```
assert-fpf-is-empty  THM

⊢  ∀A:Type, B:(A→Type), f:x:A fp-> B(x). fpf-is-empty(f) ⟺ f =
| by Auto THEN DVar ‘f’
|    THEN
|    All
|    (λi.Unfolds [‘fpf‘;‘fpf-empty‘;‘fpf-is-empty‘] i THEN Reduce i)
|    THEN
|    Try (Complete Auto)
|
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| 1. A : Type
| 2. B : A→Type
| 3. d : A List
| 4. f1 : x:{x:A| (x ∈ d) }→B(x)
| 5. ||d||=₂0
| ⊢  <d,f1> = <nil,λx.⋅>
| | by RW assert_pushdownC -1
| |    THEN
| |    RWO Thm* ∀l:T List. ||l|| = 0 ∈ ℤ ⟺ l = nil    {length_zero}
| |    -1
| |    THEN
| |    Analyze
| |    THEN
| |    Try (Complete Auto)
| |
| .....subterm .....
| 1. A : Type
| 2. B : A→Type
| 3. d : A List
| 4. f1 : x:{x:A| (x ∈ d) }→B(x)
| 5. d = nil
| ⊢  f1 = (λx.⋅)
|   by Ext THEN Reduce 0 THEN Assert False THEN DVar ‘x’
|      THEN
|      Assert (x ∈ nil)
|      THEN
|      Subst (nil = d) 0
|      THEN
|      Unfold ‘l_member‘ -1
|      THEN
|      Reduce -1
|      THEN
|      ExRepD
|
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. 1. A : Type
. 2. B : A→Type
. 3. d : A List
. 4. f1 : x:{x:A| (x ∈ d) }→B(x)
. 5. <d,f1> = <nil,λx.⋅>
. ⊢  ||d||=₂0
.   by Analyze -1 THEN All Reduce THEN HypSubst -2 0 THEN Reduce 0
END
```