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**Petty et al.**

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(54) **SPECIFICATION LANGUAGE FOR  
DEFINING USER INTERFACE PANELS  
THAT ARE PLATFORM-INDEPENDENT**

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(51) **Int. Cl.**<sup>7</sup> ..... **G06F 3/00**

(52) **U.S. Cl.** ..... **345/762; 345/708; 345/760; 345/798**

(58) **Field of Search** ..... 345/326, 333, 345/334, 335, 336, 338, 339, 340, 342, 700, 705, 708, 744, 746-747, 760, 762, 781, 788, 798-801, 764-765; 709/203, 300, 302, 303, 310, 315, 328

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*Primary Examiner*—Crescille N. dela Torre

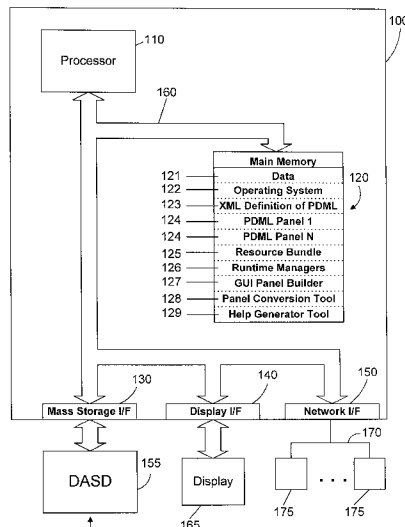
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(57) **ABSTRACT**

A specification language allows a user to define platform-independent user interface panels without detailed knowledge of complex computer programming languages. The specification language is referred to herein as a Panel Definition Markup Language (PDML), which defines tags that are used in similar fashion to those defined in Hypertext Markup Language (HTML), that allow a user to specify the exact location of components displayed in the panel. A graphical editor allows the creation and modification of platform-independent user interface panels without programming directly in the specification language. A conversion tool may be used to convert platform-specific user interface panels to corresponding platform-independent user interface panels. A help generator tool also facilitates the generation of context-sensitive help for a user interface panel.

**33 Claims, 22 Drawing Sheets**

Microfiche Appendix Included  
(1 Microfiche, 43 Pages)



