

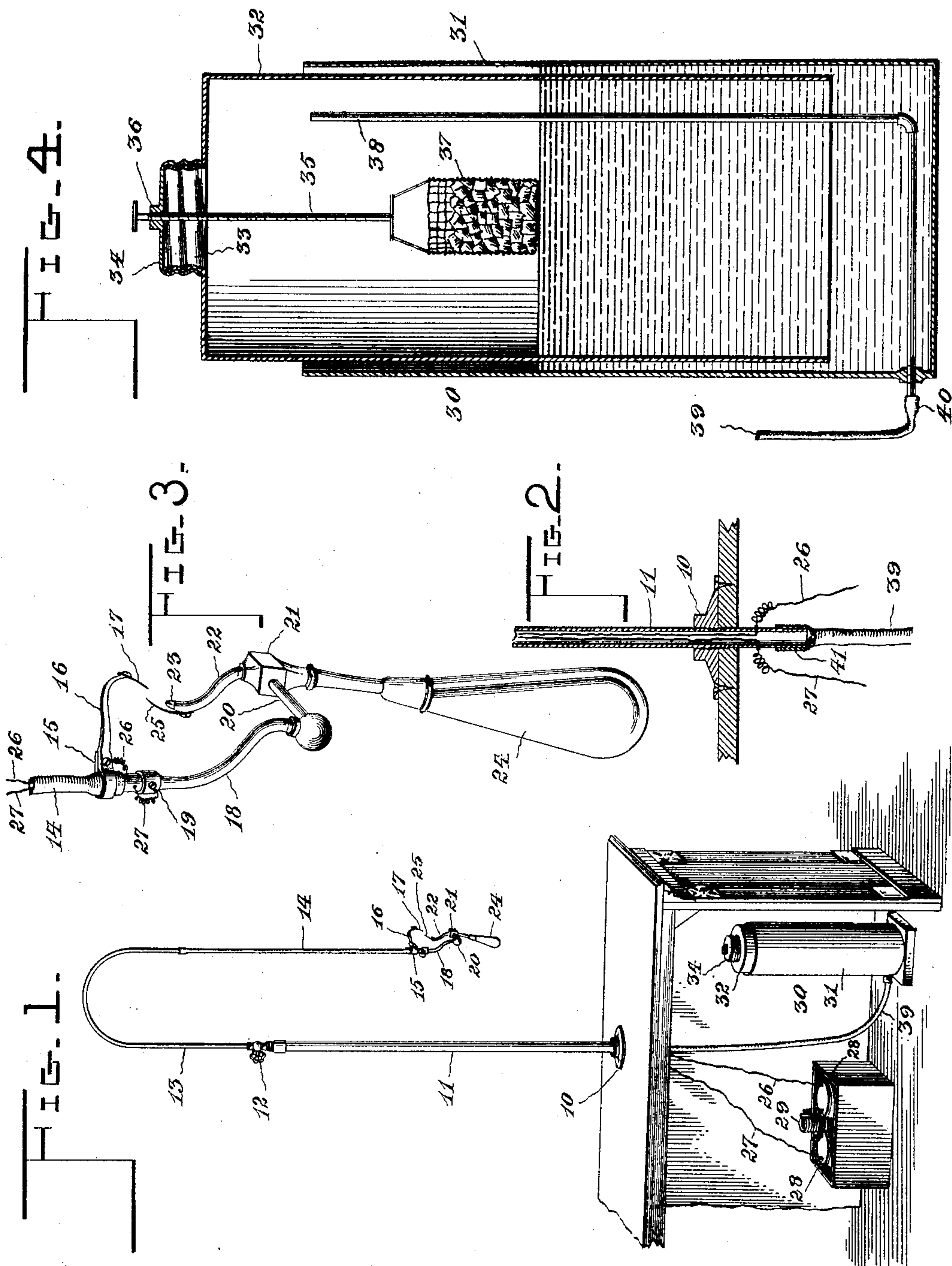
No. 636,244.

Patented Nov. 7, 1899.

A. W. CROSBY.
PORTABLE IGNITER PLANT.

(Application filed May 20, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

ADELBERT WILMONT CROSBY, OF GENESEO, KANSAS.

PORTABLE IGNITER PLANT.

SPECIFICATION forming part of Letters Patent No. 636,244, dated November 7, 1899.

Application filed May 20, 1899. Serial No. 717,602. (No model.)

To all whom it may concern:

Be it known that I, ADELBERT WILMONT CROSBY, a citizen of the United States, residing at Geneseo, in the county of Rice and State of Kansas, have invented a new and useful Portable Igniter Plant, of which the following is a specification.

