

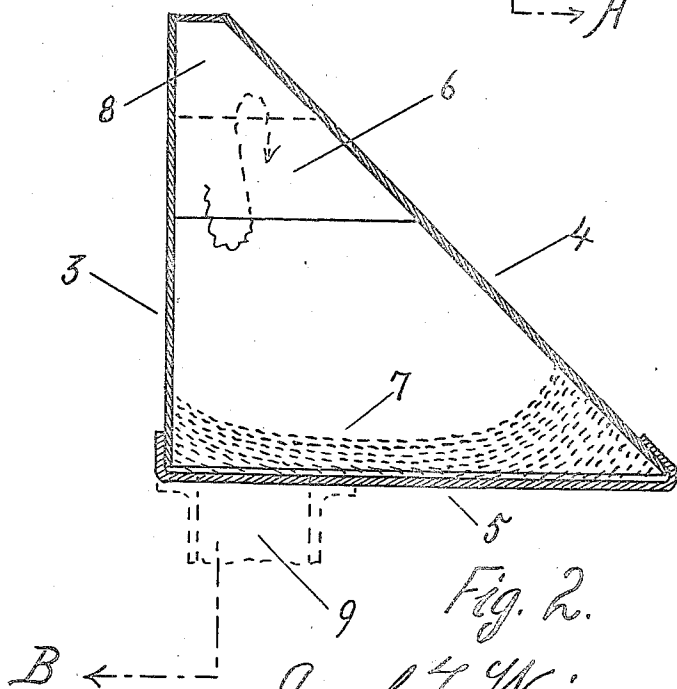
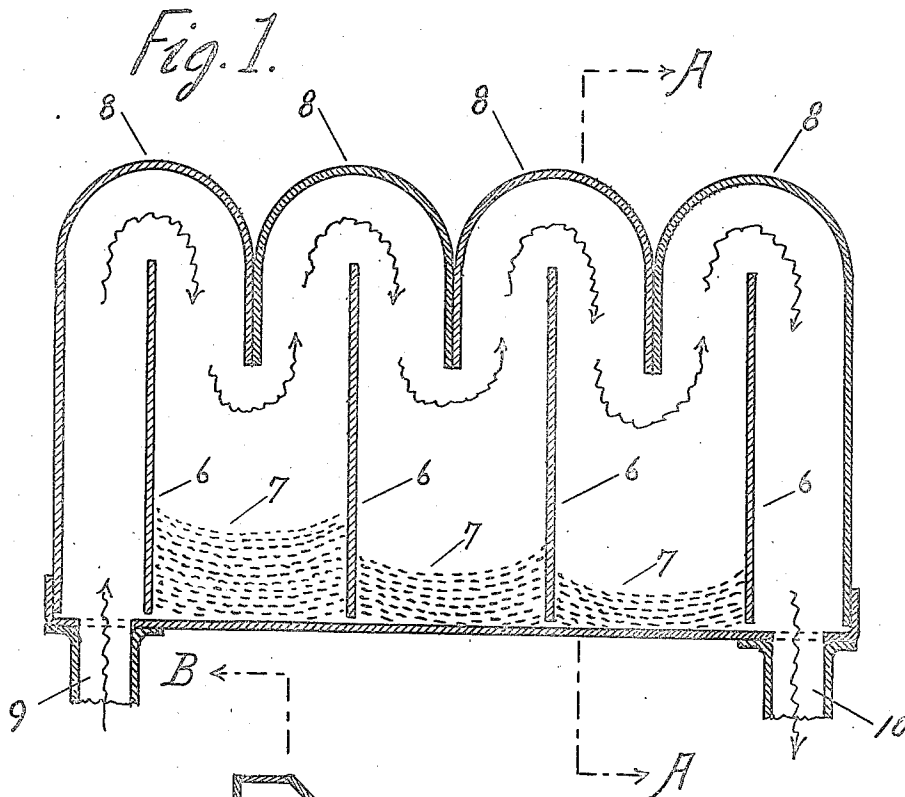
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J. T. WAINWRIGHT

INTAKE AIR CLEANER FOR INTERNAL COMBUSTION MOTOR ENGINES

Filed Feb. 27, 1924



*Fig. 2.*

INVENTOR  
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# UNITED STATES PATENT OFFICE.