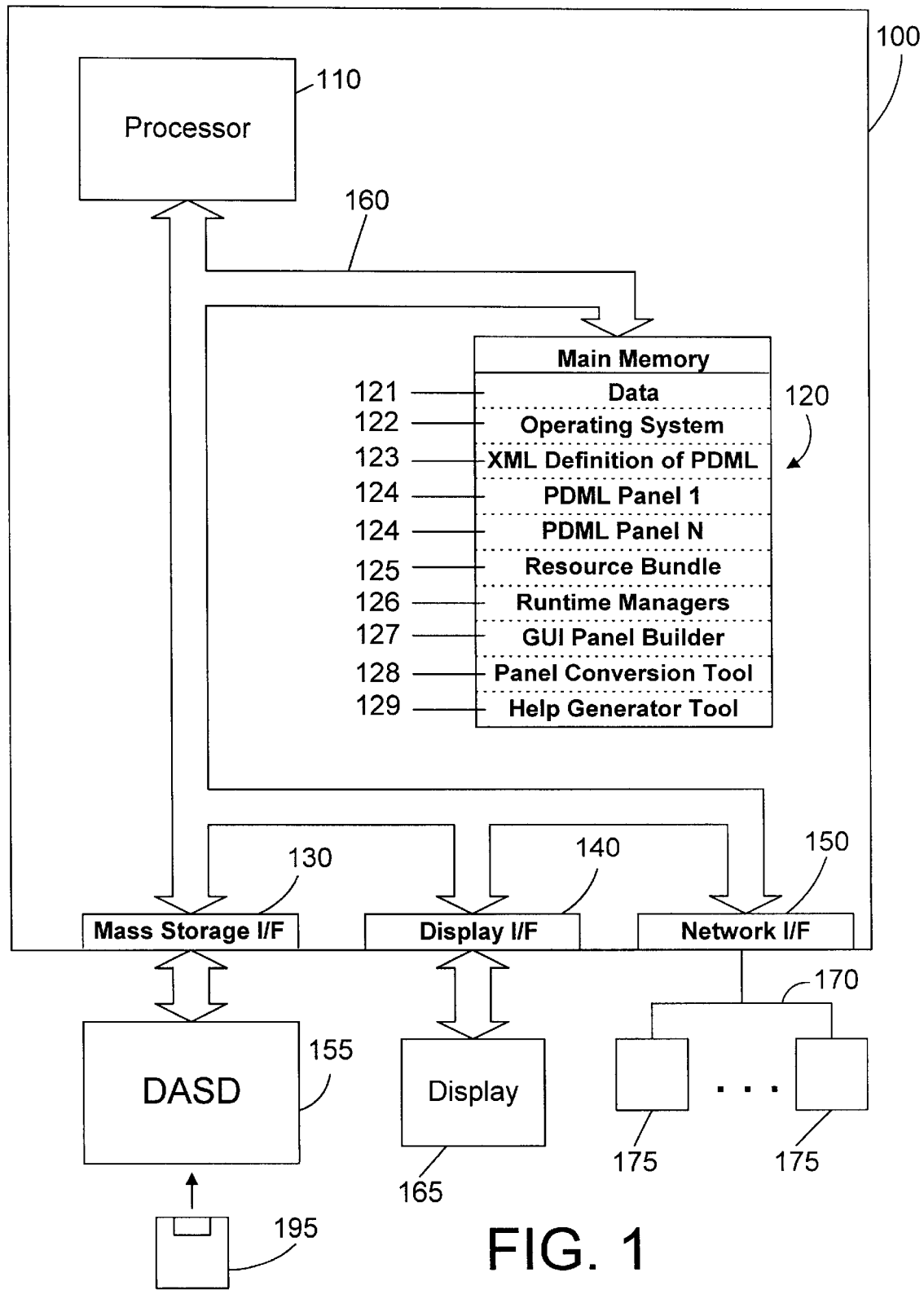


FIG. 1

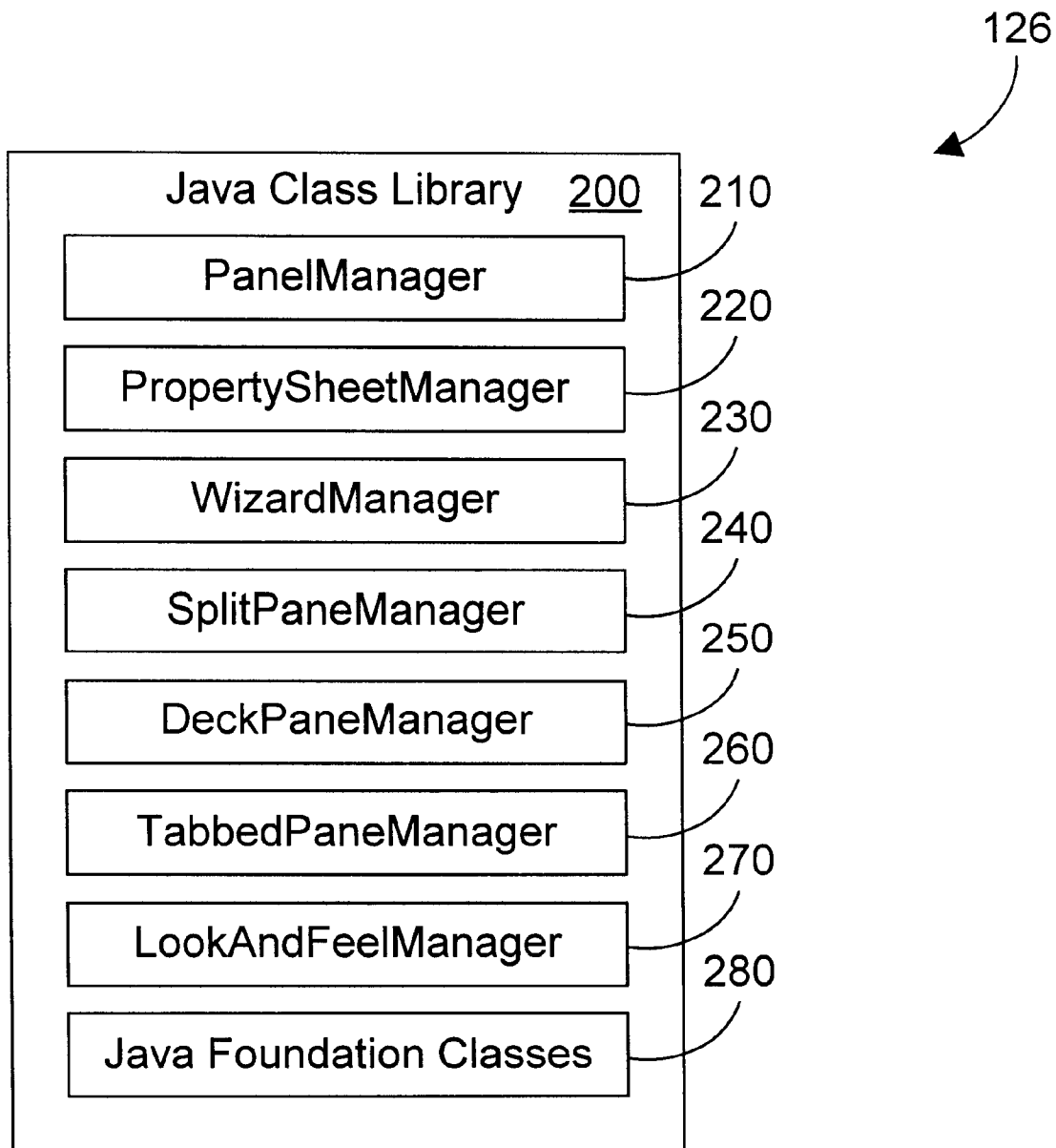


FIG. 2

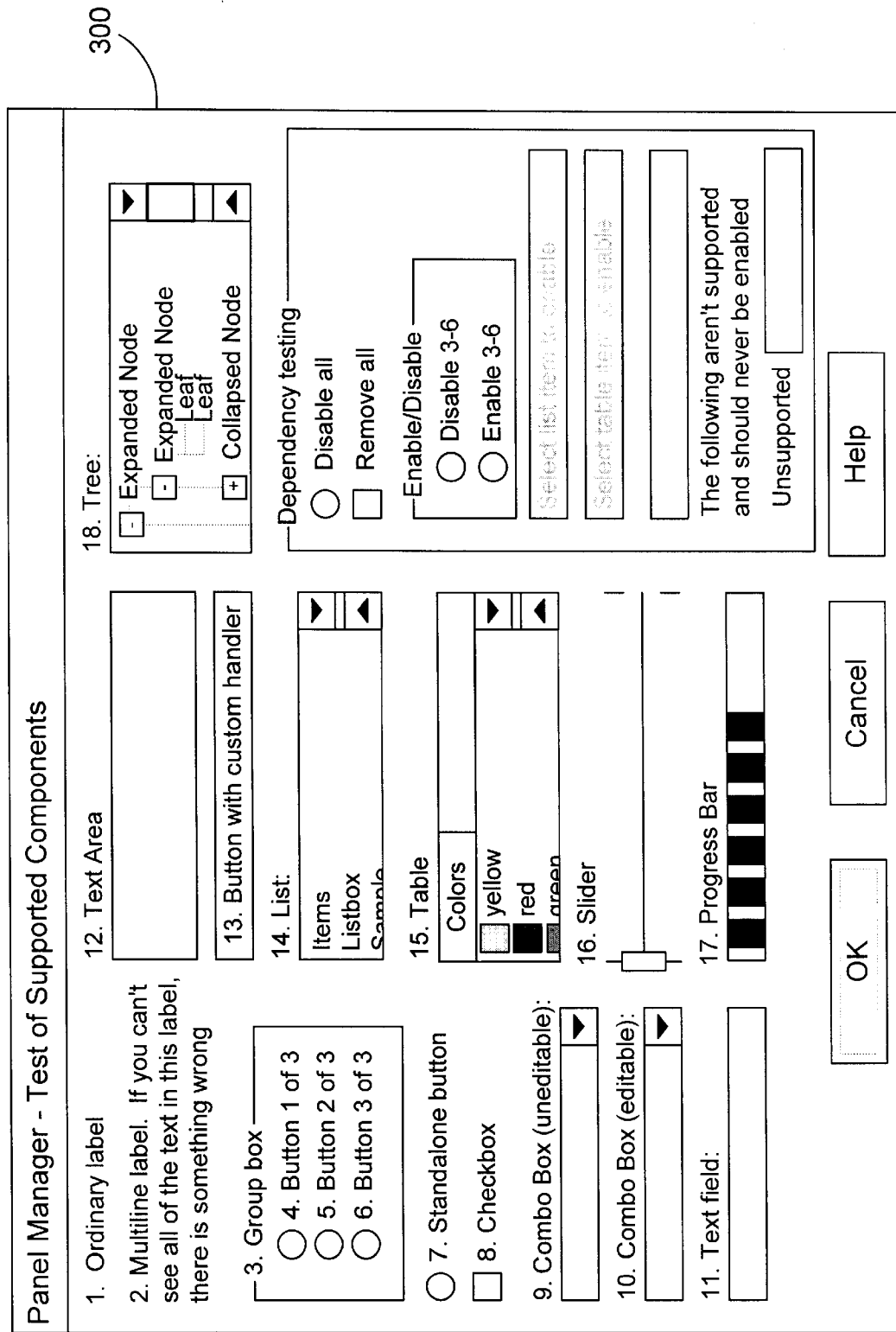


FIG. 3 Prior Art

Windows Resource Script

```
IDD_SUPPORTEDED_COMPONENTS_DIALOG DISCARDABLE 0, 0, 400, 300
STYLE DS_MODALFRAME | WS_POPUP | WS_CAPTION | WS_SYSMENU
CAPTION "Panel Manager - Test of Supported Components"
FONT 8, "MS Sans Serif"
BEGIN
  DEFPUSHBUTTON "OK",IDOK,109,279,50,14
  PUSHBUTTON "Cancel",IDCANCEL,175,279,50,14
  PUSHBUTTON "Help",IDHELP,241,279,50,14
  LTEXT "1. Ordinary label",IDC_LABEL,7,7,124,8
  LTEXT "2. Multiline label. If you can't see all of the text in this label, there is
        something wrong.", IDC_MULTILINE,7,25,124,17
