



US005902501A

# United States Patent [19]

[11] **Patent Number:** **5,902,501**

**Nunnally et al.**

[45] **Date of Patent:** **May 11, 1999**

[54] **LIGHTER ACTUATION SYSTEM**

2,525,040	10/1950	Luthi	219/263
3,372,306	3/1968	Koizumi	219/263
3,379,856	4/1968	Hirsch	219/260
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5,613,505	3/1997	Campbell et al.	219/600

[75] Inventors: **H. Neal Nunnally**, Richmond; **Dave E. Sharpe**, Chesterfield; **Michael L. Watkins**, Chester, all of Va.; **Douglas J. Ely**, Andover; **Neal R. Butler**, Acton, both of Mass.; **Patrick J. Cobler**, Nashua, N.H.

**FOREIGN PATENT DOCUMENTS**

5-248635 9/1993 Japan .

[73] Assignee: **Philip Morris Incorporated**, New York, N.Y.

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*Attorney, Agent, or Firm*—Charles E. B. Glenn; James E. Schardt; James T. Moore

[21] Appl. No.: **08/953,945**

[22] Filed: **Oct. 20, 1997**

[57] **ABSTRACT**

[51] **Int. Cl.<sup>6</sup>** ..... **F23Q 7/00**  
[52] **U.S. Cl.** ..... **219/263; 219/269**  
[58] **Field of Search** ..... 219/260, 262, 219/263, 264, 265, 267, 269, 270, 386, 600; 200/61.59

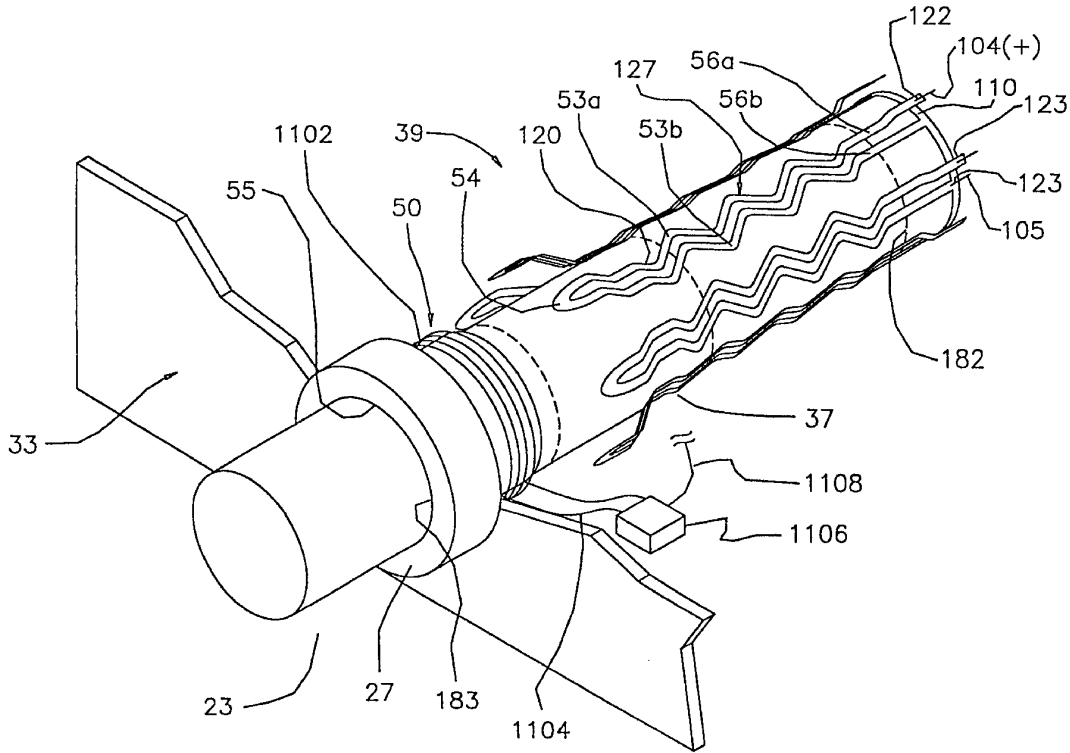
The present invention provides a cigarette identifier system comprising a coil at a location along the cigarette-receiving receptacle of the lighter, an oscillation circuit in communication with the coil and a controller configured to activate or deactivate the lighter responsively to output of the oscillator circuit.

