No. 871,361.

PATENTED NOV. 19, 1907.

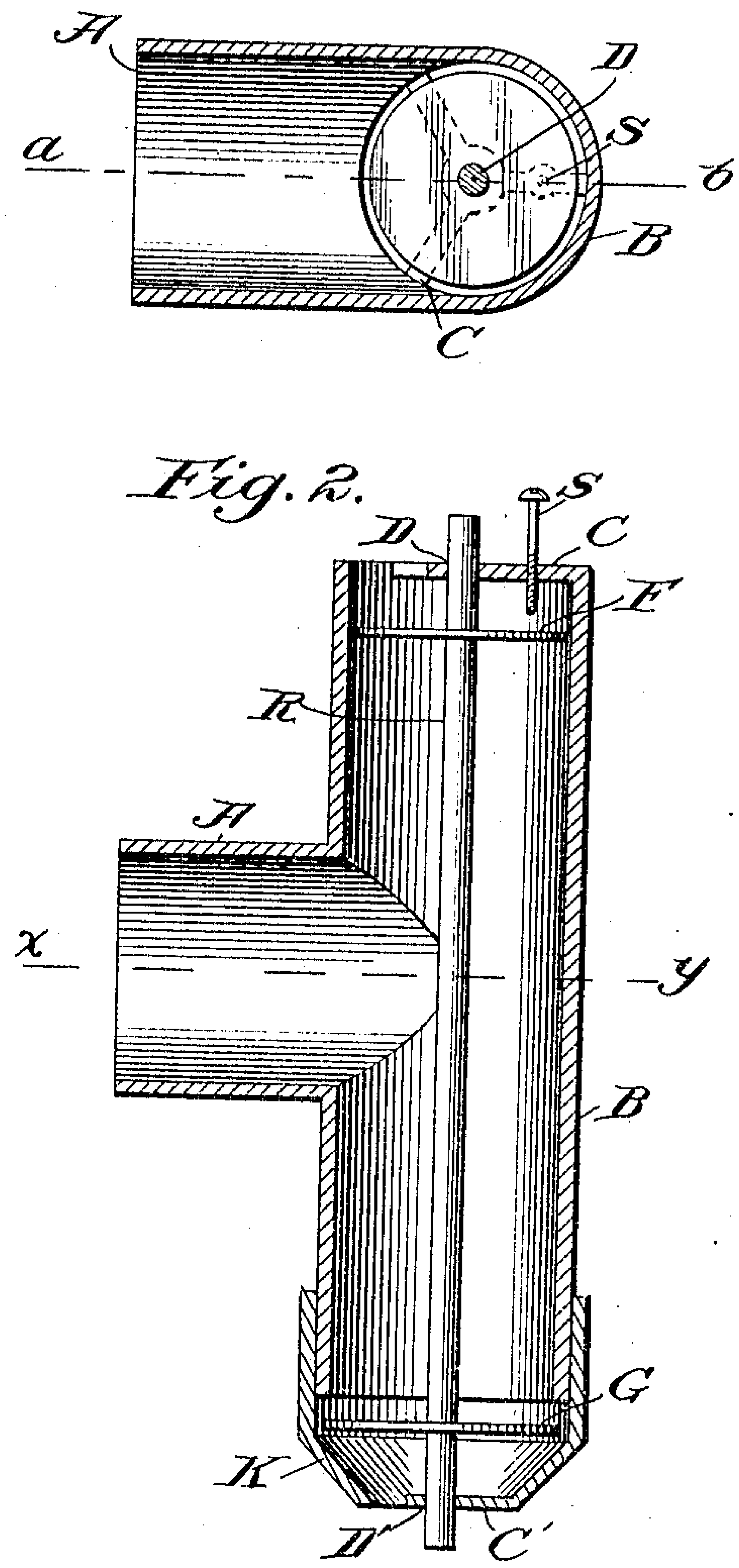
F. C. REINEKING.

AIR INTAKE REGULATOR FOR CARBURETERS.

APPLICATION FILED MAR. 29, 1907.

Fig. 1.

