

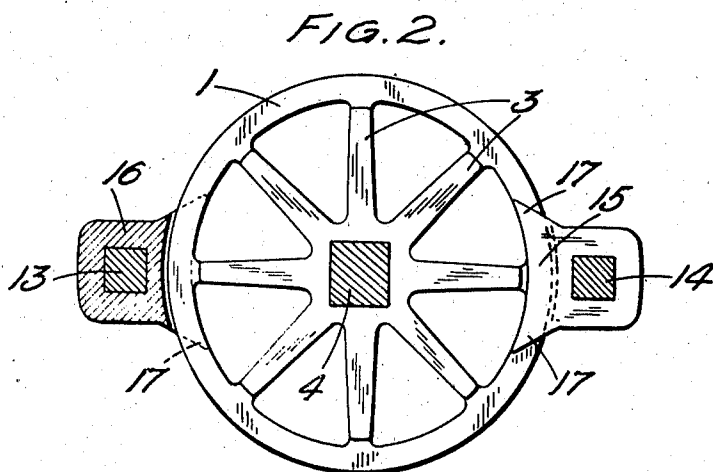
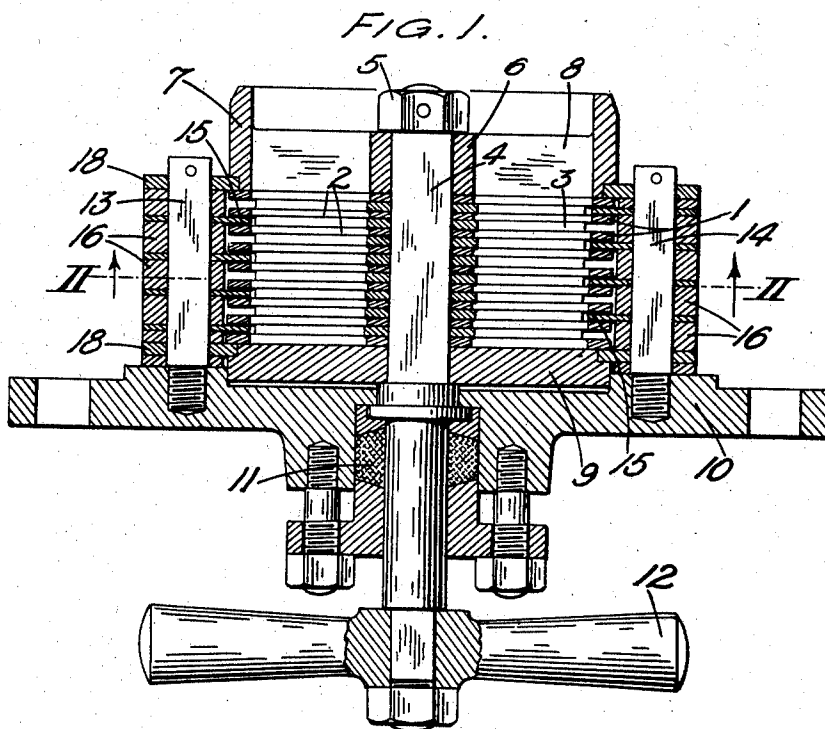
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W. R. BELDAM

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STRAINING OR FILTERING APPARATUS FOR LIQUIDS

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Inventor
William Robert Belden
By, Peck & Peck
Attys.

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STRAINING OR FILTERING APPARATUS FOR LIQUIDS

William Robert Beldam, London, England, assignor to Auto-Klean Strainers Limited, London, England, a company of Great Britain

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3 Claims. (Cl. 210-152)

This invention concerns improvements relating to straining or filtering apparatus for liquids of the kind comprising a cylindrical straining wall, which is composed of a plurality of spaced ring or disc elements, and cleaning blades which project into the spaces between the said elements.

The usual practice is for all the cleaning blades to be mounted upon a single common post or bar disposed outside the elements. With this arrangement, under certain conditions, there is a tendency for the elements and cleaning blades to be forced apart by heavy side thrusts produced when the straining wall is turned relatively to the said blades in order to effect cleaning. This defect is particularly liable to appear when certain liquids are being dealt with, e. g., liquids which contain a high percentage of foreign matter, which are viscous and/or which carry fibrous or glutinous impurities.

It is an object of the present invention to provide simple but effective apparatus of the kind set forth which, in particular, has the advantage that the above-mentioned defect can be avoided even when difficult liquids are being dealt with.

