B. RINKE.

CARBURETER.

APPLICATION FILED NOV. 22, 1907.

929,327.

Patented July 27, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

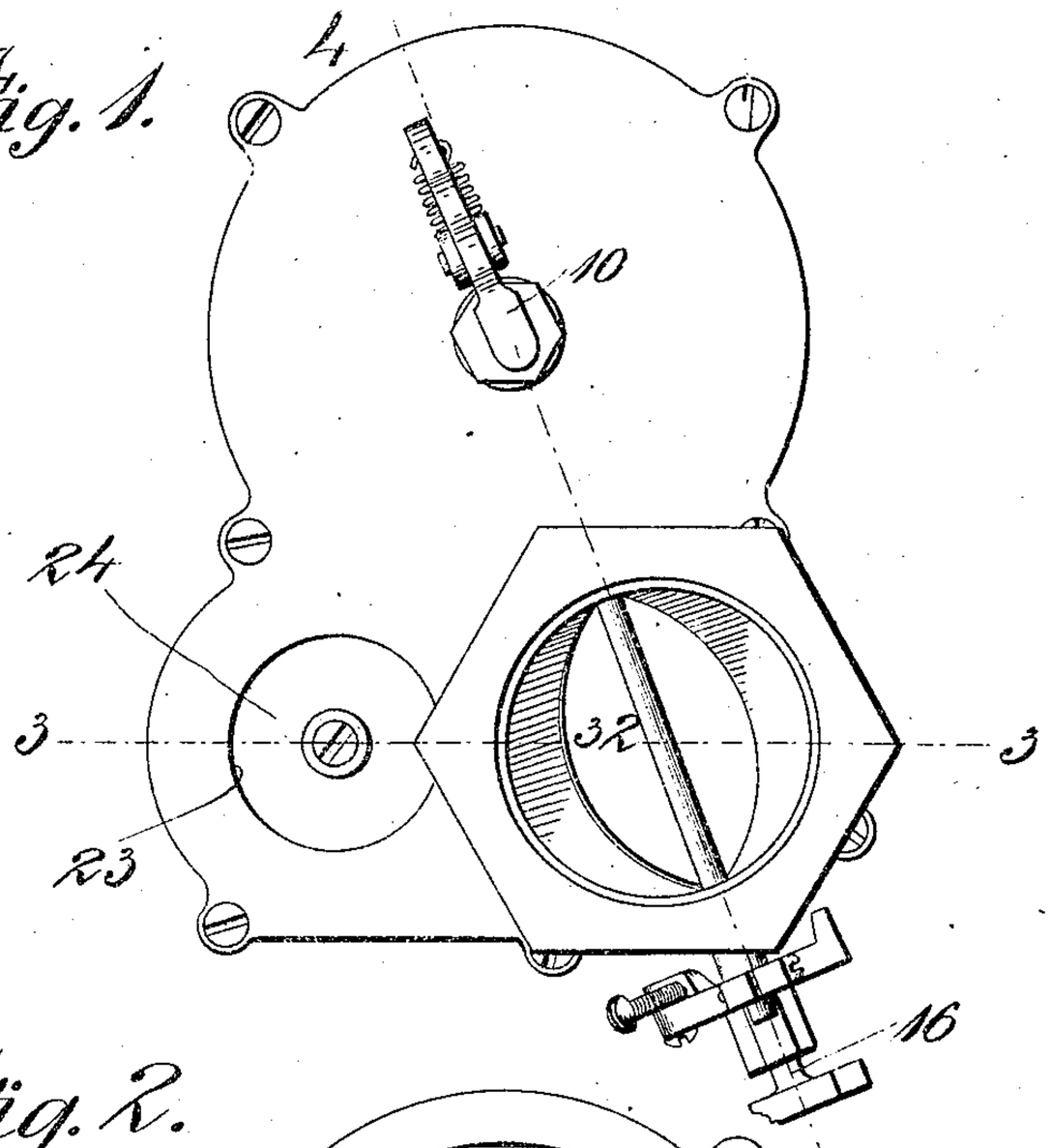
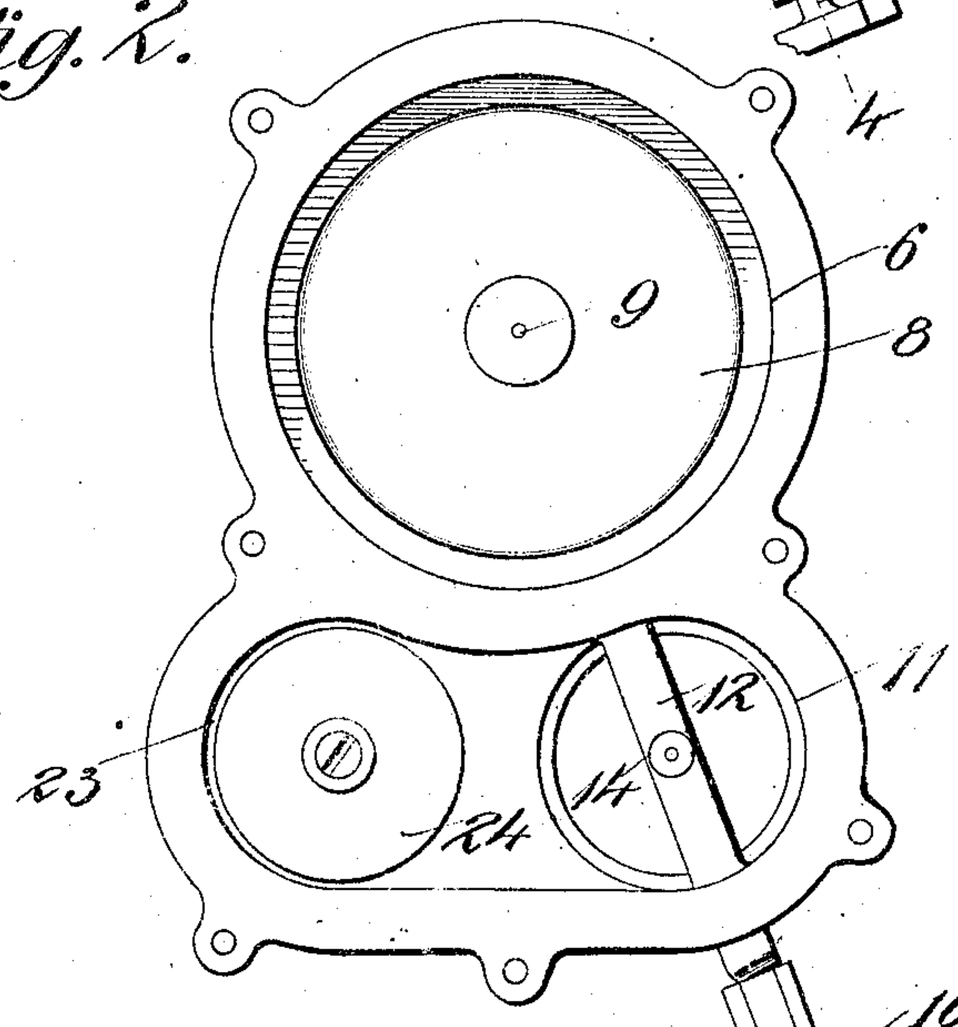


