J. R. NYE.

CARBURETER.

APPLICATION FILED SEPT. 29, 1908.

940,652.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

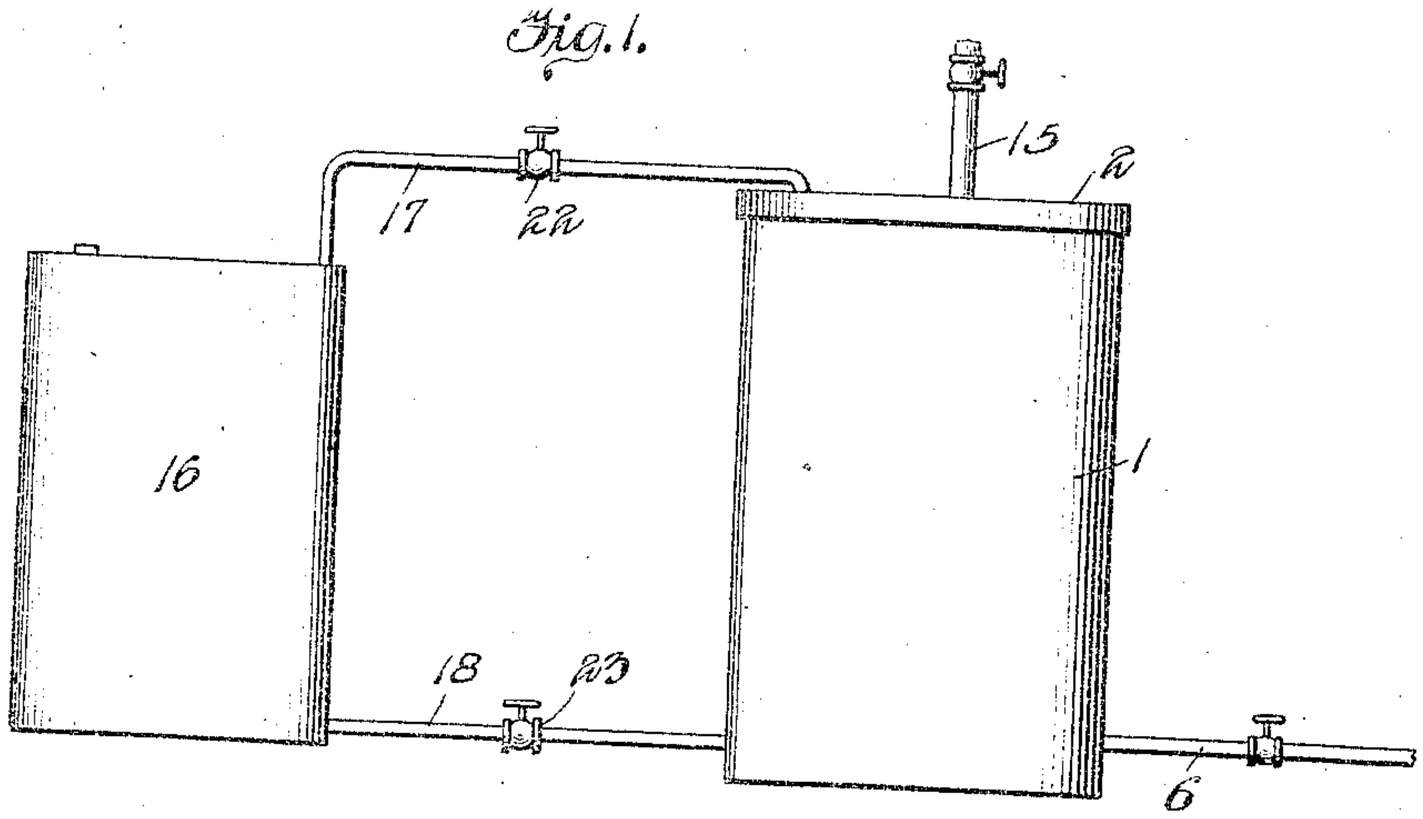

Fig. 2.

