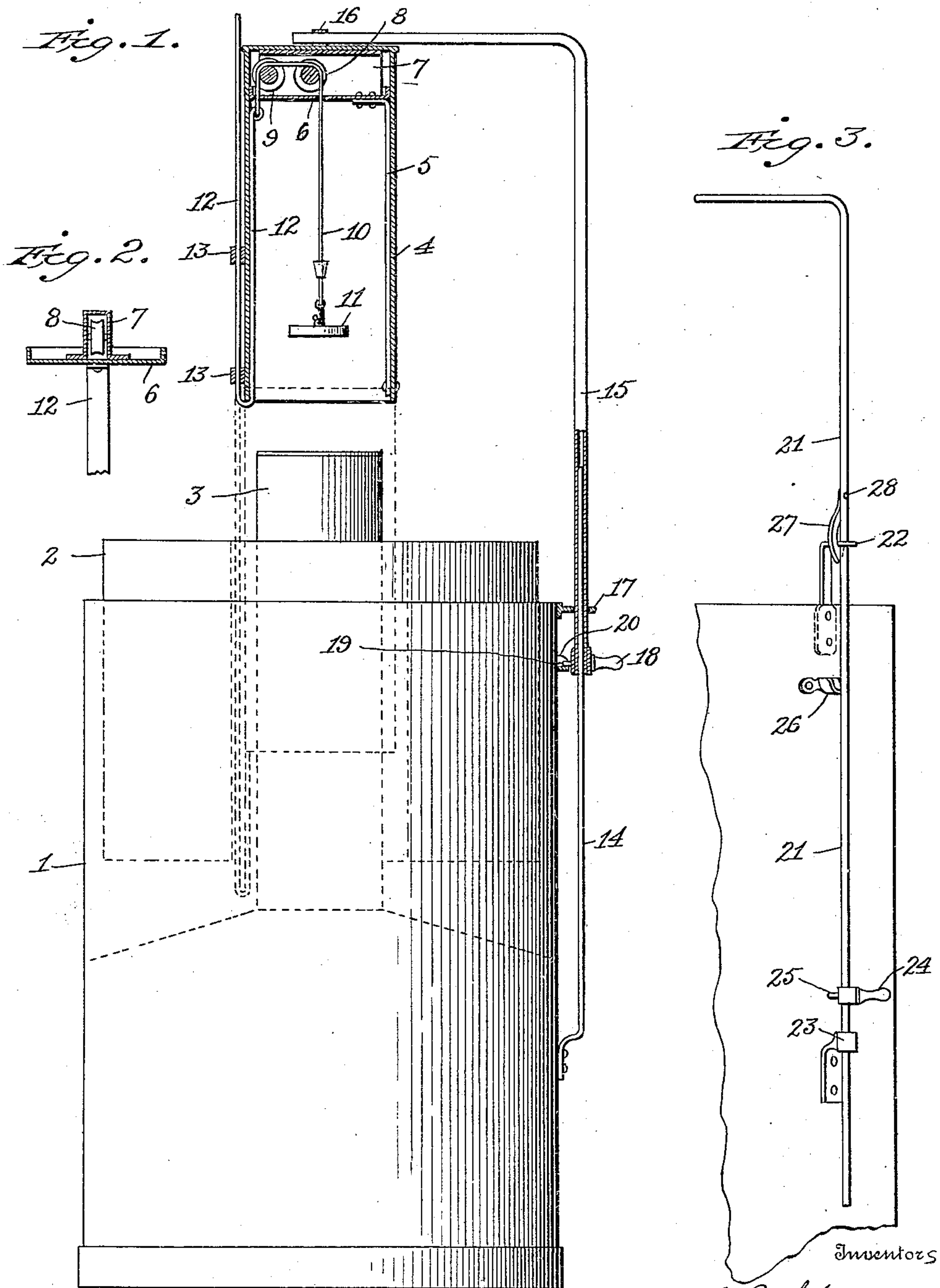


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PATENTED DEC. 31, 1907.

F. E. STOVER & C. L. DARNALL.  
ACETYLENE GAS GENERATOR.

APPLICATION FILED AUG. 1, 1907.



Witnesses

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# UNITED STATES PATENT OFFICE.

FRANK E. STOVER AND CHARLES LEE DARNALL, OF CHATTANOOGA, TENNESSEE.

