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Porter

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[54] **TOKEN BASED SOURCE FILE COMPRESSION/DECOMPRESSION AND ITS APPLICATION**

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[51] Int. Cl.⁷ **G06F 15/16**; G06F 7/00; G06F 13/38

[52] U.S. Cl. **709/247**; 707/101; 710/68

[58] Field of Search **709/246-247**; 710/68; 707/101, 540, 203, 511

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Primary Examiner—Zarni Maung

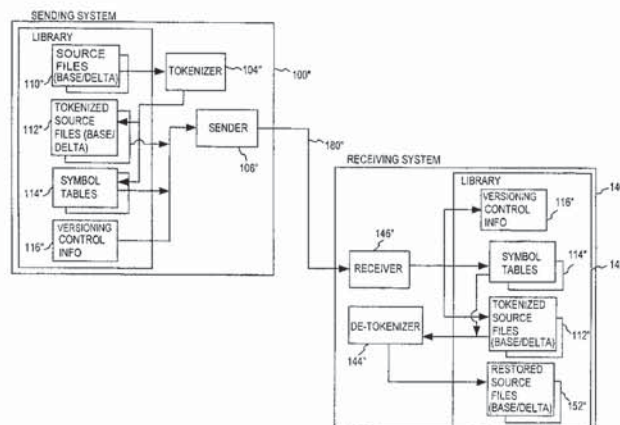
Assistant Examiner—Andrew Caldwell

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[57] ABSTRACT

Disclosed is a software distribution system using both differencing and compression techniques to distribute source files over a network while minimizing the network bandwidth needed to maintain and update a set of source files. In an embodiment, a sending computer maintains sets of source files in base and delta form. The delta source files contain difference information allowing a new version of a source file to be constructed, or reconstituted, from a previously reconstituted version. Prior to transmitting a source file in either base or delta form to a receiving computer, the sending computer compresses the source file using a dictionary-based compression scheme. The resulting tokenized source file is stored and then transmitted to the receiving computer along with versioning control information. The receiving computer stores the tokenized source file along with the versioning control information. Upon request, the receiving computer decompresses the tokenized source file(s) and then reconstitutes an updated version of the source using the versioning control information and received decompressed source file(s). In another embodiment, the sending computer provides source updates for multiple software vendors. In this case, the versioning control information also identifies the base/delta source files using a universally unique identifier (UUID) that distinguishes between the base/delta source files of the different vendors.

