



US006707449B2

(12) **United States Patent**
Hinckley et al.

(10) **Patent No.:** US **6,707,449 B2**
(45) **Date of Patent:** Mar. 16, 2004

(54) **MANUAL CONTROLLED SCROLLING**

(75) Inventors: **Kenneth P. Hinckley**, Redmond, WA (US); **Steven N. Bathiche**, Redmond, WA (US); **James H. Cauthorn**, Seattle, WA (US); **Michael J. Sinclair**, Kirkland, WA (US)

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(73) Assignee: **Microsoft Corporation**, Redmond, WA (US)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **09/940,505**

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(22) Filed: **Aug. 29, 2001**

(65) **Prior Publication Data**

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US 2002/0030667 A1 Mar. 14, 2002

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(51) **Int. Cl.**⁷ **G09G 5/00**

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(52) **U.S. Cl.** **345/173; 345/786; 345/684; 345/156**

(58) **Field of Search** **345/684-688, 345/784-787, 973, 156-179, 668-671; 178/18.01-18.11, 19.01-19.07**

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Primary Examiner—Lun-Yi Lao

(74) *Attorney, Agent, or Firm*—Banner & Witcoff, Ltd.

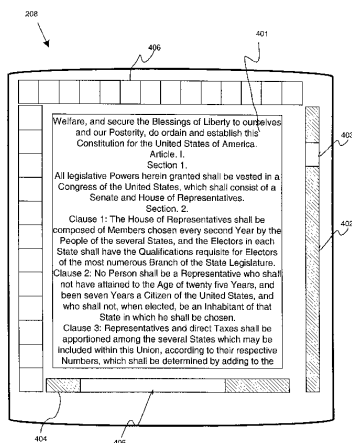
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A scrolling device for a computer may include a touch-sensitive surface, which may be elongated and/or have one or more active regions. Scrolling may be performed in manual as well as automated ways that may result in more accurate and efficient scrolling. Scrolling, as displayed on the screen, may further be rounded to the nearest document text line and/or distance unit, even though a more precise scrolling location value may be stored and/or tracked.

12 Claims, 8 Drawing Sheets



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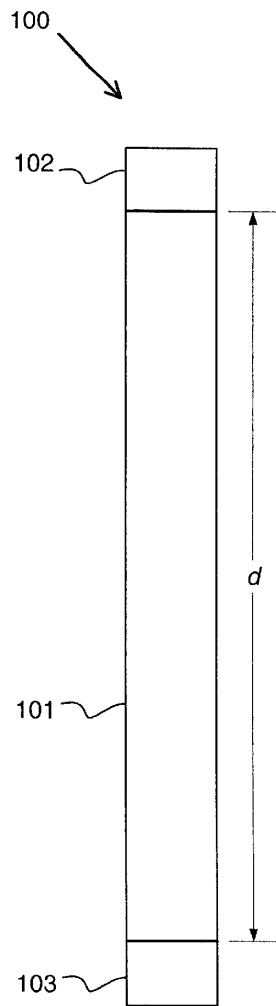


