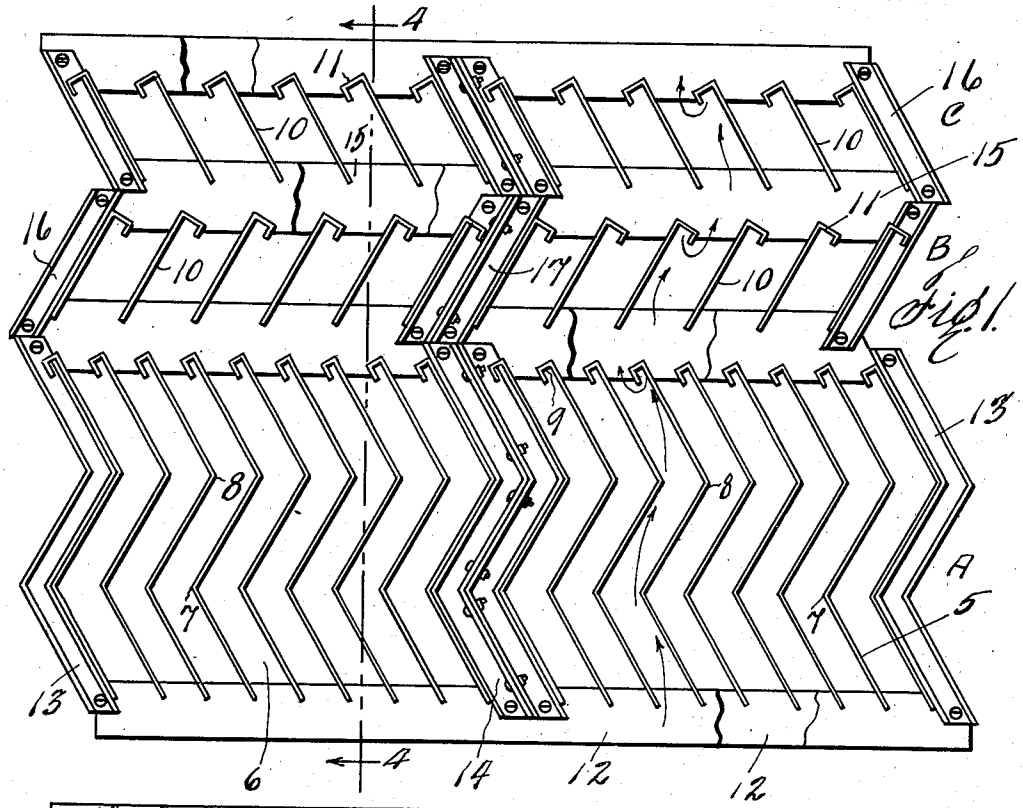
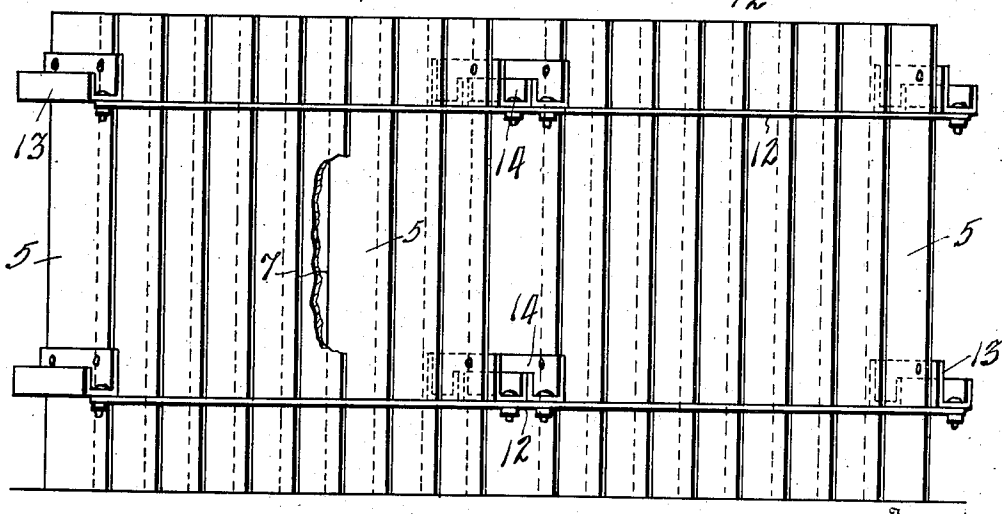
Feb. 8, 1927. 1,616,802

J. C. HOSCH

AIR CLEANING MACHINE

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J. C. HOSCH.

Fig. 2.

