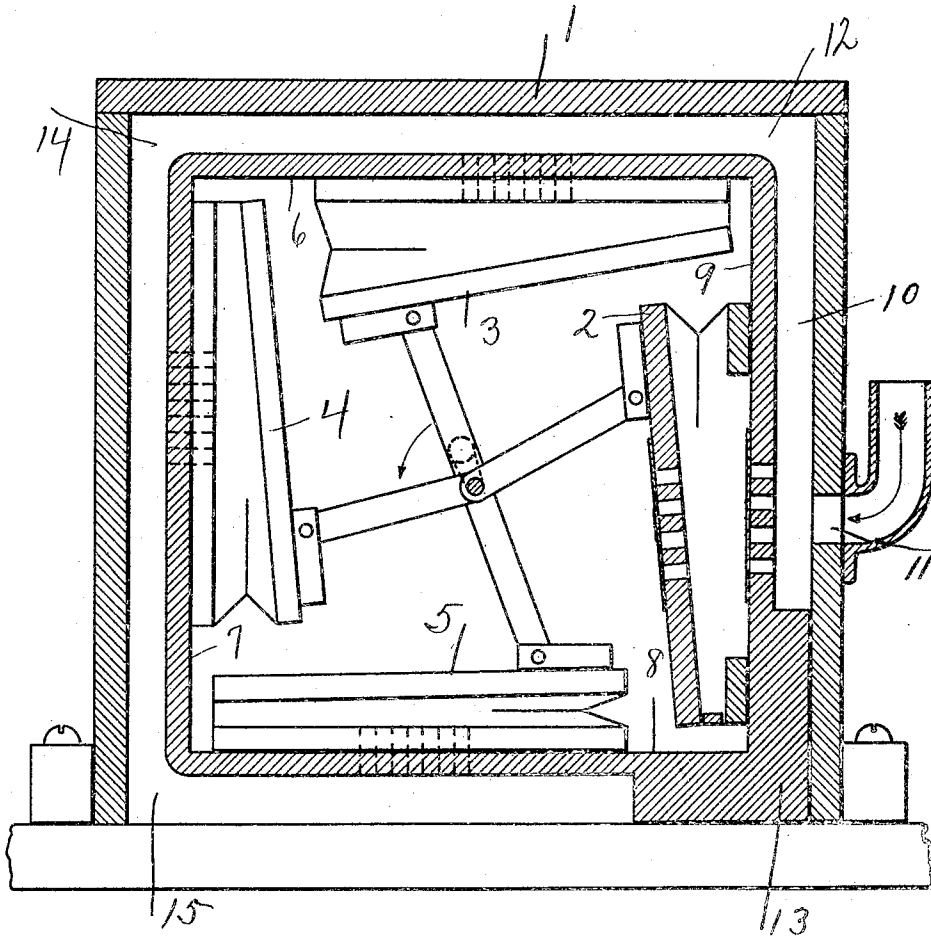


R. A. GALLY.
 AIR PUMPER OR MOTORS CIRCULATION CHECK.
 APPLICATION FILED JULY 30, 1917.

1,258,105.

Patented Mar. 5, 1918.



WITNESSES

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AIR PUMPER OR MOTOR CIRCULATION-CHECK.

1,258,105.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT A. GALLY, a citizen of the United States, and residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Air Pumper or Motor Circulation-Checks, of which the following is a specification.

Previous air pumpers or motors in the form of a box as 1 with pumper units 2, 3, 4, 5, on the several faces 6, 7, 8, 9, of such box 1, either outside or inside, have had an air channel 10 connecting all the pumper units of such box and continuous around all sides of the several said pumper units to the air service port 11 to be served by the said pumper, and thus as the crank or other driving means caused the successive action of the pumper units to make their successive suction on the said channel 10 there was a period of said succession when a certain pumper unit was nearer to the said air service port 11 in the direction of said channel 10 opposite to the direction of air current last induced by the pumper unit or units acting prior to certain pumper unit, thereby causing a reversal of direction of the air current and a consequent shock of air tension and volume in said channel 10, which caused an undesirable noise. In the present invention the air channel 10 is not made continuous around the entire box 1 or the series of pumper units as 2, 3, 4, and 5, but is carried from the air service port 11 around the said series of pumper units and connected to all of them, but the said channel 10 is terminated before it meets its own first part. The best result is attained when the several power units act in regular succession along the direction of the air channel 10, and the interruption of said channel is between the last pumper unit of such series and the air service port 11, as shown in the present drawing, so that the take up of the elasticity of the air in channel 10 is in succession from said service 11 along the series of pumper units 2, 3, 4, and 5, which are best operated in succession according to their numbers as now shown. As the final pumper unit 5 is acting on the channel 10, and the air draft is along the entire length of that channel from air service port 11, the pumper unit 2 commences its action on the air service 11 and the channel 10, thus securing a smooth, steady and continuous action of air

in the channel 10, with the most noiseless operation possible.

The interruption of the channel 10 may be placed just to the other side air service port 11, at about the position marked 12, and solid interruption part 13 made into a continuation between the two interrupted parts of the channel, but this is not as desirable as the position of interruption now shown, as the successive air shocks will be in reverse order to the general direction of travel of air in channel 10 instead of the same direction as in the structure as shown herein.

As a proof of the effect of this interruption or check of the air channel 10, it will be found by test that if an interruption or check is placed at either the corner 14, or the corner 15, and the channel 10 made continuous around the remainder of the structure, the reversal of air pull in the two directions from the air service port 11, that is for example, with the interruption at 14, pumper units 2 and 3 first drawing the air upward of channel 10 from air service 11 and then to the left in said channel, and then pumper units 4 and 5 drawing the air downward of channel 10 from air service port 11 and then leftward in said channel and then upward in said channel, such reversal of air current will cause a greater air shock and noise than with the entire channel 10 continuous in the ordinary manner of the prior art.

It is to be understood that many changes and substitutions of pumpers, driving means, etc., may be made or the special channel used for an air motor, or the driving connection be attached to driving means outside the box instead of to a shaft or other means inside the box, and yet such structure be subject to what I claim as my invention, which is:—

1. The combination of a plurality of air pumper units grouped around a shaft, driving means and connections from said shaft to said pumper units and adapted to actuate said pumper units successively, an air channel connected to all the said pumper units, an air service connection at a certain point of said air channel, said air channel being continuous from the first to the last of all said pumper units regarded around in the same direction from the service port but discontinuous from the last to the first of said units.

2. The combination with a plurality of

air pumper units arranged about a common center, of driving mechanism adapted to actuate said pumper units non-synchronously, an air channel connected to the inlets
5 of all of said pumper units at sides opposite said center, an air service connection at one point of said air channel, said air channel leading from said service connection to all
10 of said inlets in series in one direction but not connecting the last of that series with the first.

3. The combination with a plurality of air pumper units arranged about a common cen-

ter, of driving mechanism adapted to actuate said pumper units successively, an air
15 channel connected to the inlets of all of said pumper units at sides opposite said center, an air service connection at one point of said air channel, said air channel leading
20 from said service connection to all of said inlets in series in one direction but not connecting the last of that series with the first.

ROBT. A. GALLY.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."