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INTAKE-AIR CLEANER FOR INTERNAL-COMBUSTION-MOTOR ENGINES.

Application filed February 27, 1924. Serial No. 635,525.

*To all whom it may concern:*

Be it known that I, JACOB TRIPLER WAINWRIGHT, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Intake-Air Cleaner for Internal-Combustion-Motor Engines, of which the following is a specification.

By my invention I provide means that may be conveniently installed on any of the usual types of this kind of engine and for manipulating an intake flow or current of a mixture of dirt and air in a way to eject therefrom much of such dirt or solid particles of matter because they act as an abrasive to injure the interior parts of the engine; also, means to utilize intake-suction as an impellent of such flow; also, means to effect such removal or ejection in a way that is convenient and does not tend to choke or restrain such flow nor interfere with the adjustments and usual way of operating the engine; also, means to make possible a degree of refinement or removal that has not been attained in the prior state of the art under such exacting requirements.

In a conventional manner, a preferable way of applying my invention is shown in Figures 1 and 2 of the accompanying drawing. Figure 1 represents a sectional-elevation at B—B on Figure 2, and Figure 2 represents a sectional-elevation at A—A on Figure 1.

In both of these figures; identical reference numbers identify and refer to parts that are identical, or are duplicated.

At 3 and 4, are represented the sides of an enclosure or box having a bottom at 5 from which it may be disconnected and removed for purpose of cleaning and removal of accumulations of dirt ejected from the flow of intake-air which is directed and manipulated by the peculiar construction of the device in a way which progresses the stream of dirty intake-air through a series of turns and under conditions which impose a corresponding succession of self-impelled ejections of solid particles at alternate turns of such series, and such ejections ultimately accumulate at the bottoms of the corresponding receptacles comprised between the conduit walls shown at 6. These accumulations of dirt are shown at 7.

The succession of arrows show the progressive stages and turns which the current is caused to take between the curved conduit walls shown at 8 and the afore-mentioned straight conduit walls shown at 6. The intake to the apparatus is shown at 9, and the outlet is shown at 10.

It may be remarked that in Figure 2 where the intake 9 is shown, it is convenient to locate the outlet 10 also thereat in that view and consequently it is not shown separately in that view.

It will be perceived that Figure 2 shows that the space between conduit walls 6 is more constricted at the top than at the bottom. This feature as it obtains between the corresponding curved conduit walls 8 causes a corresponding fluctuation (rise and fall) of the velocity of the current and thereby creates and imposes means for causing separation and removal of dirt which are more efficient than would obtain without such changeable constriction, and the thus created efficiency is proportionate to the corresponding rate at which such constriction changes. This feature of my invention is purposed to impose under conditions which minimize turbulence, a successional series of recuperations of velocity to the current and consequent corresponding recuperations of momentum to the particles of dirt floating therein, and alternate such recuperations with progression at falling velocity, and thereby provide means to alternately impart much momentum to the inertia-impelled self-ejecting particles of dirt; and during such ejection, to correspondingly lessen the velocity and turbulence of the gaseous portion of the current thereat and thereby lessen the resistance and consequently facilitate the progress of such inertia impelled particles of dirt through and out of the thus quieted gaseous portion of the current. It will be perceived that efficiency of the device is dependent also upon the number of such treatments that are comprised in the successional series through which the stream is progressed.

It will be perceived that, the combination of features thus described is more efficient in producing desired results than was ever attained in the prior state of the art.

I claim:

A conduit adapted to progressively conduct a stream of dirty air through a succes-

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sion of alternating turns respectively in  
contrary directions, and constructed in a  
way to constitute means to impose alternate  
decreasing and increasing stream-velocity  
5 intervening respectively between such alter-  
nating turns in such progression, and con-  
structed in a way to constitute means to en-

able self-impelled ejection of dirt from the  
stream during such progression through  
turns which follow a corresponding de- 10  
creasing stream-velocity and precede a cor-  
responding increasing stream-velocity.

JACOB TRIPLER WAINWRIGHT.