

[54] **DIGITAL JOYSTICK CONTROL**

[75] **Inventors:** David C. Burson, Garland; Harold D. Larson, Plano, both of Tex.

[73] **Assignee:** Texas Instruments Incorporated, Dallas, Tex.

[21] **Appl. No.:** 785,144

[22] **Filed:** Apr. 6, 1977

[51] **Int. Cl.<sup>2</sup>** ..... G06F 3/02

[52] **U.S. Cl.** ..... 340/365 R; 74/471 XY; 200/6 A

[58] **Field of Search** ..... 340/365 R, 365 S, 204, 340/347 P, 365 P; 200/1 R, 6 R, 6 A; 74/471 XY; 338/128

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*Primary Examiner*—John W. Caldwell, Sr.

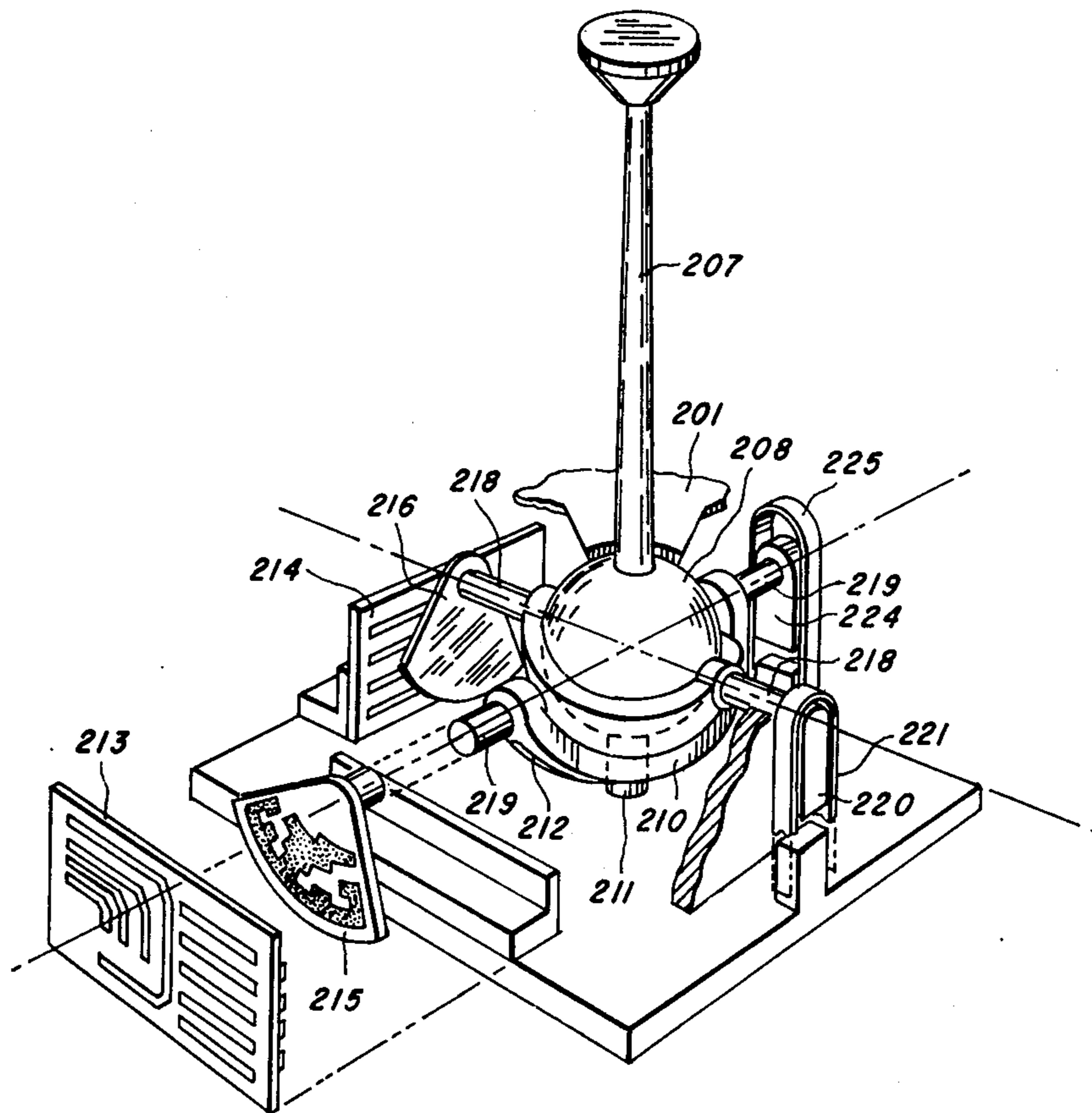
*Assistant Examiner*—James J. Groody

*Attorney, Agent, or Firm*—William K. McCord; Stephen S. Sadacca; Melvin Sharp

[57] **ABSTRACT**

A digital joystick control includes an elongated shaft member having a spherical ball at one end thereof. First and second socket members are coupled to the joystick to provide a swivel joint between the ball and the socket members enabling movement of the shaft about the ball in any direction; movement of the joystick effects corresponding movement of the socket members. Each of the socket members is connected to a plate member which moves therewith. The plate members have a patterned surface presenting conductive and non-conductive regions in opposing relation to wiper arms which engage the patterned surfaces. The patterned surfaces are coded in such a manner that the locations of the conductive and non-conductive regions of the patterned surfaces with respect to the wiper arms are changeable in response to movement of the shaft of the joystick whereby a unique digital-coded positional signal is generated for preselected incremental positions of the shaft.

**7 Claims, 25 Drawing Figures**



[54] DISPLAY MODULE

[75] Inventors: David Rolfe Smith, Hillsboro;  
Richard Ellwood Hansen, Portland,  
both of Oreg.

[73] Assignee: Tektronix, Inc.

[\*\*] Term: 14 Years

[21] Appl. No.: 673,779

[22] Filed: Apr. 5, 1976

[51] Int. Cl. .... D14-02

[52] U.S. Cl. .... D14/43

[58] Field of Search ..... D26/5 R, 5 C; D64/11 R,  
D64/11 B, 11 C; D16/11, 14; 40/28.1, 28 R;  
353/46-51, 74-78

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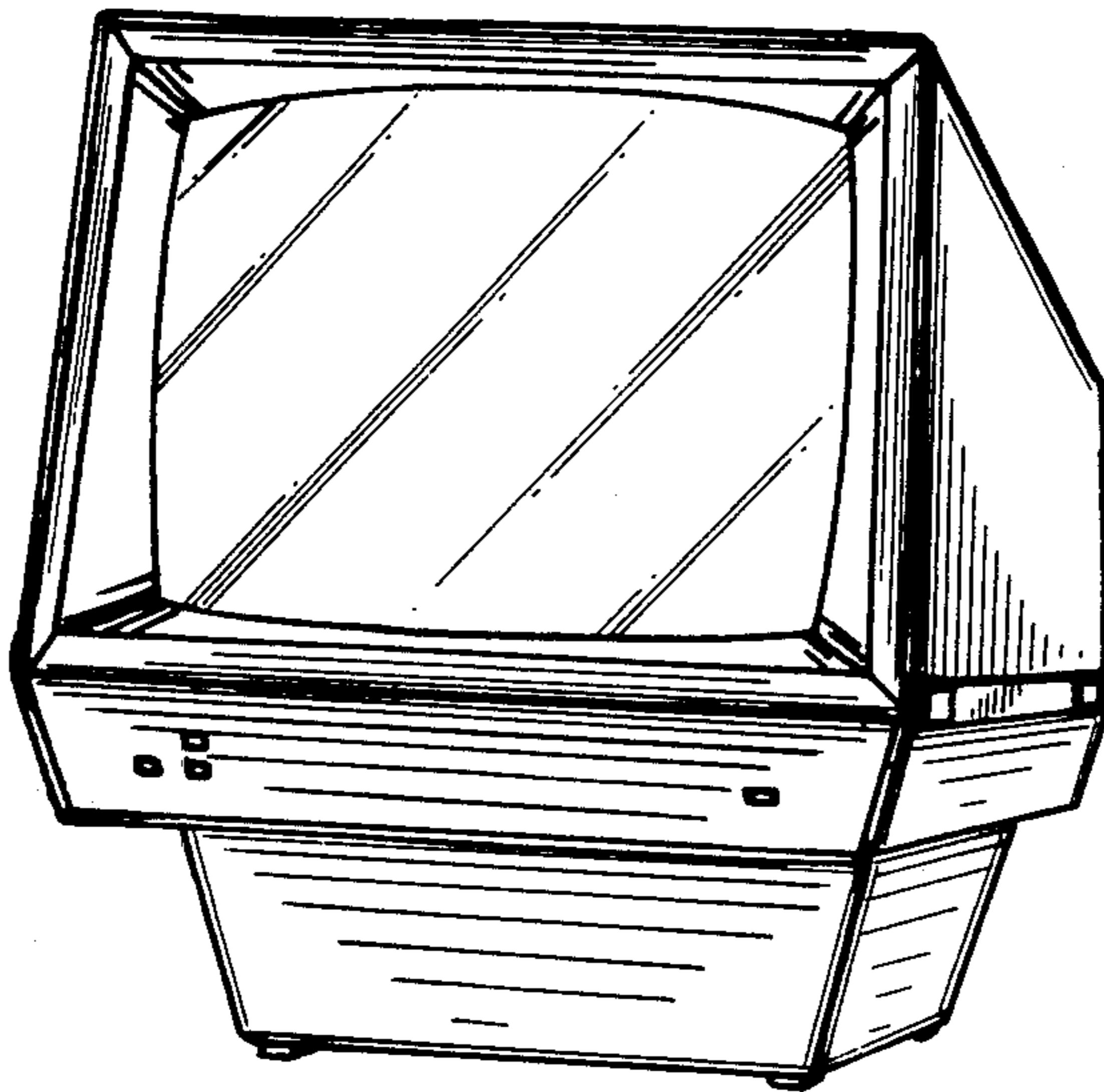
Primary Examiner—Wallace R. Burke  
Assistant Examiner—Catherine Kemper  
Attorney, Agent, or Firm—Kenneth M. Durk

[57] CLAIM

The ornamental design for a display module, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of a display module, showing our new design;  
FIG. 2 is a left side elevational view thereof;  
FIG. 3 is a right side elevational view thereof;  
FIG. 4 is a front elevational view thereof;  
FIG. 5 is a rear elevational view thereof;  
FIG. 6 is a top plan view thereof; and  
FIG. 7 is a rear perspective view thereof.



