

Fig. 1

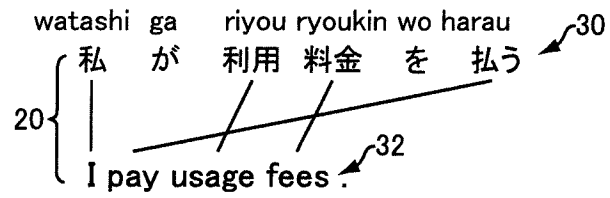


Fig. 2

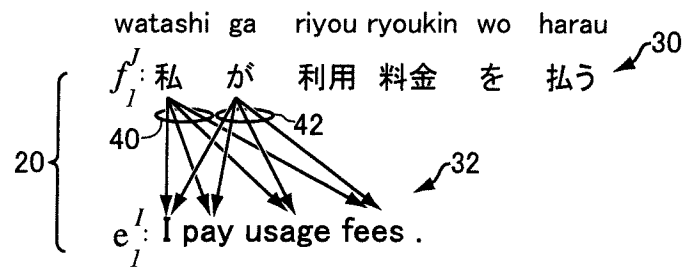


Fig. 3

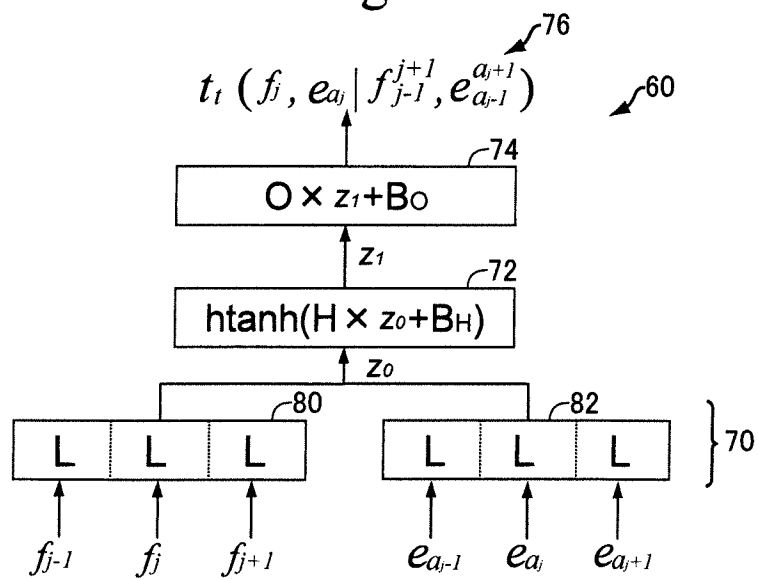


Fig. 4

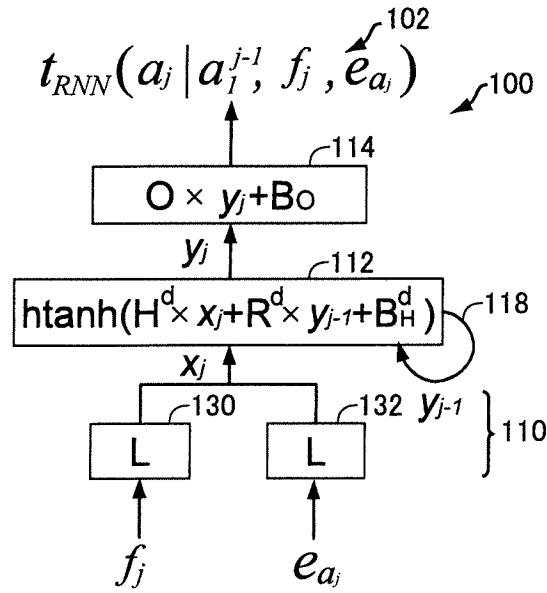


Fig. 8

		Train	Dev	Test
BTEC		9K	0	960
Hansards		1.1M	37	447
FBIS	NIST 03	240K	878	919
	NIST 04			1,597
IWSLT		40K	2,501	489
NTCIR		3.2M	2,000	2,000

Fig. 9

ALIGNMENT	BTEC	Hansards
<i>IBM4</i>	0.4859	0.9029
$FFNN_{s(I)}$	0.4770	0.9020
$RNN_{s(I)}$	0.5053 ⁺	0.9068
$RNN_{s+c(I)}$	0.5174 ⁺	0.9202 ⁺
RNN_u	0.5307 ⁺	0.9037
RNN_{u+c}	0.5562⁺	0.9275⁺
$FFNN_{s(R)}$	0.8224	-
$RNN_{s(R)}$	0.8798 ⁺	-
$RNN_{s+c(R)}$	0.8921⁺	-