FIG. 1A

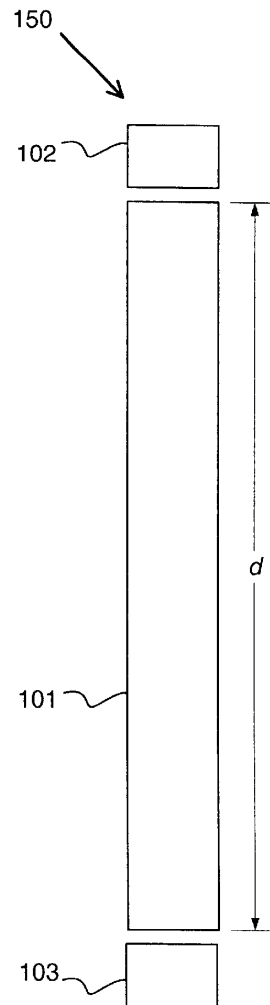


FIG. 1B

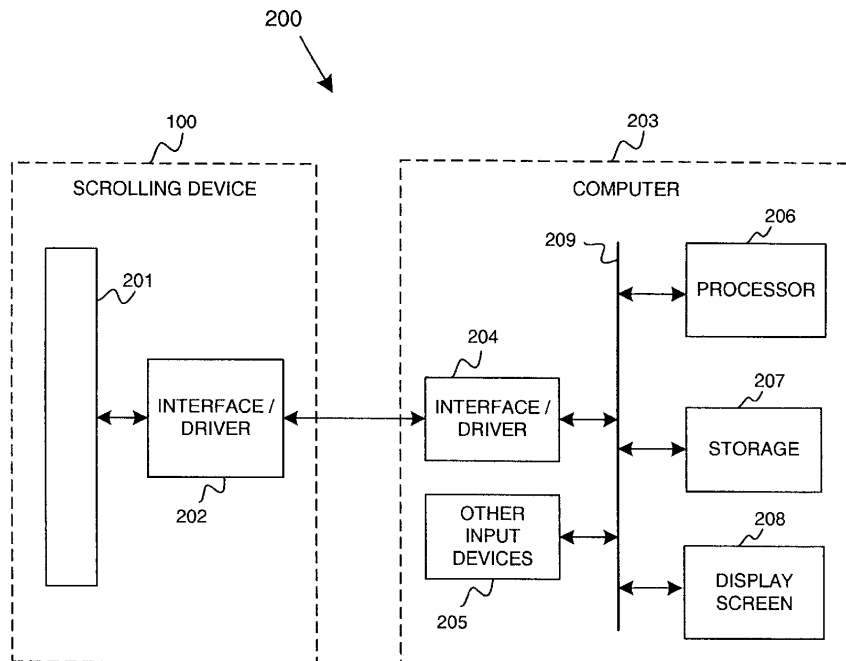


FIG. 2

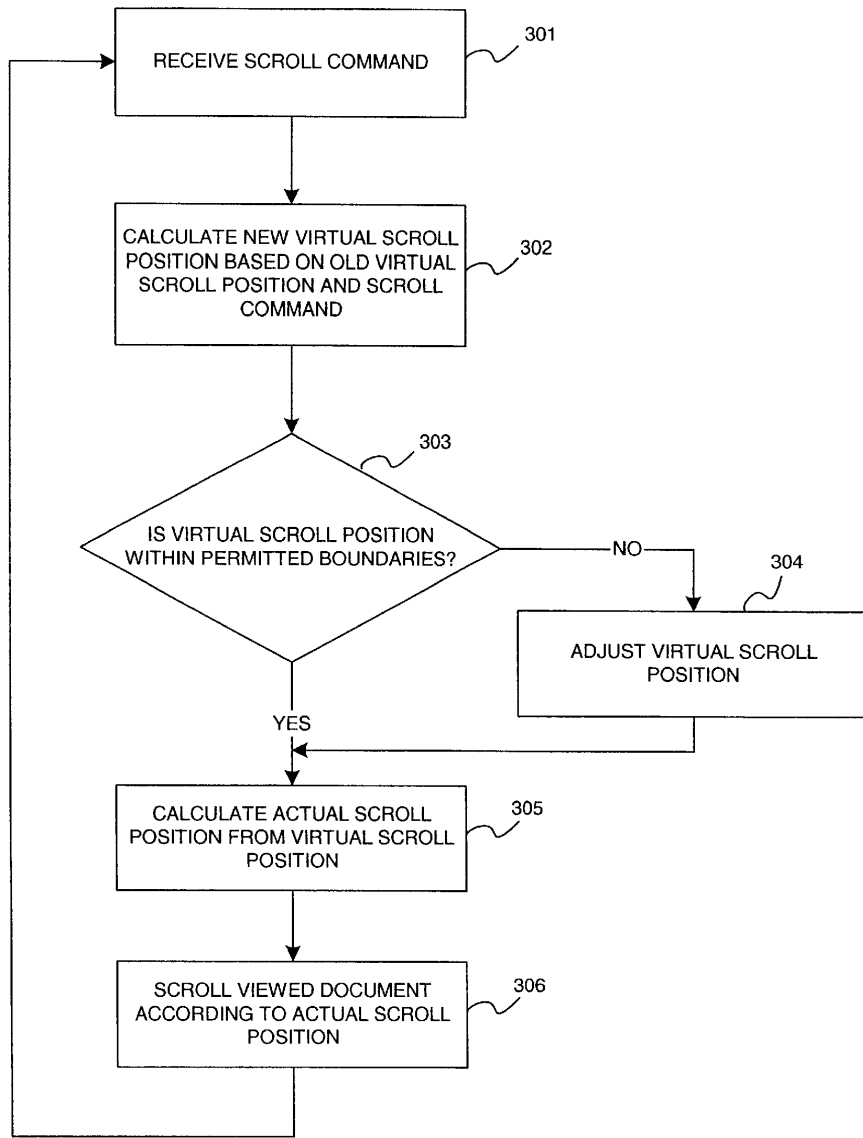


FIG. 3

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