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SEPARATOR

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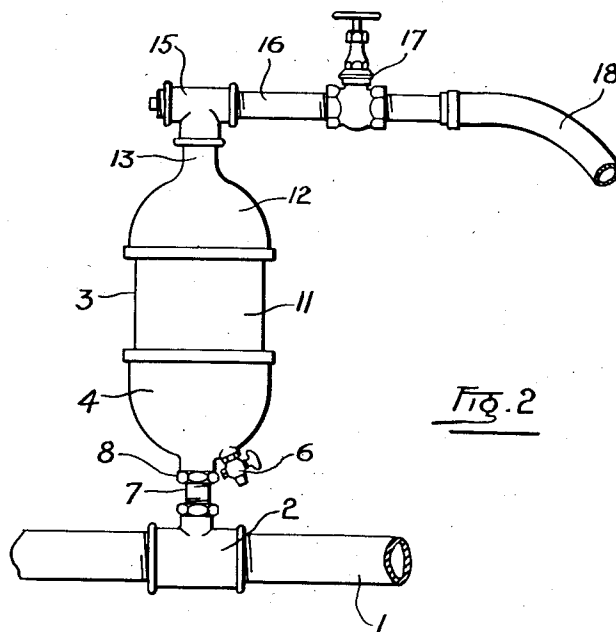


Fig. 2

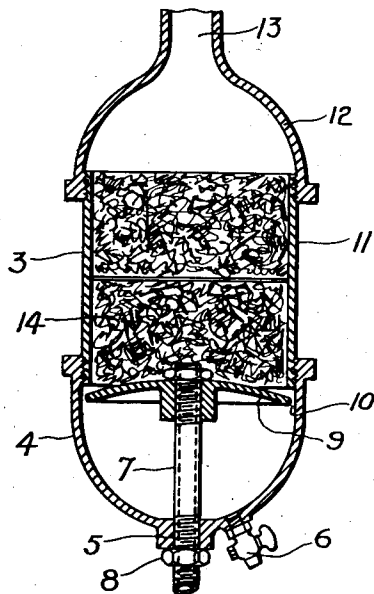


Fig. 1

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My invention relates to improvements in separators, which are particularly adapted for use on air lines through which compressed air is delivered to pneumatic hammers and the like. Air lines of this kind are frequently used in construction work, being coupled to a portable compressor, and are continually being extended as the work proceeds with the addition of lengths of old pipe, which are subjected to much abuse, and are frequently coupled when containing grit, scale and the like, which under usual circumstances are propelled forward by the compressed air, finally entering one of the pneumatic tools and necessitating its being taken down or repaired. The moisture normally in suspension in the air on being passed through the line, condenses and on reaching the valves of the tool is subjected to rapid reduction in temperature due to the expanding of the air, finally resulting in frost developing around the valve and a consequent stoppage of the work. The object of the invention is to separate all such dirt, scale and moisture from the air flow in the line immediately prior to its delivery to the tools, so that uninterrupted use thereof may be obtained.

The invention consists essentially of a chamber having a screening medium through which the air is adapted to flow prior to delivery to the pneumatic tools, and means below the screen for collecting condensate from said air, as will be more fully shown in the accompanying drawings and described in the following specification in which:—

Fig. 1 is a sectional view of the invention.

Fig. 2 is a general view of the invention.

In the drawings like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates generally a pipe line leading from a compressed air supply to which T's 2 are fitted at suitable intervals adjacent the points where pneumatic tools are to be used. Fitted to each T 2 is a separator generally indicated by the numeral 3, which consists of a cup 4 having a threaded inlet 5, adjacent which a drain cock 6 is fitted. Extending through the inlet 5 is a pipe 7 which is rendered air and water tight by a suitable lock nut 8. The lower end of the pipe 7 is fitted into the upstand-

ing branch of the T 2 and its upper end is fitted with a centrally apertured mushroom shaped flange 9 which is slightly less in diameter than the upper extremity of the cup 4, so as to define an annular space 10 between the flange 9 and the side walls of the cup 4. Fitted into the upper extremity of the cup 4 is a cylinder portion 11 which is threaded at opposite ends and adapted to be connected to the cup and to a canopy 12 having a vertical outlet pipe 13. Loosely fitted within the cylinder portion 11 is a cylindrically formed body of metallic fibre 14 or other suitable filtering medium. The outlet pipe 13 is preferably fitted with a T 15 from which branch 16 extends forming connection through suitable valves 17 and hose 18 to the air drills or other pneumatic tools.

Having thus described the several parts of my invention I will now briefly explain its functions.

The compressed air from the supply flows through the pipe 1, the separator 3, the valve 17 and hose 18 to the tool being used. The air flow through the pipe 1 naturally carries with it such moisture as is held in suspension therein together with loose particles of scale, rust or dirt as may be contained in the pipe lines. When the air is emitted through the upper end of the pipe 7, its velocity is immediately reduced due to the cylindrical portion 11 of the separator 3 having a far greater cross sectional area than that of the pipe 7. This reduction in velocity is such that all solids and liquids as the air contains are arrested in their upward movement by the filtering medium 14, the solids adhering in part thereto and in part falling. It will be obvious that as the air passing through the pipe 7 is emitted from its upper end into the cylindrical portion 11 that, due to the enlarged area thereof, the air stream will spread outwards and in so doing will project the major portion of the liquid content towards the cylinder walls, thus spreading such liquid content throughout the mass of filtering medium from whence it gravitates through the annular space 10 into the cup 4, from which it may be drawn off daily, or as occasion demands, through the drain cock 6. After extended periods of operation, the fibrous body

14 may be renewed and all solids incapable of passage through the drain cock 6, may be removed by dismantling the separator.

What I claim as my invention is:

- 5 A separator of the character described comprising a cup having a threaded inlet and a drain opening at the bottom, a pipe secured in the inlet and projecting an appreciable distance above the bottom of the cup,
10 a. flange extending outwardly from the up-

per end of the pipe and terminating in spaced relation to the surrounding wall of the cup, a cylinder having its lower end secured in the upper portion of the cup and enclosing a filtering material resting on said 15 flange and a canopy secured to and covering the upper end of the cylinder.

Dated at Vancouver, B. C., this 21st day of June, 1927.

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