hfst_def THM

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⊢  ∀'a,'b:S.
|  all
|  (λp:hprod('a; 'b). equal
|                      (fst(p)
|                      ,select
|                       (λx:'a. exists
|                               (λy:'b. equal
|                                       (mk_pair(x,y)
|                                       ,rep_prod(p))))))
| by HN THEN StrongAuto
|
1. 'a : S
2. 'b : S
3. x : hprod('a; 'b)
⊢  1of(x) = (@_b x@0:'a. (∃_b y:'b. ((mk_pair(x@0,y)) =_b (rep_prod(x)))))
| by Unab [`bchoose`] THEN ChooseDC THEN Simp THEN StrongAuto
|
|\
| 1. 'a : S
| 2. 'b : S
| 3. x : hprod('a; 'b)
| 4. x@0 : 'a
| 5. ∃y:'b. mk_pair(x@0,y) = rep_prod(x)
| ⊢  1of(x) = x@0
| | by Last Analyze THEN StrongAuto THEN Unab [`hrep_prod`;`hmk_pair`]
| |    THEN
| |    Simp
| |    THEN
| |    StrongAuto
| |
| 1. 'a : S
| 2. 'b : S
| 3. x : hprod('a; 'b)
| 4. x@0 : 'a
| 5. y : 'b
| 6. (λa:'a. λb:'b. (a =_b x@0)∧_2(b =_b y))
|    =
|    (λa:'a. λb:'b. (a =_b 1of(x))∧_2(b =_b 2of(x)))
| ⊢  1of(x) = x@0
|   by ((Last (EquandMap (λf.f(x@0,y)) 𝔹)) THEN (Analyze 3)) THEN Simp
|      THEN
|      StrongAuto
|
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. 1. 'a : S
. 2. 'b : S
. 3. x : hprod('a; 'b)
. ⊢  ∃x@0:'a, y:'b. mk_pair(x@0,y) = rep_prod(x)
.   by ((DTerm 1of(x) 0) THEN (DTerm 2of(x) 0)
.       THEN
.       (Unab [`hrep_prod`;`hmk_pair`]))
.      THEN
.      Simp
```

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.       THEN
.       StrongAuto
END
```