Fig. 2.



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AIR-INTAKE REGULATOR FOR CARBURETERS.

No. 871,361. Specification of Letters Patent. Patented Nov. 19, 1907.

Application filed March 29, 1907. Serial No. 365,340.

To all whom it may concern:

Be it known that I, FREDERICK C. REINEKING, a citizen of the United States, residing at 35 Van Nostrand avenue, Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Air-Intake Regulators for Carbureters, of which the following is a specification.

My invention relates to an improvement in the air intake regulators of carbureters; and the objects of my invention are; first; to provide an air intake regulator for carbureters which shall be automatic for all speeds and for all conditions of load on the engine; second; to provide an air intake regulator for carbureters which will permit of greater flexibility in the throttle control of explosive hydrocarbon motors than has been possible prior to my invention. I attain these objects by the mechanism illustrated in the accompanying drawings, in which

Figure 1 is a transverse section elevation of my device; and Fig. 2 is a longitudinal section elevation of my device.

Similar letters refer to similar parts throughout the several views.

Fig. 1 is a section taken on the plane X Y (Fig. 2). A is a pipe leading to the mixing chamber. B is a T pipe opening into A. C is a "spider" at the end of B. D is a circular hole in the spider B. S is a set screw.

Fig. 2, is a longitudinal section elevation taken on the plane *a b* (Fig. 1). A is the pipe leading to the mixing chamber. B is the T pipe opening into A. C is the spider at the end of B. R is a light rod which plays freely in the hole D. K is a taper cap over the other end of B. The end of this taper cap is composed of a spider C′, with a hole D′ through which the rod R plays freely. Rigidly attached to the rod R and at right angles thereto, are two light circular diaphragms F and G. The diaphragm G is larger in diameter than the diaphragm F. The diaphragm F fits loosely inside the tube B, and the diaphragm G fits loosely in the taper head K. The ends of the rod R fit loosely in the holes D and D′. The entire structure F R G is free to move to a limited degree in a longitudinal direction with reference to the structure C B C′ K. S is a set screw to limit the backward motion of the structure F R G.

When the device is in use it must be so placed that the rod R is approximately perpendicular to the horizontal with the taper cap K at the bottom and the spider C at the top.

The operation of the device is as follows: The force of gravity acting on the structure F R G brings the diaphragm G into contact with the inner face of the taper cap K. As soon as the engine starts, a partial vacuum is induced in the tubes A and B. This partial vacuum in B causes the normal atmospheric pressure to become actively operative on the lower face of the diaphragm G and on the upper face of diaphragm F. It is obvious that if the area of the diaphragm F exactly equaled the area of the diaphragm G, the structure F R G would remain unmoved in equilibrium. But as the area of diaphragm G is greater than the area of diaphragm F, there is a greater total pressure exerted on the lower face of diaphragm G than on the upper face of diaphragm F. The result is that the structure F R G moves upward in the tube B. This upward motion of the structure F R G leaves an annular space between the diaphragm G and the inside of the taper cap K; and this annular space admits more air to the tubes B and A, and feeds more air to the carbureter.

The faster the engine runs, the greater the partial vacuum in the tubes A and B, and the more the diaphragm G is lifted from the inside face of the taper head K, and the more air is admitted to the carbureter. On the other hand, the slower the engine runs, the less the partial vacuum in the tubes A and B, and the less the diaphragm G is lifted from the inside face of the taper head K, and the less air is admitted to the carbureter.

I claim as my invention.

In air intake regulators for carbureters a vertical tube, a horizontal diaphragm near the top of said tube, a spider at the top of said tube, a vertical rod rigidly attached to said diaphragm, said rod free to work vertically in said spider, a second horizontal diaphragm rigidly attached to said rod near the bottom of said rod, said lower diaphragm being larger in area than said upper diaphragm, a taper cap in the bottom of said tube, said lower diaphragm fitting loosely inside said taper cap, a spider at the lower end of said taper cap, said rod being free to work vertically in said spider, an air intake pipe opening into said vertical tube intermediate said diaphragms.

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