

No. 728,024.

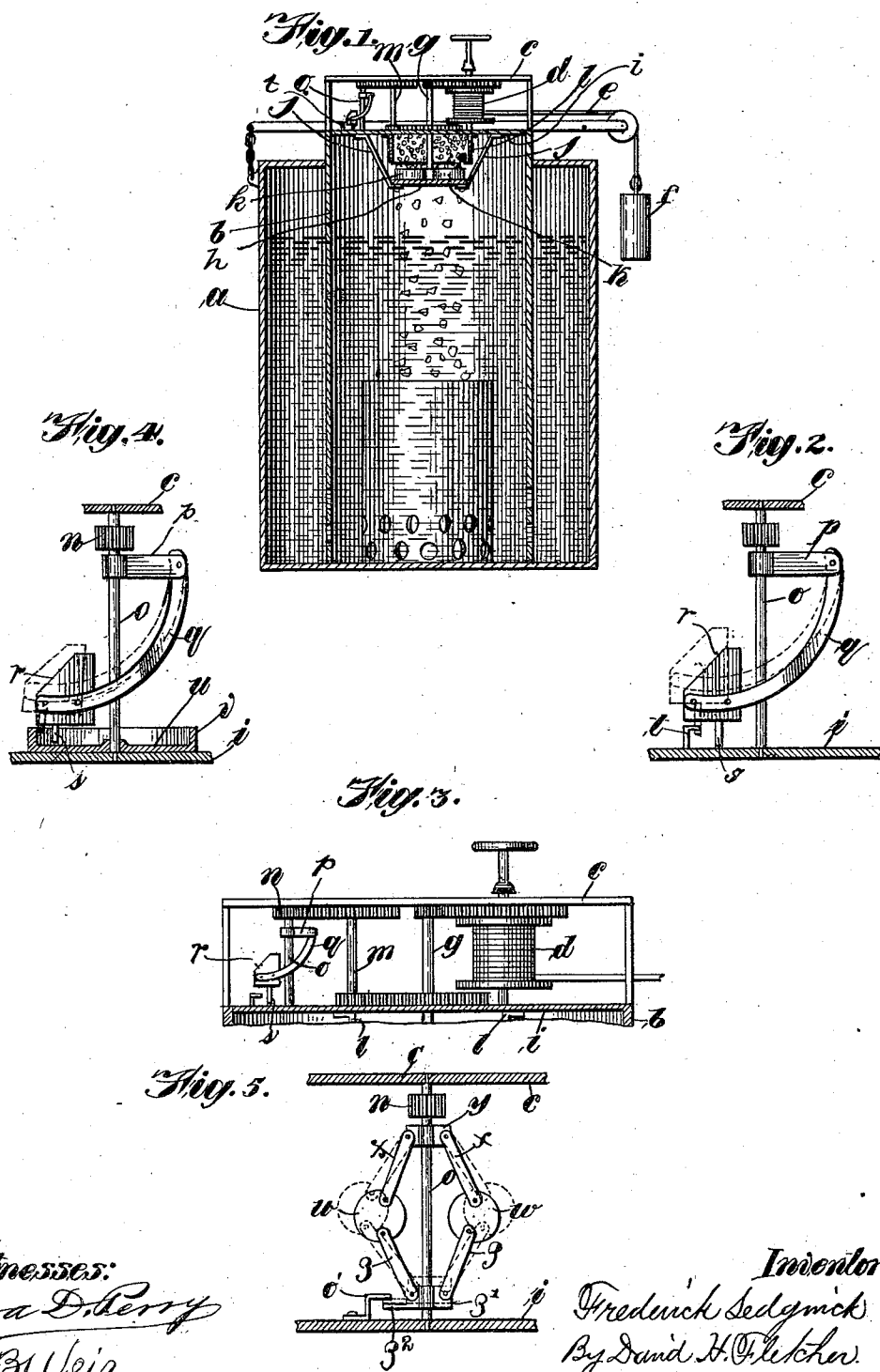
PATENTED MAY 12, 1903.

F. SEDGWICK.

AUTOMATIC GOVERNOR FOR ACETYLENE GENERATORS.

APPLICATION FILED JULY 10, 1902.

· NO MODEL.



UNITED STATES PATENT OFFICE.

FREDERICK SEDGWICK, OF CHICAGO, ILLINOIS.

AUTOMATIC GOVERNOR FOR ACETYLENE-GENERATORS.

SPECIFICATION forming part of Letters Patent No. 728,024, dated May 12, 1903.

Application filed July 10, 1902. Serial No. 115,068. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK SEDGWICK, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Governors for Acetylene-Generators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding letters of reference in the different figures indicate like parts.

The object of my invention is to so construct a governor for acetylene-generators that the mechanism controlled thereby for feeding the carbid to the gasometer may be caused to stop periodically as a result of the automatic action of the governor itself, and this in addition to the stoppage caused by an excessive generation of gas in the gasometer.

It is well known that the particles of carbid as ordinarily used for generating gas vary in size and that while the fine particles dissolve with great rapidity the larger ones dissolve slowly, and hence if particles of varying size are fed with unvarying regularity the generation of the gas will be irregular and unsatisfactory. If, however, the material is fed intermittently, allowing sufficient time for each charge to dissolve, the results will be in every way satisfactory.

