```
thb[x_, y_][UU[L_], UU[R_]] :=
  CF[UU[Expand[Distribute[pp[L, R]] /. {
      pp[0, _] → 0, pp[_, 0] → 0,
      pp[_β | _δβ | _δa | _δaa, _β | _δβ | _δa | _δaa] → 0,
      pp[_a, _β | _δβ] → 0,
      pp[β[f_], a[g_, i_, j_]] :↦
       Kδ_yj δhb[g ∂_bx f, i, ç, y],
      pp[a[f_, i_, j_], a[g_, k_, l_]] :↦ Kδ_yl (
          γa[g ∂_bx f, k, l, i, j] + Kδ_xi (
              δhb[-b_k g ∂_bx f, i, ç, j] + δa[b_k g ∂_bx f, i, j] -
               δa[b_i g ∂_bx f, k, j] + hb[f g, k, i, j] +
               δaa[f g, ç, j, k, l] - δaa[f g, ç, l, k, j])),
      pp[a[f_, i_, j_], δa[g_, k_, l_]] :↦
       Kδ_xi Kδ_yl (-δa[b_k f g, i, j] + δa[b_i f g, k, j]),
      pp[a[f_, i_, j_], δaa[g_, k_, l_, m_, n_]] :↦ Kδ_xi (
          Kδ_yl (-δaa[b_k f g, i, j, m, n] +
               δaa[b_i f g, k, j, m, n]) +
           Kδ_yn (-δaa[b_m f g, k, l, i, j] +
               δaa[b_i f g, k, l, m, j]) +
           Kδ_yln (δa[b_x b_m f g, k, j] - δa[b_k b_m f g, x, j])),
      pp[_δβ, _a] → 0,
      pp[δa[f_, i_, j_], a[g_, k_, l_]] :↦
       Kδ_xi Kδ_yl (-δa[b_k f g, i, j] + δa[b_i f g, k, j]),
      pp[δaa[f_, i_, j_, m_, n_], a[g_, k_, l_]] :↦
       Kδ_xi Kδ_yl (-δaa[b_k f g, i, j, m, n] +
            δaa[b_i f g, k, j, m, n]) +
         Kδ_xm Kδ_yl (-δaa[b_k f g, i, j, m, n] +
            δaa[b_m f g, i, j, k, n])}]]];
htb[x_, y_][L_UU, R_UU] := -thb[y, x][R, L];
```