March 14, 1939. K. H. COLVILLE 2,150,889

FILTER SCREEN

Filed Sept. 4, 1937

Fig. 1.

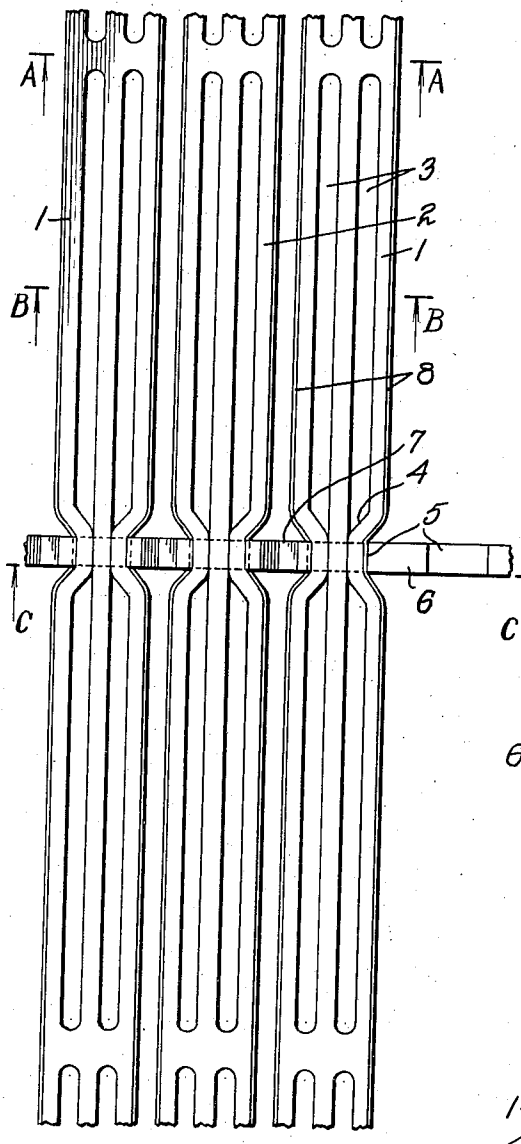


Fig. 2.

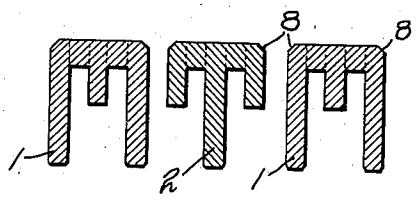


Fig. 3.

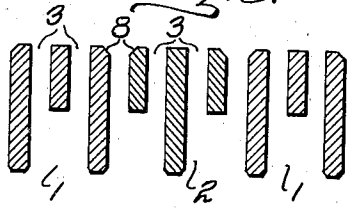


Fig. 4.

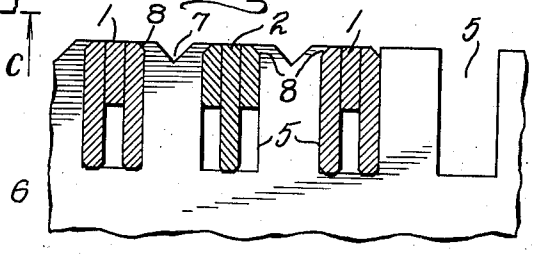
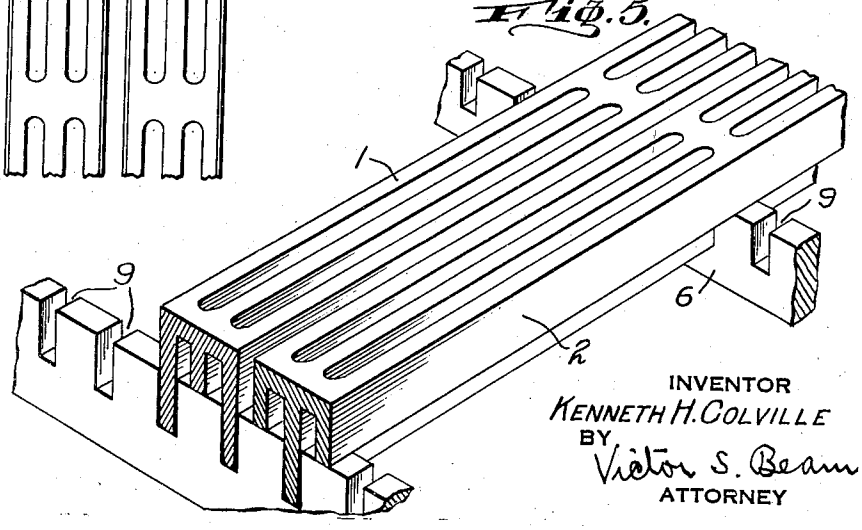


