```
fin_listify  THM

⊢  Fin(T) ⇒ (∃TL:T*. ∀t:T. mem_f(T;t;TL))  by RepD
|
1. T : Type
2. Fin(T)
⊢  ∃TL:T*. ∀t:T. mem_f(T;t;TL)  by Analyze -1 THEN Analyze -1
|
2. n : ℕ
3. f : ℕn→T
4. Bij(ℕn; T; f)
⊢   by InstConcl [(f)[ℕn]]
|
5. t : T
⊢  mem_f(T;t;(f)[ℕn])  by Analyze -2 THEN Unfold ‘surject‘ -2
|
4. Inj(ℕn; T; f)
5. ∀b:T. ∃a:ℕn. f(a) = b
6. t : T
⊢   by (InstHyp [t] -2) THEN (Analyze -1)
|
7. a : ℕn
8. f(a) = t
⊢
| by Inst
|    Thm* ∀n:ℕ, f:(ℕn→T), i:ℕn. ((f)[ℕn])[i] = f(i)
|    {select_listify_id}
|    [T;n;f;a]
|
9. ((f)[ℕn])[a] = f(a)
⊢
| by Inst Thm* ∀L:T*, i:ℕ||L||. mem_f(T;L[i];L)    {select_mem}
|    [T;(f)[ℕn];a]
|
10. mem_f(T;((f)[ℕn])[a];(f)[ℕn])
⊢   by (RWH (HypC -2) -1) THEN (RWH (HypC -3) -1)
END
```