

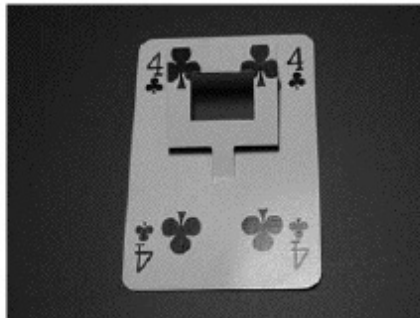
“Impossible” Foldings

Luc De Smet

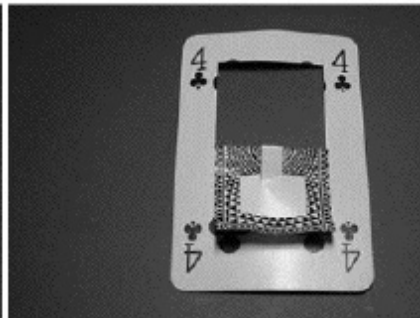
My interest in folding paper and especially playing cards started when I saw some “impossible” playing cards made by Angus Lavery. While trying to find out how they were folded I found the following basic procedures:

First Impossible Folding

Starting from



End result



(See Color Plate VIII for a full color plate of this illustration.)

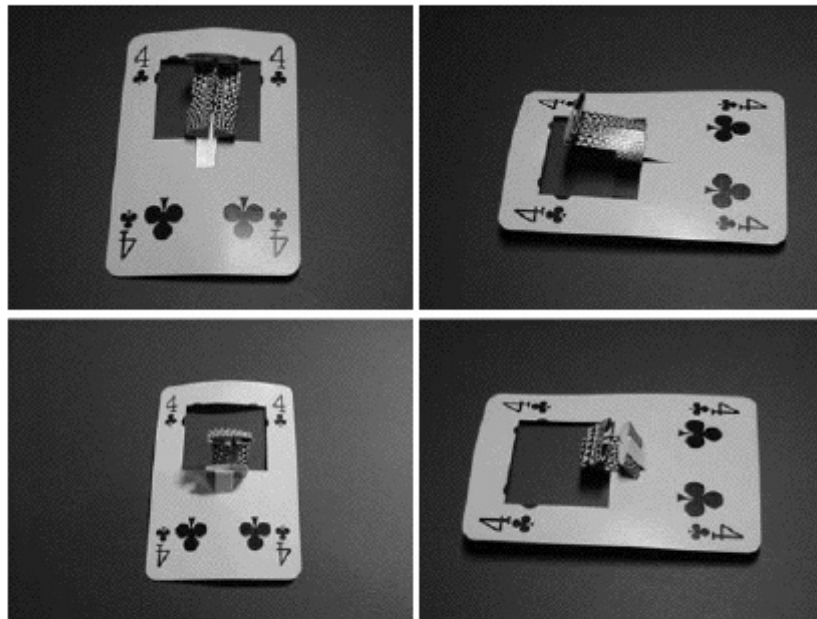
Note how the square frame is folded down, but the leg (or spine) is on the *wrong* side of the frame. One would expect the leg to be *under* the frame rather than *over* it. I'll present two ways to accomplish this feat:

Luc De Smet is a puzzle collector who is especially interested in impossible objects.



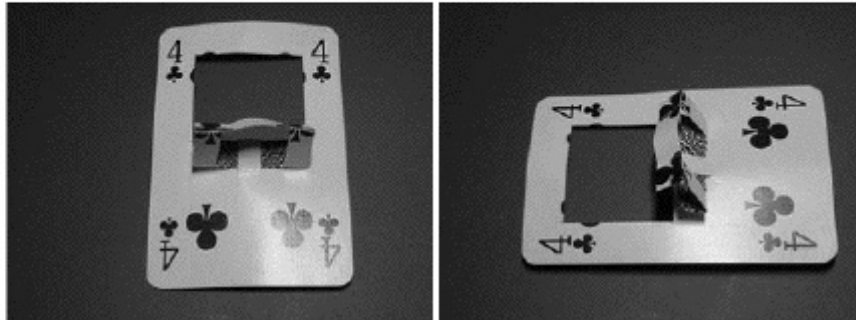
First technique. Your goal is to turn the card inside-outside, passing the outside frame of the card through the inside frame. Begin by pushing the top of the outside frame through the inside (smaller) frame from behind toward the front. (See picture above.) Continue to draw the lower (uncut) part of the card through the inside frame until the whole outside has passed through. For stiff playing cards, you'll probably have to crease the outer frame as you work the card.

