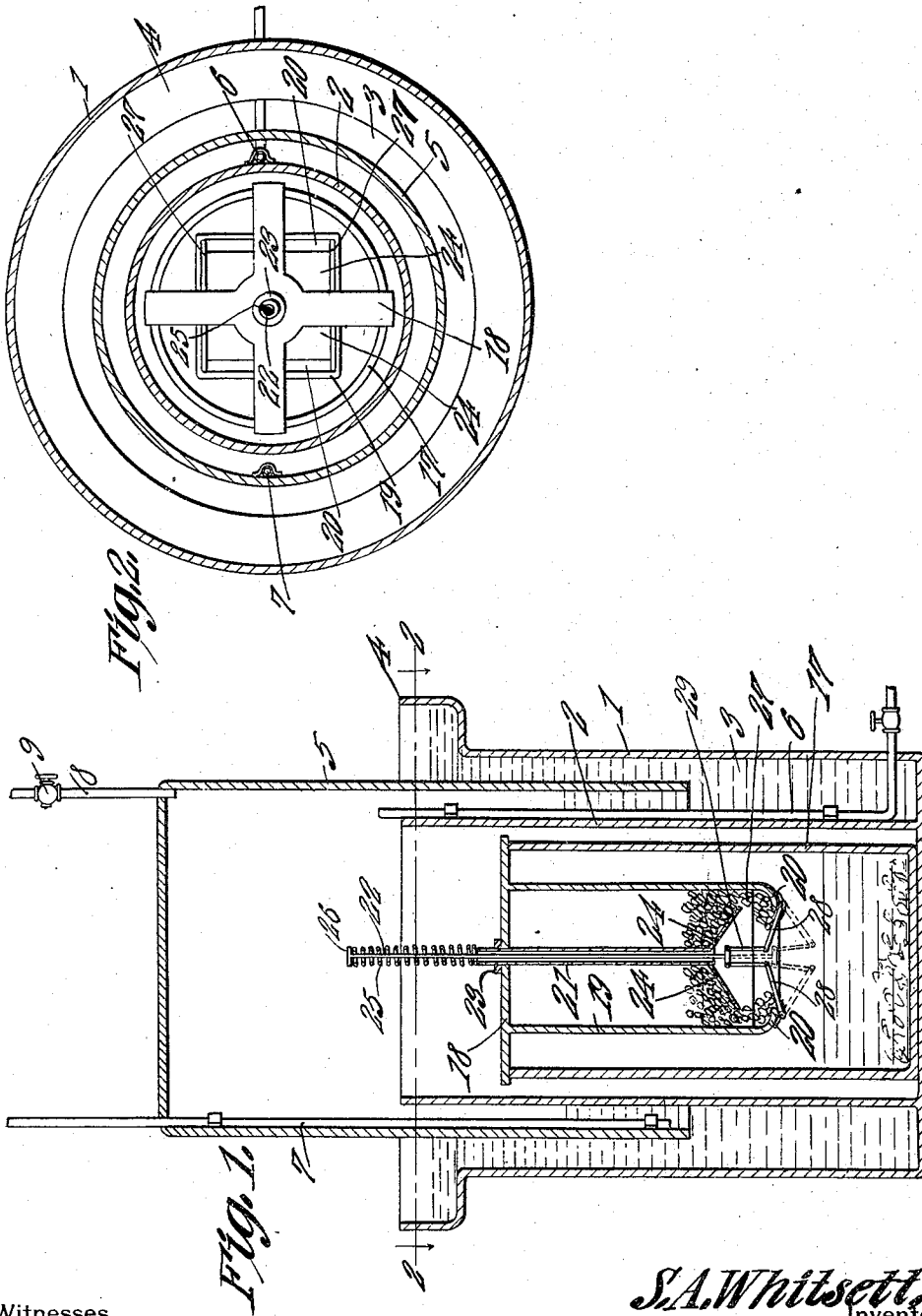


S. A. WHITSETT.
ACETYLENE GAS GENERATOR.
APPLICATION FILED JUNE 2, 1915.

1,201,409.

Patented Oct. 17, 1916.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL A. WHITSETT, OF BELFAST, TENNESSEE.

ACETYLENE-GAS GENERATOR.

1,201,409.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL A. WHITSETT, a citizen of the United States, residing at Belfast, in the county of Marshall and State of Tennessee, have invented a new and useful Acetylene-Gas Generator, of which the following is a specification.

The present invention appertains to acetylene gas generators, and aims to provide a novel and improved apparatus of that character.

One of the objects of the invention is the provision of an acetylene gas generator provided with unique means for releasing a small quantity of carbid when the bell approaches its lowermost position, so that the carbid will drop into the water when the bell lowers a predetermined amount, until the bell rises due to the formation of the gas.

Another object of the invention is the provision in an acetylene gas generator, of novel means for discharging the carbid, so that the gas will be quickly and effectively generated, whereby the carbid will be properly consumed without waste.

It is also within the scope of the invention to provide an acetylene gas generator which is improved generally in its construction and details, to enhance the utility thereof, the structure being comparatively simple and inexpensive in construction, as well as being serviceable, convenient, practical and efficient in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is a vertical section of the generator. Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1.

In carrying out the invention, there is provided a water tank 1 having an upstanding sleeve 2 therein, and providing an annular trough 3 between the sleeve 2 and walls of the tank 1 for holding the water. The upper end of the tank 1 is flared or enlarged, as at 4, whereby when the water level is

raised due to the lowering of the bell 5, the flared or enlarged portion 4 will properly receive the water, without danger of the water overflowing. The bell 5 has its rim received by the trough 3, whereby the water forms a seal for the bell, and allows the bell to move vertically when being filled and emptied.

