Claim: \( P \) has a match beginning with \( [t,b_1^*] \) if \( P' \) has any match.

\[ \Rightarrow \] Suppose \( P \) has a match beginning with \( [t,b_1^*] \) just minus with \( P' \) tiles, starting with \( [*,t,b_1^*] \), ending with \( [*,\Box] \).

Get same 2 corresponding strings, but with \( * \) interspersed with \( \Box \) at the end.

\[ \Leftarrow \] If \( P' \) has any solution, it must begin with \( [*,t,b_1^*] \), since that's the only tile in which top & bottom start with the same symbol.

Other tiles are like \( P' \)'s tiles but with extra \( *'s \).

Then stripping out the \( *'s \) yields a solution to \( P \) beginning with \( [t,b_1^*] \).

So, to decide \( MP\text{CP} \) using a decider for \( PC\text{P} \):

Given instance \( P,d \) for \( MP\text{CP} \),

1. Construct instance \( P' \) for \( PC\text{P} \) as above.
2. Ask decider for \( PC\text{P} \) whether \( P' \) has any match.
   - If yes, answer yes for \( P,d \).
   - If not, answer "no".

Since we already know \( MP\text{CP} \) is undecidable, so is \( PC\text{P} \).