Fig. 2.



Witnesses

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Fig. 3.

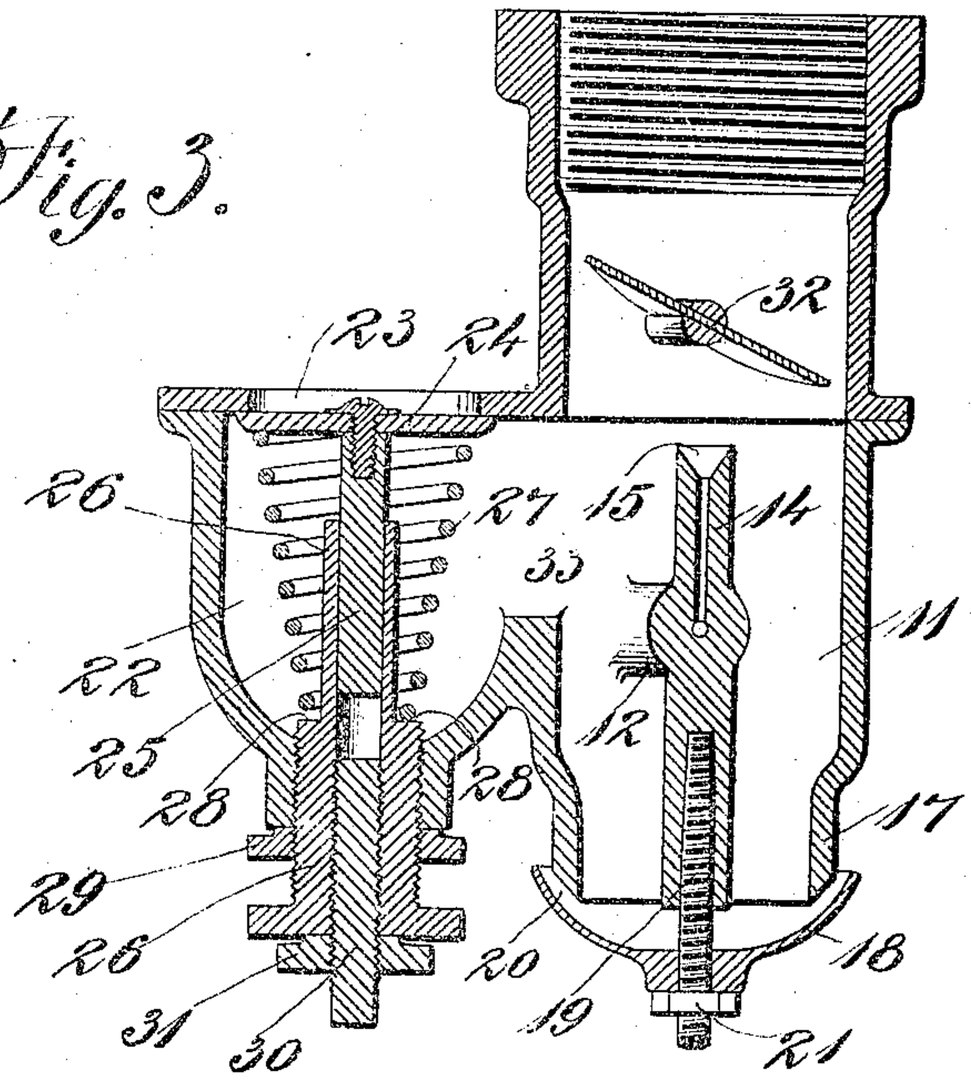
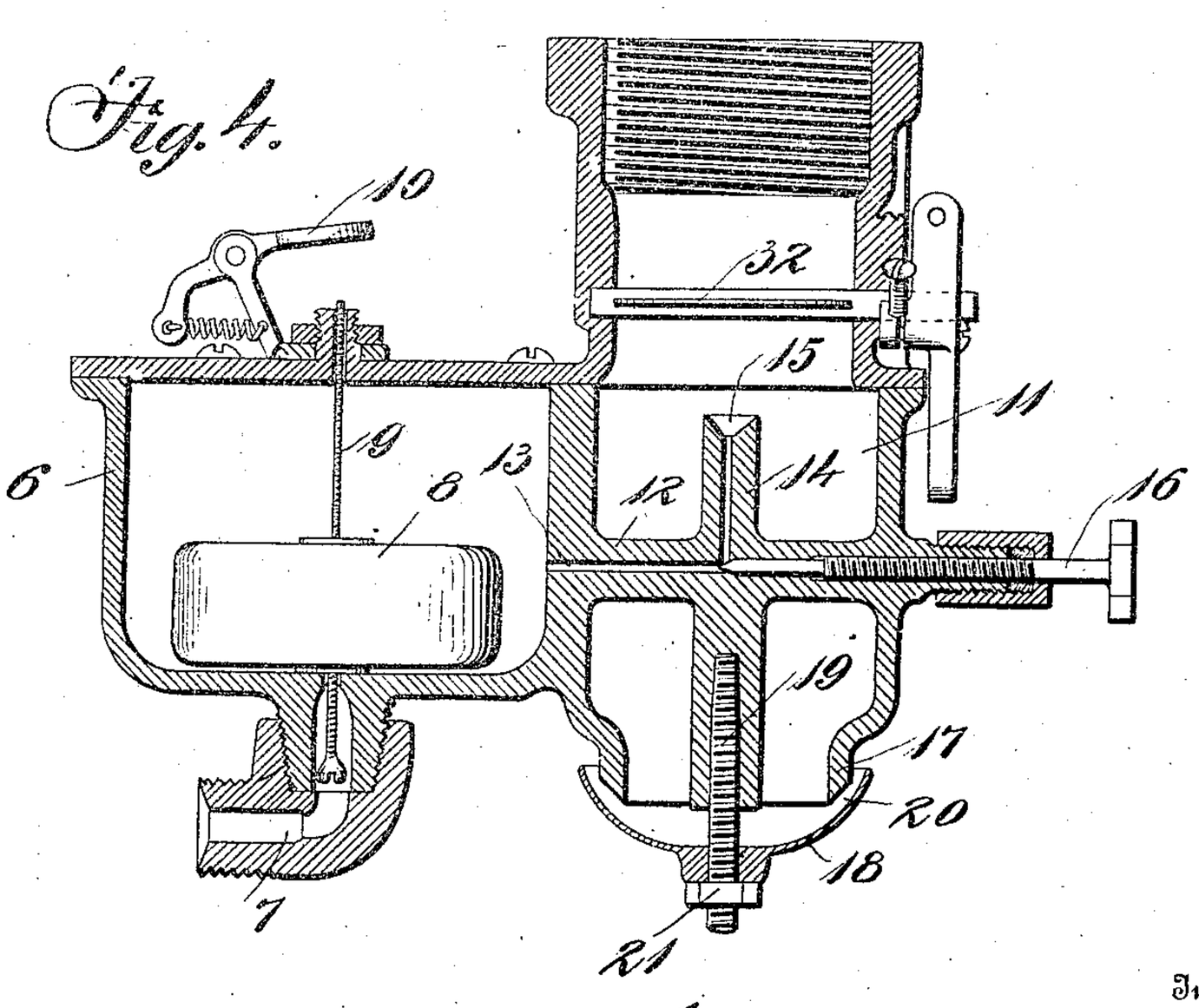