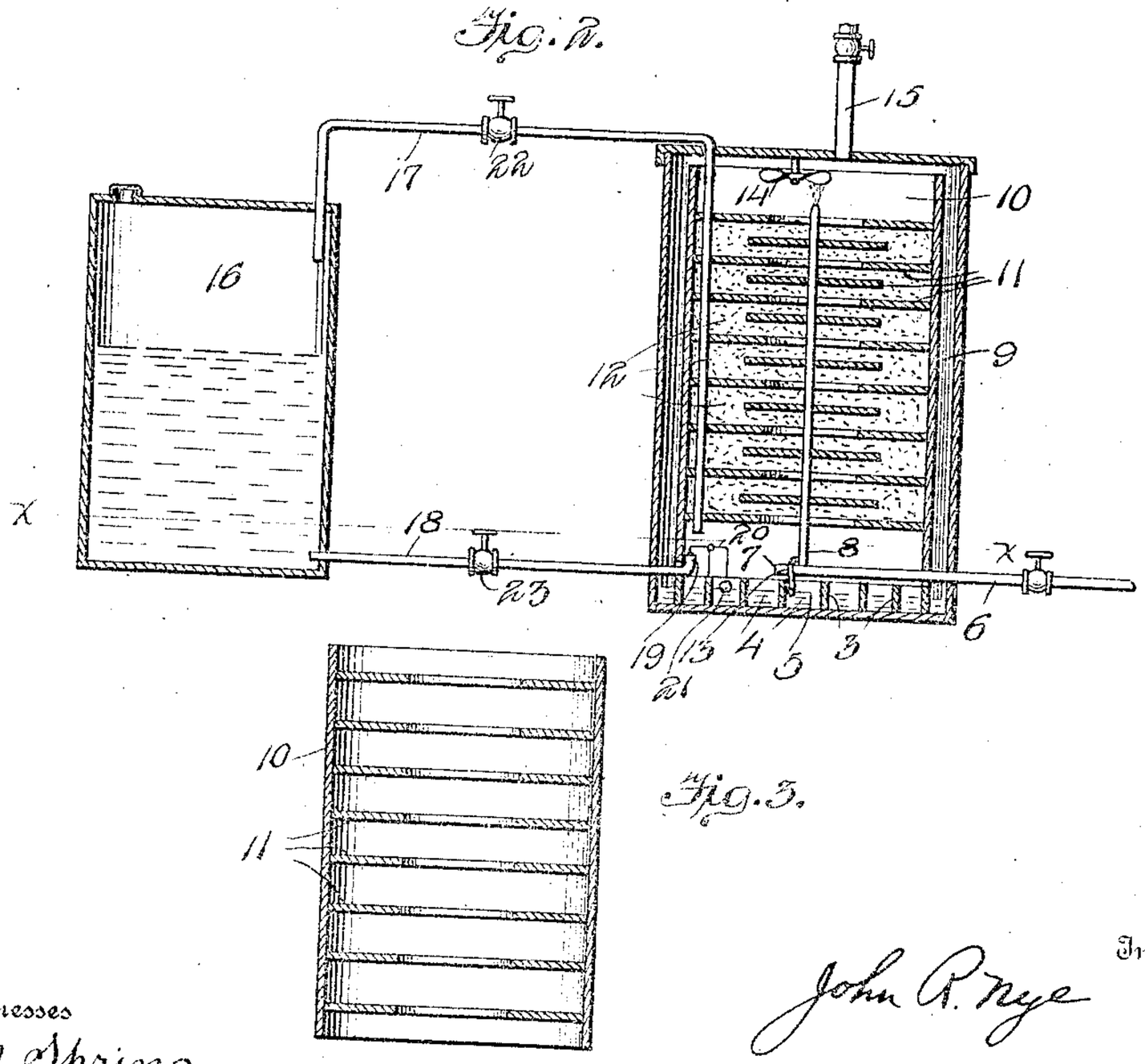

Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 4.