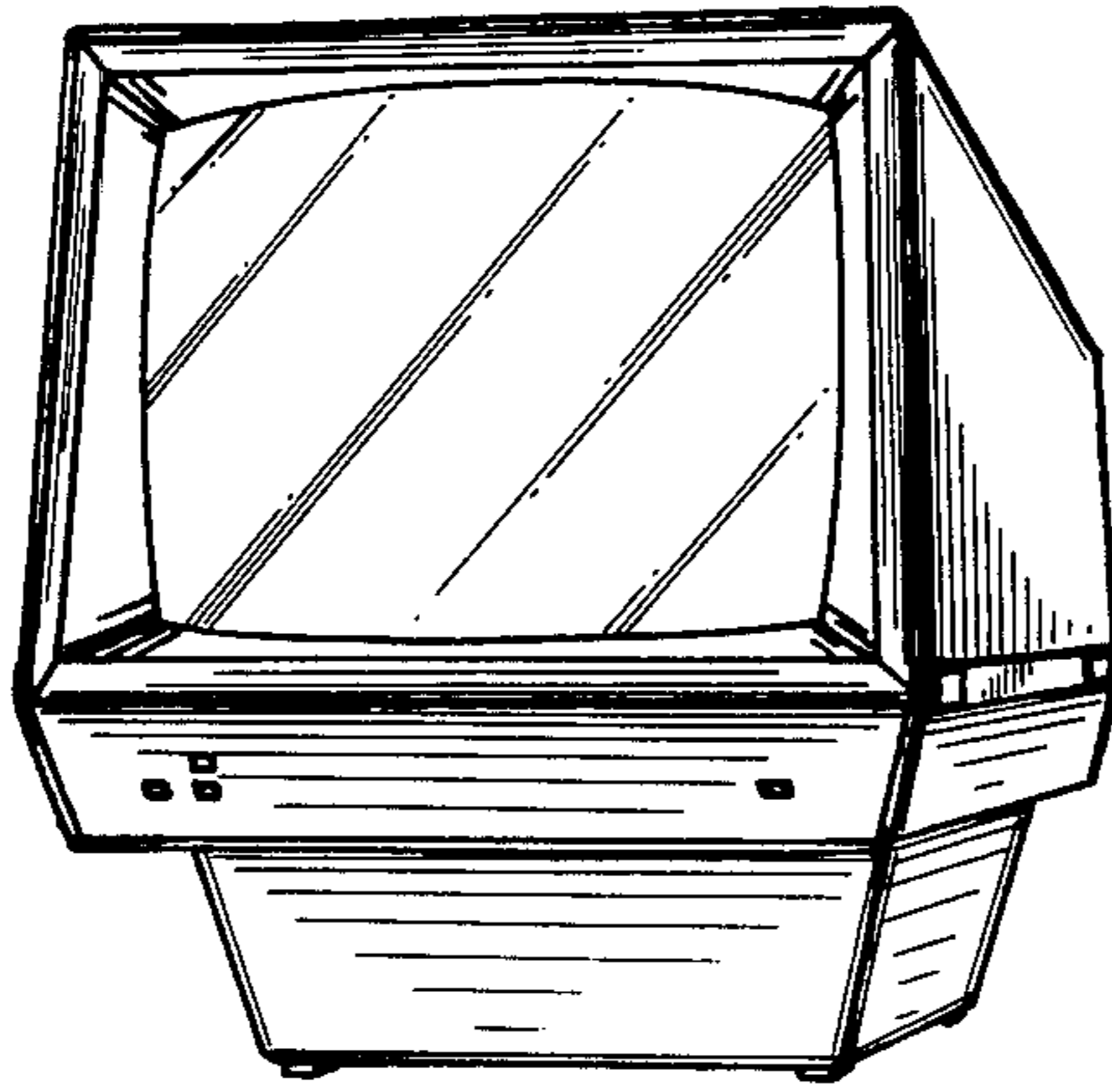


Fig -1

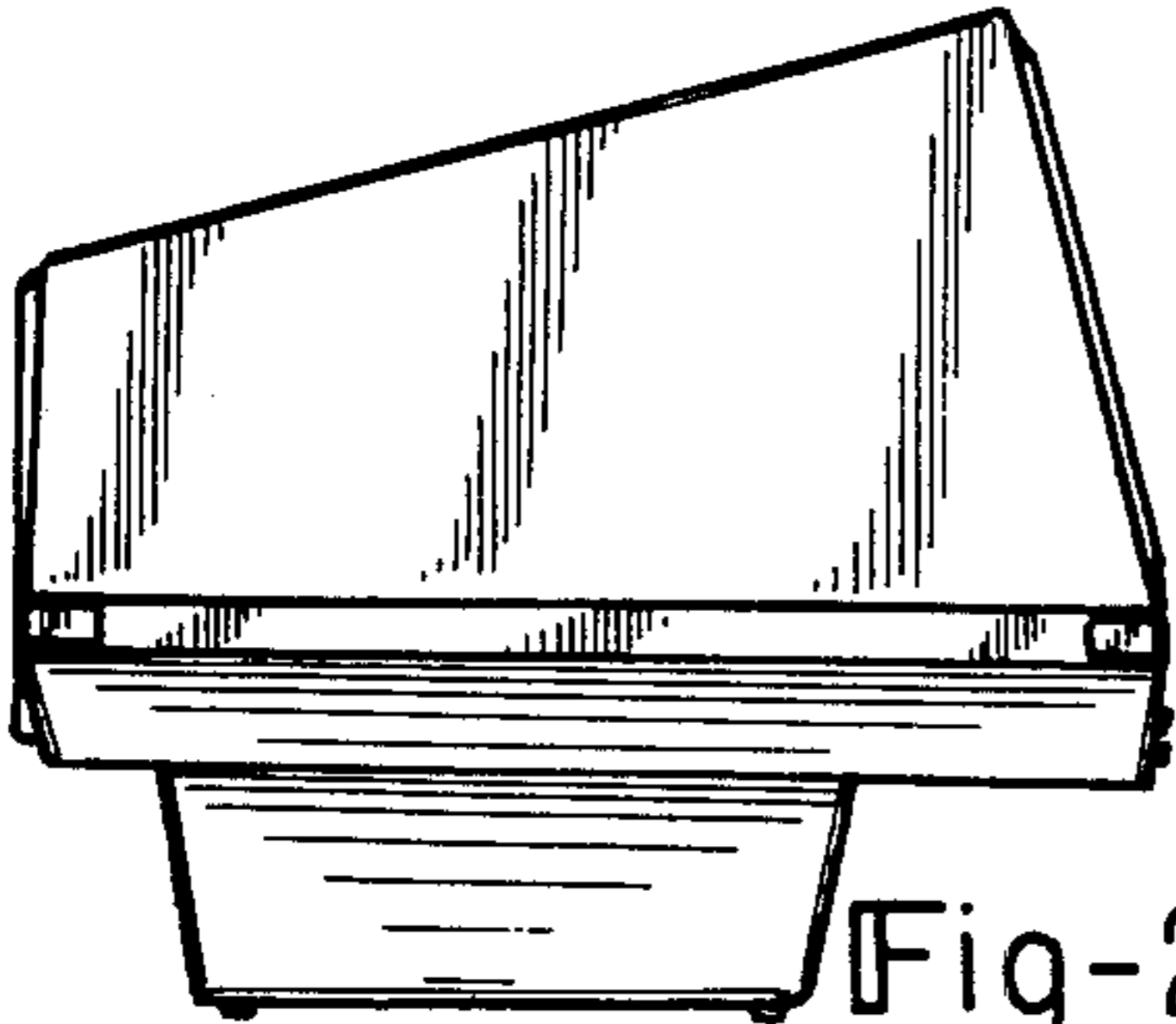


Fig-2

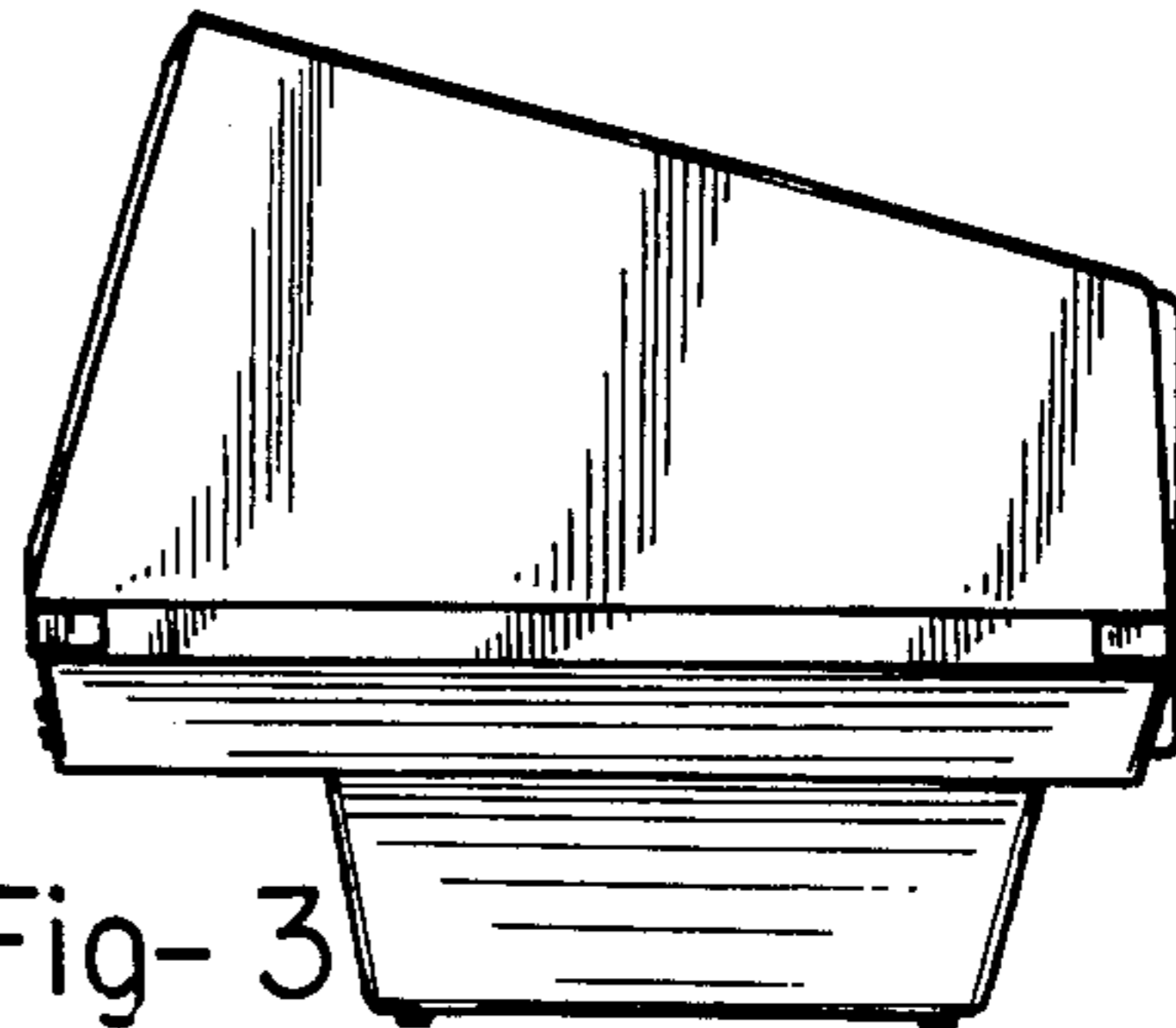


Fig-3

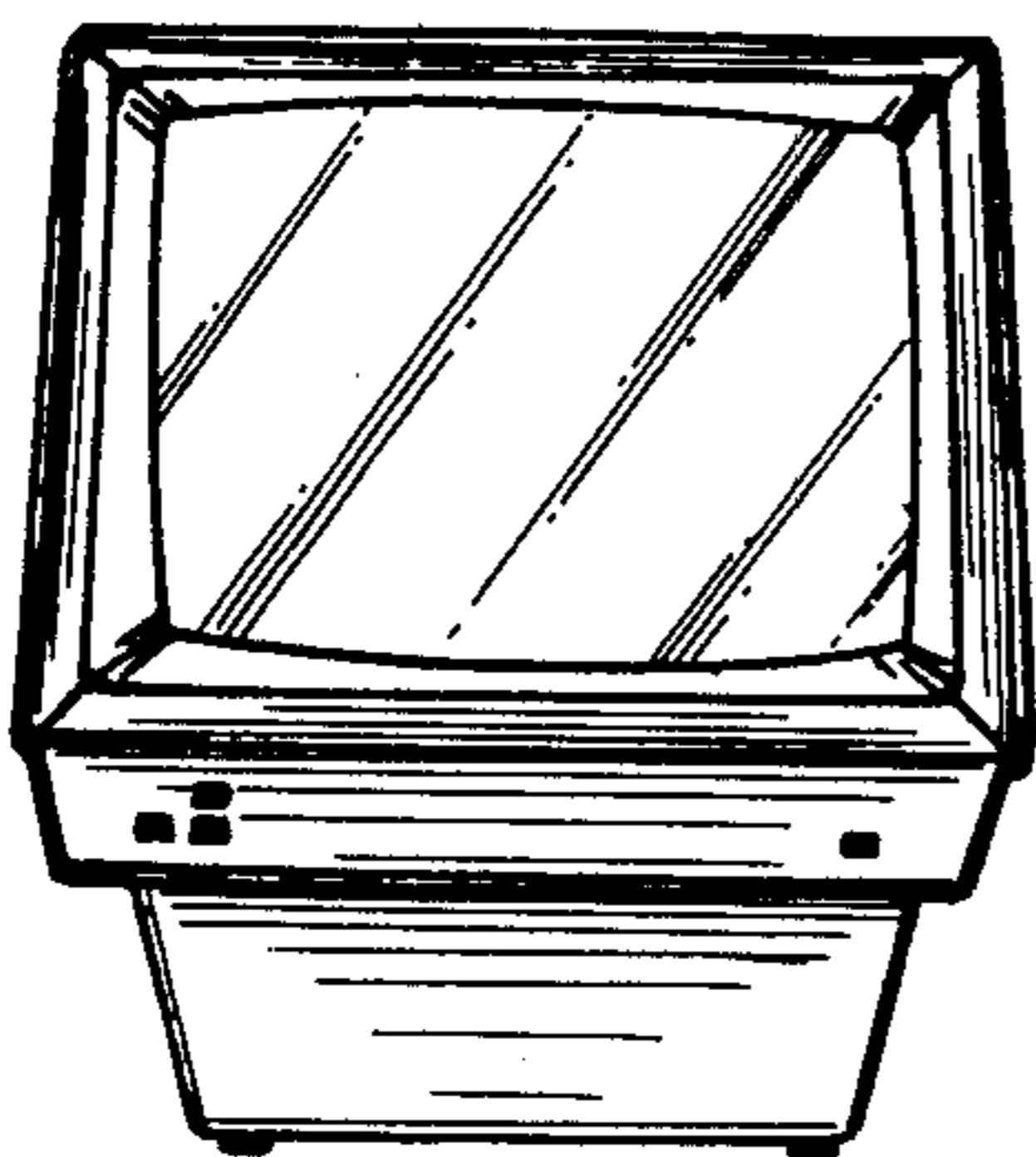


Fig-4

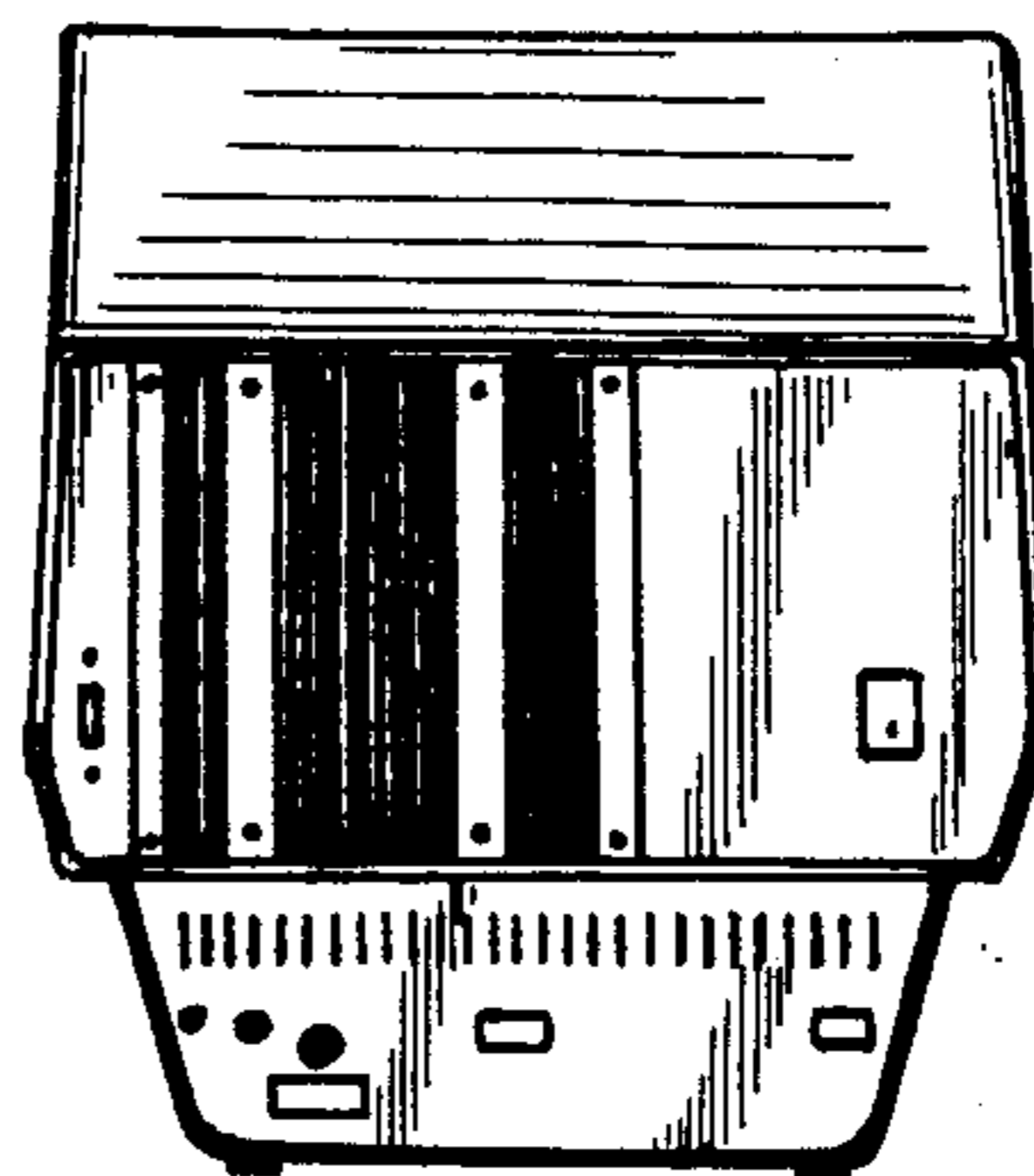


Fig-5

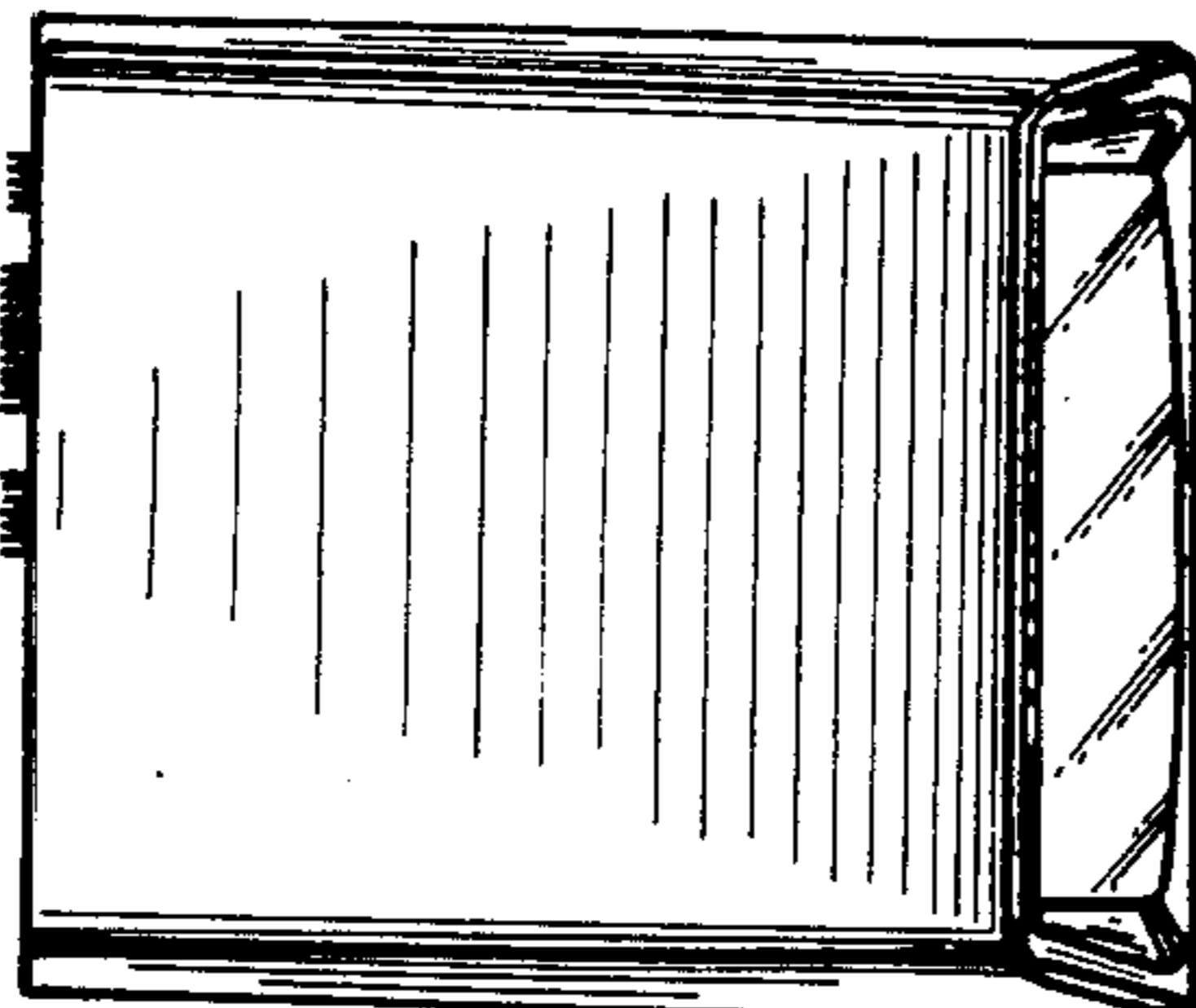


Fig-6

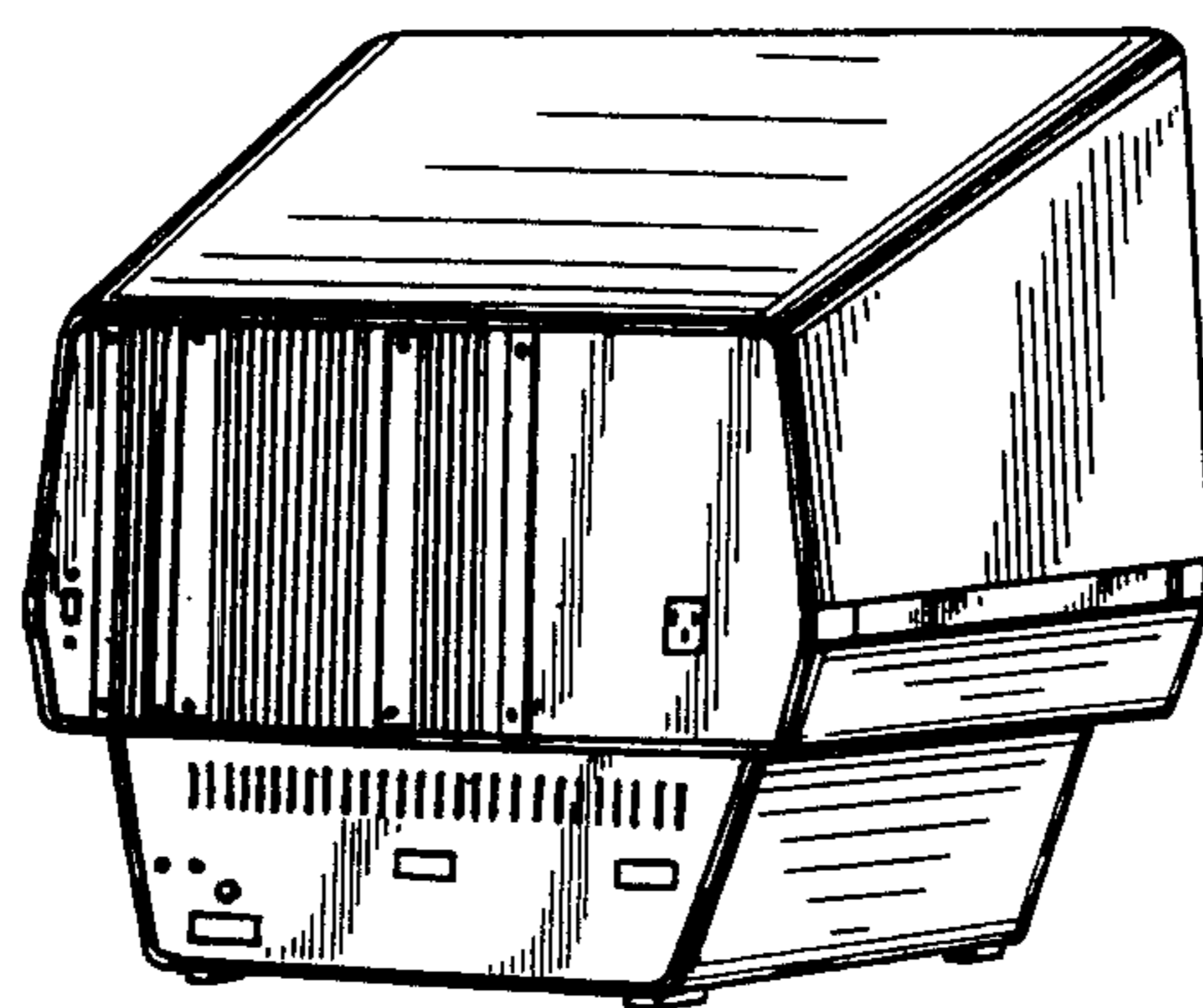


Fig- 7

# United States Patent [19]

Smith, III et al.

