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(12) **United States Design Patent** (10) **Patent No.:** **US D570,778 S**  
**Yu et al.** (45) **Date of Patent:** **\*\* Jun. 10, 2008**

(54) **COMBINED PLUGGABLE OPTICAL  
TRANSCIVER AND LATCH-RELEASE  
SLEEVE**

(74) *Attorney, Agent, or Firm*—Foley & Lardner LLP

(75) Inventors: **Juhyun Yu**, Hitachi (JP); **Yoshinori  
Sunaga**, Hitachinaka (JP)

(57) **CLAIM**

The ornamental design for a combined pluggable optical transceiver and latch-release sleeve, as shown and described.

(73) Assignee: **Hitachi Cable, Ltd.**, Tokyo (JP)

**DESCRIPTION**

(\*\*) Term: **14 Years**

(21) Appl. No.: **29/250,559**

(22) Filed: **Nov. 21, 2006**

(30) **Foreign Application Priority Data**

Jun. 26, 2006 (JP) ..... 2006-016513

(51) **LOC (8) Cl.** ..... **13-03**

(52) **U.S. Cl.** ..... **D13/123**

(58) **Field of Classification Search** ..... D13/123,  
D13/133, 146, 147, 184, 199; 385/88, 89,  
385/92, 385; 361/728, 754, 759; 439/357,  
439/372, 359, 358, 76.1, 607, 608, 609

See application file for complete search history.

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*Primary Examiner*—Daniel Bui

*Assistant Examiner*—Thomas J Johannes

This article is a combined pluggable optical transceiver and latch-release sleeve, used for optical communication, and including an optical transmitter and an optical receiver that are integrally formed. The combined pluggable optical transceiver and latch-release sleeve has a latch mechanism that is plugged to a network apparatus to serve as a retainer when this article is installed on the network apparatus. The latch mechanism connected to a latch-release sleeve can be released by pulling the latch-release sleeve to the forward direction, so that this article can be detached from the network apparatus. Respective corners of the latch-release sleeve are formed to have a round shape, so that the latch-release sleeve can be easily hold along omni-direction, namely, vertical and horizontal directions. Upper and lower surfaces of the latch-release sleeve that are often held by a user are provided with plural grooves with a constant pitch to prevent the user's fingers from being slipped. Further, a height of the latch-release sleeve is slowly increased from a main body side to a front side thereof, such that a holding force can be easily transmitted to the latch mechanism. Still further, the latch-release sleeve is provided with a stopper for limiting a front position thereof with respect to an optical transceiver housing, to avoid an application of an excessive force being to the latch mechanism.

FIG. 1 is an enlarged top, front and right side perspective view of a combined pluggable optical transceiver and latch-release sleeve showing our new design;

FIG. 2 is a front view thereof;

FIG. 3 is a back view thereof;

FIG. 4 is a right side view thereof;

FIG. 5 is a left side view thereof;

FIG. 6 is a top view thereof;

FIG. 7 is a bottom view thereof;

