

BEST AVAILABLE COPY

No. 781,936.

PATENTED FEB. 7, 1905.

J. J. COOK.
CARBURETER FOR HYDROCARBON ENGINES.
APPLICATION FILED JULY 22, 1903.

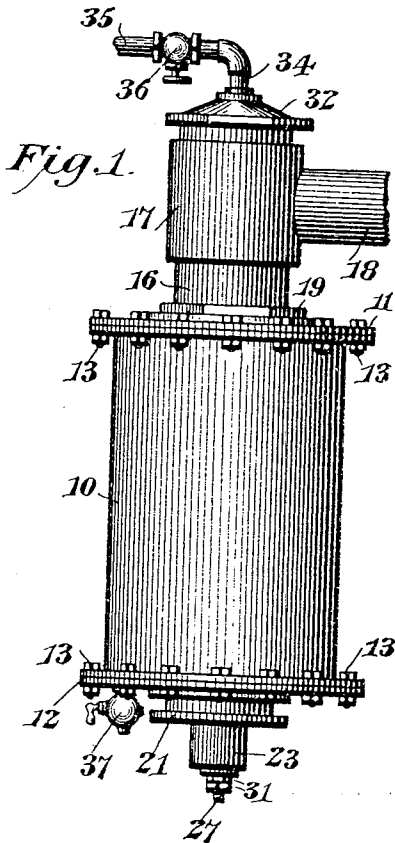


Fig. 1.

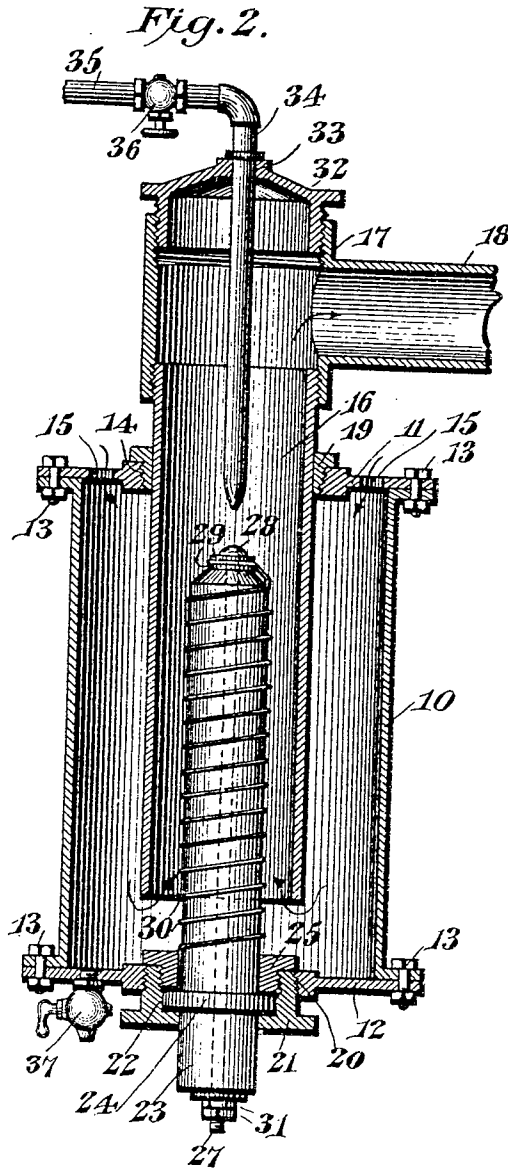


Fig. 2.

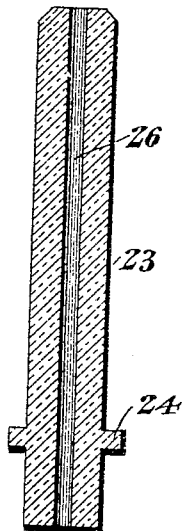


Fig. 3.

Witnesses
Jas. E. McLaughlin
B. H. Foster

James J. Cook, Inventor

By *E. J. Siggers*
Attorney

UNITED STATES PATENT OFFICE.

JAMES J. COOK, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO COOK KEROSENE CARBURETOR COMPANY, A CORPORATION OF NEW JERSEY.

CARBURETER FOR HYDROCARBON-ENGINES.

SPECIFICATION forming part of Letters Patent No. 781,936, dated February 7, 1905.

Application filed July 22, 1903. Serial No. 166,630.

To all whom it may concern:

Be it known that I, JAMES J. COOK, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Carbureter for Hydrocarbon-Engines, of which the following is a specification.

This invention relates to means for vaporizing oil and commingling the same with air for the purpose of utilizing said oil in operating explosive-engines and the like.

One of the objects of the invention is to provide a device of this character which may be employed in connection with any ordinary explosive-engine and will permit the use of cheap heavy oils, thus reducing the cost of operation to a very considerable degree.

A further object is to provide a structure that is extremely simple, can be readily manufactured, is reliable and safe in operation, and can be attached to an engine by an ordinary mechanic.

The preferred embodiment of the invention is illustrated in the accompanying drawings and described in the following specification. It will be evident, however, upon an inspection of the claims hereto appended that the structure set forth is open to various changes and modifications without departing from the spirit of the invention.

In the drawings, Figure 1 is a side elevation of the carbureter. Fig. 2 is a vertical longitudinal sectional view through the same on an enlarged scale. Fig. 3 is a vertical sectional view through the vaporizing-post.

Similar reference-numerals indicate corresponding parts in all the figures of the drawings.