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AIR CLEANING MACHINE

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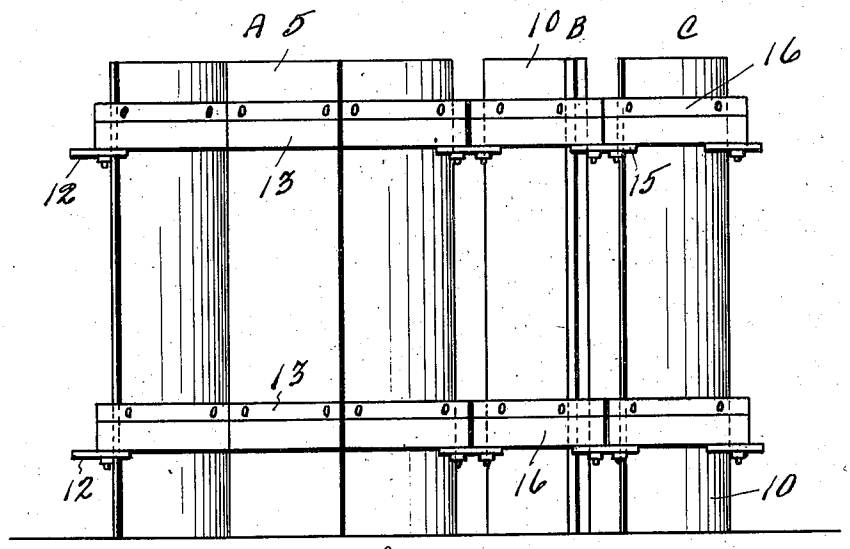


Fig. 3.

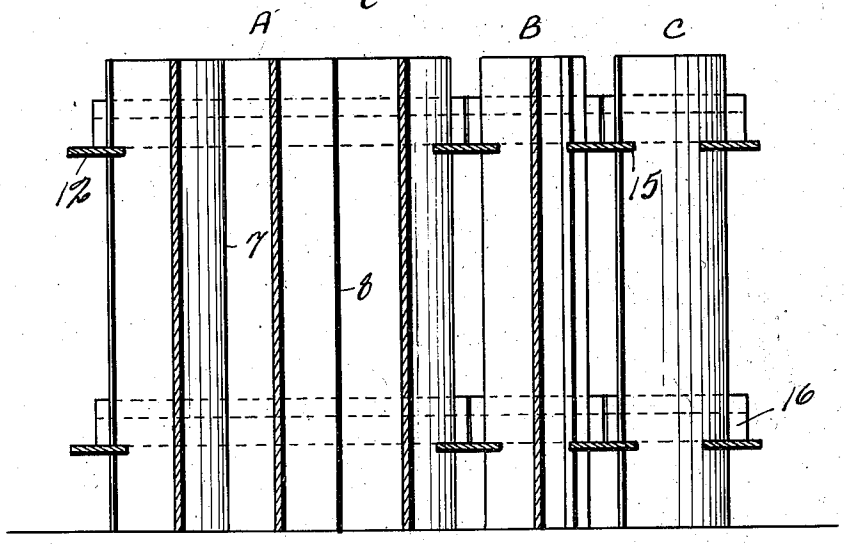


Fig. 4.

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UNITED STATES PATENT OFFICE.

J. CLAUDE HOSCH, OF LOS ANGELES, CALIFORNIA.

AIR-CLEANING MACHINE.

Application filed July 27, 1925. Serial No. 46,261.

This invention relates to air cleaning machines, and particularly to means for removing dirt and dust particles, as well as some of the moisture, from the air, after purifying or saturating operations.

The primary object of the invention is to provide means of simplified nature for application to air purifying machines, by means of which progress of the air may be retarded after the purifying and saturating operations, whereby to effectively remove impurities and moisture from the air prior to its discharge from the machine.

A further object of the invention is to provide an apparatus of the character mentioned, wherein the air is compelled to take tortuous courses through the machine to contact a relatively great number of times with dust and moisture removing surfaces before being delivered from the machine.

A further object is to provide a device of the character stated involving the use of a plurality of baffle plates, and wherein the baffle plates are constructed in sections and provided with means for their ready attachment and cooperation with each other.

With these objects in view, together with others which will appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts, all as will be described more fully hereinafter, illustrated in the drawings, and particularly pointed out in the claims.

In the drawings:

Fig. 1 is a horizontal sectional view taken through an air cleaning machine constructed in accordance with the invention,

Fig. 2 is a front elevation, parts broken away, of the machine,

Fig. 3 is a side elevation, of the machine, and

Fig. 4 is a vertical sectional view taken substantially upon line 4—4 of Fig. 1.

The device of the present invention is adaptable to air cleaning apparatus of that type wherein the air to be purified is first subjected to purifying and moistening operations; the present apparatus being designed to receive the air so treated and to condition the same before being discharged from the machine.

The apparatus comprises a plurality of plates of vanes represented at 5, arranged in spaced parallel relation, relatively close together, and providing between them a series of channels or passages 6 through which the air passes before being discharged. These plates are arranged vertically within the machine, and are preferably constructed so as to entirely fill the chamber of the machine with which it is associated.

