

A. C. GOUGH.
 ROTARY SCREEN.
 APPLICATION FILED JULY 19, 1920.

1,360,929.

Patented Nov. 30, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

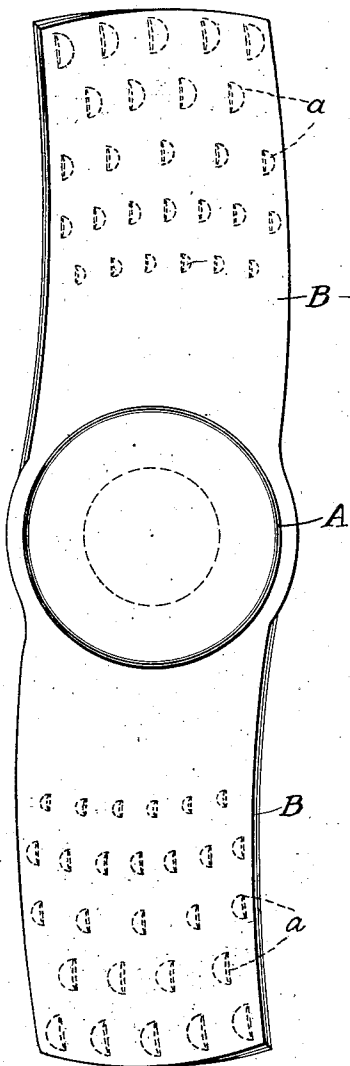


Fig. 2.

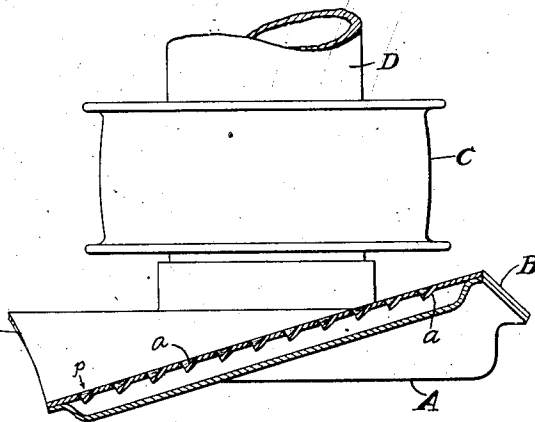
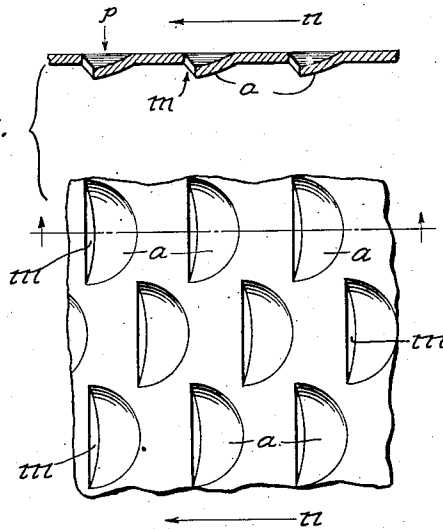


Fig. 3.



Inventor

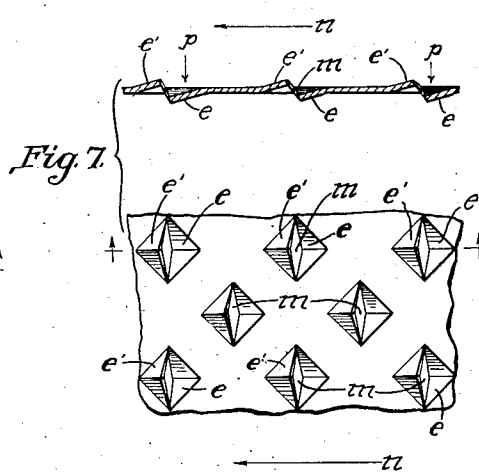
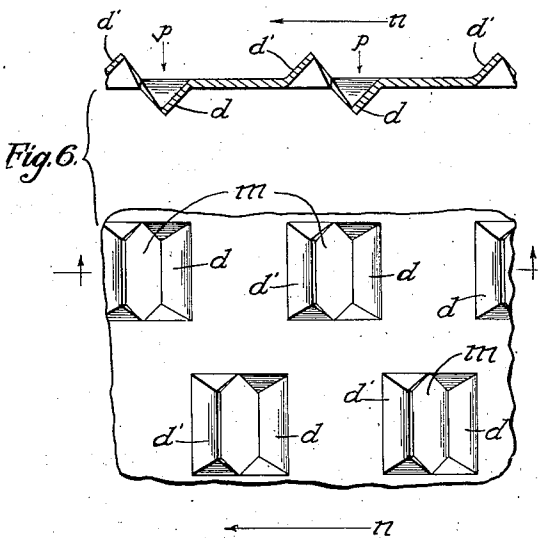
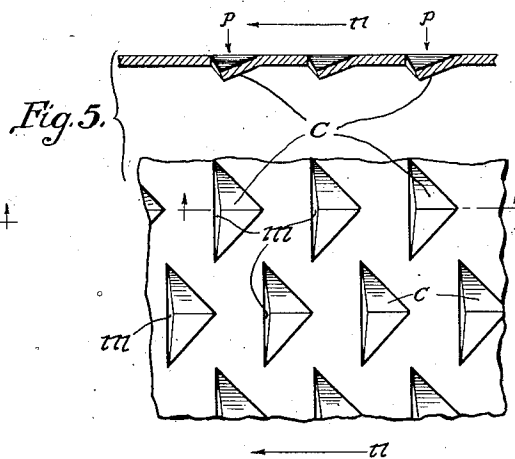
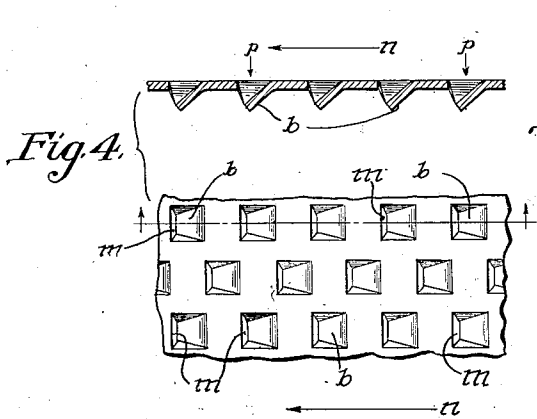
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 2 SHEETS—SHEET 2.



