subassemblies together by joining the uncut ends of the deflector blades in the first and third sets in one of the adjacent static mixing subassemblies to the spaced apart and aligned ends of the deflector blades in the second and fourth sets in the other one of the adjacent static mixing subassemblies

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] In the accompany drawings that form part of the specification and in which like reference numerals are used to indicate like components in the various views:

[00010] Fig. 1 is a side perspective view of a static mixing device constructed according to an embodiment of the present invention and shown in a fragmentary portion of a conduit;

[00011] Fig. 2 is a side elevation view of the static mixing device and conduit shown in Fig. 1;

[00012] Fig. 3 is a top plan view of the static mixing device and conduit shown in Figs. 1 and 2;

[00013] Fig. 4 is a side perspective view of one embodiment of the subassembly of the static mixing device;

[00014] Fig. 5 is a side perspective view of the subassembly of the static mixing device taken from an opposite side from the view shown in Fig. 4;

[00015] Fig. 6 is an end elevation view of two of the subassemblies of the static mixing devices prior to being joined together;

[00016] Fig. 7 is a side perspective view of a second embodiment of a subassembly of the static mixing device that incorporates apertures in deflector blades;

[00017] Fig. 8 is a front elevation view of a blank with a series of fold and cut lines that may be used to form a subassembly of the static mixing device; and

[00018] Fig. 9 is a perspective view of the blank shown in Fig. 8.

DETAILED DESCRIPTION

[00019] Turning now to the drawings in greater detail and initially to Figs. 1-3, one embodiment of a static mixing device is designated generally by the numeral 10 and is shown within a cylindrical conduit 12 through which fluid streams are intended to flow and mix together as they pass through the static mixing device 10. The static mixing device 10 fills a cross section of the conduit 12. Although only a single static mixing device 10 is illustrated, multiple static mixing devices 10 are normally positioned in end-to-end relationship within the conduit 12, with adjacent ones of the static mixing devices 10 rotated with respect to each about a longitudinal center axis of the conduit 12.

[00020] The static mixing device 10 comprises intersecting grids 14 and 16 comprised of crossing elements in the form of spaced-apart and parallel deflector blades 18 and 20, respectively. The grids 14 and 16, and the individual deflector blades 18 and 20, cross each other at an included angle that may in one embodiment be within the range of 45 to 135 degrees and in another embodiment be within the range of 60 to 120 degrees. The grids 14 and 16 and deflector blades 18 and 20 are also positioned at an angle, which is normally one-half of the included angle, with respect to the longitudinal center axis of the conduit 12.

[00021] The deflector blades 18 in each of the grids 14 are interleaved with and cross the deflector blades 18 in each of the associated intersecting grids 16. The deflector blades 18 and 20 may be in the form of rectangular strips, except that the deflector blades 18 and 20 that are positioned nearest the inner surface of the conduit 12 are shaped to conform to the shape of the inner surface of the conduit 12. The deflector blades 18 may be planar and the deflector blades