Inference at $*$ 1 2 1 1 1 1
 of proof for Lemma fincr_formation:

1. $i : \mathbb{N}$
2. $f : \{f \mid i{:}\{i_1{:}\mathbb{N} \mid i_1 < i\} \rightarrow \text{if } (i =_0 0) \text{ then } \mathbb{Z} \text{ else } \{f(i \text{ - } 1)\ldots\} \text{ fi } \}$
3. $j : \mathbb{N}$
4. $\forall j_1{:}\mathbb{N}.\ (j_1 < j) \Rightarrow (j_1 < i) \Rightarrow (f(j_1) \in \mathbb{Z})$
5. $j < i$
6. $y : \text{if } (j =_0 0) \text{ then } \mathbb{Z} \text{ else } \{f(j \text{ - } 1)\ldots\} \text{ fi}$
7. $y = f(j)$

$\vdash f(j) \in \mathbb{Z}$
 by ((SplitITE (-1))
 CollapseTHEN (Try (((Auto_aux (first_nat 1:n) ((first_nat 1:n
 ),(first_nat 3:n)) (first_tok :t) inil_term))
 CollapseTHEN (Fail))·))·

1: .....falsecase..... NILNIL

7. $y = f(j)$
8. $j \neq 0$

$\vdash f(j) \in \mathbb{Z}$

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