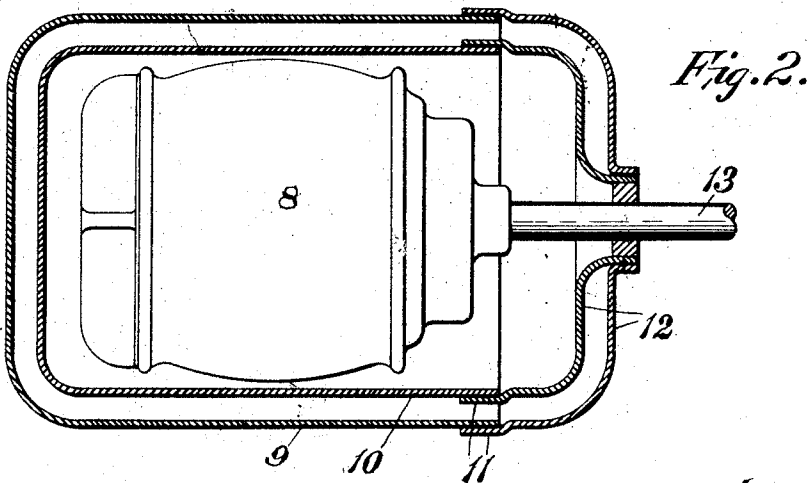
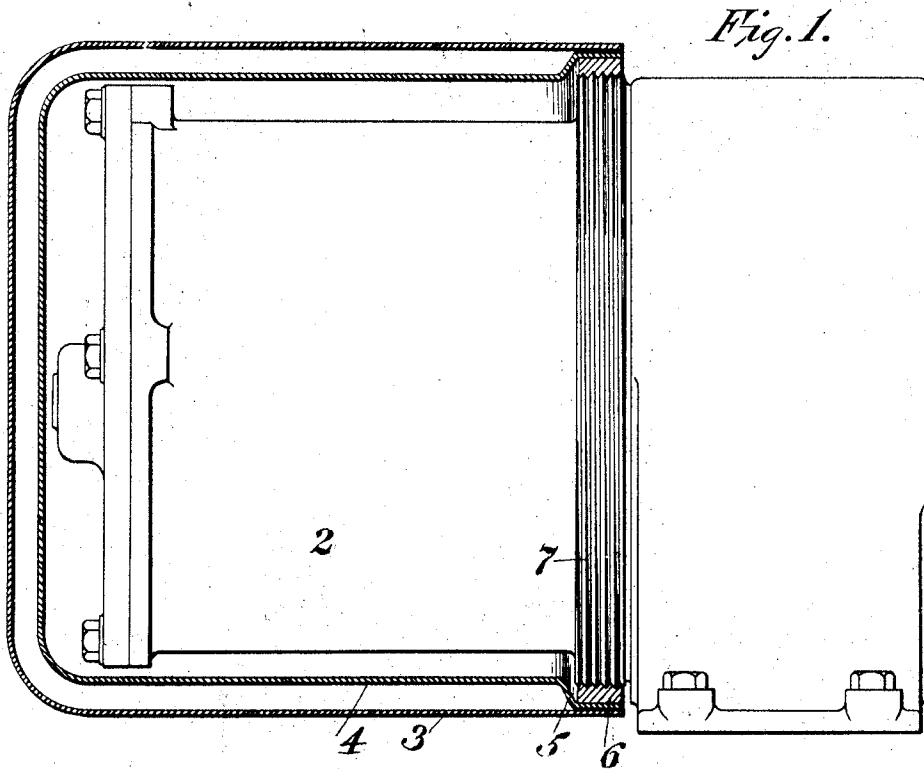


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 SOUND DEADENER FOR ROTARY BLOWERS.
 APPLICATION FILED SEPT. 24, 1909.

976,063.

Patented Nov. 15, 1910.



Witnesses;
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UNITED STATES PATENT OFFICE.

JAMES JOSEPH GIBSON, OF HOMESTEAD, AND CHARLES L. W. TRINKS, OF PITTSBURGH,
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SOUND-DEADENER FOR ROTARY BLOWERS.