Fig. 5.



INVENTOR
KENNETH H. COLVILLE
BY
Victor S. Beam
ATTORNEY

Patented Mar. 14, 1939

2,150,889

UNITED STATES PATENT OFFICE

2,150,889

FILTER SCREEN

Kenneth H. Colville, Carbondale, Pa., assignor to Hendrick Manufacturing Company, a corporation of Pennsylvania

Application September 4, 1937, Serial No. 162,407

5 Claims. (Cl. 210—169)

My invention relates to the providing and mounting of screening strips of alternate greater and lesser depths to form a screen for sewage and the like.

Prior screens have been formed either by cutting slots in solid sheets of metal or arranging and mounting separate strips of either equal or alternate depths upon a framework.

The first of the aforesaid screens is expensive to make and inflexible in application and arrangement to suit varying conditions and the second is tedious and troublesome to construct and, unless great care is taken in mounting, is not sufficiently rigid for the purpose to be fulfilled.

By the use of my invention screens may be constructed of bars having downwardly projecting longitudinal ribs of different depths which bars are slotted longitudinally through their plane or upper surface between the said ribs to form screening strips which retain their unitary bar structure since the slots do not extend along their entire length, the slots being omitted either at the points of support of the bars or at points between the points of support, or both, and thus retain a rigidity of structure difficult of attainment otherwise. The strips thus formed are of different depths and so provide slots having greater longitudinal openings on their under side which is of advantage in expediting the egress of the filtered materials.

In carrying out my invention, I use bars of bronze, Everdur, aluminum, Herculoy, stainless steel or other materials resistant to the chemical action of sewage, which bars may have been extruded or rolled in such manner as to have a plane or flat surface on one side and a longitudinally ribbed surface on the opposite side and mount these side by side alternately with and in spaced relation to similar bars but with different downwardly extending longitudinal ribs. These bars may be of alternate upright ⊓ and T construction, although my invention is not limited to such construction and may include bars constructed in various ways, having alternate shallow and deep ribs on the under-surface. The ribs of these bars, in addition, may be tapered toward their downward extremities, thus providing an important advantage in the matter of construction in that clearance is afforded for the punch in slotting so that the hazard of said punch drawing out the small bars on the upward stroke is eliminated. In addition, I have found the use of such tapered bars of particular advantage in connection with screen operating efficiency because of the additional egress clearance thus provided. If these screening bars are not slotted at the points of their support, mounting of the same upon the cross-bars or other parts of the screen framework is accomplished either by brazing them directly to the plane surface of such supporting means or by inserting the more downwardly projecting strips of said bars into apertures provided in the upper plane surface of the supports or, if said screening bars are slotted at their points of support and left intact at other points along the length thereof, mounting is accomplished by crimping the strips formed by the slotting and then inserting said crimped bar or set of strips into an aperture provided in the cross-bar or other supporting bar or bars.

The aforesaid and other advantages of my construction will appear from the following description, the drawing and the claims.

In the attached drawing, Fig. 1 is a plan view of an assembly of screening bars which have been longitudinally slotted except at certain points to provide rigidity and showing one method of mounting the same in apertures in the supporting or cross-bar, namely, by crimping.