[11] Patent Number: **Des. 274,631**

[45] Date of Patent: **\*\* Jul. 10, 1984**

[54] **HAND CONTROL UNIT FOR VIDEO ARCADE GAME**

D. 250,666 12/1978 Hector ..... D21/13

[75] Inventors: **Jay Smith, III**, Pacific Palisades;  
**Moto Shimano**, Los Angeles, both of Calif.

[73] Assignee: **Smith Engineering**, Culver City, Calif.

[\*\*] Term: **14 Years**

[21] Appl. No.: **350,944**

[22] Filed: **Jan. 6, 1982**

[52] U.S. Cl. .... **D21/48; D13/32**

[58] Field of Search ..... **D21/13, 1, 48; D13/38, D13/32; 273/DIG. 28, 1 GC, 237**

[56] **References Cited**

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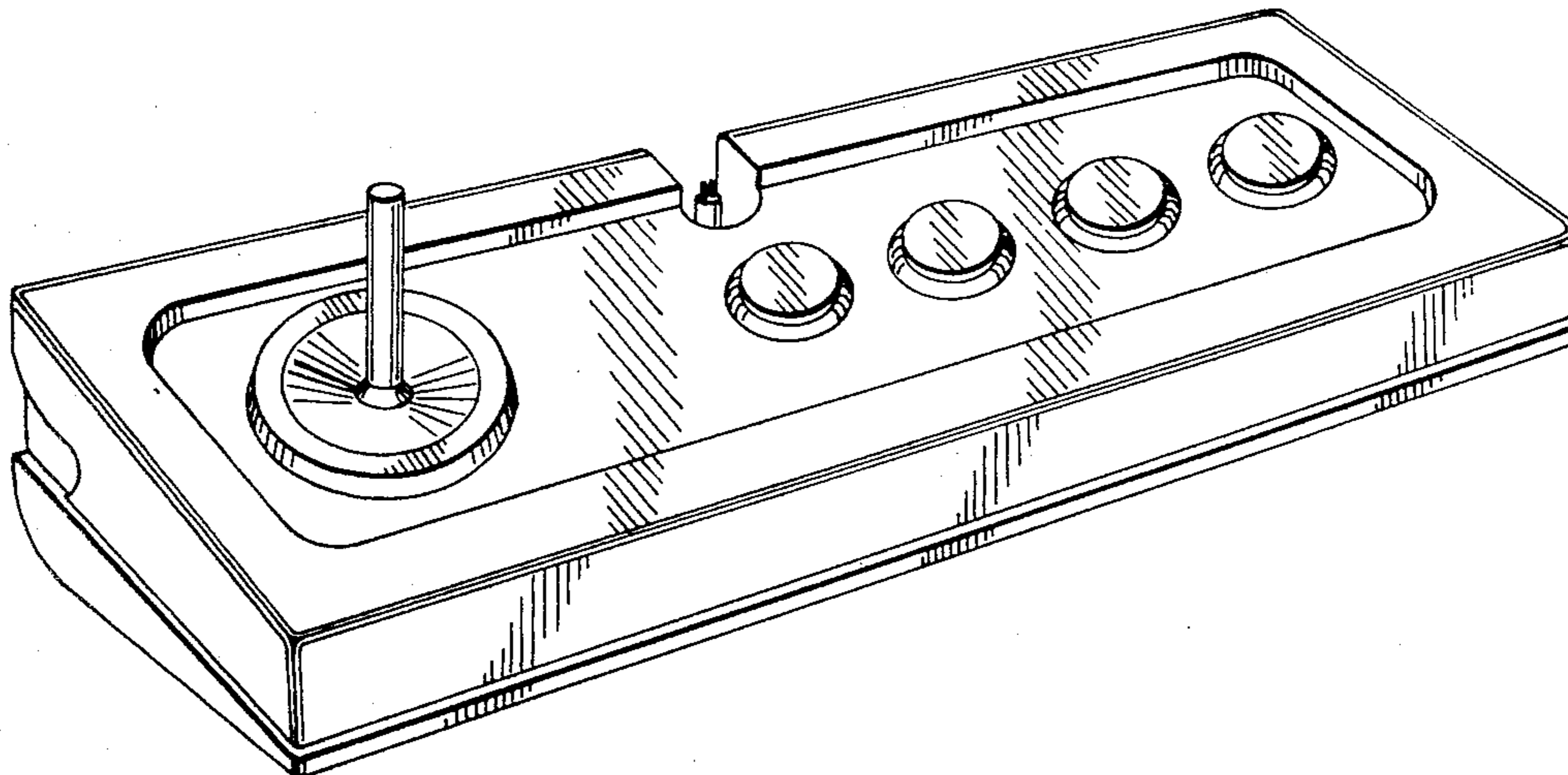
*Primary Examiner*—Melvin B. Feifer  
*Attorney, Agent, or Firm*—Jackson, Jones & Price