976,063.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed September 24, 1909. Serial No. 519,327.

To all whom it may concern:

Be it known that we, JAMES JOSEPH GIBSON, a resident of Homestead, Allegheny county, Pennsylvania, and CHARLES L. W. TRINKS, a resident of Pittsburgh, Allegheny county, Pennsylvania, have invented certain new and useful Improvements in Sound-Deadeners for Rotary Blowers, &c., of which the following is a specification.

High speed compressors, and particularly high speed rotary blowers, are very noisy, first, because the rapid alternations of suction and compression transmit vibrations through the metal which appear to the human ear as noise; second, because the discharge from any rotary blower of the displacement type is discontinuous, and this discontinuity is equivalent to a constant discharge superposed by a sound wave. This noise has been the principal reason for limiting the speed of such blowers, and attempts to overcome it have resulted in increasing the cost and weight of such machines.

For portable blowers light weight is of extreme importance, and for purposes of vacuum cleaning in residences, hotels, etc., absence of noise is of still greater importance.

The object of our invention is to intercept and deaden sound waves resulting from the vibrations referred to, which, in the present embodiment, we accomplish by inclosing the noisy part of the machine in a practically sound-proof jacket of improved construction, the space between the jacket walls being filled with a light gas, preferably hydrogen gas below atmospheric pressure, the space being of course hermetically sealed.

It is known that for the transmission of sound a medium is required, also that perfect vacuum absolutely prevents transmission of sound. For a portable machine a jacket inclosing a vacuum would be prohibitive on account of the means necessary to prevent the jacket from collapsing under the pressure of the atmosphere. If stays were used between the walls of the jacket, vibrations and consequently sound would be transmitted. If the walls were made heavy enough to withstand atmospheric pressure without stays, the weight of the jacket would be excessive. Next to perfect vacuum an extremely light gas is the best sound dead-

ener. Pure hydrogen is extremely light and hence admirably suited for the purpose if inclosed hermetically between the walls. The sound deadening properties of the jacket increase with the rarefaction of the gas, and hence we preferably reduce the pressure thereof below atmosphere pressure.

Two embodiments of the invention are illustrated by Figures 1 and 2 of the accompanying drawings, the sound deadening jacket shown in section in each instance.

The formation of an air tight jacket requires the use of two shells suitably connected. In the embodiment of Fig. 1 the jacket which incloses the operating or noisy part 2 of the blower, compressor, or like machine, consists of an outer shell 3 and an inner shell 4, the shells being spaced apart as required to contain a suitable amount of hydrogen or equivalent gas. The shells may be secured together and to the machine by so engaging the extremity of inner shell 4 as to cause it to fit the extremity of shell 3, as indicated at 5, with the parts brazed or welded to form an air tight joint. An internally threaded ring 6 may be secured within the united ends of the shells for removably securing the jacket to threaded portion 7 of the machine, thereby fully inclosing part 2 of the latter.

In the adaptation of Fig. 2, an entire machine 8 is inclosed by the jacket, the main portion of the latter consisting of the outer and inner shells 9 and 10, respectively, which have the lap-joints 11 with the jacket end-portion 12 of like two-shell formation, in the present instance this end portion having a passage for power shaft 13 extending to machine 8.

From the foregoing it will be understood that the invention may be applied in various ways, the illustrations herein being only two of numerous available embodiments.

The invention is not restricted to the use of hydrogen, as any other gas may be used having like physical property of extremely small mass per unit volume under given conditions of pressure and temperature.

We claim:

1. In a sound deadener, a hollow-wall jacket inclosing the sound producer, and hydrogen gas filling the space between the jacket walls.

2. In a sound deadener, a jacket consisting of the inner and outer walls spaced apart and extending around the sound producer, supporting means common to the walls with
5 the latter connected together only at the supporting means, and hydrogen gas filling the space between said walls.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES JOSEPH GIBSON.
CHARLES L. W. TRINKS.

Witnesses:

F. E. GAITHER,
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