  GROUPBOX "3. Group box.",IDC_GROUPBOX,7,51,124,73
  CONTROL "4. Button 1 of 3",IDC_RADIO1,"Button",
    BS_AUTORADIOBUTTON | WS_TABSTOP,17,66,58,10
  CONTROL "5. Button 2 of 3",IDC_RADIO2,"Button",
    BS_AUTORADIOBUTTON | WS_TABSTOP,17,85,58,10
  CONTROL "6. Button 3 of 3",IDC_RADIO3,"Button",
    BS_AUTORADIOBUTTON | WS_TABSTOP,17,104,58,10
  CONTROL "7. Standalone button",IDC_STANDALONE,"Button",
    BS_AUTORADIOBUTTON | WS_GROUP | WS_TABSTOP,7,136,124,10
  CONTROL "8. Check box",IDC_CHECKBOX,"Button",BS_AUTOCHECKBOX |
    WS_TABSTOP,7,158,124,10
  LTEXT "9. Combo box (uneditable):",IDC_COMBOLABEL1,7,179,124,8
  COMBOBOX IDC_COMBONOEDIT,7,191,124,25,CBS_DROPDOWNLIST |
    CBS_SORT | WS_VSCROLL | WS_TABSTOP
  LTEXT "10. Combo box (editable):",IDC_COMBOLABEL2,7,213,124,8
  COMBOBOX IDC_COMBOEDIT,7,224,124,16,CBS_DROPDOWN | CBS_SORT |
    WS_VSCROLL | WS_TABSTOP
  LTEXT "11. Text field:",IDC_TEXTFIELD1,7,242,124,8
  EDITTEXT IDC_TEXTFIELD,7,254,124,14,ES_AUTOHSCROLL
  LTEXT "12. Text area:",IDC_TEXTAREALABEL,145,7,107,8
  EDITTEXT IDC_TEXTAREA,145,19,114,26,ES_MULTILINE |
    ES_AUTOHSCROLL
  PUSHBUTTON "13. Button with custom handler",
    IDC_CUSTOMBUTTON,145,54,114,14
  LTEXT "14. List:",IDC_LISTLABEL,145,77,107,8
  LISTBOX IDC_LIST,145,88,114,30,LBS_SORT | LBS_NOINTEGRALHEIGHT
    | WS_VSCROLL | WS_TABSTOP
```

FIG. 4A Prior Art

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