

Title (en)  
Heat exchanger and hot water supply apparatus using the same

Title (de)  
Wärmetauscher und Warmwasserversorgungsvorrichtung damit

Title (fr)  
Échangeur thermique et appareil d'alimentation en eau chaude doté de celui-ci

Publication  
**EP 2199693 A1 20100623 (EN)**

Application  
**EP 09178235 A 20091207**

Priority  
JP 2008313386 A 20081209

Abstract (en)  
An heat exchanger and hot water supply apparatus using the same can avoid the blocking of flow by means of stacking of scale without forming whole of the outer pipe or the downstream side of the outer pipe using the larger diameter pipe. The number of the first inner pipes 51, which are disposed on downstream side of the hot water, is smaller than the number of the second inner pipes 52, which are disposed on upstream side of the hot water. By this, it is secured that the sectional area for flowing water between the first outer pipe 53 and each of the inner pipes 51 becomes larger than that between the second outer pipe 54 and each of the second inner pipes 52. Therefore, it is not necessary that the outer pipes 53, 54 or downstream side of the outer pipe 53 is made of a larger diameter pipe. Moreover, the first and second inner pipes 51, 52 are made of copper alloy pipes having a composition comprising, by mass, 0.005 to 0.2 % Zirconium (Zr), 0.05 to 3.0% Tin (Sn), 0.001 to 0.2 % Phosphorus (P), 0.05 to 5.0% Zink (Zn), and the balance copper (Cu) with inevitable impurities. By this, it is possible to prevent the piling up of the scale onto the inner pipes 51, 52.

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