According to the invention, in apparatus of the kind set forth, cleaning blades are mounted upon two or more supports so that no two blades projecting into adjacent spaces between the elements are mounted upon the same support. By this means, it can be arranged that any heavy side thrusts produced neutralise each other. Excessive stresses in the blades and any tendency for the elements and the blades to be thrust apart are avoided.

The blades on each support may be spaced and strengthened by intermediate washers which also serve to produce a smooth surface between the blades and thus avoid the possibility of impurities or rejects being retained thereon. An additional strengthening effect is achieved if the blades and washers are cemented together, for example by a synthetic resin.

One embodiment of the invention by way of example will now be described with reference to the accompanying drawing, in which—

Fig. 1 is an axial section through a strainer, and

Fig. 2 is a cross-section on the line II—II in Fig. 1.

In this embodiment of the invention, the straining wall is constituted by the ring portions 1 of a plurality of wheel-shaped elements 2 spaced apart by spider-shaped distance pieces 3. Alternate elements 2 and distance pieces 3 are mounted upon a squared portion of a shaft 4

upon which they are secured by a nut 5 through the intermediary of the hub-portion 6 of a wheel-shaped end-member 7. The chamber enclosed by the straining wall is thus open at the top, between the spokes 8 of the end member 7, for the exit of the strained liquid. The lower end of the said chamber is closed by a plate 9. The shaft 4 is mounted in a plate 10 through which it passes by way of a packed gland 11, the lower end of the said shaft being furnished with a handle 12. By means of the plate 10, the strainer is mounted in known manner in a suitable vessel by way of which the liquid to be strained has access to the exterior of the straining wall where it is strained in entering the chamber through the annular spaces between the rings 1.

Mounted in the plate 10, on diametrically opposite sides of the straining wall and outside the same, are two square posts 13, 14 each of which supports a series of alternate cleaning blades 15 and spacing washers 16. The blades 15 are formed with plough-like tips 17 and extend into the spaces between the rings 1 to the inner edges of the latter. The blades on the post 13 do not project into the same spaces as the blades on the post 14; the blades on the two posts are spaced so as to project into alternate successive spaces. The shape of a blade 15 may be clearly seen on the right-hand side of Fig. 2 and that of a spacing washer 16 on the left-hand side thereof. The series of blades and washers are mounted between end-pieces 18 engaged by annular shoulders on the parts 7 and 9.

When necessary, cleaning is effected in known manner by turning the straining wall, by means of the handle 12, in relation to the stationary cleaning blades 15 which act to scrape out the impurities or rejects retained in the spaces between the rings 1. With the above-described arrangement of the blades 15 alternately on opposite posts 13, 14 any heavy side thrusts which may tend to be produced cancel each other out and there can be no tendency for the cleaning blades 15 and rings 1 to be thrust apart.

The spacing washers 16, which also serve to strengthen the cleaning blades, may be cemented to the blades with, for example, synthetic resin of the kind known by the registered trade-mark "Bakelite" so as to form a strong unitary body on each post. Alternatively, the parts may be welded together. Except where the effective blade part projects, the blades and washers may be of the same shape (see Fig. 2) so that the said body presents a substantially smooth surface by which impurities are not readily retained.

Various modifications of the above described embodiment of the invention may be made: For example, the cleaning blades may be distributed over more than two posts spaced around the straining wall. Also, the elements constituting the said wall may be spaced apart by elevations thereon instead of by separate distance pieces.

What I claim is:

1. Straining apparatus comprising a cylindrical straining wall composed of a plurality of axially spaced ring elements, a plurality of supports spaced at substantially equal distances apart around the outside of the straining wall, cleaning blades mounted upon and spaced axially apart on said supports and operatively extending into the spaces between said ring elements, with the blades on each support extending into different spaces and the remaining blades extending into every other space, said ring elements mount-

ed for rotation relative to the blades and their supports, and means for effecting such rotation, said cleaning blades being operative on relative rotation between said ring elements and blades, to clear the spaces between the ring elements.

2. Apparatus according to claim 1, wherein the blades are spaced apart on their supports by washers, said washers being of substantially the same shape as the portion of the blades disposed outside the spaces between the ring elements, so that the blades and washers together present a smooth surface at all points where the blades are disposed outside the spaces between the ring elements.

3. Apparatus according to claim 1, wherein the blades are spaced apart on their supports by washers fixedly secured to the blades.

WILLIAM ROBERT BELDAM.