Fig. 5

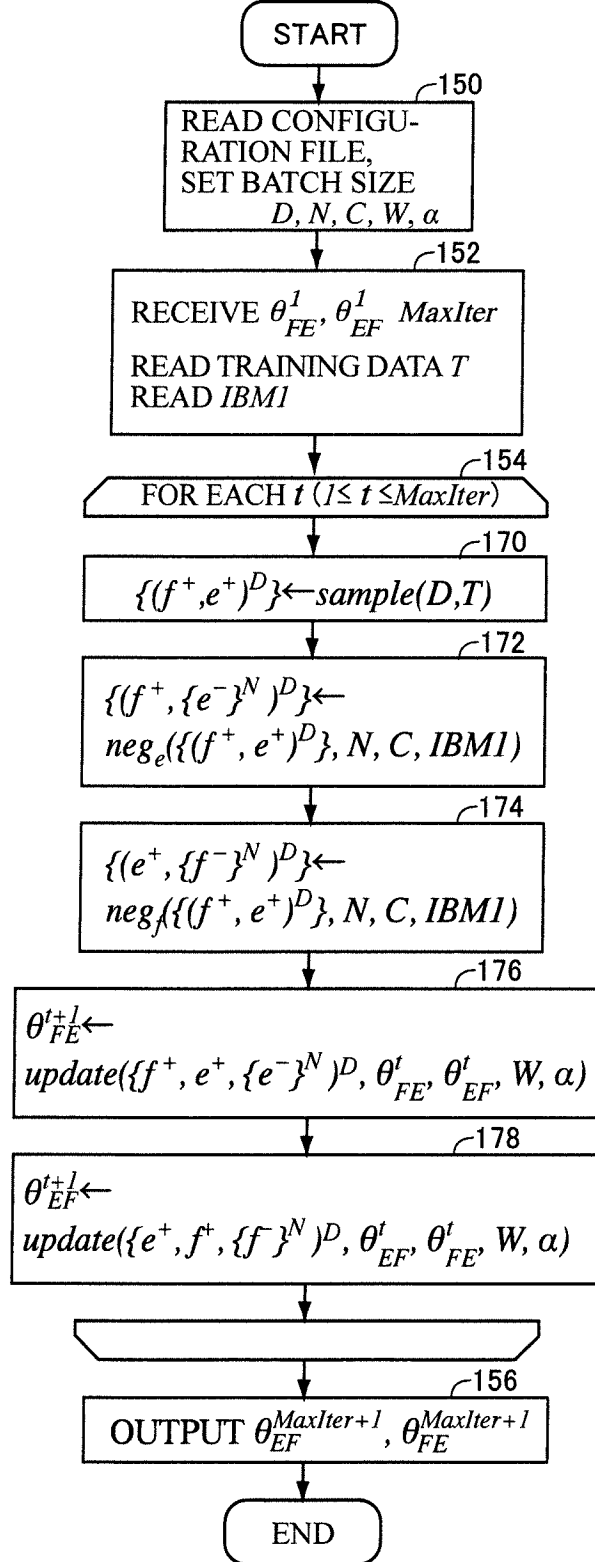


Fig. 6

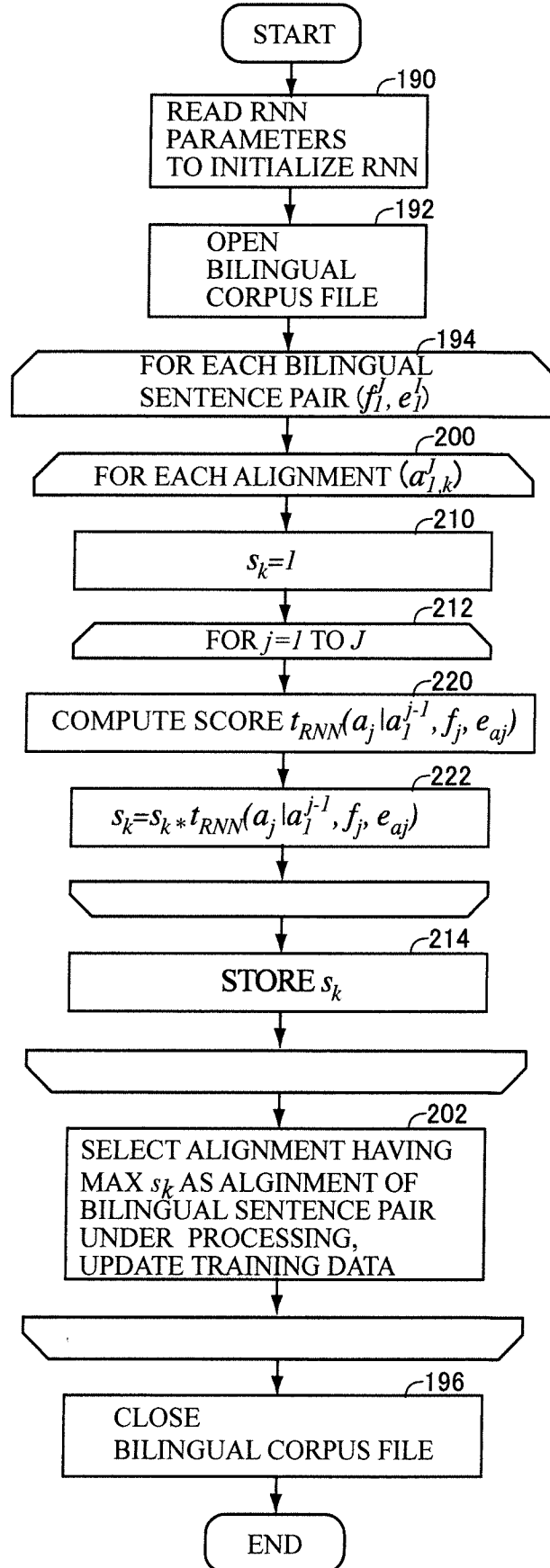


Fig. 7

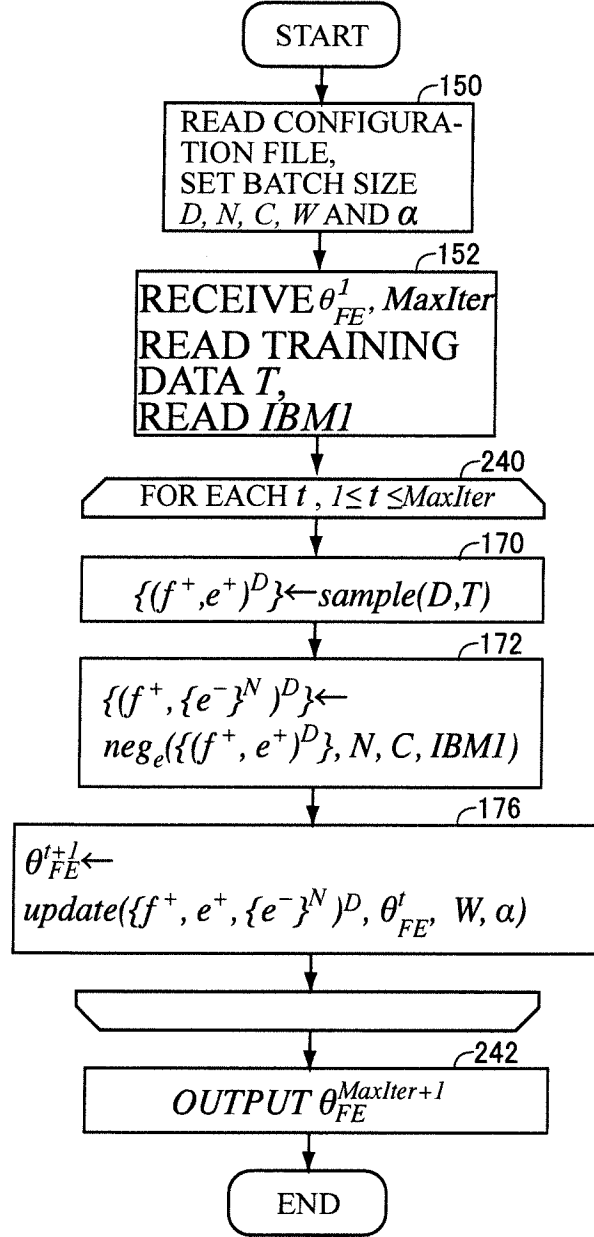


Fig. 13

ALIGNMENT	40K	9K	1K
<i>IBM 4</i>	0.5467	0.4859	0.4128
RNN_{u+c}	0.6004	0.5562	0.4842
$RNN_{s+c} (R)$	-	0.8921	0.6063

Fig. 10

ALIGNMENT	IWSLT	NTCIR	FBIS	
			NIST 03	NIST 04
<i>IBM 4_{all}</i>	46.47	27.91	25.90	28.34
<i>IBM 4</i>		27.25	25.41	27.65
<i>FFNN_s(I)</i>	46.38	27.05	25.45	27.61
<i>RNN_s(I)</i>	46.43	27.24	25.47	27.56
<i>RNN_{s+c}(I)</i>	46.51	27.12	25.55	27.73
<i>RNN_u</i>	47.05*	27.79*	25.76*	27.91*
<i>RNN_{u+c}</i>	46.97*	27.76*	25.84*	28.20*