## ACETYLENE-GAS GENERATOR.

No. 875,468.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed August 1, 1907. Serial No. 386,684.

*To all whom it may concern:*

Be it known that we, FRANK E. STOVER and CHARLES LEE DARNALL, citizens of the United States, residing at Chattanooga, in the county of Hamilton, State of Tennessee, have invented new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

Our invention relates to acetylene gas generators, and has for its objects, first, to provide an improved means for indicating the amount of carbid in the carbid chamber, and, secondly, to provide means for lifting and sustaining the carbid chamber cover, together with the carbid indicating mechanism, whereby access may be had to the carbid chamber for filling the same without danger of disarranging said carbid indicating mechanism. These objects we accomplish in the manner and by the means hereinafter described and claimed, reference being had to the accompanying drawing, in which:

Figure 1 is a side elevation of an acetylene generator of the carbid feed type, showing the carbid chamber cover raised above the carbid chamber, said cover being shown in section to show the carbid indicating mechanism carried thereby. Fig. 2 is a detail sectional view of the plate supporting the pulleys of the carbid indicating mechanism, taken at a right angle to Fig. 1. Fig. 3 is an elevation showing a somewhat modified construction of cover lifting mechanism.

Similar numerals of reference denote as far as possible corresponding parts in the several views.

In the said drawing the reference numeral 1 denotes the body of a generator of the carbid feed type, such, for instance, as is disclosed in Letters Patent No. 853,746, granted to the assignee of Frank E. Stover, May 14, 1907. In said construction there is a gas bell 2, and a carbid chamber 3, the cover 4, when in position, fitting between said gas bell and carbid chamber and being water sealed in the upper chamber of the generator.

Fitting snugly within the cover 4 near its upper end, and retained therein by a strap 5 extending lengthwise of said cover and bolted thereto near its lower end, is a base plate 6, having fixed to its upper side a bridge piece 7 providing bearings for two pulleys 8 and 9, over which passes a cord 10, one end extending through an aperture

in said base plate downward centrally into the body of the cover 4 and carrying at its lower end a suitable weight 11. The other end of said cord extends through a similar aperture in the base plate 6 near one edge thereof, and is connected with the upper inner end of an indicating rod 12 that extends downwardly below the lower edge of the cover 4, whereby it is water sealed therewith, and is then bent abruptly back to extend up the outer side thereof, as shown, the same passing through suitable guides 13 on the exterior of the cover. We prefer to form said rod of a flat metal strip, and the same may extend for any desired distance above the top of the cover 4 so that it may be visible at all times to indicate the level of the carbid in the carbid chamber 3.

Bolted at its lower end to the exterior of the generator 1 is a guide rod 14, on which telescopes a hollow extension rod 15 that is bent horizontally at its upper end and engaged, preferably at a single point, with the top of the cover 4 by means of a clip 16. Said hollow rod 15 passes through a guide 17 on the generator, and has fixed thereto at its lower end a handle 18 that is extended at its opposite side into a pin 19 adapted to be engaged in a cup-shaped stop 20 when said rod 15 is raised to approximately its highest point.

From the above description the operation of our improved construction will be understood as follows: With the cover 4 in operative position over the carbid chamber 3 and water sealed between the same and the gas bell 2, the rod 15 will be telescoped on rod 14, and the weight 11 of the carbid indicator will rest on the carbid in chamber 3, the weight of indicating rod 12 taking up the slack of cord 10 and being thereby governed in its vertical position by the level of the carbid in chamber 3, as will be readily understood, its upper end being raised when the carbid level is low, and vice versa. When it is desired to fill the carbid chamber 3, the operator by lifting on handle 18 will raise rod 15, and with it the cover 4, it being understood that, when said cover is centered over carbid chamber 3, the pin 19 will lie to one side of stop 20 so as to clear the same in the upward movement of rod 15. When the handle 18 and pin 19 are a little above stop 20, said handle may be turned horizontally to bring said pin 19 over stop 20 so that the two will engage when the handle 18 is re-



leased to support the parts in their uppermost position, as shown in Fig. 1. This turning of handle 18 will correspondingly rotate rod 15 so that the cover 4 will be carried to one side of carbid chamber 3, permitting free access to the latter.