Fig. 2 is a cross-section of Fig. 1 on the line A—A where the bars are left intact.,

Fig. 3 is a cross-section of Fig. 1 on the line B—B where the bars have been slotted, showing the spaced relation.

Fig. 4 is a cross-section of Fig. 1 on the line C—C thereof.

Fig. 5 is an isometric view of a portion of a screen in which the screening bars are mounted on a cross-bar at a point where said bars are not slotted.

In Fig. 1 is shown an assembly of a group of ⊓ and T-shaped bars 1 and 2, respectively, in the plane or upper surface of which parallel slots 3 are cut longitudinally in the manner hereinbefore described. The two outer strips thus provided are bent or formed as at 4 and placed in aperture 5 in supporting bar 6, completely filling the same, the bent or formed portions of said strips being in juxtaposition to the unbent center strip. Crosswise of, and at or near the center of the solid portions 7 of supporting bar 6, a sharp tool, such as a chisel, is placed and struck forcibly, causing the metal of said portions 7 to spread and securely fasten said screening strips to supporting bar 6. At the points A—A is illustrated a portion of bars 1 and 2 through which slots have not been cut, thereby providing means for strengthening the screening strips and preventing the bending or spreading thereof.

In Fig. 2 is shown an end-view of bars 1 and 2 on the line A—A of Figs. 1 and 5, illustrating the form of said bars and their spaced relationship to each other and also illustrating, as at 8, the beveled edge of the plane surface of said bars 1 and 2 for mounting of said bars by crimping, as in Figs. 1 and 4, providing a space allowance for the expansion of the metal as described and shown in Fig. 1, the filling of said space provided by the bevel causing the bars to become firmly fastened in their respective apertures.

In Fig. 3 is shown an end-view of bars 1 and 2 on the line B—B of Figs. 1 and 5, illustrating the alternating depth of the screening strips after the slots have been cut in bars 1 and 2 as previously described.

In Fig. 4 is shown in cross-section bars 1 and 2 on the line C—C of Fig. 1, illustrating the manner of placing the same in apertures 5 in supporting bar 6 after having been crimped and fastened in place, as hereinbefore described.

In Fig. 5 is shown an isometric view of an alternate method of assembling bars 1 and 2 and mounting the same upon supporting bar 6, wherein the deeper depending strips are inserted into apertures 9 in supporting bar 6. The deeper depending strips here shown are of the tapered construction hereinbefore explained and described and are fastened to said supporting bar 6 by brazing or soldering. It is to be understood, however, that these bars 1 and 2 may be mounted upon the supporting bars 6 without being set therein, as by brazing and that slotting may be omitted at points other than at the points of support.

I claim:

1. A screen formed of bars having upper plane surfaces and alternately having under surfaces with longitudinal ribs of different depths and mounted in spaced relation upon supporting means, said bars being longitudinally slotted through their upper plane surfaces between their downwardly projecting ribs.

2. A screen formed of ⊓ and T-shaped bars alternately arranged and mounted in spaced relation upon supporting means, said bars being longitudinally slotted through their upper plane surfaces between their downwardly projecting ribs.

3. A screen formed of bars having upper plane surfaces and alternately having under surfaces with longitudinal ribs of different depths and mounted in spaced relation upon supporting means, said bars being longitudinally slotted through their upper plane surfaces between their downwardly projecting ribs, said bars at the points of slotting being crimped into apertures in the upper surface of the supporting means.

4. A screen formed of ⊓ and T-shaped bars alternately arranged and mounted in spaced relation upon supporting means, said bars being longitudinally slotted through their upper plane surfaces between their downwardly projecting ribs, said bars at the points of slotting being crimped into apertures in the upper surface of the supporting means.

5. A screen formed of bars having upper plane surfaces and alternately having under surfaces with longitudinal ribs of different depths and mounted in spaced relation upon supporting means, said bars being longitudinally slotted for a portion of the length thereof between their points of support through their upper plane surfaces between their downwardly projecting ribs.

KENNETH H. COLVILLE.