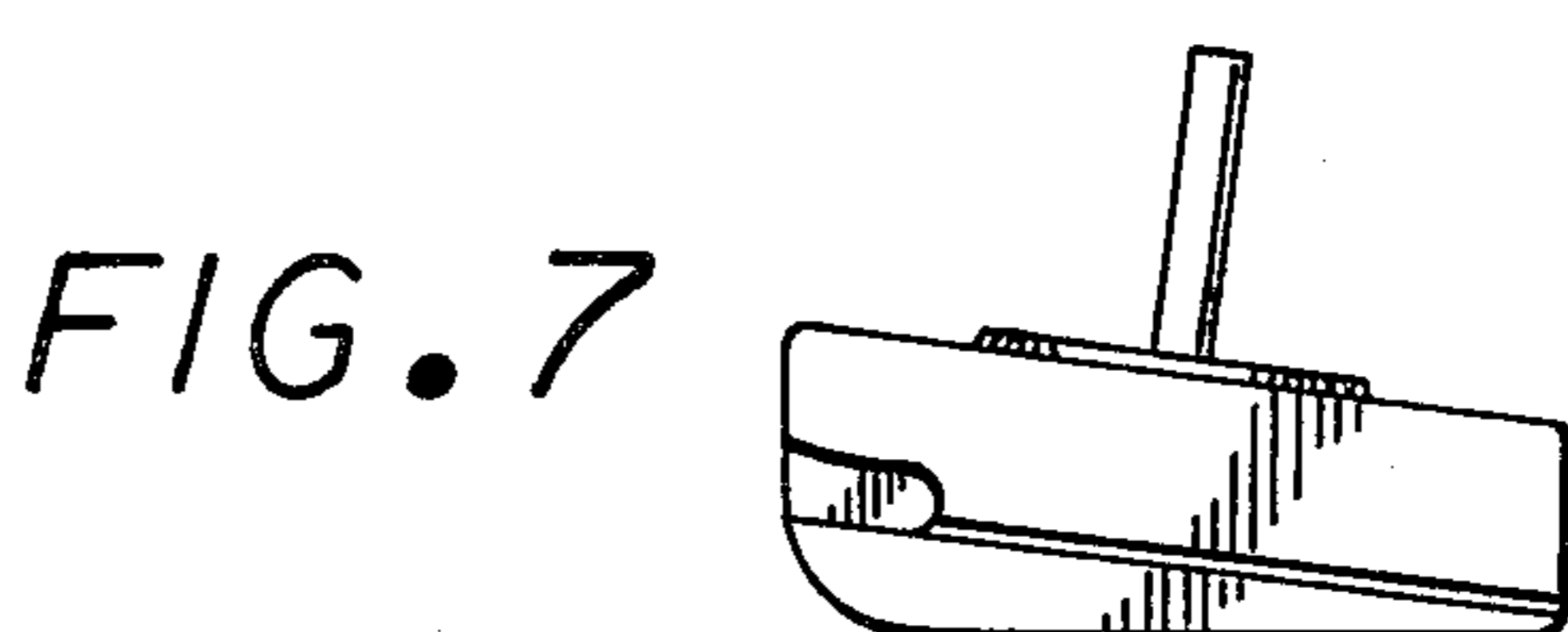
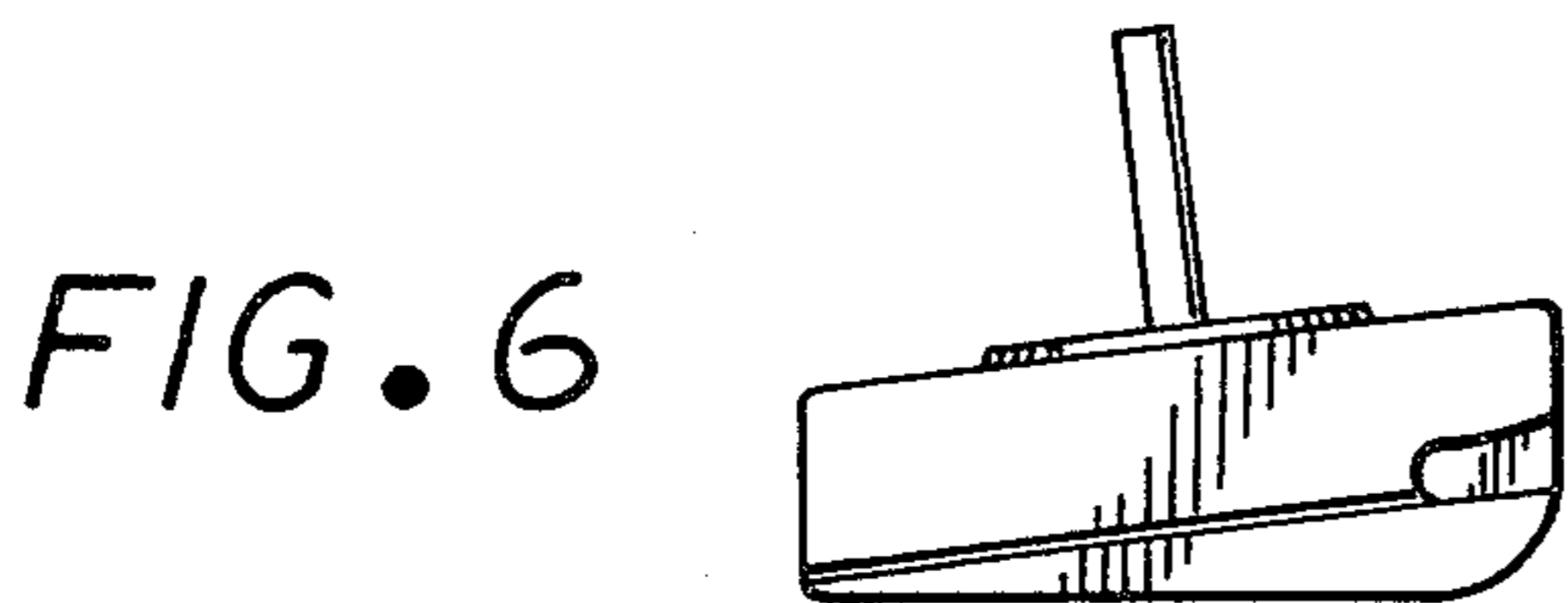
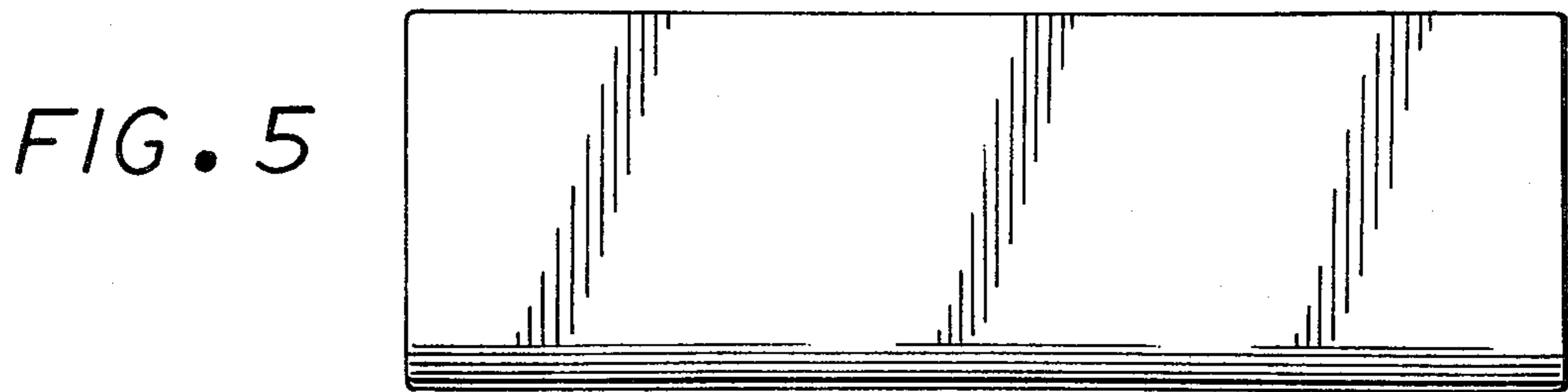
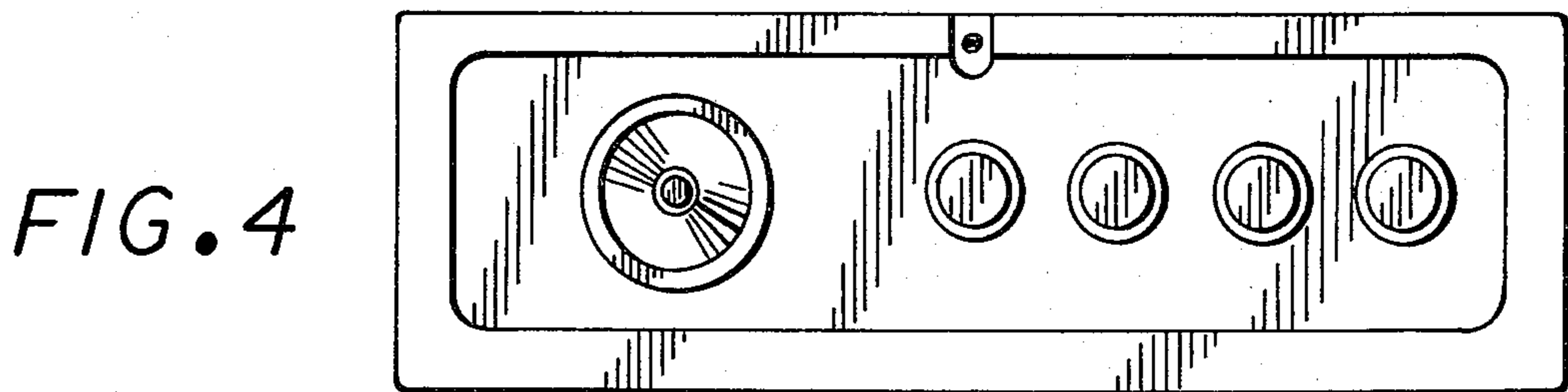
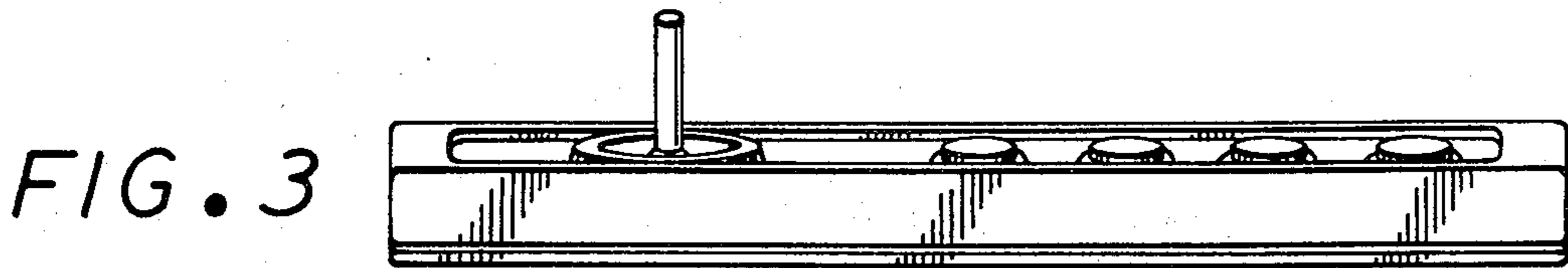
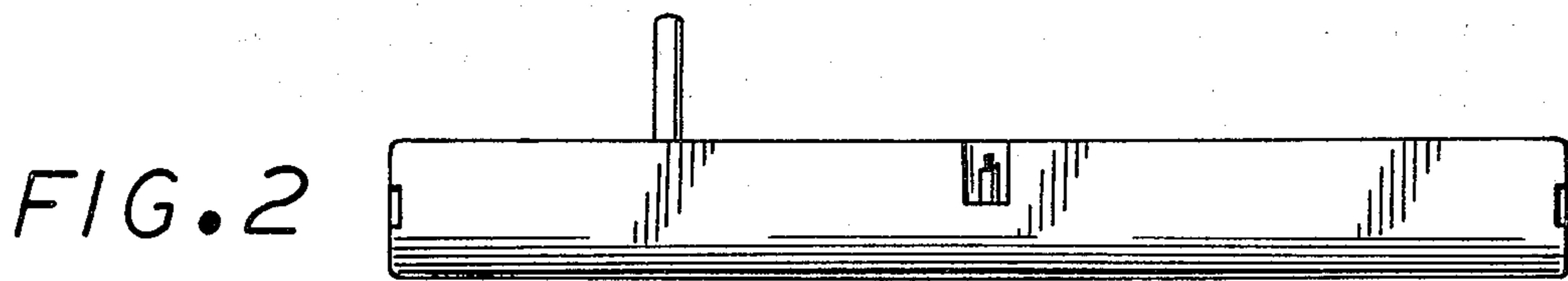
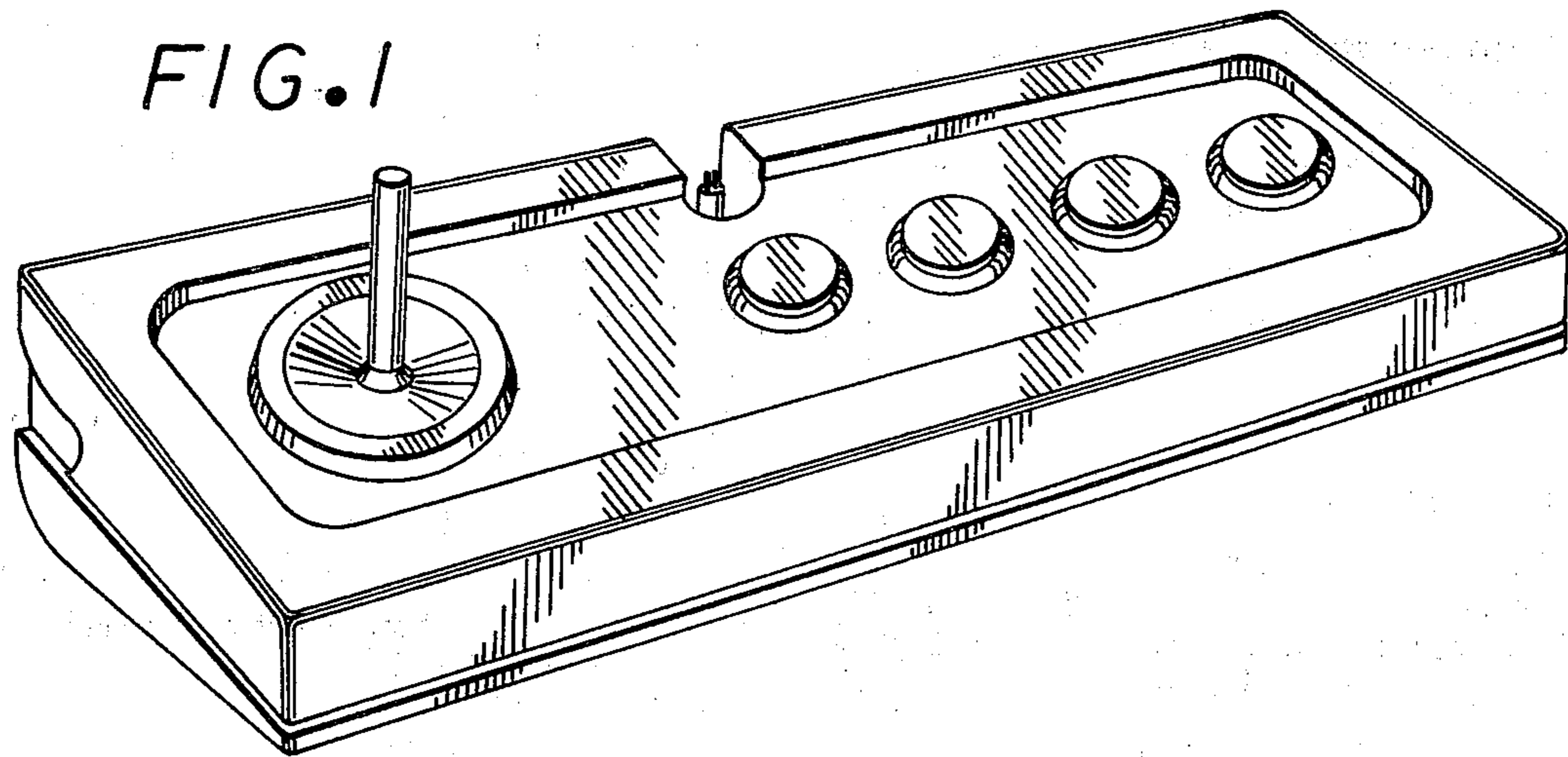
[57] **CLAIM**