A casing 10 is employed, which is preferably cylindrical in form and is provided with heads 11 and 12, suitably secured thereto by bolts 13. One of these heads 11 is provided with a central opening 14 and air-inlet orifices 15, surrounding the same. Through the opening 14 is passed a conductor-tube 16, the inner end of which is open and spaced from the opposite head 12. The upper end of the tube 16

projects beyond the head 11 and carries a coupling 17, to which is suitably attached a gas-discharge pipe 18, that may be connected in any desired manner with the intake or inlet port of the engine. The tube 16 is adjustable in the opening 14 to permit the open end of said tube being located at different distances from the head 12, and to this end a split plug-nut 19 surrounds the tube and is threaded into the opening 14, being arranged to clamp upon said tube when screwed into the opening. The lower head 12 is also provided with a central opening 20, into which is threaded a plug-nut 21, having an interiorly-opening socket 22. A vaporizing-post 23 extends through the plug-nut and into the casing 10, its inner end being located concentrically within the inclosed end of the tube. The lower end of the post has an outstanding annular flange 24, which is seated in the socket 22, and the post is held against displacement by a holding-nut 25, threaded into said socket and bearing against the flange. This vaporizing device or post is formed of suitable refractory material, such as porcelain, and has a longitudinal central opening 26 therethrough. A stem 27 is passed through the opening and has at its inner end a head 28, washers 29 being interposed between said head and the inner end of the post. These washers constitute clamping means for one end of an electric heating-coil 30, that surrounds the post, as illustrated in Fig. 2, the other end of the coil being clamped by the holding-nut 25 against the post and the flange 24. The outer or lower end of the stem is threaded, and suitable nuts 31 are screwed thereon, constituting a binding-post for one of the leads of a storage battery or other suitable source of electric-current supply.

The upper end of the tube 16 is closed by an adjustable cap 32, threaded in the upper end of the coupling 17 and having a central opening 33, through which is passed a depending discharge-nozzle 34, connected with an oil-supply pipe 35. Said pipe has a suitable valve 36 controlling the passage-way

therethrough. The discharge end of the nozzle 34 is in line with the upper end of the post, and thus directs the oil against the same.

The operation of the structure is substantially as follows: One pole of a battery is attached to the lower end of the stem, the other pole being suitably grounded upon the casing. As a result, the current will flow through the resistance-coil 30, thereby heating the post. Oil is thereupon admitted through the discharge-nozzle and will drip upon said post, consequently being vaporized by the heat of the same and by the passage of air therethrough. In this connection it is desired to call attention to the fact that by having the coil upon the exterior of the post a spiral channel is formed upon the same within the carbureter, and therefore the oil following this channel will when the wire is heated come into direct contact therewith and, furthermore, will be caused to spread itself more completely over the post, so that vaporization is completely effected. Air admitted to the interior of the casing through the orifices 15 will pass down the outside of the tube 16 and be heated to a certain degree. Thence said air will enter the lower end of the tube and be directed thereby over the post, mixing with the vapor of the oil and being conducted through the gas-discharge 18 to the engine. The amount of air admitted to the interior of the tube 16 can be regulated as desired by adjusting the open end of said tube toward or from the head 12, thus regulating the space between the same. In like manner the distance between the discharge-nozzle and the upper end of the post can be changed by properly adjusting the cap 32. For the purpose of removing the sediment and matter not vaporized a valved drain-nipple 37 may be employed, which is carried by the lower head.

It will be seen that this structure is very simple and can be cheaply manufactured, as the various parts can be easily made and readily assembled. The device, moreover, constitutes an attachment which can be readily applied to any ordinary engine and in connection with which comparatively heavy oils can be vaporized. This attachment, moreover, can be readily understood and connected with an engine by an ordinary mechanic. The device, therefore, will greatly reduce the cost of operation and is convenient, reliable, and safe.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In a carbureter, the combination with a casing, of an upright vaporizing-post located in the casing, an electrical heater-coil wound upon the exterior of the post, and forming a spiral channel for oil projected against the post, and means for projecting oil against the upper end of the post.

2. In a carbureter, the combination with a casing, of a vaporizing-post extending from one end of the casing into the same and having an opening therethrough, an electric conductor extending through the opening, and an electrical heater-coil surrounding the exterior of the post, and forming a spiral channel for oil projected against the post, one end of the coil being attached to the inner end of the conductor.

3. In a carbureter, the combination with a casing, of a vaporizing-post located in the casing and having a longitudinal opening therethrough, an electrical conductor-stem extending through the opening and having a binding-post at its outer end, and an electrical heater-coil surrounding the exterior of the post, said coil having one end attached to the inner end of the stem.

4. In a carbureter, the combination with a casing having an opening, of a vaporizing-post located within the casing and having a flange at one end, a plug-nut threaded in the opening of the casing and having a socket that receives the flange of the post, a holding-nut threaded into the socket and bearing against said flange, and an electric heating-coil surrounding the post.

5. In a carbureter, the combination with a vaporizing-post formed of refractory material and having an opening therethrough, of a stem passing through the opening, means engaging one end of the post for supporting the same, and an electric heating-coil surrounding the post and having its ends connected respectively to the stem and supporting means.

6. In a carbureter, the combination with a casing having an opening, of a plug mounted in the opening and having a socket, a vaporizing-post formed of refractory material and having an opening therethrough, said post having one end fitted in one end of the socket, a holding-nut threaded into the socket, a stem extending through the post and projecting from one end thereof, and a heating-coil secured to said projecting end and surrounding the post, said coil having its other end located in the socket of the plug and held by the nut.

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

JAMES J. COOK.

Witnesses:

JOHN H. SIGGERS,
E. HARKNESS.