Inference at $*$ 1
of proof for Lemma dec_iff_ex_bvfun:

1. T : Type
2. E : $T \to T \to \mathbb{P}$
3. $\forall x, y{:}T.\ \mathrm{Dec}(E(x,y))$

$\vdash \exists f{:}T \to T \to \mathbb{B}.\ (\forall x, y{:}T.\ (\uparrow(f(x,y))) \iff (E(x,y)))$

by ((((((RenameVar 'g' 3)
CollapseTHENM (Unfold 'decidable' 3))·)
CollapseTHENM (((
With $\lambda x,y.$ case $g(x,y)$ of inl(a) => tt | inr(b) => ff (D 0))
CollapseTHENA (
(Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·
))·)
CollapseTHENM (Reduce 0))·

1:

3. g : $\forall x, y{:}T.\ (E(x,y)) \vee (\neg(E(x,y)))$

$\vdash \forall x, y{:}T.\ (\uparrow$case $g(x,y)$ of inl(a) => tt | inr(b) => ff) $\iff (E(x,y))$

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