Second technique. This technique is more appealing for stiff material like playing cards, because the smaller, inner frame is creased rather than the outside frame. This time it's the inner frame that is turned inside-out around the leg, and the outer frame is left alone.



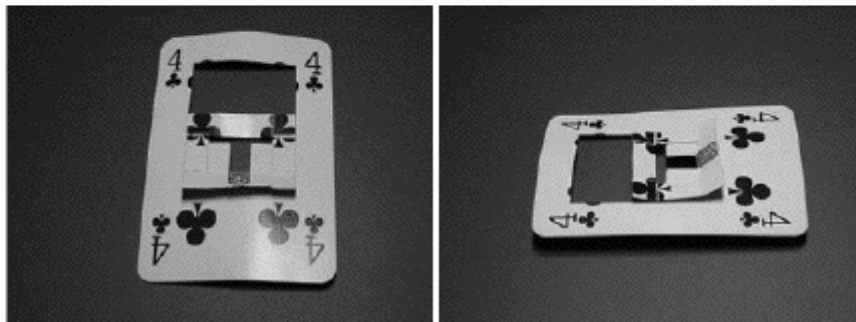
Step 1. Fold the four inner frame sides (left, right, upper, and lower in any order) inwards and toward the front as in the figure on the previous page. Note that the lower side tucks behind the central leg which is attached to the rest of the card.

Step 2. Continue to turn the inner frame inside out by passing the folded left, right and top sides of the frame down and through the middle of the frame. It's important to keep the lower side of the frame tucked behind the leg as you work. Unfold the inner frame and then fold the three sides unattached to the leg downwards onto the lower part of the card to complete the impossible fold.



Second Impossible Folding

Starting from the same position, the end result is:



In this folding, the square frame is shifted downwards, and the leg appears mysteriously on the *top* side of the frame. Again, we can accomplish this folding in one of two ways which closely parallel the first folding.

First technique: Push the top of the outside frame through the inside (smaller) frame from the front to behind, and continue to draw the lower part of the card through the inner frame until the whole of the outside has passed through.

Second technique: For stiff material such as playing cards, I prefer:

Step 1: Fold the four frame sides of the inner square, this time toward the back of the card. The lower side should remain in front of the leg.

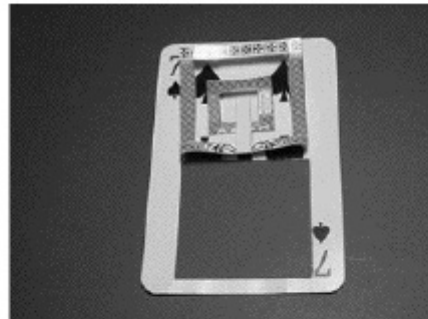
Step 2: Continue to pass the inner frame through itself and unfold the four sides of the frame. Note that the lower side comes under the central leg.

The second folding is closely related to the first: If you do the first folding with the back of the card facing you, then carefully move the inner frame to the front of the card, you'll arrive at this folding.

Further Combinations

Once you've mastered the basic procedures you can try a lot of combinations and variations:

- Change the shape of the frame to a rectangle, trapezium, etc....
- Don't cut a hole but keep one side of the inner part attached to give the card a "window."
- Put 2 cards one through the other.
- Make combinations of, say, 2 frames as below.



Bibliography

- [Mor88] Scot Morris. *The Next Book of Omni Games*. New American Library, New York, 1988. The Museum of the Impossible.
- [Rog98] Terri Rogers. *Buckled Bunkum in Top Secrets*. Breese Books, London, 1998.