My invention relates to improvements in portable igniter plants especially adapted for lighting cigars or cigarettes; and the object in view is to provide a portable structure adapted to be conveniently installed on a store-counter, table, or other place and to effect economy in the generation of the electrical current and in the production of gas, which furnishes the lighting medium.

In my apparatus or plant an acetylene-gas generator is employed in connection with a standard which carries the electrical igniting device, and with the igniter device is associated a gas-valve that operates in unison with the contacts of said igniter, whereby the gas is produced in and supplied by the generator to a controlling-valve, which remains closed under normal conditions to cut off the flow of gas and is adapted to be opened at the period of producing the electric spark from a circuit which includes a battery and an induction-coil.

The invention further consists in the novel combination of elements and in the construction and arrangement of the various parts for service, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated a preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a complete plant or apparatus constructed in accordance with the principles of my invention. Fig. 2 is a vertical section of the counter or table fixtures forming a part of my apparatus. Fig. 3 is an enlarged detail view of the electrical igniter and gas-valve appliances. Fig. 4 is a detail vertical section of the gas-generator.

The same numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

To support the fixtures on a store-counter, table, or other structure, I employ a base-

plate 10, which may be fastened in any suitable way, and this base-plate is provided with a central threaded socket, into which is screwed the lower threaded end of a tubular standard 11. A stop-cock 12 is screwed to the upper end of this standard, and this stop-cock supports a bowed or metallic pipe 13, one leg of which is screwed to the stop-cock.

A flexible pipe or tube 14 is attached to the other leg of the bowed or arched metallic pipe 13, and this flexible tube depends a suitable distance from the bowed pipe, so as to support the igniter and the gas-valve in a position where the handle may be reached conveniently by the user. A metallic clip 15 is secured in any suitable way to the flexible tube 14, near the lower end thereof, and from this clip extends a finger 16, which is provided at its free extremity with a yieldable metallic contact-plate 17, which forms one of the terminals of an electric circuit. A curved metallic tube 18 is fastened securely to the lower extremity of the flexible tube 14, so as to lie below and out of metallic contact with the clip 15, and this metallic tube 18 is insulated electrically from the clip 15, as at 19.

In the practical construction of the apparatus the flexible tube 14 is made of rubber or a rubber fabric, and by attaching the clip 15 and the metallic tube 18 to this rubber or fabric tube, so as to leave an intervening space between said parts, they are adapted to be insulated electrically one from the other, as hereinafter described, and represented more clearly by Fig. 3. Any suitable construction or expedient may be adopted for the insulation of the metallic parts 15 18 from electrical connection one from the other, as will readily be understood by a skilled mechanic. The curved metallic tube 18 supports or carries a valve-shell 20 of compact construction, and in a seat of this valve-shell is fitted a turning-plug 21, that is adapted to be manipulated for opening and closing a gas passage or way through the shell and the plug. To one end of this valve-plug 21 is attached a head 22, which is hollow, so as to communicate with the valve-plug, and this head has a burner-tip 23 attached thereto for communication with the passage in the head, so as to receive the gas from the tube 18 when the valve is opened. The other end of the head

22 is constructed to receive a handle 24, which may be of porcelain or other electrical insulating material, and the head 22 carries the flexible metallic contact-wiper 25, which is adapted to sweep across the electrical contact 17, so as to temporarily close the electric circuit and to produce a spark on the separation of the two contact-points. The valve is held normally in its closed position to cut off the flow of gas to the burner-tip by the weight or gravity of the handle 24, and the contacts 17 25 are separated or spaced one from the other in a manner to break or open the electric circuit when the gas-valve is closed, thus obviating the consumption of gas and the utilization of the current in the electric circuit. This circuit has its conductors 26 27 carried or extended through the tubular standard 11, the bowed pipe 13, and the flexible tube 14, and one conductor 26 is in electrical contact with the clip 15, so that the contact-point 17 will form one terminal of the circuit, while the other conductor 27 is in electrical contact with the curved metallic tube 18 for the current to traverse the shell 20, the plug 21, and the head 22 for making the other contact 25 constitute the other terminal of the electric circuit. A battery 28 and an ordinary induction-coil 29 are included in this electric circuit for supplying the current of requisite strength to produce a well-defined flash or spark on the separation of the terminal contacts, and the conductors of said circuit are carried through the standard 11 and base-plate 10, so that the battery and coil may be compactly disposed below the store-counter, table, or other fixture on which my plant is attached.

