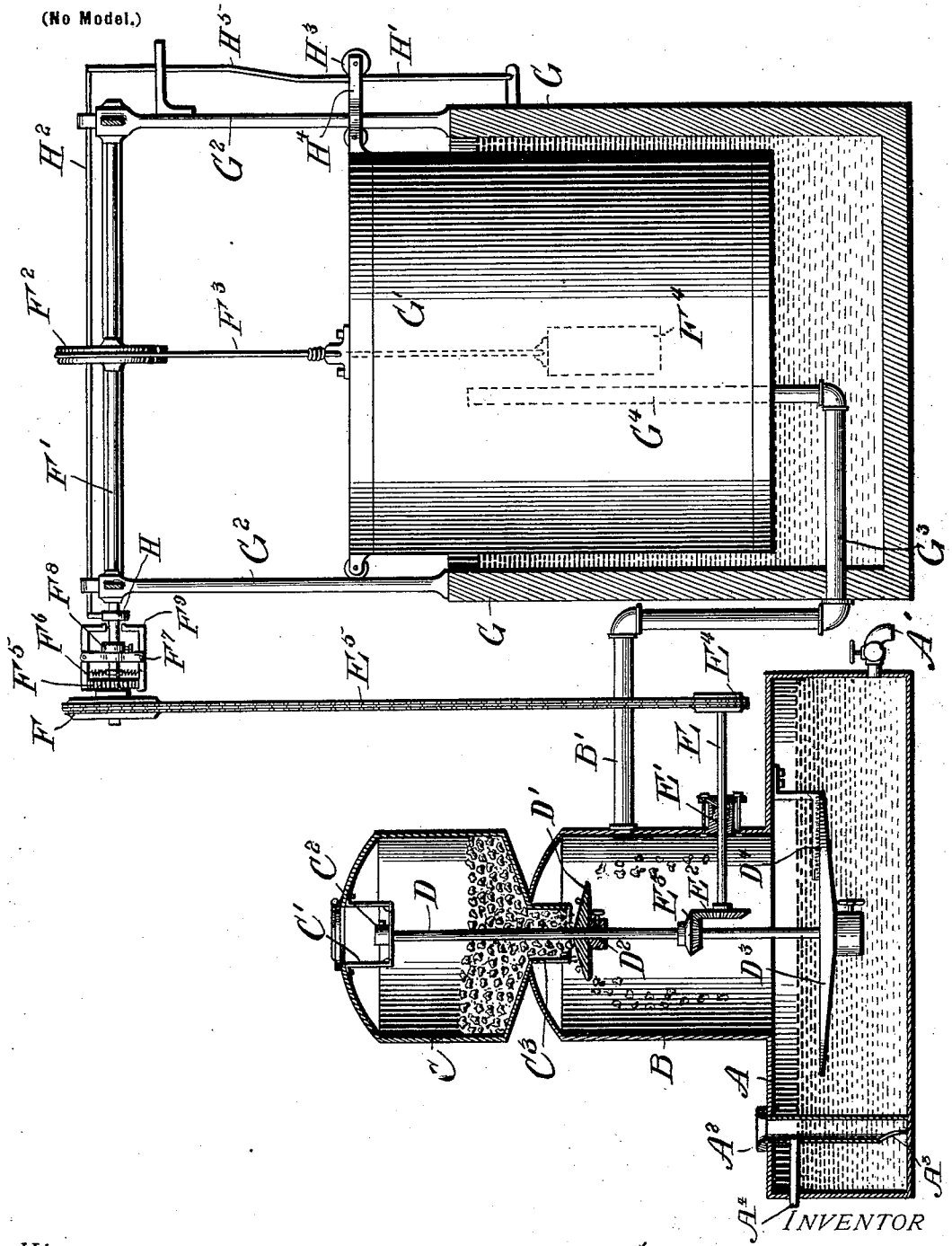
No. 689,540. Patented Dec. 24, 1901.

C. E. COLOMY.

ACETYLENE GAS GENERATOR.

(Application filed Aug. 7, 1901.)

(No Model.)



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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 689,540, dated December 24, 1901.

Application filed August 7, 1901. Serial No. 71,232. (No model.)

To all whom it may concern:

Be it known that I, CARL E. COLOMY, a citizen of the United States, residing at Elkton, in the county of Rockingham, State of Virginia, have invented certain new and useful Improvements in Carbid-Feeds, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a carbid-feed, and is particularly adapted for application to gas-generators and adapted to be controlled by the gasometer thereof.

One object of the invention is to provide an improved construction of feeding device for the carbid whereby it shall be fed in separated quantities by a distributing-disk and retained beneath the water-level upon a traveling plate until the decomposition of the same has fully occurred in order to secure the maximum quantity of gas from the amount of carbid used.