Fig. 11

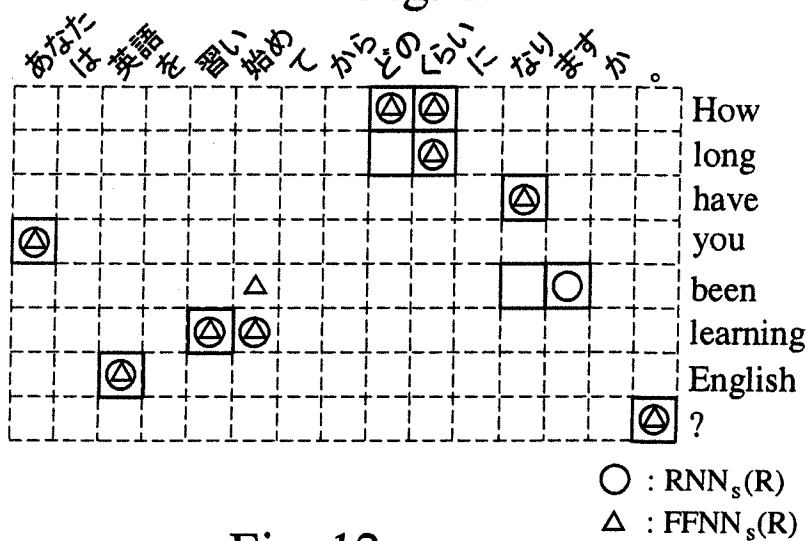


Fig. 12

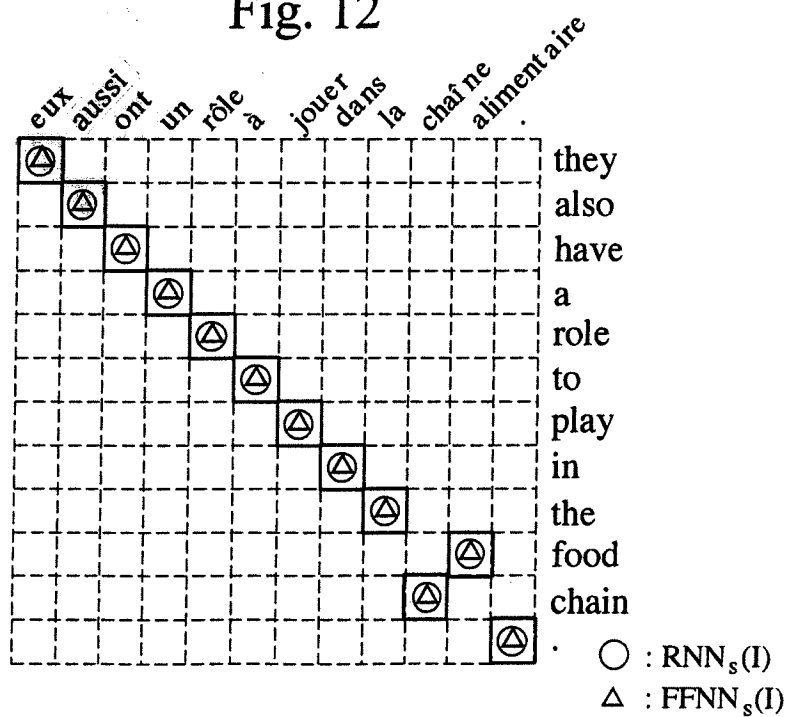


Fig. 14

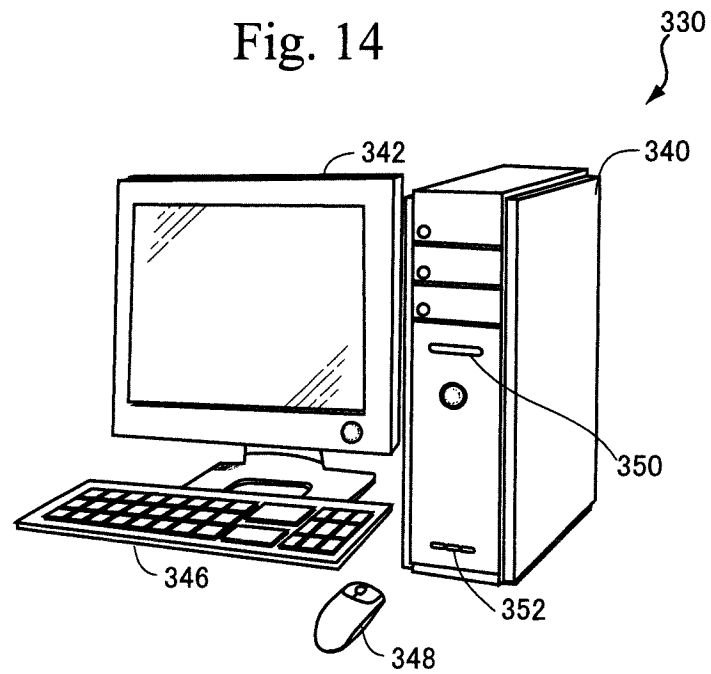


Fig. 15