The ornamental design for hand control unit for video arcade game, substantially as shown.

**DESCRIPTION**

FIG. 1 is a perspective view of a hand control unit for video arcade game showing our new design; FIG. 2 is a rear elevational view; FIG. 3 is a front elevational view; FIG. 4 is a top plan view; FIG. 5 is a bottom plan view; FIG. 6 is a right elevational side view; and FIG. 7 is a left elevational side view.





[54] **VIDEO ARCADE GAME AND DISPLAY HOUSING**

[75] **Inventors: Jay Smith, III, Pacific Palisades; Moto Shimano, Los Angeles, both of Calif.**

[73] **Assignee: Smith Engineering, Culver City, Calif.**

[\*\*] **Term: 14 Years**

[21] **Appl. No.: 350,462**

[22] **Filed: Jan. 6, 1982**

[52] **U.S. Cl. .... D21/13; D14/80**

[58] **Field of Search .... D21/13; D14/80; 273/DIG. 28, 85 G, 1 GC**

[56] **References Cited**  
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*Primary Examiner*—Melvin B. Feifer  
*Attorney, Agent, or Firm*—Jackson, Jones & Price

[57] **CLAIM**

The ornamental design for a video arcade game and display housing, substantially as shown.

**DESCRIPTION**

- FIG. 1 is a perspective view of the video arcade game and display housing showing our new design;
- FIG. 2 is a right side view;
- FIG. 3 is a front elevational view;
- FIG. 4 is a left side elevational view;
- FIG. 5 is the rear elevational view;
- FIG. 6 is a top plan view;
- FIG. 7 is a bottom plan view.

