```
fappend-inject  THM

⊢  ∀n,m:ℕ+, f:(ℕ(n-1)→ℕ(m-1)).
   Inj(ℕ(n-1); ℕ(m-1); f) ⇒ Inj(ℕn; ℕm; f[n-1:=m-1])
  by Auto THEN (ParallelOp -1) THEN (RepeatFor 2 (Analyze 0))
     THEN
     (Unfold `fappend` 0)
     THEN
     (Reduce 0)
     THEN
     (RepeatFor 2 SplitOnConclITE)
     THEN
     BackThruSomeHyp
END
```