The baffle plates or vanes are preferably arranged in series or sections, A, B, C, the said sections being so constructed as to enable the same to be readily coupled to and operatively associated with other sections of the series. The first series, indicated generally at A, comprises the plates 5 as shown in Fig. 1, of uniform length and breadth, bent or shaped as shown to provide tortuous or sinuous passages through the section. The front portions of the said vanes incline from a straight line passing through the machine so that the air is initially brought into contact with inclined faces of the plates. The plates then incline for a short distance so as to provide an obtuse angle with the first mentioned portions to provide walls against which the air must forcibly engage in its further travel between the plates. The plates are then disposed or inclined in a direction substantially parallel with the portions 5. This formation and arrangement of plates produces abutments at points 7—8, around which the air currents pass and are caused to be brought into intimate contact with the angular walls on the opposite sides of the passages next succeeding the said abutments. The air is thus caused to be thrown back and forth laterally of the passages, and the contact of the air with the walls thereof causes dust particles, dirt and moisture to be deposited upon the angular faces, from which it will gravitate to the bottom of the vanes. The rear extremities of the vanes are provided with pockets indicated at 9. These pockets are formed by bending or shaping the rear extremities of the plates laterally and inwardly, whereby the pockets having angular walls are disposed in direct path of the air currents passing over the next preceding abutments 8. The pockets by thus projecting into the air passages or channels, receive the volume of air and retard the flow of the same so that dirt particles and moisture will be collected and retained upon the walls thereof.

The sections B—C are constructed substantially similar to each other, except that the

relatively short vanes 10 thereof incline in directions substantially opposite to each other. Each of the vanes 10 is straight throughout its length, and is provided at its rear with a pocket 11 formed by deflecting the edges of the vanes at substantially right angles from the body portions thereof and then turning the extreme edges thereof forwardly to provide closures for the outer sides of the pockets. It will be noted that the vanes 10 of the sections B—C are spaced greater distances apart than are the vanes of the section A with their pockets progressively increasing in size proportionate to the channels, and the vanes or plates of sections B—C are so arranged that the passages between them are disposed directly rearwardly of the discharge ends of the channels of the next preceding section.

By reason of the particular shape and arrangement of the plates 5 of the section A, the pockets 9 thereof are out of direct longitudinal alignment with any of the abutments 7—8. This construction compels the air currents to move into contact with a relatively great area of plate surface before being delivered from the particular section. The assemblage of the vanes 10 of the sections B—C is such that the pockets thereof are out of direct longitudinal alignment with each other as well as with the pockets of the section A. This arrangement compels the air currents to follow such a sinuous course as to bring the same into intimate contact with a multiplicity of vane and pocket surfaces before being delivered from the washer. Dirt and dust particles, as well as moisture, coming in contact with such surface collects thereon and gravitates to the lower ends of the vanes, where it may be collected or disposed of in any suitable manner.

The vanes of the several sections are maintained rigidly in proper position by bars or plates 12 at the front and rear edges thereof. These plates are provided at their edges with recesses as shown to receive the edges of the adjacent plates, and channel irons such as represented at 13 connect the end vanes of the section with the said plates or bars 12. Similar channel members 14 may extend between the plates 12 intermediate the lateral ends of the section to lend rigidly to the structure.

The relatively short sections B—C have their end vanes connected to coupler strips or bars 15 by channel irons 16, while intermediate channel members 17 may also be employed to lend rigidity to the structure.

The front and rear edges of the strip or bars 12—15 are recessed to receive the rear and front edges respectively of the next adjacent vane sections, and the ends of the channel members 13—14—16—17 are securely bolted to the said strips.

The sections thus constructed and assembled cause the currents of air entering the channels to take courses substantially as outlined by the arrows in Fig. 1 of the drawing. The arrangement of baffle walls is such that the currents of air follow zig-zag courses through the passages and the volume thereof is thrown directly into the pockets at the rear ends of the vanes. The air currents are thus freed of moisture and dirt particles by reason of their being brought into intimate contact with a relatively great number of surfaces.

By constructing the units or sections in the manner specified it is apparent that any desired number of sections may be used in an air washing machine, as they may be applied or removed as occasion demands. The sections thus interfit with one another, lend rigidity to each other and stabilize the entire assembled series.

What I claim, is:

1. In an air cleaning machine, primary vanes arranged in parallel zig-zag relation and forming continuous tortuous air channels each having oppositely disposed abutments, pockets at the discharge end of said vanes projecting into said channels and disposed in a line intersecting the final abutment therein, opposite bars for supporting said vanes, and a supplemental series of oppositely inclined parallel vanes supported at the delivery from the primary vanes by a series of parallel bars mounted upon one of the opposite bars, said supplemental vanes being spaced to receive discharge from more than one of the primary vanes and formed with pockets at their delivery end projected into the space intermediate the supplemental vanes.

2. In an air cleaning machine, continuous primary vanes forming tortuous air channels having oppositely disposed abutments, pockets at the discharge end of said vanes projecting into said channels and directed toward the final abutment therein, a supplemental series of oppositely inclined parallel vanes disposed at the delivery from the primary vanes and having pockets at their delivery ends projected into the space intermediate the supplemental vanes, recessed securing strips adapted to receive the opposite edges of the primary vanes, brace bars conforming to the vanes for securing said strips together, and secondary recessed strips for supporting the supplemental vanes relative to the final first mentioned strip.

In testimony whereof I affix my signature.

J. CLAUDE HOSCH.