Inference at $*$
of proof for Lemma decidable_and:

$\vdash \forall P, Q{:}\mathbb{P}.\ \mathrm{Dec}(P) \Rightarrow \mathrm{Dec}(Q) \Rightarrow \mathrm{Dec}(P\ \&\ Q)$
by ((TryOnAllClauses (Unfold 'decidable'))
CollapseTHEN ((Auto_aux (first_nat 1:n
) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·

1:

1. $P : \mathbb{P}$
2. $Q : \mathbb{P}$
3. $P \vee (\neg P)$
4. $Q \vee (\neg Q)$

$\vdash (P\ \&\ Q) \vee (\neg(P\ \&\ Q))$

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http://www.nuprl.org/FDLcontent/p0_942988_/p121_103248_{decidable__and}.html