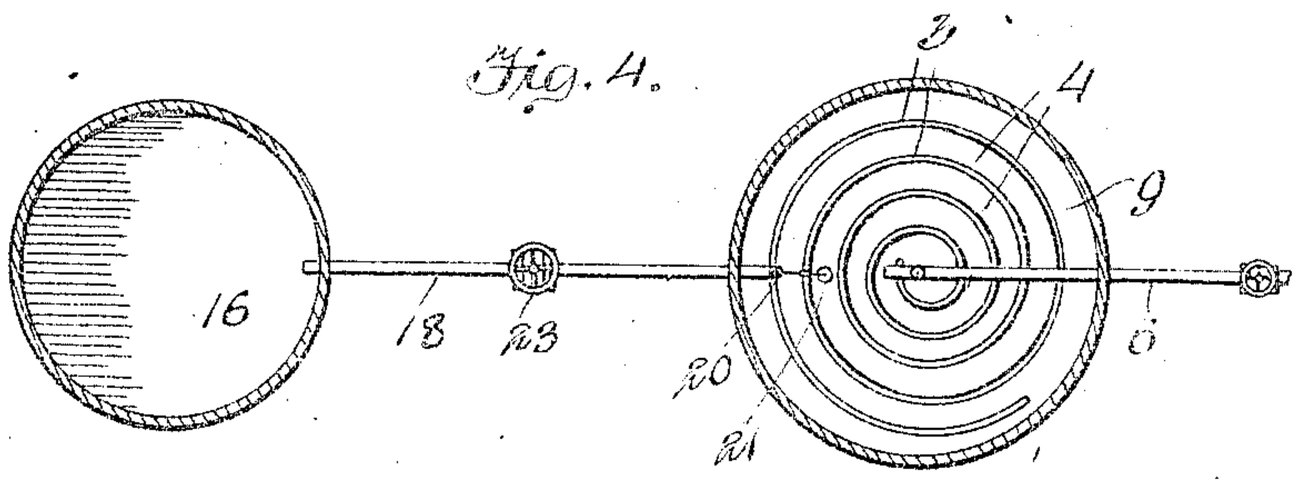


Fig. 5.

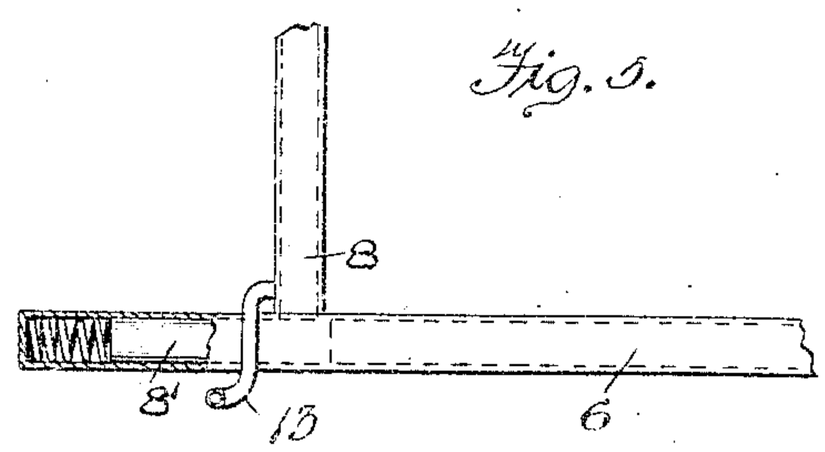
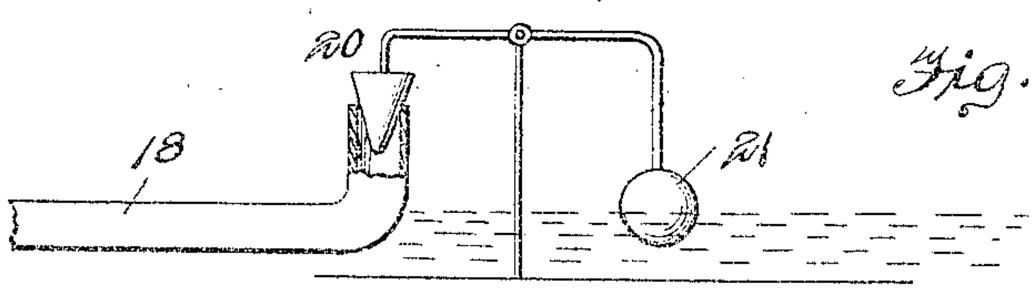


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN R. NYE, OF WATERVILLE, MAINE.

CARBURETER.

940,652. Specification of Letters Patent. Patented Nov. 16, 1909.

Application filed September 29, 1908. Serial No. 455,294.

