```
w-locl-iff  THM

⊢  ∀the_w:World, e,e':E.
|  FairFifo ⇒ (e <loc e' ⟺ loc(e) = loc(e') & e <c e')  by Auto
|
|\
| 1. the_w : World
| 2. e : E
| 3. e' : E
| 4. FairFifo
| 5. e <loc e'
| ⊢  loc(e) = loc(e')  by Unfold `w-locl` -1
|
|\
| 1. the_w : World
| 2. e : E
| 3. e' : E
| 4. FairFifo
| 5. e <loc e'
| ⊢  e <c e'
|   by Unfold `w-causl` 0 THEN Unfold `rel_plus` 0 THEN Reduce 0
|      THEN
|      InstConcl [1]
|      THEN
|      Repeat (RecUnfold `rel_exp` 0 THEN Reduce 0)
|      THEN
|      InstConcl [e']
|      THEN
|      OrLeft
|
.\
. 1. the_w : World
. 2. e : E
. 3. e' : E
. 4. FairFifo
. 5. loc(e) = loc(e')
. 6. e <c e'
. ⊢  e <loc e'
.   by Unfold `w-locl` 0
.      THEN
.      BackThru
.      Thm* ∀the_w:World, e,e':E.
.           FairFifo ⇒ e <c e' ⇒ time(e)<time(e')
.      {w_DASH_causl_DASH_time}
END
```