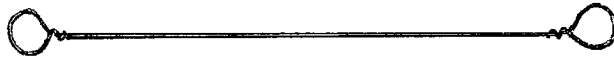


# The Odyssey of the Figure Eight Puzzle

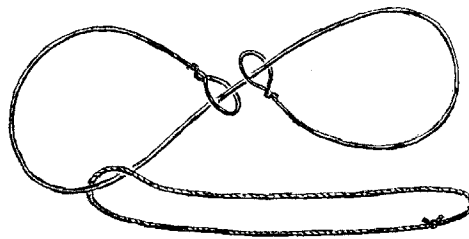
Stewart Coffin

I became established in the puzzle business in 1971, hand-crafting interlocking puzzles in fancy woods and selling them at craft shows as fast as I could turn them out. What I lacked from the start was a simple interesting puzzle that could be produced and sold at low cost to curious children (or their parents) who could not afford the fancy prices of those AP-ART sculptures. To fill this need, I turned my attention to topological puzzles, which almost by definition do not require close tolerances and are just about the easiest to fabricate. This led to a couple of not very original or interesting string-and-bead puzzles (the Sleeper-Stoppers). I also tried to come up with something in string and wire that could be licensed for manufacture. I may have been inspired in this by a neat little puzzle known as Loony Loop that was enjoying commercial success at the time. The three rather unexciting puzzles that came out of this (Lamplighter, Liberty Bell, and Bottleneck) are described in the 1985 edition of *Puzzle Craft*, so I will not waste space on them here, except to describe their common design feature.

Take a foot or two of flexible wire and form a loop at both ends, thus:



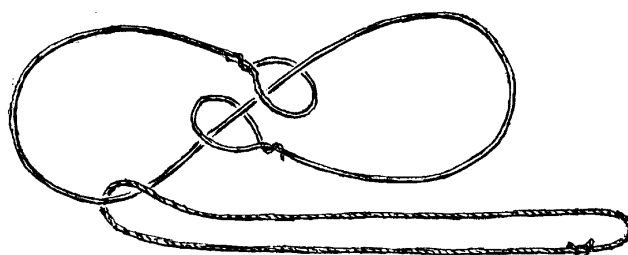
Then bend the wire into some animated shape, with wire passing through the loops in various ways, such as in the very simple example below.



Finally, knot a sufficiently long loop of cord around some part of the wire and try to remove it (or try to put it back on after it has been removed). Unlike the simple example shown above, some of these puzzles can be quite baffling to solve.

Alas, none of these ideas enjoyed any success. (In a recent survey of my puzzle customers, they reported that topological puzzles in general were their least favorite of any puzzles I had produced.)

The story does not end there, however. For a slight variation of this, during an idle moment one day I formed some wire into the figure-eight shape shown below, knotted a cord around it, and tried to remove it.



I soon became convinced that this was impossible, but being a novice in the field of topology, I was at a loss for any sort of formal proof. I published this simply as a curiosity in a 1974 newsletter (later reprinted in *Puzzle Craft*). Some readers misread that purposely vague write-up and assumed that it must have a solution, which then left them utterly baffled as to finding it. Royce Lowe of Juneau, Alaska, decided to add the Figure Eight to the line of puzzles that he made and sold in his spare time. When some of his customers started asking for the solution, he begged me for help.

Next it appeared in a 1976 issue of a British magazine on puzzles and games. The puzzle editor made the surprising observation that it was topologically equivalent to the Double-Treble-Clef Puzzle made by Pentangle and therefore solvable, since the Pentangle puzzle was. But a careful check showed that the two were not quite equivalent.

To add to the confusion, somewhat to my surprise, the puzzle appeared in *Creative Puzzles of the World* by van Delft and Botermans (1978) with a farce of a convoluted “solution” thrown in for added amusement. More recently, I received a seven-page document from someone in Japan, full of diagrams and such, purporting to prove that the puzzle was unsolvable. The proof appeared to be a rather complicated, and I did not spend a lot of time trying to digest it. Over the intervening years, I had continued to

received numerous requests for the solution, and by that time I was rather tired of the whole thing.

When it comes to puzzles, it is often the simplest things that prove to have the greatest appeal, probably not even realized at the start. Whoever would have guessed that this little bent piece of scrap wire and loop of string would launch itself on an odyssey that would carry it around the world? I wonder if this will be the final chapter in the life of the infamous Figure Eight Puzzle. Or will it mischievously rise again, perhaps disguised in another form, as topological puzzles so often do?