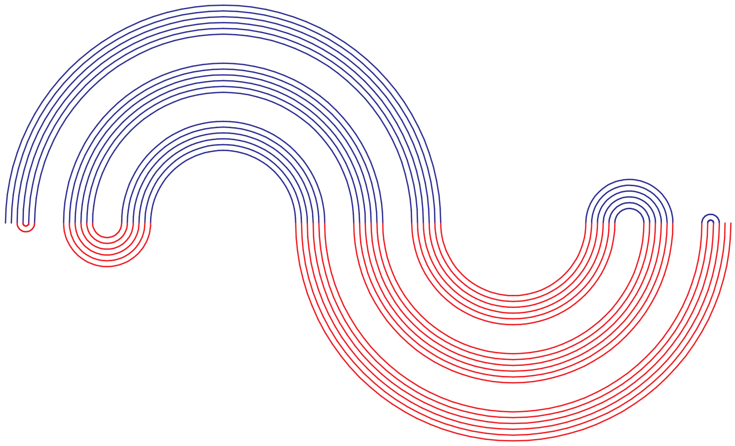

Figure 3.2.1: (B) double buckethandle

1. If $w_p : I \to I$ is the map such that $w_p(i/p) = 0$ for even i, $w_k(i/p) = 1$ for odd i, where i is an integer between 0 and $p \in \mathbb{N}$, and w_p is linear on each interval $[i/p, (i+1)/p]$, then $\mathcal{K}$ is equal to the family of all continua homeomorphic to inverse limits $\varprojlim(I_n, f_n)$, where, for each n, $I_n = I$ and $f_n = w_{p_n}$ for some p_n [Rogers 1970]. So, each $K \in \mathcal{K}$ is determined by a sequence $\mathbf{p} = (p_1, p_2, \dots)$ such that $K = \varprojlim(I_n, w_{p_n})$. We will denote such K by $K(\mathbf{p})$ and call it a **p**-*adic Knaster continuum* . Without loss of generality, one can assume that all p_n's are prime.

2. Each **p**-adic Knaster continuum K is homeomorphic to the quotient of the **p**-adic solenoid $\Sigma(\mathbf{p})$ under the relation

$$a \sim b \Leftrightarrow a = b \quad \text{or} \quad a = b^{-1},$$

   where $a, b \in \Sigma(\mathbf{p})$ and b^{-1} is the group inverse of b. A point of K is an end point of K if and only if it is an image under the quotient map of the neutral element or the element of order 2 (if such exists) of the corresponding solenoid (see, e.g., [Krupski 1984b, p. 43]).

3. The class $\mathcal{K}$ of all Knaster continua is equal to the class of all arc-like continua with one or two end points having the property of Kelley and arcs as proper non-degenerate subcontinua and which themselves are not arcs [Krupski 1984b]. In particular, all of them are indecomposable.

4. There are $2^{\aleph_0}$ mutually non-homeomorphic members of $\mathcal{K}$ [Wa]; in fact, there is a subfamily of $\mathcal{K}$ of cardinality $2^{\aleph_0}$ no member of which is an open image of another one [Dębski 1985].

5. Any open map between two Knaster continua $\varprojlim(I_n, f_n)$, $\varprojlim(I_n, g_n)$ is the uniform limit of open maps which are induced by maps $(I_n, f_n) \to$