One of the especial features of my apparatus or plant resides in the employment of a portable generator adapted for the production of gas which is conveyed to the standard 11, so as to flow therethrough, the pipe 13, and the flexible tube 14 to the gas-valve, and thence to the burner-tip. The generator which I employ is indicated more clearly by Fig. 4 and relates to that type known to the art as "acetylene-generators," in which the gas is produced by the decomposition of water and a solid—such, for instance, as calcium carbide. This type of generator is especially serviceable in my apparatus, because the gas may be produced economically and in accordance with the demands of the service, and thus the entire plant is constructed for use in localities where there is no available gas-supply—as, for instance, in small towns and villages. The generator is indicated in its entirety by the numeral 30, and it consists of a tank 31, which is adapted to contain a suitable quantity of water, which forms a bath for the immersion of the inverted gas-bell 32, thus producing a sealed joint between the bell and the tank for minimizing the escape of gas from the generator. The head of the floatable bell 32 is provided with a central threaded nipple

33, to which is secured removably a threaded cap 34. Through this cap passes the upper extremity of a threaded stem 35, which is adapted to work in a nut 36 of said cap 34, and this threaded stem is thus made adjustable longitudinally in the screw-cap. The stem extends downwardly into the floatable gas-bell 32, and it carries a carbide vessel 37 of any suitable construction, which vessel is adapted to travel with the bell and to enter the water which is contained in the tank 31. The gas from the generator is conveyed through a pipe 38, which extends above the water-seal and has one end protruding through the tank 31 below the limit of downward travel of said bell. A flexible hose 39 has its lower end coupled at 40 to the protruding end of the gas-pipe, and the opposite end of said flexible hose is coupled at 41 to the lower part of the tubular standard 11.

The gas-generator of an apparatus which I have in service is of very compact construction, the same being about six inches in diameter and sixteen inches high, and said generator is capable of producing an ample supply of gas for use at the burner for a period of from one to three weeks without renewing the carbide charge, so that it will be at once apparent that the generator produces the gas very economically and with minimum attention. By reason of the compact construction of the generator it is capable of being stored beneath the counter or a table along with the battery and induction-coil of the electric circuit. Economy in the consumption of gas and in the energy generated by the electric battery is obtained by having the contact-points of the electric circuit normally free to maintain the circuit in an open or broken condition and by cutting off the flow of gas to the burner-tip, so that it is not necessary to constantly maintain a flame or jet at the burner-tip.

The operation may be described as follows: The apparatus or plant having been installed as herein described, the cap 34 is removed from the generator, together with the stem 35 and the carbide vessel. A charge of calcium carbide or other suitable material is placed in the vessel and the elements are replaced on the generator in a position for the vessel 37 to descend within the floatable bell. As the bell settles slowly in the bath contained within the generator-tank, the carbide vessel 37 is immersed in the water, which at once attacks the carbide, so that acetylene-gas is generated by the decomposition of the carbide and water. The gas accumulates in the bell and raises the latter within the tank until the carbide vessel is withdrawn from the water-bath and the gas is free to flow through the hose 39, the tubular standard, and the pipes 13 14 to the valve-shell, the stop-cock 12 being opened.

In using the device the operator grasps the handle 24 and turns the latter for the wiper-

contact 25 to approach the other contact 17, and in this manipulation of the handle the valve-plug 21 is turned for the gas to pass through the hollow head 22 and into the burner-tip 23, thus admitting gas to the burner. As the handle continues to move the wiper-contact 25 sweeps clear of the contact 17, and the sudden separation of the two spring-contacts 25 produces an electric spark, which ignites the gas that issues from the burner-tip 23. The operator may now light the cigar or cigarette from the flame produced at the burner-tip by the consumption of acetylene gas, and when the operator releases the handle the weight or gravity thereof restores the contact-wiper 25 to its normal position and operates the valve-plug 21 to cut off the flow of gas.

It is evident that the stop-cock 12 may be manipulated to prevent the gas from flowing from the generator to the burner-tip in case it is desired to recharge the generator or to repair any of the parts of the apparatus.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claim may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what I claim is—

The combination with a casing, of a tubular standard fixed to the casing and having a flexible connection at its upper end, a rigid tube fixed to the flexible connection, a clamping-collar adapted to hold the flexible connection upon the tube, an extension of the collar having an electrical terminal, a burner pivoted to the rigid tube and communicating therewith, an electrical terminal carried by the burner and adapted for engagement with the first-named terminal when the burner is moved upon its pivot, a gas-supply within the casing and connected with the tubular standard to supply gas to the burner, and a source of electricity within the casing and having conducting-wires passed through the standard and its flexible connection and connected with the terminals.

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

ADELBERT WILMONT CROSBY.

Witnesses:

LESTER E. SMITH,
A. B. FALLIS.