```
filter_is_nil  THM

⊢  ∀T:Type, P:(T→𝔹), L:T List. (∀x∈L.¬P(x)) ⇒ (filter(P;L) ∼ nil)
| by RepeatFor 3 (D 0 THENA Auto) THEN ListInd (-1) THEN Reduce 0

|    THEN Try (Complete Auto)

|    ...
THEN D 0 THENA Auto
THEN RWO "l_all_cons" (-1) THENA Auto
|
|\
| 1. T : Type
| 2. P : T→𝔹
| 3. T List
| 4. u : T
| 5. v : T List
| 6. (∀x∈v.¬P(x)) ⇒ (filter(P;v) ∼ nil)
| 7. P(u)
| 8. ¬P(u) & (∀x∈v.¬P(x))
| ⊢  [u / filter(P;v)] ∼ nil  by D (-1) THEN D (-2) THEN Auto
|
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. 1. T : Type
. 2. P : T→𝔹
. 3. T List
. 4. u : T
. 5. v : T List
. 6. (∀x∈v.¬P(x)) ⇒ (filter(P;v) ∼ nil)
. 7. ¬P(u)
. 8. ¬P(u) & (∀x∈v.¬P(x))
. ⊢  filter(P;v) ∼ nil  by BackThruSomeHyp THEN Auto
END
```