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

2,199,885 5/1940 Kravchuk ..... 219/263

**18 Claims, 9 Drawing Sheets**



RAI Strategic Holdings, Inc.  
Exhibit 2016  
Philip Morris Products, S.A. v. RAI Strategic Holdings, Inc.  
IPR2020-00919

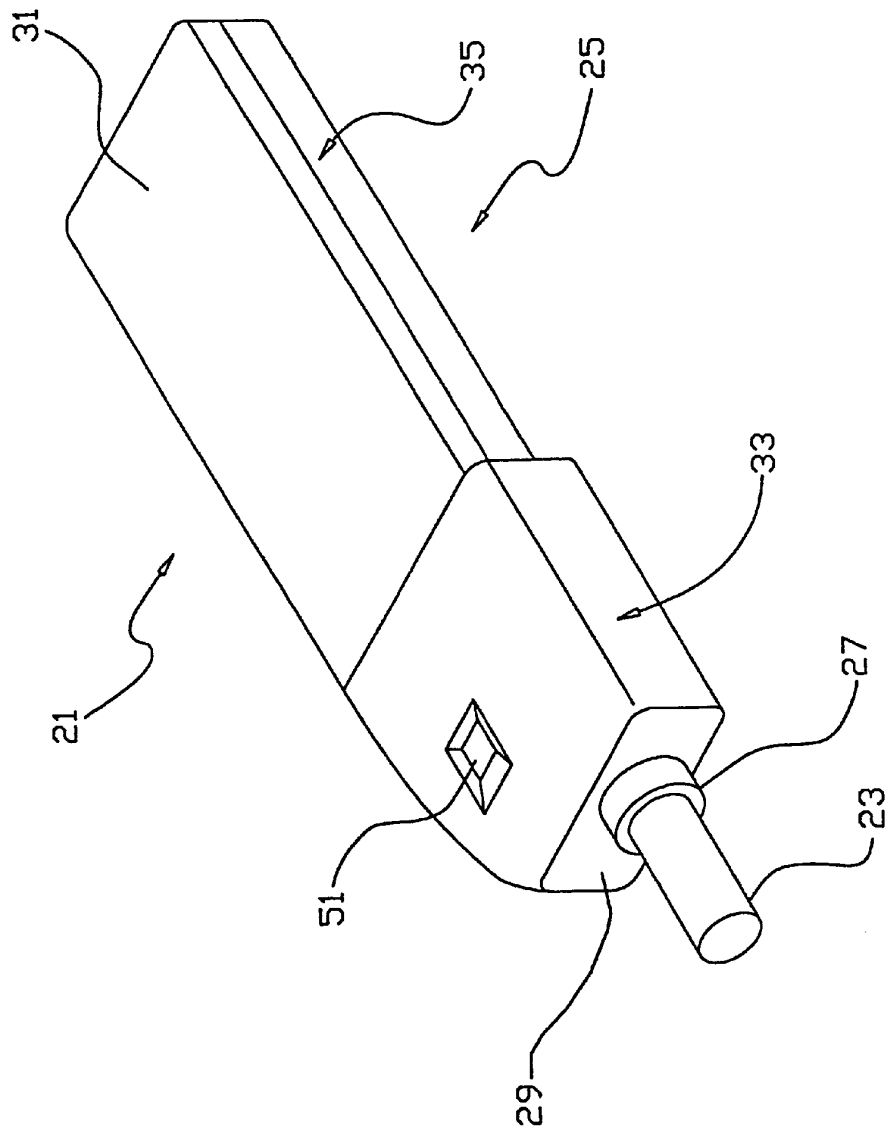


Fig. 1

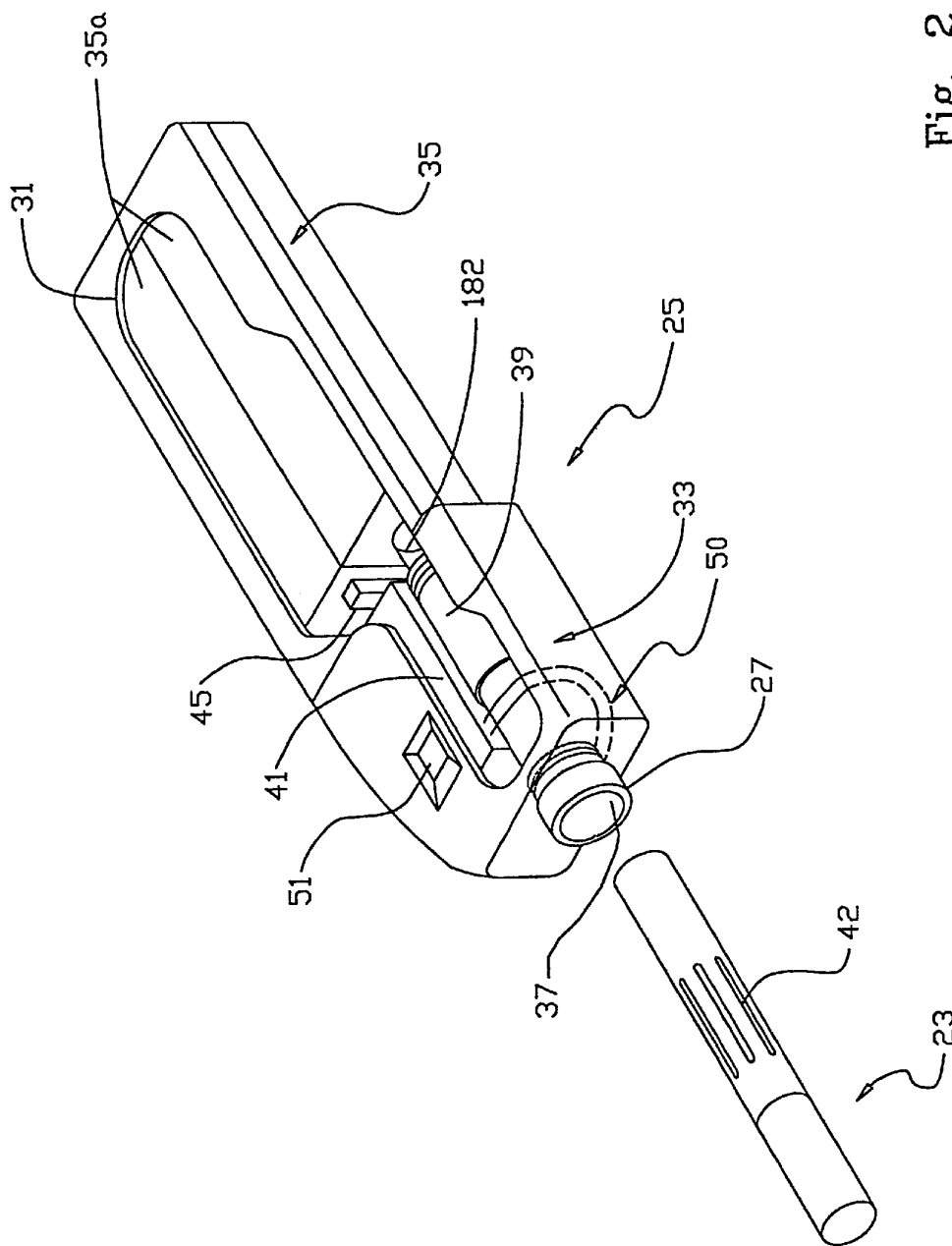