To these ends my invention consists in the combination of elements hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a central vertical sectional view of an acetylene-generator having my improved feed-governor applied thereto. Fig. 2 is an enlarged detail view, partly in section, showing the essential features of said invention. Fig. 3 is an enlarged view showing the upper portion of the gasometer in section, while the clock-train and governor appear in elevation. Fig. 4 is an enlarged detail view showing a modification of said governor, and Fig. 5 is a like view showing a still further modification of said device.

Referring to the drawings, *a* represents the main body of an ordinary tank, closed at the top and having therein the usual cylindrical vessel *b*, open at the bottom and closed at the top. Upon the top of the vessel *b* is a frame

c, in which is mounted in any approved way a winding-drum *d*, adapted to be driven by means of a cord *e* and weight *f*. A gear upon the drum *d* serves to drive a pinion upon a vertical shaft *g*, which is extended downwardly through the top of the gasometer and provided with a bearing upon a horizontal circular plate *h*, suspended from beneath the top *i* by means of metal straps *j*. Rigidly attached to the lower end of the shaft *g* immediately above the plate *h* is one or more wings *k*, above which is located a receptacle *l*, intended for the reception of the charge of carbid. The shaft *g* is geared, as shown, to a shaft *m*, and the shaft *m* in turn to a pinion *n* upon a governing-shaft *o*. Rigidly attached to the shaft *o* near the upper end is an arm *p*, to the outer end of which is loosely pivoted a bent arm *q*, the lower portion of which is preferably forked or slotted, so as to straddle the shaft *o*. Upon the outer end of the arm *q* is a weight *r*, having a pin *s* depending from the bottom thereof. A stud *t* is located upon the plate *i* in such a manner as to be normally out of engagement with the pin *s*, but in such a position as to engage said pin when the weight *r* is thrown outwardly by centrifugal force, as hereinafter described.

The operation of said governing device is as follows: The pin *s* and stud *t* being normally disengaged, the weight *r* is free to rotate the drum *d* and to actuate the connecting-train. As the speed of the shaft *o* is accelerated the weight *r* is caused by centrifugal force to move out farther and farther until the pin *s* and stud *t* are brought into contact, when the movement of the train is arrested. The weight then falls back to its normal position, when the operation is repeated. This stoppage is of sufficient length to allow the carbid, which is pushed off from the plate *h* by the wing or wings *k*, to become dissolved. As soon as the governor-weight becomes disengaged and falls back to its normal position the train is again set in motion to feed another charge to the generator. It will thus be seen that the charges of carbid instead of being fed continuously are fed intermittently, which insures a more nearly uniform pressure in the generator.

In Fig. 4 I have shown a modification of

said invention, in which a disk *u*, having an upturned flange *v*, is permitted to rest upon the part *i*, with the shaft *o* passing loosely through a bore in its center. When the speed of the shaft *o* is increased sufficiently to throw the weight *r* outwardly by centrifugal force, the pin *s* is caused to impinge against the flange *v*, so that the resulting friction causes a stoppage of the weight, which again falls back to its normal position to repeat the described action as the speed of the shaft is accelerated. If the friction between the pin *s* and flange *v* is greater than that between the plate *i* and the bottom of the disk *u*, the latter may be rotated slightly; otherwise it will remain stationary. In either case the rotation of the shaft *o* will be intermittent.

A still further modification is shown in Fig. 5, in which a ball-governor is utilized. The balls *w w* are suspended, by means of links *xx*, to a support *y*, rigidly attached to the upper end of the shaft *o*, while links *zz* serve in turn to connect said balls to a block *z'*, which is loosely mounted upon the lower end of said shaft. A finger *z²* upon the block *z'* is adapted to engage with a stop *o'* upon the plate *i* when raised to the proper height, which only occurs when the speed of the shaft is sufficient to cause the balls *w w* to assume the respective position indicated in dotted lines, when the links *zz* serve to lift said block to said position. The instant an engagement occurs between the finger and stop

the balls fall to the position shown in full lines, thereby releasing the engagement of the finger, when the shaft is again free to rotate.

Having thus described my invention, I claim—

1. An intermittently-acting motor for operating a carbid-feed mechanism, consisting of a motor element, a clock-train, a movable weight rotated by a shaft of said train and free to vary its arc by centrifugal force as the speed of the shaft is increased, and means interposed in the pathway of its largest arc, whereby the action of said train may be intermittently arrested as the result of an acceleration of speed of said shaft.

2. A motor for operating a carbid-feed device, comprising a clock-train, a motor element, a centrifugal governor consisting of a weight loosely suspended from a shaft of said train, said weight being adapted to be moved from its normal position by centrifugal action as the speed of the shaft is increased, and a stop in position to arrest said weight when in an extreme abnormal position.

In testimony whereof I have signed this specification, in the presence of two subscribing witnesses, this 7th day of July, 1902.

FREDERICK SEDGWICK.

Witnesses:

D. H. FLETCHER,
C. E. JORDAN.