The gas discharge pipe 6 extends along one side of the sleeve 2 from within the bell 5, and projects out through the tank 1 for conducting the gas from the bell 5 to the point of discharge or consumption.

A vertical escape pipe 7 is secured to one wall of the bell 5, within the bell, and projects upwardly through the top of the bell, the lower end of the pipe 7 terminating slightly above the lower end of the bell, whereby when the water level within the bell reaches the lower end of the bell, due to the raising of the bell and the lowering of the water level, the gas will escape through the pipe 7, instead of escaping around the lower end of the bell which would be objectionable. An upstanding pipe 8 is connected to the top of the bell 5 and is provided with a controlling valve 9, whereby when the valve 9 is opened, the air is allowed to escape from the bell, when the generator is started.

Seated within the sleeve 2, is a sludge can or receptacle 17, and spider 18 is seated upon the upper end of the can 17, and carries a depending carbid holder or receptacle 19 of rectangular or square cross section. The carbid holder 19 is suspended within the can 17 and is spaced above the bottom of the said can, and opposite walls of the holder 19 have their lower ends bent inwardly, as at 20, between the other opposite sides of the holder 19. There is an opening between the inturned ends 20 communicating with the space or chamber within the can 17.

A vertical pipe 21 is engaged through the center of the spider 18 and depends within the carbid holder 19, and a rod 22 is slidable through the pipe 21. A nut 23 is threaded upon the pipe 21 and seats upon the spider 18 for adjustably supporting the pipe 21.

A pair of inclined plates or chutes 24 are secured to the pipe 21 adjacent its lower end, and form a gable whose edges overhang the inturned portions 20. A coiled wire spring 25 surrounds the upper protruding terminal of the rod 22 and seats against the upper

end of the pipe 21 and a head 26 secured to the upper end of the rod 22. The ends of the plates or chutes 24 are secured to opposite side plates 27 which rest slidably against opposite walls of the carbide holder 19.

Wings 28 are hinged to the inturned portions 20 and project toward one another, so that the free ends of the said wings may be swung upwardly and downwardly, and links 29 connect the free ends of the wings 28 and the lower end of the rod 22, whereby when said rod is raised and lowered, the wings will be raised and lowered correspondingly. The upper end of the rod 22 projects upwardly sufficiently in order that the rod 22 will be depressed when the bell 5 lowers a predetermined amount. The wings 28 normally project angularly upward toward one another, so that the carbide will be effectively held back thereby, and the free edges of the wings are spaced apart.

In operation, presupposing that the bell 5 is raised, as seen in Fig. 1, when the gas is withdrawn from the bell 5 through the pipe 6, so that the bell lowers a predetermined amount, the top of the bell will strike the upper end or head 26 of the rod 22. Then when the bell lowers still further, the rod 22 will be moved downwardly, against the tension of the spring 25, which normally lifts the said rod, and the wings 28 will be swung downwardly, as seen in dotted lines in Fig. 1. Normally, the wings 28 are swung upwardly, as seen in full lines in Fig. 1, whereby they support the carbide thereon and prevent the carbide from dropping into the water in the lower portion of the sludge can 17. Now, when the wings 28 are swung downwardly, they permit the carbide to slide or gravitate downwardly into the water, and this will start the generation of the acetylene gas, causing the bell 5 to rise. When the bell is raised, the rod 22 is released, and will be moved upwardly by its spring 25, to again swing the wings 28 upwardly for arresting the discharge of carbide. The carbide within the holder 19 gravitates over the lower edges of the inclined plates or chutes 24 and is directed onto the wings 28 by the inturned portions 20 of the respective side walls of the carbide holder, whereby when the wings 28 are swung downwardly, the carbide will be gradually discharged into the water. The carbide being dropped into the water will form the gas quickly and effectively, and without waste of carbide.

The pipe 21 may be adjusted vertically, by rotating the supporting nut 23, for adjusting the plates 24 and 27 vertically within the holder 19, when desired, so that various grades of carbide may be used, it being noted that when the plates 24 are adjusted vertically, their lower edges are moved away from or toward the inturned portions 20 to increase or decrease the delivery openings or spaces between the plates 24 and inturned deflecting portions 20.

Should the bell 5 be filled with an excessive quantity of acetylene gas, so that the gas would be liable to escape under the lower end of the bell 5, the gas would first escape out through the pipe 7, to prevent the upsetting of the bell and other mishaps. If desired, a hose or other connection may be attached to the outer end of the pipe 7 for catching the acetylene gas which escapes through the said pipe.

When it is desired to clean and refill the apparatus, the bell 5 is removed, and the sludge can 17 may then be removed. The carbide holder 19 may be lifted out of the can 17, whereby the sludge may be dumped, and the holder 19 may then be filled with carbide. The parts are then again assembled.

Having thus described the invention, what is claimed as new is:—

A holder, the opposite side walls of which have inturned portions at their lower ends, wings hinged to said portions and projecting toward one another, the free edges of said wings being spaced apart at all positions thereof, a vertically adjustable pipe carried by the holder and depending thereinto, a pair of inclined chutes within the holder attached to the lower end of said pipe and having their lower edges overhanging said inturned portions, slidable plates resting against the other sides of the holder and attached to the ends of the chutes, a spring raised rod slidable through said pipe, and links connecting the lower end of said rod and free edges of said wings, said rod when raised raising the free edges of the wings above the plane of the hinged edges thereof, and said rod when depressed moving the free edges of said wings below said plane.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

SAMUEL A. WHITSETT.

Witnesses:

GEO. McADAMS,
JOSIE PETTY.