Fig. 2

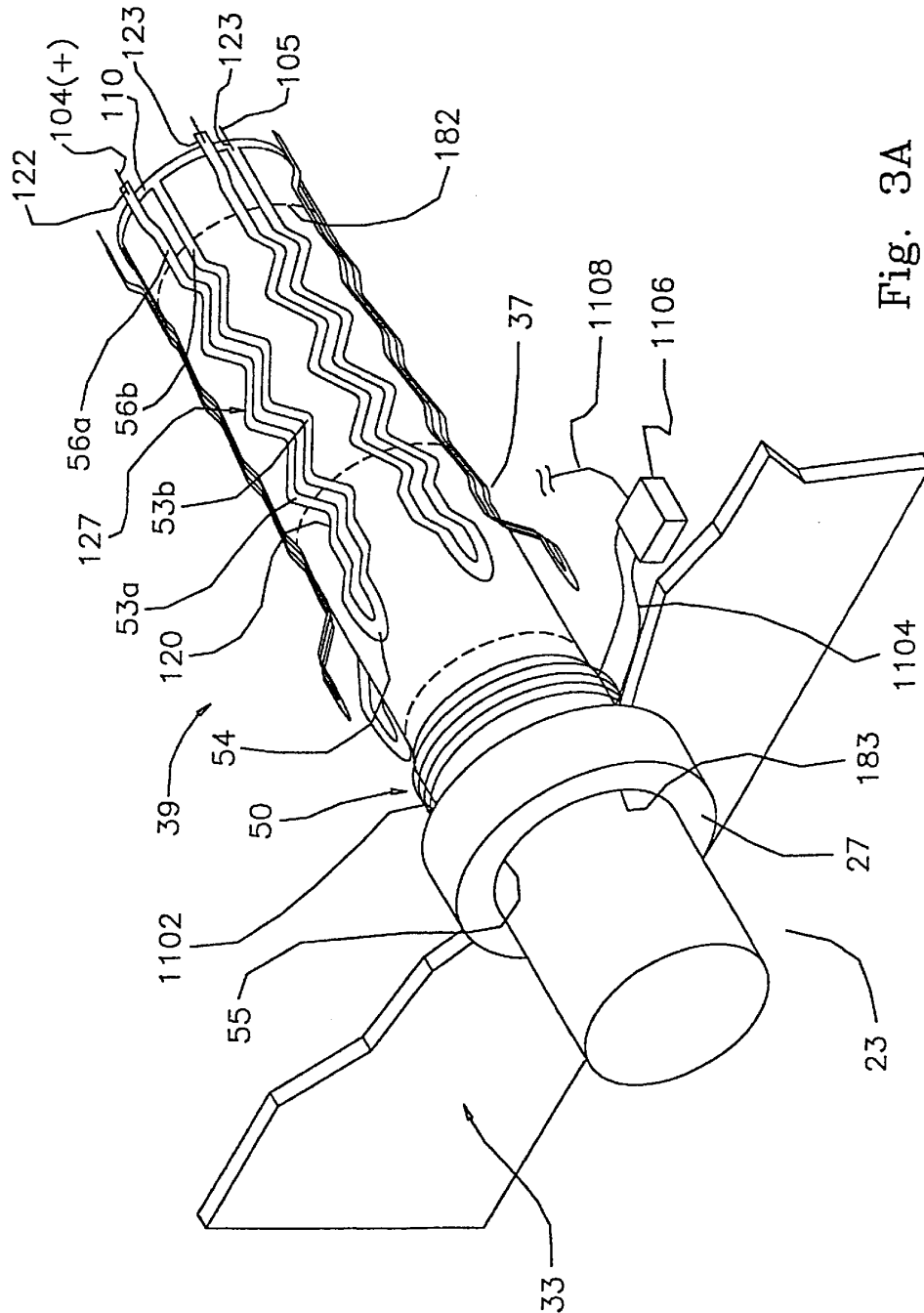


Fig. 3A

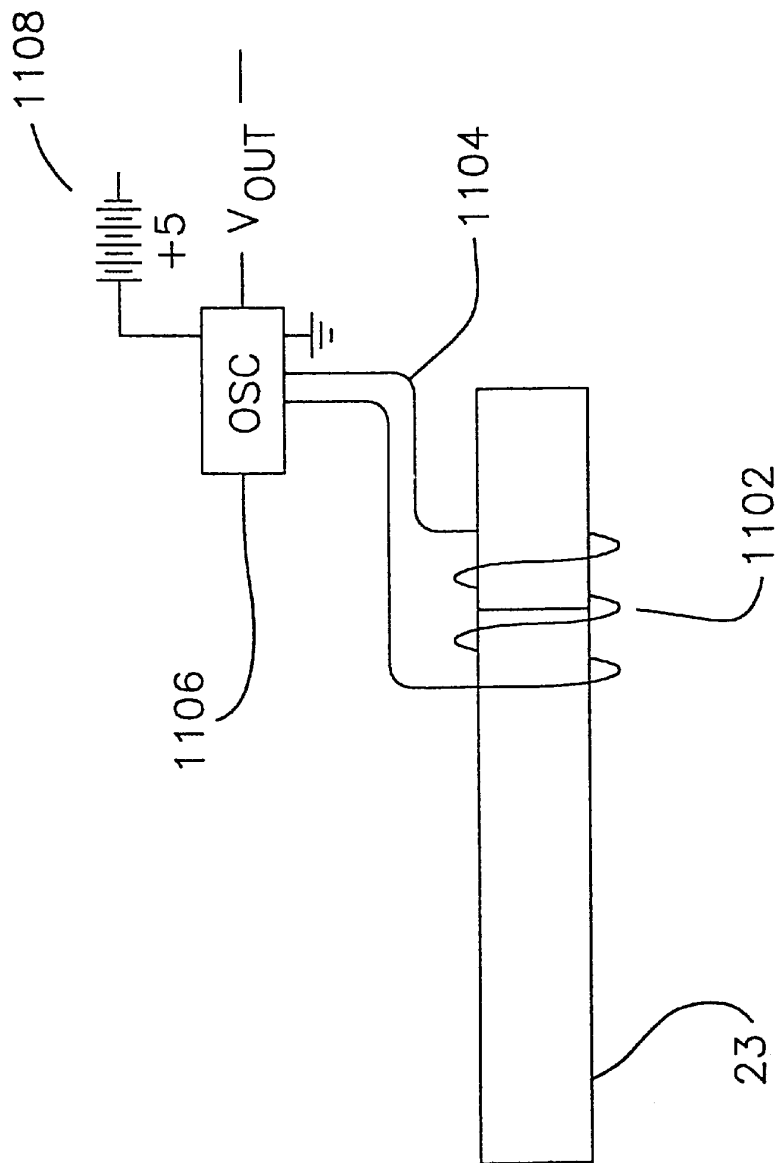


Fig. 3B

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