To all whom it may concern:

Be it known that I, JOHN R. NYE, a citizen of the United States, residing at Waterville, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Carbureters, of which the following is a specification, reference being had therein to the accompanying drawing.

My present invention relates to an improved carbureter, and has special reference to a carbureter, which will produce a carbureted air for illuminating, cooking and heating purposes, from a very cheap oil, such as low grade gasolene.

To clearly illustrate my invention, attention is invited to the accompanying drawings, in which:—

Figure 1 is a plan view of the complete apparatus. Fig. 2 is a vertical central section view of the carbureter. Fig. 3 is a detail view of its inner casing removed. Fig. 4 is a cross section on line *x*—*x*, of Fig. 2 looking toward the bottom. Figs. 5 and 6 are detail views of various parts of the carbureter.

Referring to the drawings:—the numeral 1 designates the outer casing of the carbureter, which is provided with the removable cover 2. Mounted in the bottom of the casing, is the spiral strip 3, which provides a spiral channel 4, beginning at a point near the periphery of the bottom and terminating in a small chamber 5, in the center. Entering the casing near the bottom from one side is the air inlet pipe 6, whose end 7 projects beyond the center of the casing, but whose vertical pipe 8, projects upwardly centrally thereof to a point near the top of the drum. In the projecting end 7, of the pipe 6, is mounted the spring actuated valve block 8′, the purpose of which will presently appear.

Removably mounted in the casing so that a space 9, is provided therearound, is a removable drum, 10, which is provided with a series of disks 11 of heavy thick cloth, or of a material, which prevent the air from passing therethrough, but allows the oil to percolate to the bottom of the casing. Loosely packed between these disks, is an absorbent material 12, such as sponges or excelsior, this packing forming a porous receptacle, whereby the gasolene or oil which is not evaporated after leaving the upper end of the pipe 8, is caught and allowed to slowly flow toward the bottom of the drum, the air contained within the tank practically surrounding the drum and thereby coming into contact with the gasolene or oil, and becoming to a great extent carbureted. The pipe 8 projects upwardly through the center of this drum, terminating above the upper disk 11 and within the upper end of the drum, and as the oil is drawn through the pipe 13 in the lower end of this pipe, by the action of the air therethrough, the same is carried through this pipe, and by the action of the air, is sprayed upon the top disk 11, from whence it percolates toward the bottom, the oil which has not been vaporized, falling into the spiral channel 4, while the carbureted air passes around and within the drum 10 into the space 9, and thence upwardly into the top of the casing, above the drum 10, and out of the supply pipe 15, to be burned.

In order to feed the oil to the casing, I employ the oil tank 16, which is provided with the pressure feed pipe 17, which is in communication with the carbureter and the tank 16 at the top of the tank 16, the oil passing through the pipe 18 into the bottom of the carbureter, where the entrance end 19 of the pipe is controlled by the float actuated valve 20, the float 21 of which, when the oil has attained the proper level in the bottom of the carbureter, closes the entrance pipe 19, and prevents the oil from flowing until more is needed. The pipes 17 and 18 are provided with globe valves 22 and 23, as shown, thus making it possible to regulate to a nicety the flow of air to the tank and consequently the flow of oil to the carbureter. By this means the tank may be entirely cut-off from the carbureter, when filling the tank with oil.

By means of the spring actuated block valve 8′, more or less oil may be taken up into the vertical pipe, regulated entirely in accordance to the amount or pressure of the air, the greater the pressure of the air acting upon the outer end of the valve and causing its spring to be compressed and the valve to move, so as to present a larger opening in the lower end of the pipe 8, the spring having a tendency to hold the valve closed.

