ERROR in Spanish Checkers: The game is not ended as a draw when it's been 40 moves without any crowning or promoting.
Status: **UNSOLVED** - 04/11/2019

Error in:
```
  Scenario Outline: End of the Game In Draw - Forty Moves Without Crowning and
Without Jumping
    Given the game is played up to a certain point from file "<file_name>"
    And the number of consecutive indecisive moves is 39
    When the player makes a regular move without promoting
    Then the game is ended as a draw

    Examples:
      | file_name | explanation |
      | endOfTheGameInDrawFortyIndecisiveMoves2 | f*: no promote is 45, no
capture is 39, a regular move ends the game in draw |
```

```
*f: means that this move is being conducted as the first move in current turn,
it is not part of a move sequence.
```

The game set-up in SpanishCheckers.ini file is specified as follows:

```
[endOfTheGameInDrawFortyIndecisiveMoves2]
boardSetUp=crowningTheEligiblePieceBoard6
turn=black
playerMove=7,5>6,6
extras=noPromote-45,noCapture-39

[crowningTheEligiblePieceBoard6]
2,6=black-pawn
7,1=black-queen
2,4=white-pawn
0,2=white-pawn
1,1=black-pawn
7,5=black-pawn
```

Expected Behavior:
The smallest indecisive move counter is at 39. After the regular move, it will be 40 moves without any move that leads to an end. The game should be ended as a draw.

Actual Behavior:
The smallest indecisive move counter is at 39. After the regular move is conducted, number of consecutive moves that don't lead to an end has reached 40 . But the game is NOT ended as a draw.

Error:
The game is not able to tell that players haven't been advancing the game for 40 moves.

Test Outputs:

Before the move is conducted:

```
Testing: endOfTheGameInDrawFortyIndecisiveMoves2
Player turn: black
Player move: (7,5)->(6,6)
No promote count: 45
No capture count: 39
Best sequence: []
Prior move sequence: []
Game begins ...
     0   1   2   3   4   5   6   7
   --- --- --- --- --- --- --- ---
7 |   |   |   |   |   |   |   |   | 7
   --- --- --- --- --- --- --- ---
6 |   |   | B |   |   |   |   |   | 6
   --- --- --- --- --- --- --- ---
5 |   |   |   |   |   |   |   | B | 5
   --- --- --- --- --- --- --- ---
4 |   |   | W |   |   |   |   |   | 4
   --- --- --- --- --- --- --- ---
3 |   |   |   |   |   |   |   |   | 3
   --- --- --- --- --- --- --- ---
2 | W |   |   |   |   |   |   |   | 2
   --- --- --- --- --- --- --- ---
1 |   | B |   |   |   |   |   | A | 1
   --- --- --- --- --- --- --- ---
0 |   |   |   |   |   |   |   |   | 0
   --- --- --- --- --- --- --- ---
```

Test Outputs:

After the move is conducted:

```
TEST RESULTS
Test: endOfTheGameInDrawFortyIndecisiveMoves2
Informers: []
Final Informers: []
Was player going to make another move?: false
End of the game? false
Board:
    0   1   2   3   4   5   6   7
   --- --- --- --- --- --- --- ---
7 |   |   |   |   |   |   |   |   | 7
   --- --- --- --- --- --- --- ---
6 |   |   | B |   |   |   | B |   | 6
   --- --- --- --- --- --- --- ---
5 |   |   |   |   |   |   |   |   | 5
   --- --- --- --- --- --- --- ---
4 |   |   | W |   |   |   |   |   | 4
   --- --- --- --- --- --- --- ---
3 |   |   |   |   |   |   |   |   | 3
   --- --- --- --- --- --- --- ---
2 | W |   |   |   |   |   |   |   | 2
   --- --- --- --- --- --- --- ---
1 |   | B |   |   |   |   |   | A | 1
   --- --- --- --- --- --- --- ---
0 |   |   |   |   |   |   |   |   | 0
   --- --- --- --- --- --- --- ---
    0   1   2   3   4   5   6   7
```

HOW DOES CUCUMBER HELP US FIND THE PROBLEM?

The following method in `AmericanCheckersScenarioTester` (superclass of SpanishCheckersScenarioTester) fails (lines are renumbered):

```
1 @Override
2 public void theGameIsEndedAsADraw() {
3     assertTrue(referee.getInfo().isGameEnded());
4     assertTrue(referee.getInfo().isDraw());
5 }
```

And we know that the game is not ended.

WHERE IS THE PROBLEM?

In SpanishReferee's conductGame() method, while the "game draw situation" is being checked at line 124. First of all, there is not check for "noCaptureRule" at all.

```
endOfGameDraw = (isSatisfied(noPromoteRule, this) );
```

Also in RuleDrawIfNoPromoteForFortyTurn class's evaluate(…) method, the check is made with the following lines:

```
if(noPromoteTurnNumber == 40)
     return true;
}
```

So, even if the number of no-promote moves is 45, it is not registered as too many. A future fix (while combining noPromote and noCapture rules) should deal with this also.