

Nov. 14, 1967

D. M. SWALLOW

3,352,418

REMOUNTABLE SEPARATOR SCREEN

Original Filed Nov. 26, 1963

2 Sheets-Sheet 1

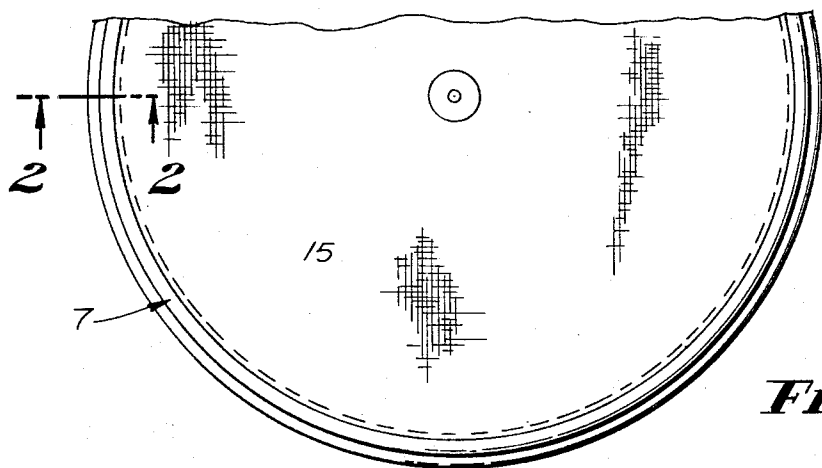


FIG. 1

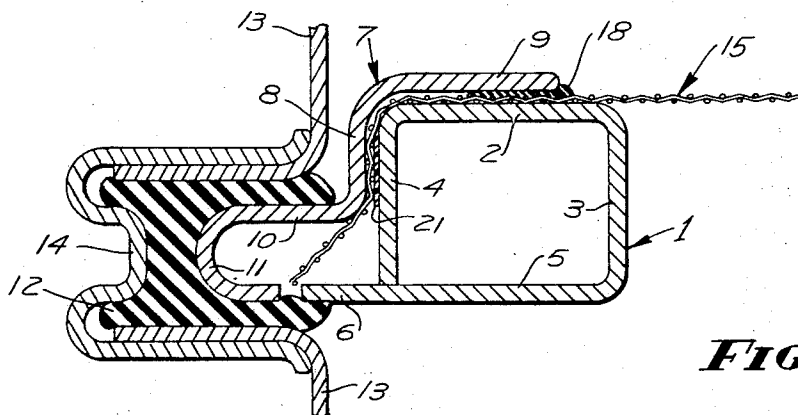


FIG. 2

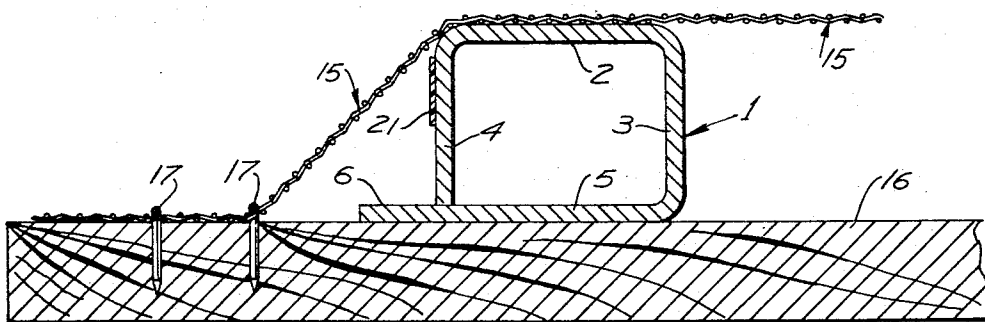


FIG. 3

INVENTOR.