A further object of the invention is to provide means governed by the gasometer for driving the feeding device in the downward movement of the dome of the gasometer and for discontinuing this feed during the upward movement of said dome.

Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

The drawing represents a vertical section through the generator and the gasometer for controlling the operation thereof.

The gas-generator (shown at the left of the drawing) is composed of a water-tank A, provided with the usual draw-off cock A′ and safety blow-off or vent A^2, and at the upper portion thereof a feed-chamber B is applied, above which the carbid-magazine C is located. This feed-chamber communicates by means of a pipe B′ with the gasometer, as shown. Extending vertically through the carbid-magazine and feed-chamber is a driven shaft D, carrying at its lower portion a feed and distributing disk D′ of any desired configuration—for instance, having a beveled or conical upper face, which has been found desirable. This shaft may be operatively supported in any desired manner. For instance, as shown, a hanger C′ is provided at the upper portion of the magazine C, and a set-collar C^2 upon the end of the shaft D supports the shaft from said hanger, while the feed-disk D′, which distributes the carbid, is supported in any desired relation to the outlet C^3 from the magazine C by means of a set-collar D^2 or other preferred device. At the lower end of the shaft D a rotating plate D^3 is applied, adapted to receive the carbid and retain the same beneath the water in the rotary movement of the plate. A stationary spreading-brush D^4 is secured to a wall of the tank A and extends over said plate, so as to distribute and agitate the carbid thereon. This brush also removes the ash from the periphery of the plate, which gradually accumulates at that point. It will be obvious that by an adjustment of the feeding and distributing disk D′ the amount of material to be fed can be governed according to the capacity of the generator, and the carbid falling upon this disk is scattered or distributed in small particles, so that when it reaches the water the most rapid decomposition occurs, while the particles of carbid are retained upon the rotating table D^3 until this action has been completed.

For the purpose of driving the shaft D and imparting a rotary motion to both the distributing-disk and the retaining-plate D^3 a driving-shaft E has been provided and mounted in a suitable packing E′, carried by the feed-chamber B. This driving-shaft has at its inner end a gear E^2, adapted to mesh with a corresponding gear E^3, carried upon the shaft D, while the outer end of the shaft is provided with a driving-wheel E^4—for instance, a sprocket-wheel, as shown. From this wheel a belt or chain E^5 is extended to a sprocket-wheel F, loosely mounted upon one end of a shaft F′, supported above the dome, G′ of a gasometer G by means of standards G^2, which guide the vertical movement of said dome. This shaft is provided with a pulley-wheel F^2, over which a flexible connection F^3 extends from the top of the dome, and the connection F^3 carries at the opposite end a counterbalancing-weight F^4, as shown by dotted lines in the drawing. The gas-pipe B′ extends into the lower portion of the water-tank of the gasometer, as shown at G^3, and is provided with the upwardly-extending dis-

charge-pipe G^4, as shown by dotted lines, so that the gas generated is delivered beneath the dome G' and raises the same.

The sprocket F has secured at one side thereof a pinion F^5, which is loosely mounted upon the shaft F', so as to freely rotate thereon when the pawls F^6 are disengaged from the teeth of said pinion. These pawls are pivoted at the opposite ends of an arm F^7, which is secured to the shaft F' in any desired manner—for instance, by a set-collar F^8—and the inner ends of the pawls are provided with levers F^9, adapted to be moved by a sliding block H, loosely mounted upon the shaft F', whereby the movement of said block toward the pinion causes an outward movement of the locking ends of the pawls F^6, so as to leave the pinion free to rotate upon the shaft F' and discontinue the feeding action of the sprocket F. The movement of this block H may be acquired in any desired manner—for instance, by means of a spring-arm H', secured to the tank of the gasometer G at one end and at its upper end provided with a connecting-rod H^2, extending to the block H. In order to impart an inward movement to the upper end of this spring-arm H', a roller H^3 is suitably mounted in a bracket H^4, carried by the dome G', and the upward movement of this roller engages an outwardly-bent portion H^5 of the arm H', thereby causing an inward movement of the upper end of the arm and a shifting of the block H against the levers F^9, carried by the pulleys F^6.

The blow-off A^2 comprises a tube extending from the top of the tank downward and open to the atmosphere at its upper end, while the lower end thereof is slitted, as at A^3, to permit the escape of water upward through the tube and the discharge A^4 when the pressure of gas within the tank rises above a safe amount, and thus prevent explosion or other damage.