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ROTARY SCREEN.

1,360,929.

Specification of Letters Patent.

Patented Nov. 30, 1920.

Application filed July 19, 1920. Serial No. 397,345.

To all whom it may concern:

Be it known that I, ACHILLES C. GOUGH, citizen of the United States, residing at Pocatello, in the county of Bannock and State of Idaho, have invented certain new and useful Improvements in Rotary Screens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to rotary or moving screen separators for separating and eliminating dust and small particles from the air. An improved form of such a device is described in my United States Patent, Number 1,311,811.

The object of the present invention is to provide a simpler, lighter and more economical form of structure for devices of this character.

The invention consists of the novel construction, combinations and arrangements of parts hereinafter more fully specified.

Two sheets of drawings accompany this specification as part thereof, in which like reference characters denote like parts throughout.

Figure 1 is a front elevation of a separator,

Fig. 2 is a plan view of Fig. 1 with the top blade in section.

Fig. 3 is a plan and transverse sectional view of one form of the improved structure.

Fig. 4 is a plan and transverse sectional view of another form of the improved structure.

Fig. 5 is a plan and transverse sectional view of another form of the improved structure.

Fig. 6 is a plan and transverse sectional view of another form of the improved structure, and

Fig. 7 is a plan and transverse sectional view of another form of the improved structure.

Referring to the drawings, A represents a fan provided with hollow blades B communicating with a hollow shaft D and driven by a pulley C or by any other suitable means.

As illustrated in Figs. 1 and 2, the fan blades are constructed of thin sheet metal and the back side of each blade is provided with a number of short radial slots arranged preferably in staggered fashion. On

one and the same side of each of these slots, the thin sheet metal is depressed to provide a sloping wall inclined at an angle with the face of the blade. The form of these sloping walls may vary, as illustrated in Figs. 3 and 7, being of semicircular form as at *a* in Fig. 3; of wedge shape as at *b* in Fig. 4; or triangular as at *c* in Fig. 5. In Figs. 6 and 7, a further modification is shown in having the metal on one side of each slot elevated and on the other side depressed.

To secure the best results in the separation of the dust from the air it is desirable that the size of the openings be proportioned to the velocity of the air and the speed of travel of the openings with respect to its adjacent sloping wall, so that the necessary repellant force will be exerted on the dust particles. As it is furthermore desirable that the maximum amount of air be admitted, it is desirable that the size of the slots be varied proportionately with their radial distance from the axis of the fan, as indicated in Fig. 1, so that those slots traveling faster, the inclined walls of which will exert a proportionately greater repellant force on the dust particles, can be made proportionately larger, than those traveling slower nearer the center.

In operation it will be noted that when a fan provided with the structure of any of the illustrations is rotated in the directions indicated by the arrows *n*, the air will be drawn in the direction indicated by the arrows *p*, and any particles of dust or other foreign matter impinging on the sloping walls, *a, b, c, d, d', e* or *e'* will be deflected and thrown out while the air will be drawn in through the slots *m* and so through the hollow shaft D.

Obviously, this invention is equally applicable to other forms of screen separators, relying on the same or similar principles of operation.

What I claim is:

1. In a separator having a rotary air induction member, a sheet metal wall in said rotary part having a plurality of openings, said wall being bulged adjacent said openings to provide inclined planes extending from said openings in planes substantially transverse the direction of rotation.

2. In a separator having a rotary air induction member, a sheet metal wall in said rotary part having a plurality of radial openings, said wall being indented adjacent

said opening to provide inclined planes extending therefrom in planes substantially transverse the direction of rotation.

3. In a separator having a rotary air induction member, a sheet metal wall in said rotary part having a plurality of radial openings arranged in staggered relation, said wall being indented adjacent said openings to provide inclined planes extending therefrom in planes substantially transverse the direction of rotation.

4. In a separator the combination of a rotary air induction member, a sheet metal wall in said member having a plurality of short radial openings arranged in staggered relation, said wall being bulged outwardly

on one side and inwardly on the other side of each of said openings to provide planes adjacent thereto and extending angularly with respect to said wall in a direction transverse the direction of rotation.

5. In a separator having a rotary air induction member and a plurality of openings with walls inclined from said openings in planes substantially transverse the direction of rotation, said openings being spaced radially and of a size proportioned to their radial distance from the axis of rotation so that their speed of rotation will be directly proportional to their size.

In testimony whereof I affix my signature.
ACHILLES CALLOWAY GOUGH.