DOUGLAS M. SWALLOW

BY

Julian J. Schuman
ATTORNEY

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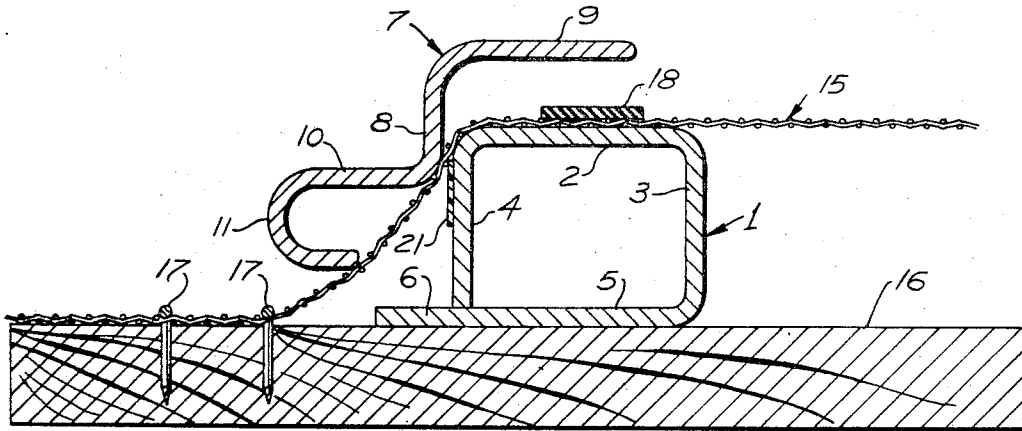


FIG. 4

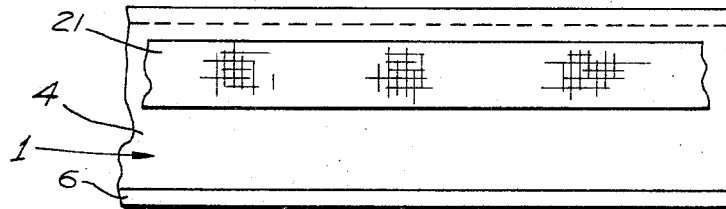


FIG. 5

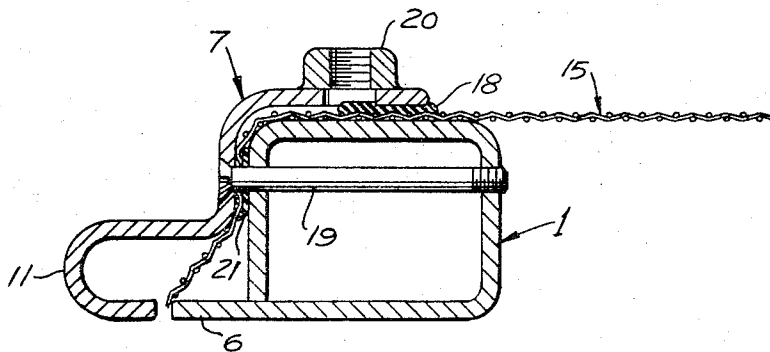


FIG. 6

INVENTOR
DOUGLAS M. SWALLOW
BY *Julian J. Schmitt*
ATTORNEY

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3,352,418

REMOUNTABLE SEPARATOR SCREEN

Douglas M. Swallow, Milton, Ontario, Canada, assignor to Southwestern Engineering Company, Los Angeles, Calif., a corporation of California
Original application Nov. 26, 1963, Ser. No. 325,956, now Patent No. 3,291,164, dated Dec. 13, 1966. Divided and this application Oct. 17, 1966, Ser. No. 587,200
2 Claims. (Cl. 209-403)

ABSTRACT OF THE DISCLOSURE

A separator screen including a screen wedged between and held in tension by confronting walls of an inner and outer pair of cylindrical frames, the inner frame including a hollow channel having top and bottom circular walls and inner and outer cylindrical walls, the bottom circular wall extending radially outwardly beyond the outer cylindrical wall; the outer frame including a cylindrical side wall, a circular top flange and a folded outer flange forming a semi-circular bead, the inner extremity of which confronts the flange on the inner frame; and yieldable means between the frames in the region of emergence of the screen.

This application is a division of my prior copending application Ser. No. 325,956, filed Nov. 26, 1963, now Patent No. 3,291,164.

This invention relates to remountable separator screens, and included in the objects of this invention are:

First, to provide a remountable separator screen which is circular in form, and which is particularly adapted for use in the type of vibrator separators illustrated in Patent No. 3,029,946, issued Apr. 17, 1962, for "Clamping Means for Material Separators."

Second, to provide a remountable separator screen which may be securely fastened under proper and uniform tension in such a manner that the screen may be replaced when worn or damaged.