From the foregoing description taken in connection with the drawings, the operation of my carbureter is readily understood, but briefly stated it is, as follows:—The tank 16 is first filled with the oil, such as gasolene, and then air, or if desired, the regular

city gas, is admitted to the carbureter, through the pipe 6, sufficient pressure being attained to cause the block valve 8', to be moved to allow the air or gas to pass upwardly through the pipe 8, into the top of the drum and carbureter. The air or gas during this passage, draws along with it, the oil from the channel 4, through the pipe 13, thus becoming carbureted, the carbureted air passing out of the pipe 15, while any oil, not evaporated, falls upon the upper disk of the drum and percolates through the absorbent material, some however, I find by experiments even while held in suspension in the absorbent material is taken up by the air, which also surrounds the drum and to a certain extent is within the drum, but that which is not evaporated falls into the channel 4, to be again carried up through the pipe 8. When there is no flow of air or gas through the pipe 15, the pressure becomes static within the carbureter, and as the air is lighter than the oil, the air is conveyed through the pipe 17 in to the tank 16, at its upper end, and thus oil is fed automatically from the tank to the channel 4 of the carbureter. I have found that by employing a drum 10 open at its bottom and top, gives fair results, and is really operative, but to secure better results the upper end of the drum 10, should be closed, thus forcing the air downward through the drum and finally upwardly through the space 9 to the pipe 15. This drum will be covered in another application. The fan 14, I have found, is caused to rotate by the flow of air and oil thereagainst, thus assisting in forming carbureted air.

What I claim, as new is:—

1. In combination with a liquid hydrocarbon supply tank and an air supply, of a carbureter, comprising a casing having a central vertical pipe extending from near the bottom to near the top, an air supply pipe entering the casing and in communication with the vertical pipe, a spring controlled valve at the junction of the two pipes, a drum removably mounted in the casing and having the upper end of the vertical pipe terminate within and below its upper end and providing an annular space in communication with the upper and lower ends of the casing, a series of disks mounted in the drum and having openings therein, said openings being arranged in zigzag order, a loosely packed absorbent packing within the spaces between the disks, means for feeding the fluid to the lower space of the carbureter, and a pipe leading from within near the bottom of the carbureter to the top of the fluid supply tank, as and for the purpose set forth.

2. In combination with a liquid hydrocarbon supply tank and an air supply, of a carbureter, comprising a casing, a vertical pipe arranged centrally of the casing and extending from a point near the bottom to near the top, the lower end of the same being connected to and in communication with the air supply pipe, a spring actuated valve for controlling the admission of air to the vertical pipe, a spiral passage formed in the bottom of the casing with a central chamber directly below the vertical pipe, a drum removably mounted in the casing so as to provide an annular space therearound in communication with the outer space of the spiral passage and the space at the top of the casing, said vertical pipe terminating within and near the upper end of the drum, a series of disks carried by the drum, each one being provided with an opening through which the liquid may pass from the top to the bottom of the drum, said disks being so arranged as to have the openings in zig-zag order, a loosely packed absorbent material filling the spaces between the disks, a float controlled supply pipe in communication with the fluid supply tank and the bottom of the casing, and another pipe extending from near the bottom of the casing to the top of the supply tank, as set forth.

3. In combination with a liquid hydrocarbon supply tank and an air supply pipe, of a carbureter, comprising a casing, a vertical pipe arranged centrally of the casing and extending from a point near the bottom to near the top, the lower end of the same being connected to and in communication with the air supply pipe, a spring actuated valve for controlling the admission of air to said vertical pipe, controlled by the pressure of the air from the supply pipe, a short pipe in communication with the vertical pipe above the junction of the air and vertical pipes and having its lower end close to the bottom of the casing, so that fluid may be sucked into the vertical pipe by the action of the air pressure passing the point at which said short pipe joins the vertical pipe, a spiral strip mounted in the bottom of the casing and providing a spiral channel extending from the exterior of the casing to the center, at which point it forms a chamber directly below the vertical pipe and into which the short pipe depends, a cylindrical drum removably mounted in the casing so as to provide a space above the same and rest upon the spiral strip so as to provide an annular space which communicates with the upper space of the casing and the spiral channel, said vertical pipe terminating near and within the upper end of the drum, a series of disks mounted in the drum, each disk having an opening therein and arranged so that the openings are in zig-zag order from the top to the bottom of the drum, a loosely packed absorbent material between the disks, a pipe leading from the fluid supply tank to the lower portion of

the casing at the outer end of the spiral channel, a float controlled valve mounted in said channel to regulate the level of the fluid within the channel, and a pipe extending from above the spiral channel in the casing to the upper end of the fluid supply tank, as set forth.

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

JOHN R. NYE.

Witnesses:
B. HAROLD LEON PEPPER,
LEO M. MARSHALL.