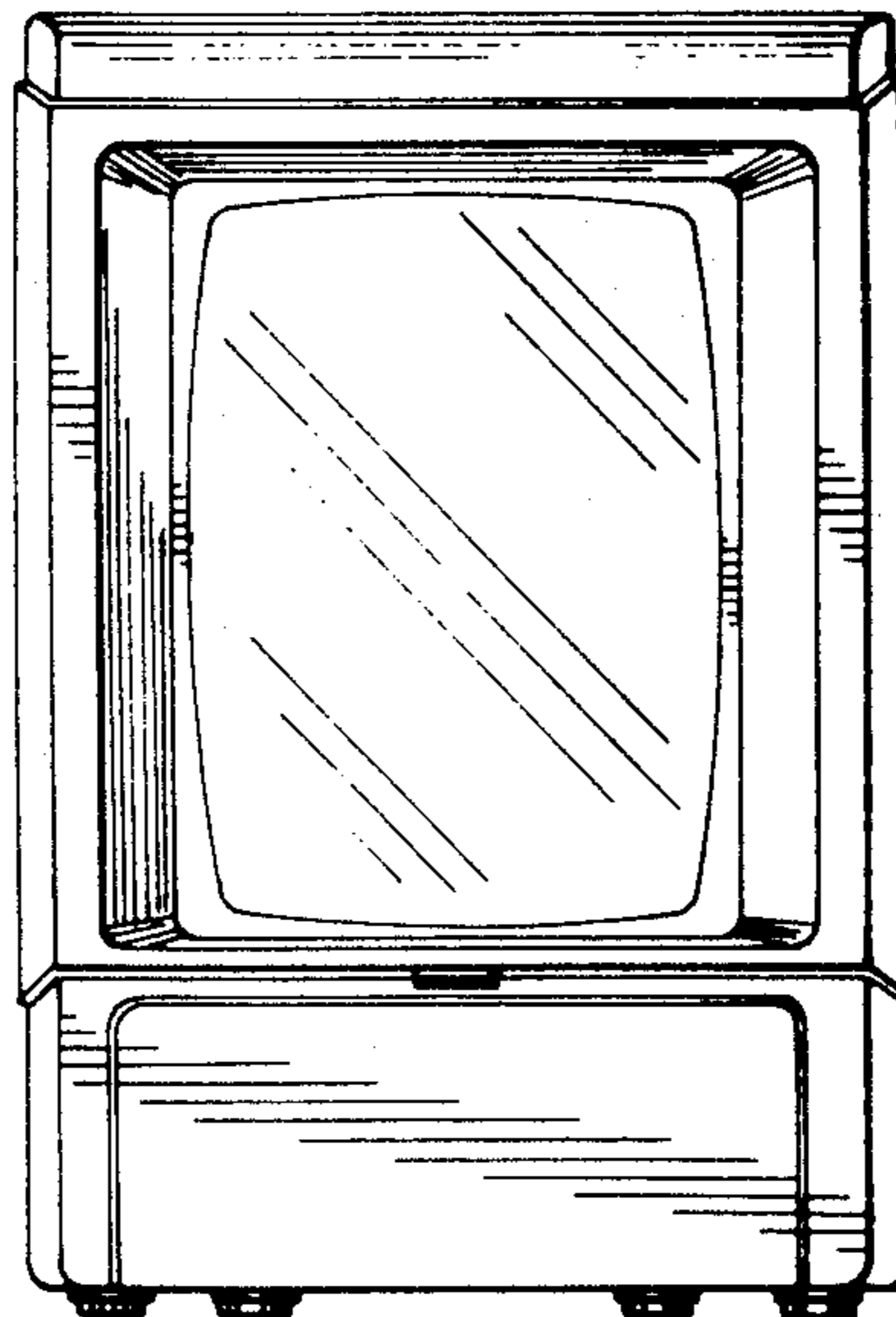


FIG. 1

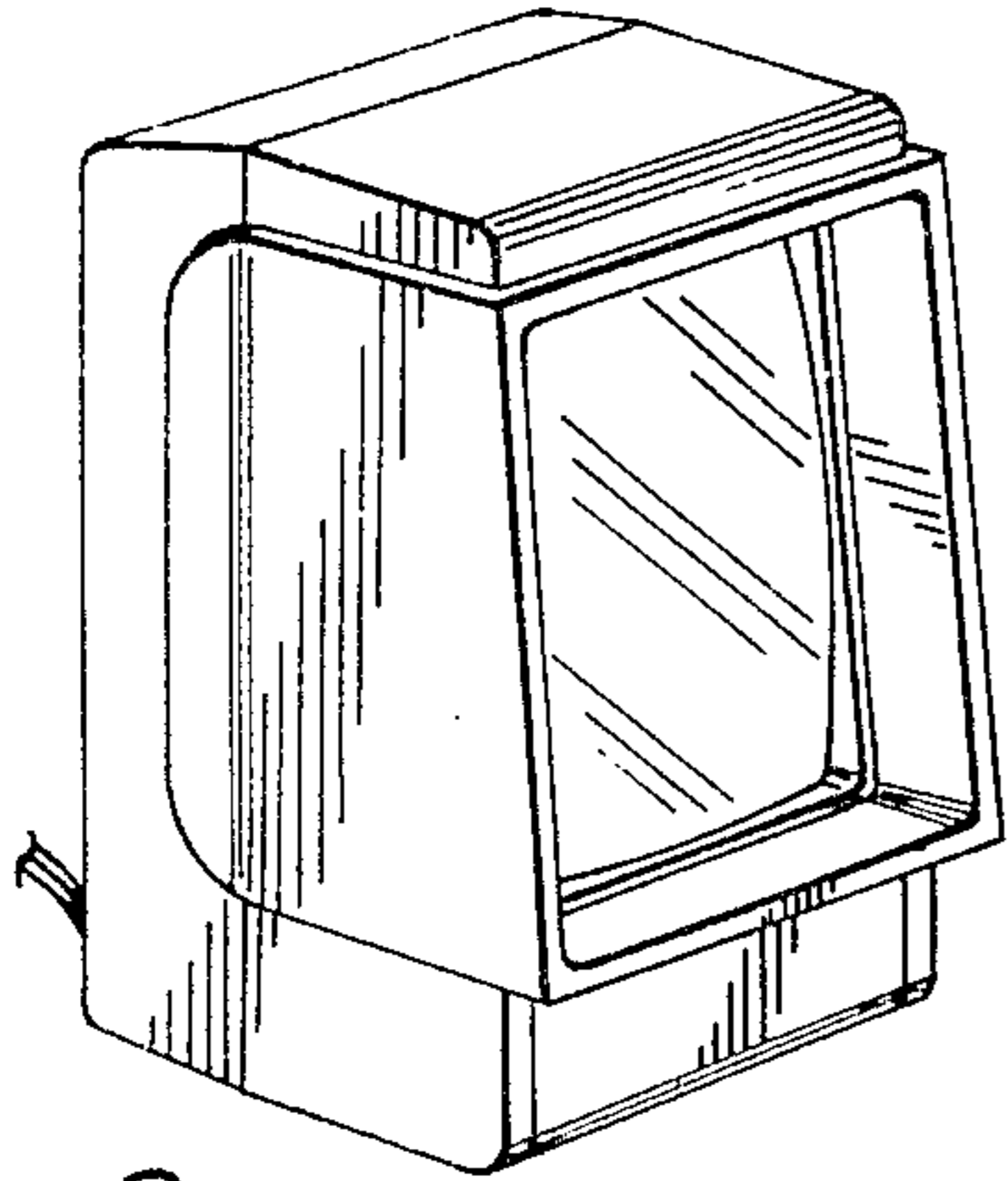


FIG. 2

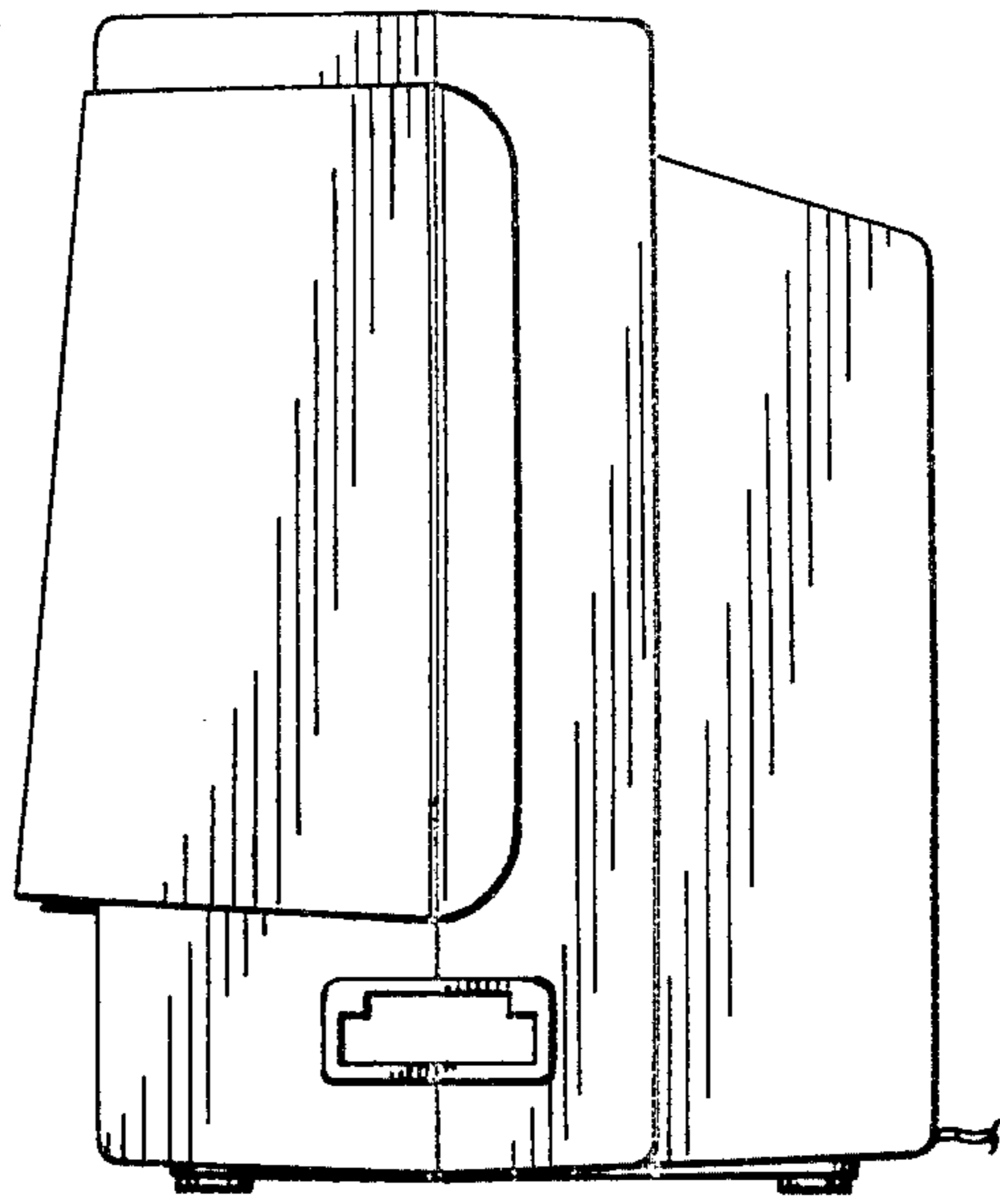


FIG. 3

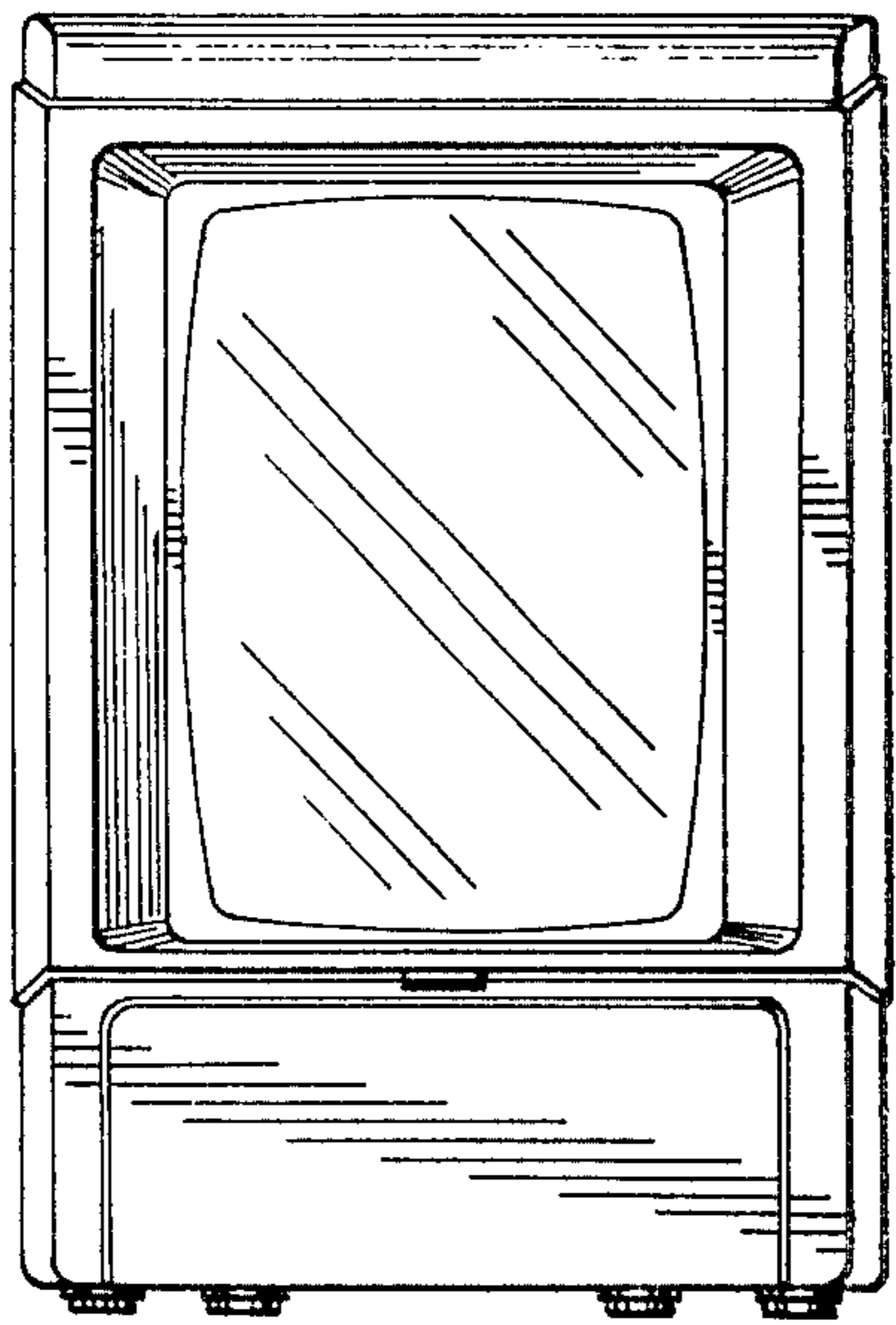