With the above and other objects in view, as may appear hereinafter, reference is directed to the accompanying drawings in which:

FIGURE 1 is a fragmentary plan view of the remountable separator screen;

FIGURE 2 is an enlarged, fragmentary, sectional view thereof shown mounted between two shells and held therein by a clamp;

FIGURE 3 is a fragmentary sectional view showing the manner in which screening cloth is placed over the screen frame in the course of manufacture;

FIGURE 4 is a similar sectional view showing mating screen frames as they are brought together to clamp and secure the screen;

FIGURE 5 is a fragmentary edge view of one of the screen frames showing the application of a friction-producing tape thereto;

FIGURE 6 is a sectional view similar to FIGURE 2 showing a retainer screw and jacking nut.

The remountable separator screen includes a circular bottom frame 1 having a top wall 2, a radially inner wall 3, a radially outer wall 4, and a base wall 5 which projects radially outward beyond the outer wall 4 to form a flange 6. The frame 1 thus formed is rectangular in cross section,

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and its corners, except for the corner having the projecting flange 6, are rounded.

Fitted over the inner frame 1 is a circular upper or outer frame 7 which includes a cylindrical portion 8 adapted to confront the radially outer wall 4 of the inner frame 1, an inner flange or lip 9 overlying the top wall 2 of the inner frame 1, and an outer flange or lip 10 projecting radially outward from the cylindrical portion 8.

The extremity of the outer frame 8 is folded, as indicated by 11, to provide a peripheral semicircular bead, the extremity of which confronts the flange 6. The flanges 6 and 10 are adapted to fit within a gasket 12, which in turn is clamped between a pair of shells 13 by means of a clamp ring 14, as more fully disclosed in Patent No. 3,029,946.

Interposed between the inner flange 9 and the top wall 2, and extending between the confronting outer wall 4 and cylindrical portion 8, is a separator screen 15.

The remountable separator screen is manufactured as follows:

The bottom or inner frame 1 is placed on a mounting board 16 and the screen 15 is placed thereover. Initially, the margins of the screen extend beyond the inner frame 1 and are attached to the mounting board 16 by staples 17. The staples are preferably applied to form concentric rings of decreasing diameter so as to effect uniform stretching of the screen.

The upper or outer frame 7 is then placed over the inner frame 1 so that the screen 15 is wedged or gripped between the confronting walls 4 and 8 and is further tensioned. Before the inner flange 9 is brought into contact with the screen overlying the top wall 2, a rubber or elastomer gasket 18 is placed on the screen 15 and under the inner flange 9. The gasket 18 may be a premolded member or may be in the form of a semisolid latex which is painted or coated on the screen 15.

The outer frame 7 is worked into place by tapping with a mallet around its periphery until it tightly clamps that portion of the screen 15 overlying the inner frame 1. The two frames are secured relative to each other by laterally extending screws 19. In order to facilitate separation of the two frames, the upper frame 7 is provided with several jack nuts 20 which are welded thereto and which receive screws, not shown, adapted to be forced against the inner frame 1 so as to raise the outer frame 7.

It has been found desirable in the course of manufacture to apply a band of friction material 21 to the interior of the cylindrical portion or wall 8 of the outer frame 7, or to the outer wall 4 of the inner frame 1. A suitable material is woven glass tape having an adhesive coating for ease of application. Other materials having high friction coefficient may be used.

While a particular embodiment of this invention has been shown and described, it is not intended to limit the same to the exact details of the construction set forth, and it embraces such changes, modifications, and equivalents of the parts and their formation and arrangement as come within the purview of the appended claims.

What is claimed is:

1. A separator screen comprising:

(a) an inner circular hollow frame including cylindrical inner and outer walls and circular top and bottom walls extending radially therebetween, said bottom wall projecting radially outward beyond said outer wall to form a first flange;

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- (b) an outer circular frame confronting said inner frame, said outer frame including
- (1) a cylindrical wall confronting a portion of said outer wall,
 - (2) a circular inner second flange overlying said top wall, 5
 - (3) a folded outer third flange forming a semi-circular bead, the extremity of which confronts said first flange;
- (c) a screen wedged between and held in tension by said confronting frames; and 10
- (d) a yieldable means between one of said frames and said screen in the region of emergence of said screen therefrom to minimize stress concentration of said screen in said region. 15
2. The separator screen of claim 1 comprising:

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a friction ring on one side of said confronting walls such that said screen is retained in tension between said friction ring and confronting wall.

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FRANK W. LUTTER, *Primary Examiner.*HARRY B. THORNTON, TIM R. MILES, *Examiners.*L. H. EATHERTON, *Assistant Examiner.*