Inference at $*$ 1
 of proof for Lemma fast-fib:

. . . . .assertion. . . . . NILNIL

$\vdash \forall n, a, b{:}\mathbb{N}.$
 $\{m{:}\mathbb{N} \mid$
  $\forall k{:}\mathbb{N}.$
  $(a = \text{fib}(k))$
  $\Rightarrow ((k \leq 0) \Rightarrow (b = 0))$
  $\Rightarrow ((0 < k) \Rightarrow (b = \text{fib}(k \text{ - } 1)))$
  $\Rightarrow (m = \text{fib}(n{+}k))\}$
 by (InductionOnNat)
 CollapseTHEN (Auto')$\cdot$

1:

1. $a : \mathbb{N}$
2. $b : \mathbb{N}$
$\vdash \{m{:}\mathbb{N} \mid$
  $\forall k{:}\mathbb{N}.$
  $(a = \text{fib}(k))$
  $\Rightarrow ((k \leq 0) \Rightarrow (b = 0))$
  $\Rightarrow ((0 < k) \Rightarrow (b = \text{fib}(k \text{ - } 1)))$
  $\Rightarrow (m = \text{fib}(0{+}k))\}$

2:

1. $n : \mathbb{Z}$
2. $0 < n$
3. $\forall a, b{:}\mathbb{N}.$
  $\{m{:}\mathbb{N} \mid$
   $\forall k{:}\mathbb{N}.$
   $(a = \text{fib}(k))$
   $\Rightarrow ((k \leq 0) \Rightarrow (b = 0))$
   $\Rightarrow ((0 < k) \Rightarrow (b = \text{fib}(k \text{ - } 1)))$
   $\Rightarrow (m = \text{fib}((n \text{ - } 1){+}k))\}$
4. $a : \mathbb{N}$
5. $b : \mathbb{N}$
$\vdash \{m{:}\mathbb{N} \mid$
  $\forall k{:}\mathbb{N}.$
  $(a = \text{fib}(k))$
  $\Rightarrow ((k \leq 0) \Rightarrow (b = 0))$
  $\Rightarrow ((0 < k) \Rightarrow (b = \text{fib}(k \text{ - } 1)))$
  $\Rightarrow (m = \text{fib}(n{+}k))\}$

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http://www.nuprl.org/FDLcontent/p0_963683_/p25_480536_{fast-fib}1.html