer to provide this stop-rod also with a couple of sleeved clamps, I′ and I^2, provided with springs *i* and *i*′. These clamps may be set upon the guide-rods in any suitable position to limit the motion of the rollers upon the track to stop the momentum of the balls, while also giving the desired momentum in the opposite direction.

J and J′ are angular brackets connected

with the ends of the tracks, and supporting a guide-rod, K, similar in construction to the stop-rod I.

L is a dead weight mounted upon said guide-rod, and provided with a set-screw, *l*, by which the weight may be adjusted in any desired position upon said rod and there secured. The object of this feature is to regulate the normal operation of the governor, as it is evident that by moving said weight to and fro upon the guide-rod the speed of the governor may be increased or diminished, as may be desired.

The working of the device is as follows: Should the governor have too rapid motion, it will elevate crank-arm D, and thereby tilt the track F′, causing the rollers to advance in the direction of the arrow in Fig. 2 to the center of gravity, the effect of which will be to cause the engine to cut off shorter. So, on the other hand, should the governor E run too low, the crank-arm D will be depressed, tilting the track in the opposite direction and causing the rollers to seek the center of gravity along the track upon the other side of the rocker-bar, which would make the engine cut off longer.

It will be seen that this automatic attachment is simple, economical, and most effectually assists the ordinary governor in accomplishing the results aimed at.

What I claim is—

1. The combination, with a rocker-bar, of a track clamped thereto, one or more rollers mounted upon said track, a stop-rod provided with adjustable clamps, and in connection therewith a roller-clamp sleeved upon said rod, substantially as described.

2. The combination, with the rocker-bar, of a track clamped thereto, one or more rollers mounted upon said track, a stop-rod provided with adjustable clamps, a roller-clamp sleeved upon said rod, and in connection therewith a guide-rod provided with an adjustable dead-weight, substantially as and for the purposes described.

3. The combination, with a rocker-bar having a governor-rod connected therewith, of a track clamped upon said bar, and one or more rollers mounted upon said track, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE BEANE.

Witnesses:
N. S. WRIGHT,
M. B. O'DOGHERTY.