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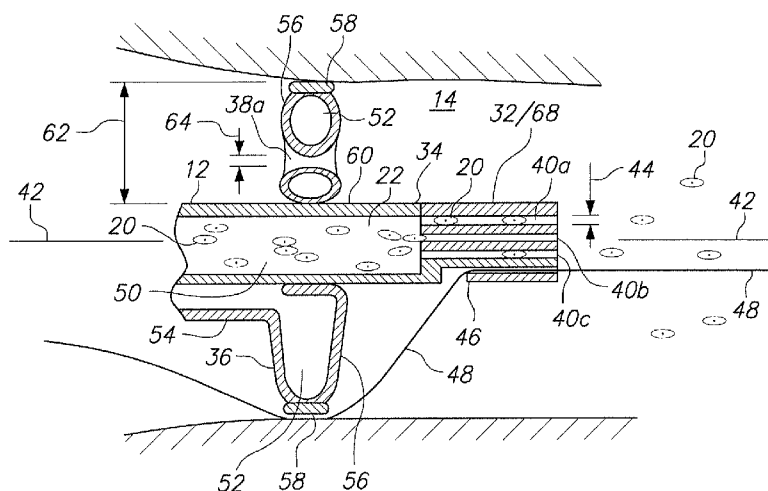
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(57) Abstract: A system for moving particles suspended in a first fluid, for infusion into the stream of a second fluid, includes a catheter with a multi-lumen distal separator. The separator is formed with a plurality of parallel lumens, wherein each lumen has a predetermined diameter. Importantly, the diameter of each lumen is dimensioned to sequentially receive particles therethrough, to prevent the particles from flocculating before they enter the stream of the second fluid. A recollection chamber in fluid communication with the separator allows for reconsolidation of the fluid after leaving the separator and for minimizing the damage caused to the vessel when the fluid exits the catheter. An inflatable balloon, affixed to the outside of the catheter, can be provided to regulate flow of the second fluid and thereby facilitate entry of the particles into the stream of the second fluid and increase retention of particles in targeted tissue.