Fig. 4.



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UNITED STATES PATENT OFFICE.

BERT RINKE, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO HACKET BROTHERS, OF DETROIT, MICHIGAN, A FIRM.

CARBURETER.

No. 929,327. Specification of Letters Patent. Patented July 27, 1909.

Application filed November 22, 1907. Serial No. 403,358.

To all whom it may concern:

Be it known that I, BERT RINKE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

This invention relates to carbureters particularly adapted for internal combustion engines and is characterized particularly by improvement with respect to the means for feeding air and oil to the mixing chamber or pipe, including an adjustable air inlet which is operated at all times, as well as an auxiliary air inlet valve which operates at high speed or under great suction to give an increased supply of air to the mixture.

The device also has certain novelties of construction, as will more fully hereinafter appear.

In the accompanying drawings Figure 1 is a top view of the carbureter. Fig. 2 is a top view with the top plate or cover removed. Fig. 3 is a vertical section on the line 3—3 of Fig. 1. Fig. 4 is a vertical section on the line 4—4 of Fig. 1.

Referring specifically to the drawings, 6 indicates the gasolene reservoir or chamber which has an inlet oil pipe 7 at the bottom controlled by a float valve 8 which has a priming pin 9 extending through a nipple in the reservoir cover, and which may be pressed down by a finger lever 10 at the start. The mixing conduit or tube is indicated at 11 and it is provided with a cross pipe 12 the bore of which is continued as at 13 through the wall of the gasolene reservoir to allow the flow from said reservoir to the tube. At the center of the mixing tube 11 the pipe 12 has an upright extension 14 with flared top, as indicated at 15, through which the liquid fuel is drawn and sprayed into the mixing chamber. The flow is controlled by a needle valve 16 which is tapped through the wall of the mixing chamber and which opens or closes the bore in the pipe 12 at or about its junction with the bore in the upright pipe 14.

At the lower end the mixing chamber or pipe is reduced, as indicated at 17, and projects within a cupped piece 18 which acts to catch any over-flow of gasolene and also to control the inlet flow of air through the opening at the bottom of the mixing tube. Said cup 18 is screwed on a threaded stem 19. which projects downwardly from the cross pipe 12 at the center, and the cup may be screwed up or down to vary the inlet opening at 20 through which the air is drawn. A jam nut 21 on the threaded stem fixes the cup at adjustment. Obviously by lowering the cup the size of the air inlet opening in increased, and vice versa.

The rim of the cup extends above the lower end of the tube, so that when flooded there will be enough gasolene in the cup to start the engine at once and the air will be drawn in through the gasolene in the cup, thereby taking up the gasolene with it.

At one side of the mixing chamber the casting has a valve chamber 22 with an opening 23 in the top controlled by a disk valve 24 carried at the top of a stem 25 which works up and down in a threaded sleeve or bushing 26 screwed into or through the bottom of the chamber. The valve is normally lifted and closed by a spring 27 coiled around the stem and resting on the shoulder 28 of the bushing. The tension of the valve may be adjusted by screwing the bushing in or out, and a jam nut 29 fixes the same as set. The extent the valve will open is controlled by a screw 30 projecting upwardly into the bushing 26. The lower end of the valve stem 25 stops against the end of the screw and so limits the opening of the valve, and by adjusting the screw the matter may be regulated. A jam nut 31 fixes the screw as set. A throttle valve is indicated at 32, in the passage leading to the engine, and the valve chamber communicates with the mixing chamber through an opening 33 adjacent to the nozzle 15.

In operation, under ordinary conditions, the suction of the engine draws air upwardly through the mixing chamber and vaporizes the fuel drawn through the pipes 12 and 14, and so the charge flows to the engine. At high speed, the valve 24 will be drawn open and an additional supply of air will flow in and enter the mixing chamber through the opening 33 and thereby make the mixture more uniform with respect to the proportions of air and oil. The proportion of air and gasolene may be varied by raising or lowering the cup 18. Should the valve 24 open at ordinary speed, the cup 18 should be lowered to increase the normal air supply. Various other adjustments may be made with respect to the tension of the spring on

the auxiliary air valve and the position of the cup 18 to obtain the proper relative supply of oil and air.

I claim:

In a carbureter, the combination of a casing embodying an upright mixing tube, an upright valve chamber at one side of said mixing chamber having an apertured top plate, and an upright oil chamber adjacent said mixing tube and valve chamber, an oil pipe extending across said mixing chamber from said oil chamber and provided centrally with upper and lower vertical extensions, the upper one of which is apertured to form a fuel spray pipe, and the lower one of which carries a depending threaded stem, a valve tapped through the wall of said mixing tube and controlling the fuel at the junction of said oil pipe and its apertured extension, said mixing tube being contracted at its lower end and open to provide an air inlet, a cup upon said depending stem below said contracted tube end, and adjustable to and from the same, the rim of said cup extending around and above said lower end of said tube, a bushing tapped through the lower end of said valve chamber, a disk valve seated upwardly against the apertured top plate thereof, and having a depending stem extending into said bushing, a spring in compression between said bushing and valve, said bushing being exteriorly adjustable to vary the tension of the spring, and a screw in the bushing, forming an adjustable stop for the valve stem.

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

BERT RINKE.

Witnesses:

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ALBERT W. MCCAULEY.