With the parts in the position shown in the drawing the dome is in its descending position and the pawls F^6 are in clutch with the pinion F^5, so as to drive the distributing-disk D' and the holding-plate D^3 through the medium of the driving-shaft E and the gearing connections therewith. The carbid coming in contact with the water immediately begins a rapid generation of gas, which causes an upward movement of the dome, and when the roller H^3, carried by the dome, reaches the deflected portion H^5 of the spring-arm H' the rod H^2 is shifted, so as to disconnect the pawls F^6 from the pinion, and consequently stop the rotation of the feeding-disk and the consequent feed of carbid to the water beneath.

From the foregoing description of the operation it will be seen that the action of the several parts is entirely automatic in character and the carbid fed to the generator only at such times as the amount of gas within the gasometer has become reduced below the predetermined amount. The generator then continues until the desired amount is contained within the gasometer, and the apparatus is thus adapted for continuous automatic operation in maintaining a predetermined pressure or amount of gas so long as the supply of carbid within the magazine exists.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

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

1. In a carbid-feed, the combination with a feeding device embodying a feed-magazine and a rotating distributing-disk beneath the discharge-opening from the magazine, of a driving-shaft for said disk, a water-tank beneath said discharge-opening, a gasometer having a driving-shaft and pulley-wheel above the dome thereof, a flexible weighted connection extending from said dome over said pulley-wheel to actuate the latter, a driving-wheel and gear loosely mounted upon the gasometer driving-shaft, a clutch device carried by said shaft to engage said gear-wheel, a clutch-operating arm extending upward from one side of the gasometer-tank, and a contact member carried by a lateral bracket upon the gasometer-dome to engage and operate said arm to disconnect the clutch from said gear, substantially as specified.

2. In a carbid-feed, a water-tank, a feed-chamber above the same and of less diameter than said tank, a carbid-magazine adapted to discharge into the upper portion of said feed-chamber, a vertical shaft mounted to extend centrally through said feed-chamber and into said water-tank, a rotating distributing-disk adjustably mounted on said shaft beneath the outlet from said carbid-magazine, a retaining-plate of greater diameter than said disk and carried by the lower portion of said shaft within said water-tank entirely beneath the opening from the feed-chamber and of greater diameter than said disk or opening, and means for driving said shaft disposed between the disk and plate; substantially as specified.

3. In a carbid-feed, a water-tank, a feed-chamber above the same, a carbid-magazine adapted to discharge into the upper portion of said feed-chamber, a vertical shaft supported within said feed-chamber and extending into said water-tank, a rotatable distributing-disk adjustably mounted on said shaft beneath the outlet from said carbid-magazine, a retaining-plate secured to the lower end of said shaft beneath the water in said tank, a fixed brush above the upper surface of said plate, and means for driving said shaft to rotate said disk and plate in unison; substantially as specified.

4. In a carbid-feed, a water-tank, a feed-chamber above the same, a carbid-magazine

adapted to discharge into the upper portion of said feed-chamber, a vertical shaft extending through said feed-chamber and into said water-tank, a rotating distributing-disk mounted on said shaft beneath the outlet from said carbid-magazine, a retaining-plate within said water-tank adapted to receive the carbid from said distributing-disk, a driving-shaft geared to rotate said disk and plate, a gasometer, a driving-shaft located above the dome thereof and actuated by the movement of said dome, a driving-wheel on said shaft above the gasometer having geared connection with the driving-shaft for the feeding device, a clutch comprising a gear-wheel and pawls to engage the same, a slidably-mounted block adapted to actuate said pawls to disengage them from said gear-wheel, and means carried by the dome of the gasometer for shifting said block to disconnect the pawls in the upward movement of the dome; substantially as specified.

5. In a carbid-feed, a water-tank, a feed-chamber above the same, a carbid-magazine adapted to discharge into the upper portion of said feed-chamber, a vertical shaft extending through said feed-chamber and into said water-tank, a rotating distributing-disk mounted on said shaft beneath the outlet from said carbid-magazine, a retaining-plate within said water-tank adapted to receive the carbid from said distributing-disk, a driving-shaft geared to rotate said disk and plate, a gasometer, a driving-shaft located above the dome thereof and actuated by the movement of said dome, a driving-wheel on said shaft above the gasometer having geared connection with the driving-shaft for the feeding device, a clutch comprising a gear-wheel and pawls to engage the same, a slidably-mounted block adapted to actuate said pawls to disengage them from said gear-wheel, means carried by the dome of the gasometer for shifting said block to disconnect the pawls in the upward movement of the dome, a pulley-wheel upon the driving-shaft above said dome, and a flexible connection extending from the top of the dome over said pulley-wheel and provided with a weight at its opposite end; substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

CARL E. COLOMY.

Witnesses:
EUGENE PETTY,
C. R. MCGOHEY.