22 Claims, 8 Drawing Sheets



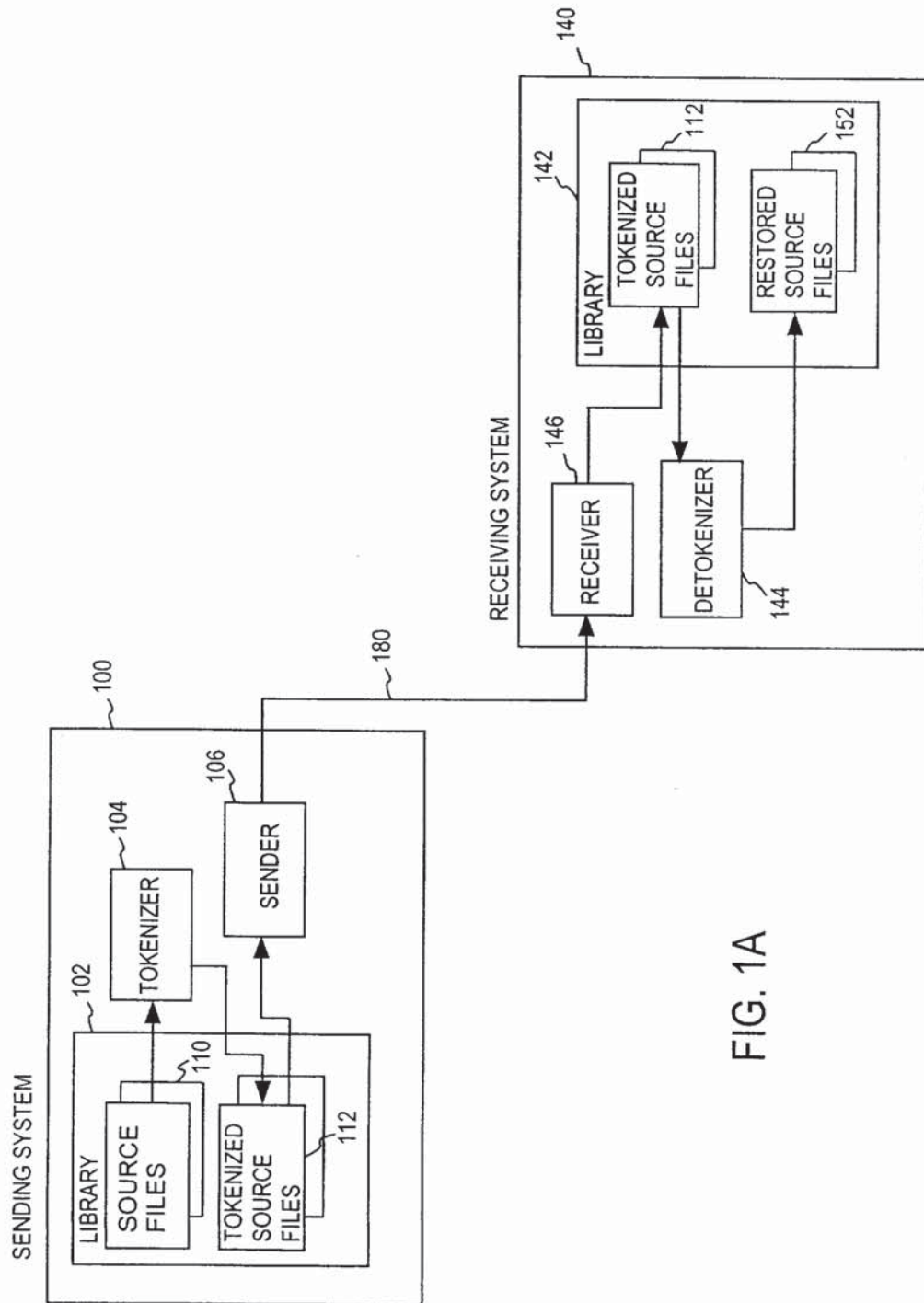


FIG. 1A

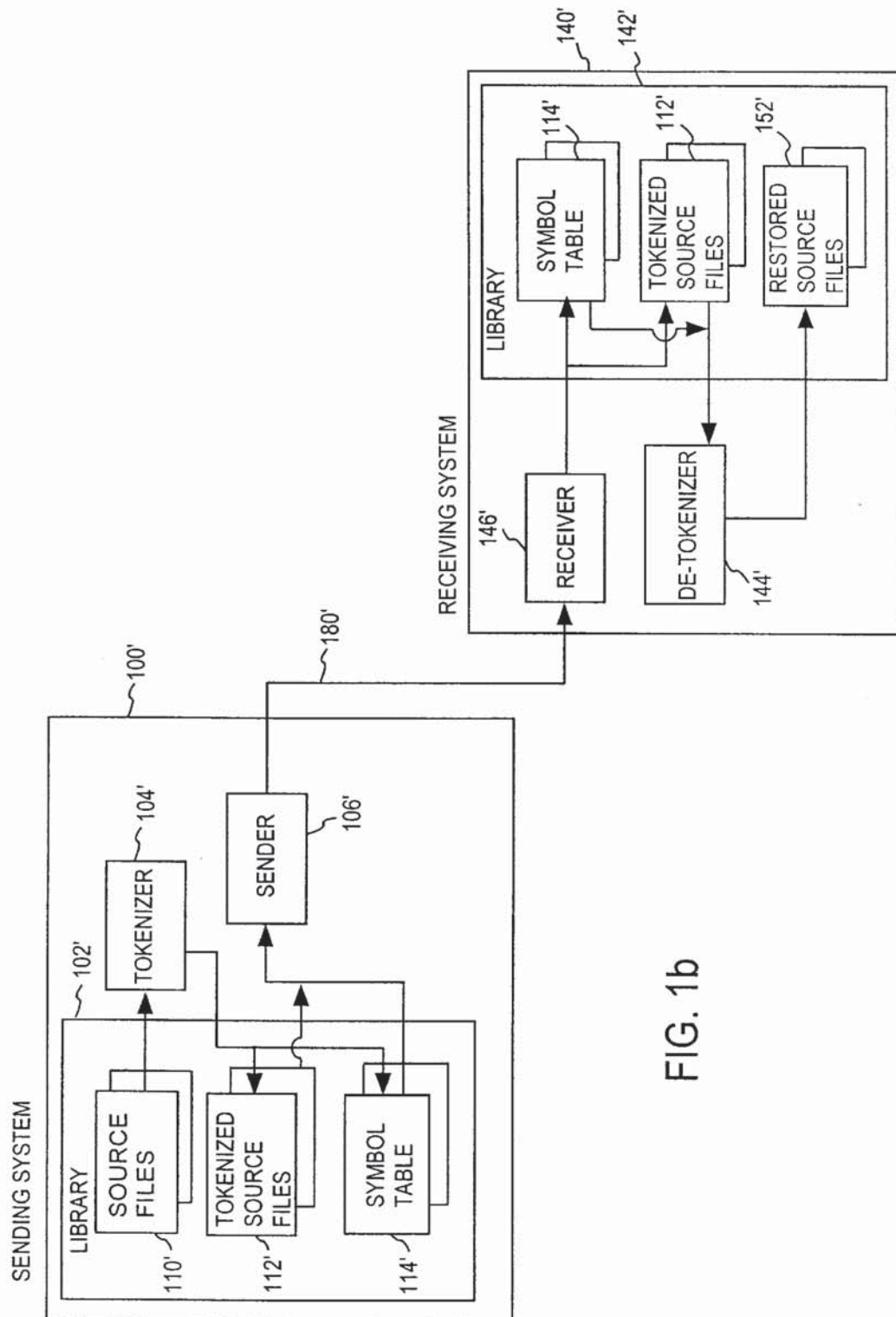


FIG. 1b

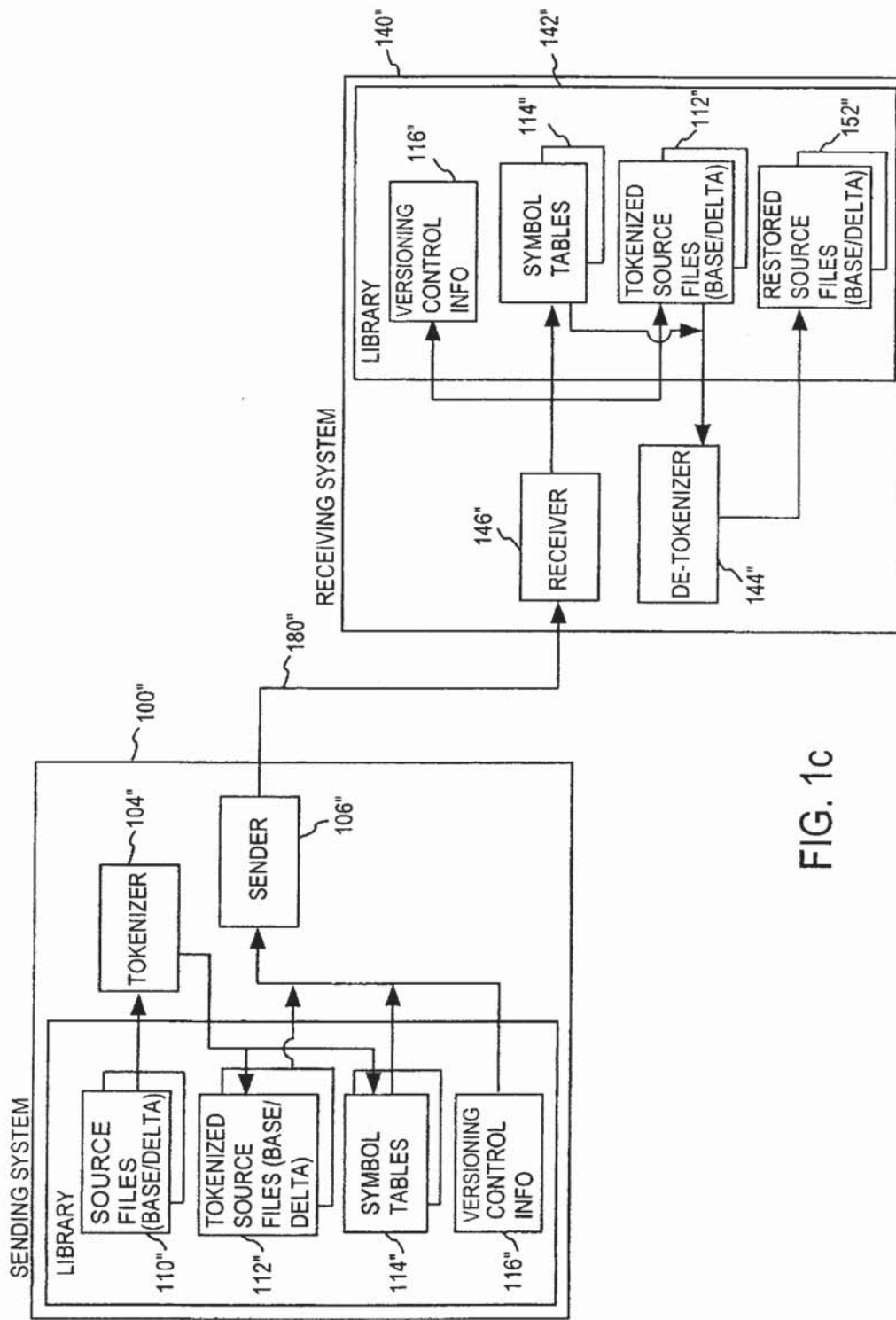


FIG. 1c

TOKEN		VALUE
CLASS		
ARITHMETIC OPERATOR		+ , * , / , ↑ , -
RELATIONAL OPERATOR		= , > , = , < , >
LEFT PAREN		(
RIGHT PAREN)
NEXT		NEXT J
ASSIGN		LET X =
OPERAND		OPENING - BALANCE, ENDING - BALANCE

FIG. 2a

SYMBOL TABLE	
SYMBOL NUMBER	SYMBOL
1	OPENING BALANCE
2	ENDING BALANCE
3	
⋮	⋮
⋮	⋮

↑
POINTER

FIG. 2b

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