It being observed that the carbid indicating mechanism is carried entirely by the cover 4, the same will move therewith, while said lifting mechanism will obviate all necessity for independently handling said cover, thus eliminating all danger of the latter being reversed when removed, which is liable to result in the weight 11 dropping on the base plate 6 and breaking the mechanism. Furthermore, the maintaining of the vertical position of the cover 4 at all times absolutely prevents any derangement of the carbid indicating mechanism, which is liable to occur even with a slight tilting of the cover during manual removal or replacement.

We prefer to connect the rod 15 with the cover 4 at a single point only, in order that said cover may have a limited independent movement on said rod, so that it may be more readily centered over carbid chamber 3 when about to be placed thereon.

We have illustrated in Fig. 3 a structure adapted more particularly for use in large generators, wherein the size of the generator permits a single rod 21 to be employed in lieu of the telescoping members; said rod moving in upper and lower guides 22 and 23 and employing a handle 24 and pin 25 adapted to be engaged with a cup-shaped stop 26, as in the Fig. 1 construction. We also provide a hook 27 pivoted at 28 on said rod 21 that will automatically engage under and lock with the upper guide 22 when the rod 21 is in its lowermost position with the cover in operative position on the carbid chamber, said device serving, in connection with rod 21, to lock the cover in position against upward movement due to abnormal gas pressure, thus dispensing with the necessity for weighting said cover, as has been found necessary heretofore in machines of large capacity.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber that is water sealed when in operative position over said carbid chamber, and means carried by said generator body for vertically lifting and supporting said cover free from said carbid chamber to permit access to said carbid chamber.

2. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber, a carbid indicator mechanism carried entirely by said cover, and means carried by said generator

body for vertically lifting and supporting said cover and carbid indicator mechanism free from said carbid chamber, whereby said carbid indicator mechanism will be undisturbed.

3. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber, and a vertically movable rod on said generator body engaged with said cover to lift the latter vertically in the upward movement of said rod.

4. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber, a vertically movable rod on said generator body engaged with said cover to lift the latter vertically in the upward movement of said rod, and means for supporting said rod in its lifted position.

5. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber, and a vertically movable and rotatable rod having an upper horizontal end engaging said cover whereby the latter may be lifted vertically with said rod free from its carbid chamber and shifted laterally away from the upper open end of said carbid chamber.

6. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber, a vertically movable and rotatable rod having an upper horizontal end engaging said cover whereby the latter may be lifted vertically with said rod free from its carbid chamber and shifted laterally away from the upper open end of said carbid chamber, a pin on said rod, and a stop on said generator body over which said pin will swing when said rod is rotated to shift said cover laterally, said pin engaging said stop when said rod is released to support the parts in their lifted position.

7. In an acetylene gas generator, a generator body, a carbid chamber, a water sealed cover for said carbid chamber adapted to be lifted vertically from said carbid chamber, and a vertically movable rod having a horizontal upper arm engaging said cover at a single point only, whereby said cover may be lifted by said rod and will have a limited movement on said arm to permit its being centered over said carbid chamber.

8. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber, and a telescoping lifting arm on said generator body engaged with said cover to lift the latter free from its carbid chamber.

9. In an acetylene gas generator, a generator body, a carbid chamber, a vertically movable cover for said carbid chamber, a lifting rod on said generator body connected with said cover, and means for locking said lifting rod and cover in their lowermost position.

10. In an acetylene gas generator, a generator body, a carbid chamber, a vertically



movable cover for said carbid chamber, a lifting rod on said generator body connected with said cover, a guide on said generator body for said rod, and a pivoted hook on 5 said rod adapted to engage and lock with said guide when said rod is in its lowermost position, whereby said rod and cover will be held against vertical movement.

11. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber, and a water sealed carbid indicating mechanism carried solely by said cover and removable therewith.

12. In an acetylene gas generator, a generator body, a carbid chamber, a removable cover for said carbid chamber, and a carbid indicating mechanism carried solely by said cover and removable therewith, and consisting of a base plate fixed in said cover, 15

pulleys supported from said base plate, a cord passing over said pulleys, a weight at one end of said cord within said cover, and an indicating rod connected to the other end of said cord within said cover and bent at its lower end to pass beneath the lower edge of said cover to project upwardly alongside the outer side of said cover. 25

In testimony whereof, we have hereunto set our hands in the presence of subscribing witnesses. 30

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