FIG. 4

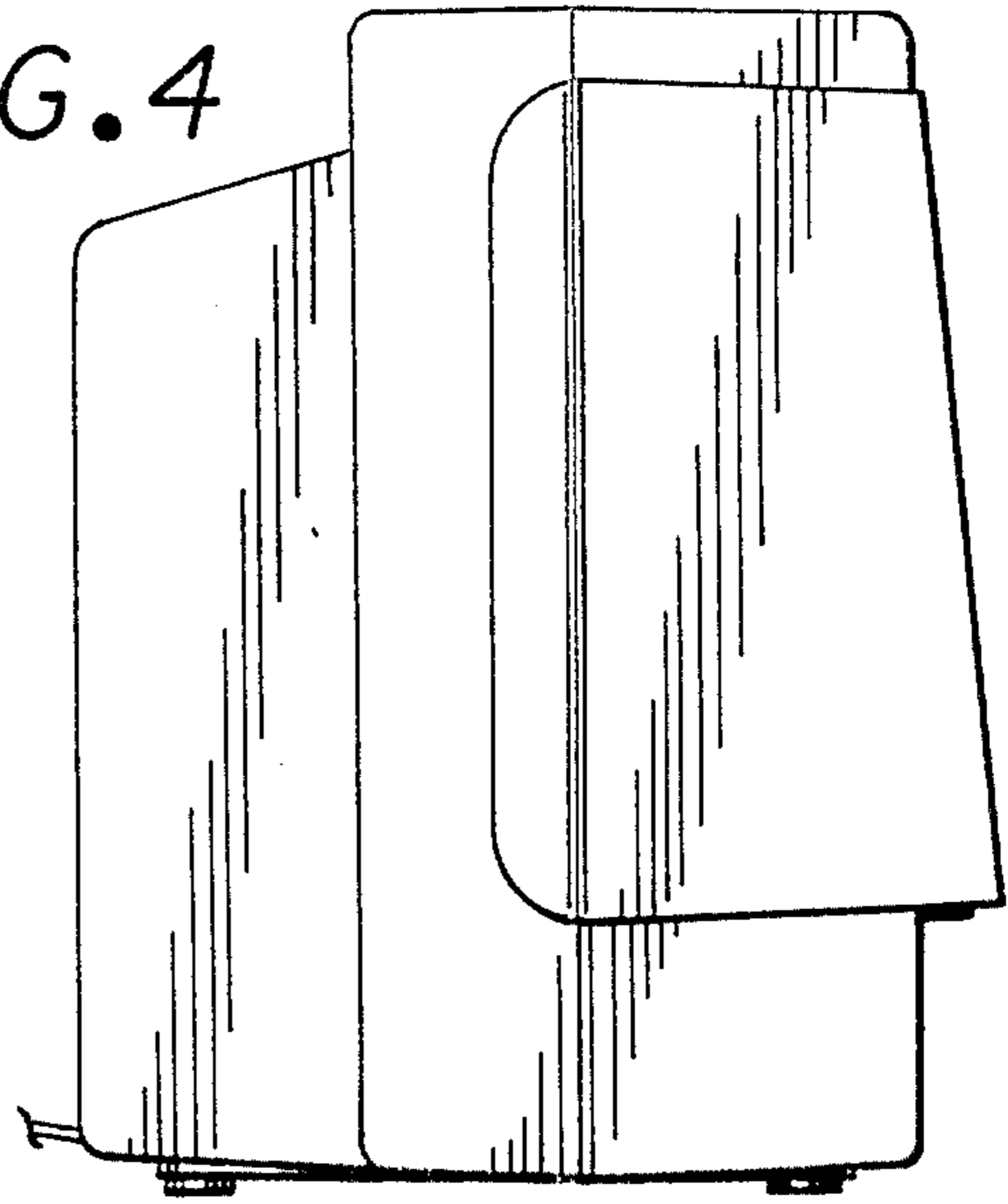


FIG. 5

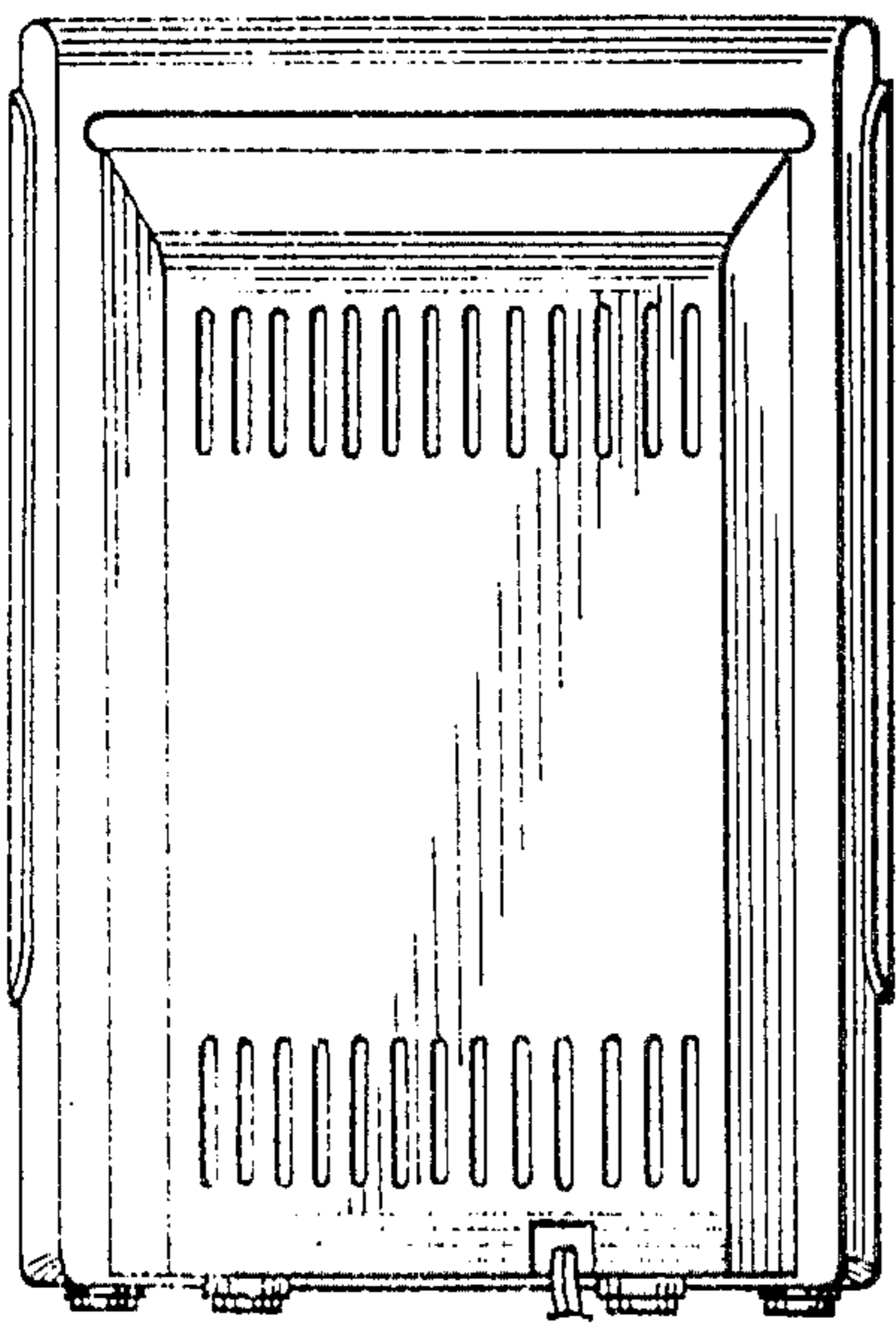


FIG. 6

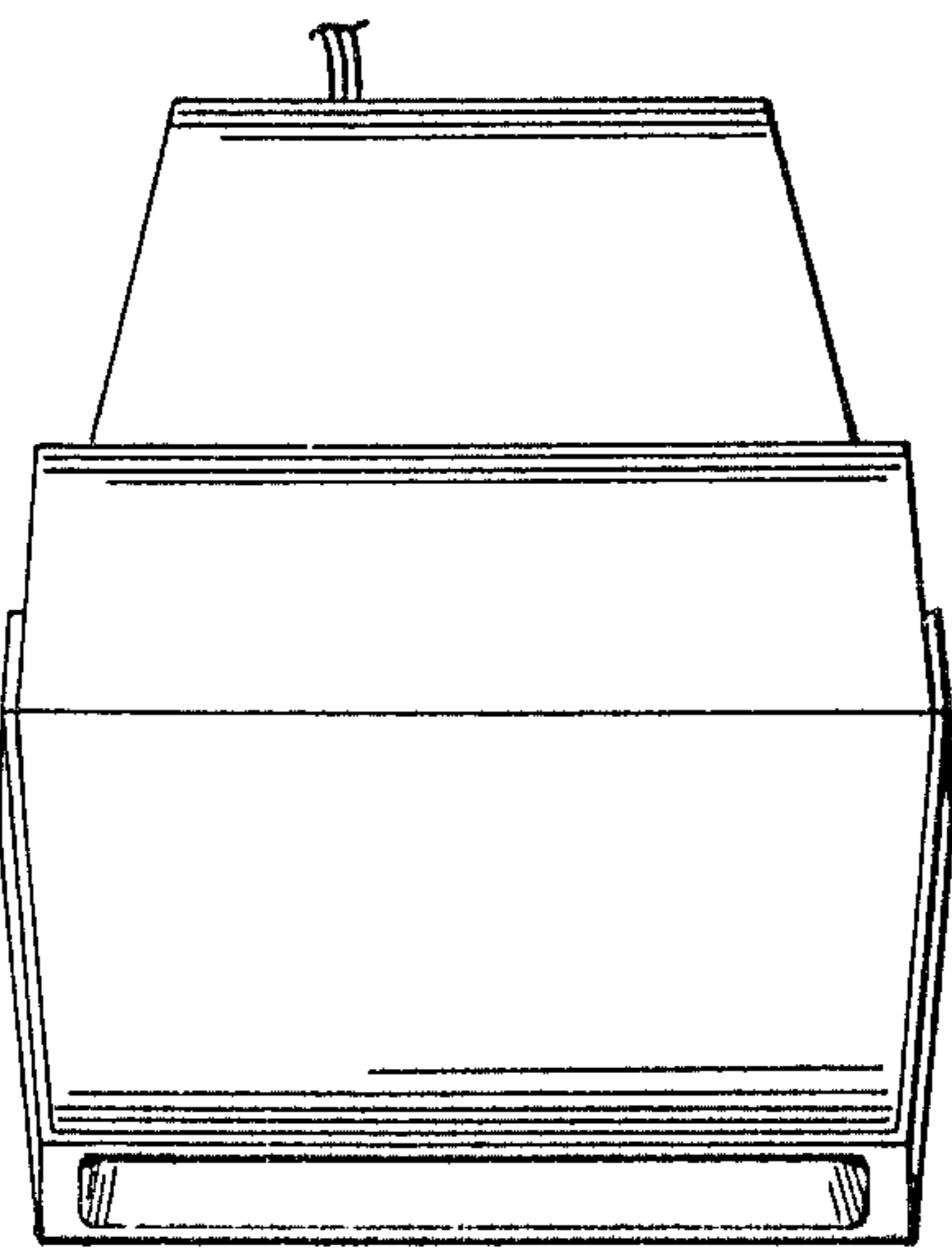


FIG. 7

