

## (12) United States Patent Loomans

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## (54) TECHNIQUES FOR MANAGING MULTIPLE THREADS IN A BROWSER ENVIRONMENT

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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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(22) Filed: Nov. 17, 1999

### Related U.S. Application Data

(60) Provisional application No. 60/109,077, filed on Nov. 18, 1998.

(51) Int. Cl.<sup>7</sup> ...... G06F 9/00

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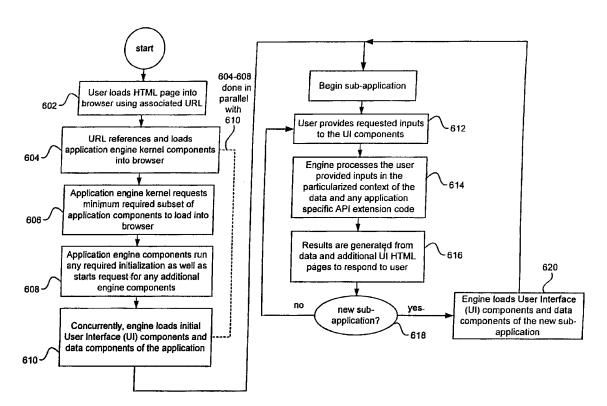
Primary Examiner—Meng-Al T. An Assistant Examiner—Charles E Anya

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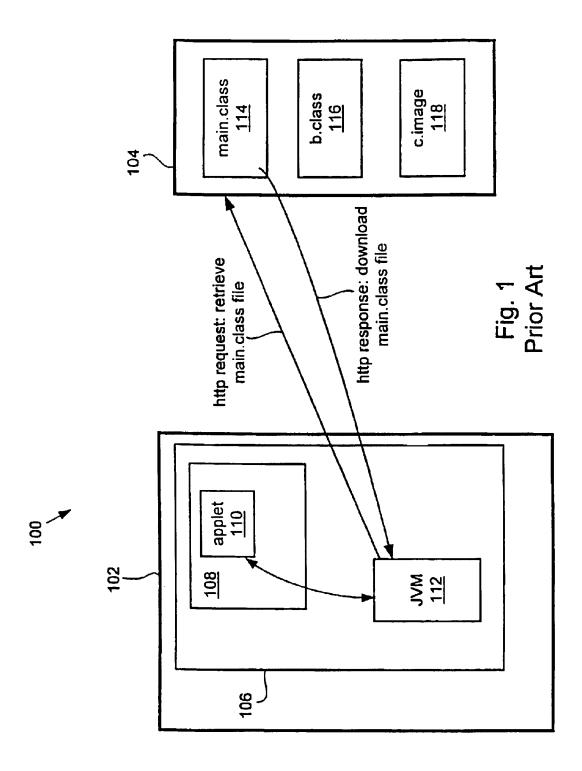
### (57) ABSTRACT

Techniques for managing multiple threads in an asynchronous environment, such as a browser, are described. As a method, instantiating an event thread in response to a user event by a shell event handler block that provides shell functions for a user event. Once the event thread as been instantiated, managing the event thread by a generic thread manager block that provides a plurality of multithread management functions for the shell event handler. When required, blocking and unblocking the event thread by a blocking system that is arranged to block and unblock threads.

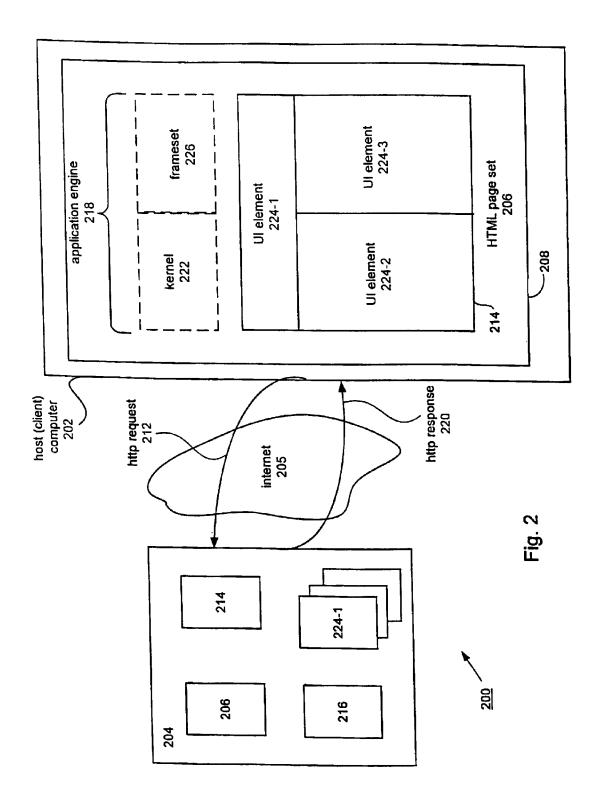
### 11 Claims, 7 Drawing Sheets













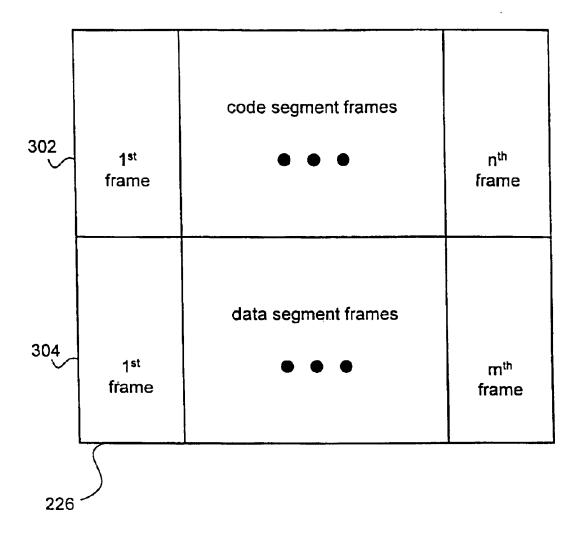
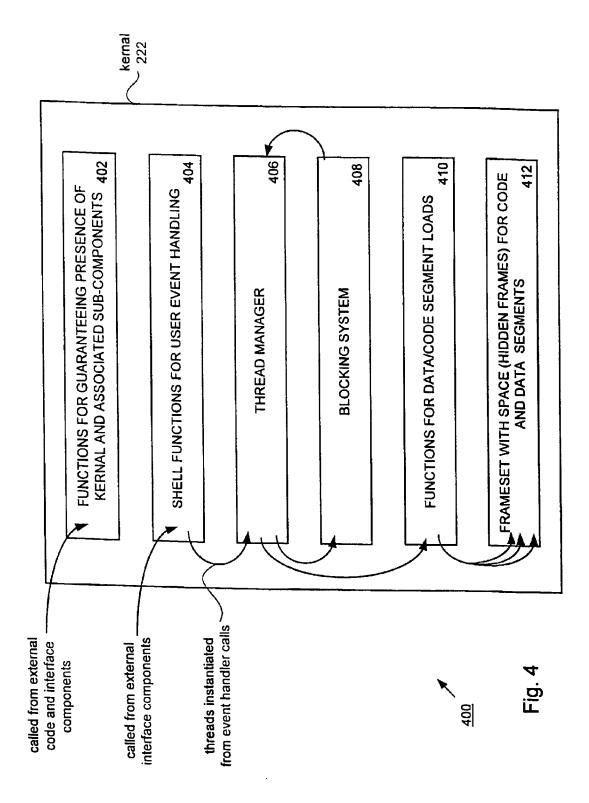


Fig. 3





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