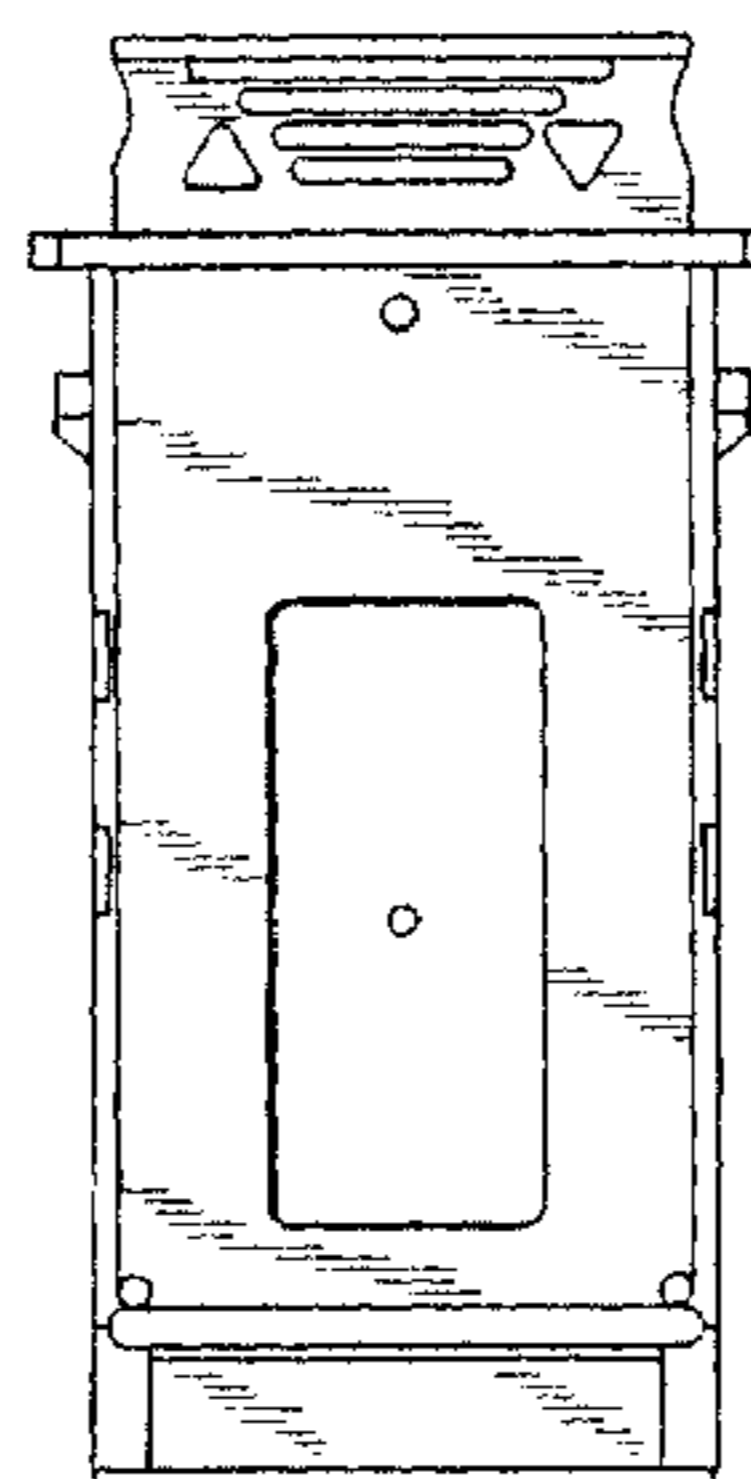


FIG. 8 is an enlarged top, front and right side perspective view of a combined pluggable optical transceiver and latch-release sleeve in a state where a latch is released showing an alternate usage condition;

FIG. 9 is a front view thereof;

FIG. 10 is a back view thereof;

FIG. 11 is a right side view thereof;

FIG. 12 is a left side view thereof;

FIG. 13 is a top view thereof;

FIG. 14 is a bottom view thereof;

FIG. 15 is an enlarged top, front and right perspective view of the latch-release sleeve disassembled from a combined pluggable optical receiver shown separately for clarity;

FIG. 16 is a front view thereof;

FIG. 17 is a back view thereof;

FIG. 18 is a right side view thereof;

FIG. 19 is a left side view thereof;

FIG. 20 is a top view thereof;

FIG. 21 is a bottom view thereof; and,

FIG. 22 is a cross sectional view thereof, taken along line 22—22 in FIG. 21.

In FIGS. 6 and 13, small circles shown at two points on a rear portion of the optical transceiver housing and an outer circle of a double circle shown at one point on a front portion of the optical transceiver housing are holes.

In FIGS. 7 and 14, small circles shown at two points on the rear portion, one point on a front-center portion, and one point on a center portion of the optical transceiver housing are holes. Further, in FIGS. 7 and 14, a rectangular concave portion with a depth of about 0.1 mm is formed at the center portion along a longitudinal direction.

The broken line showing in the figure drawings is included for illustrative purposes only and forms no part of the claimed design.

**1 Claim, 22 Drawing Sheets**

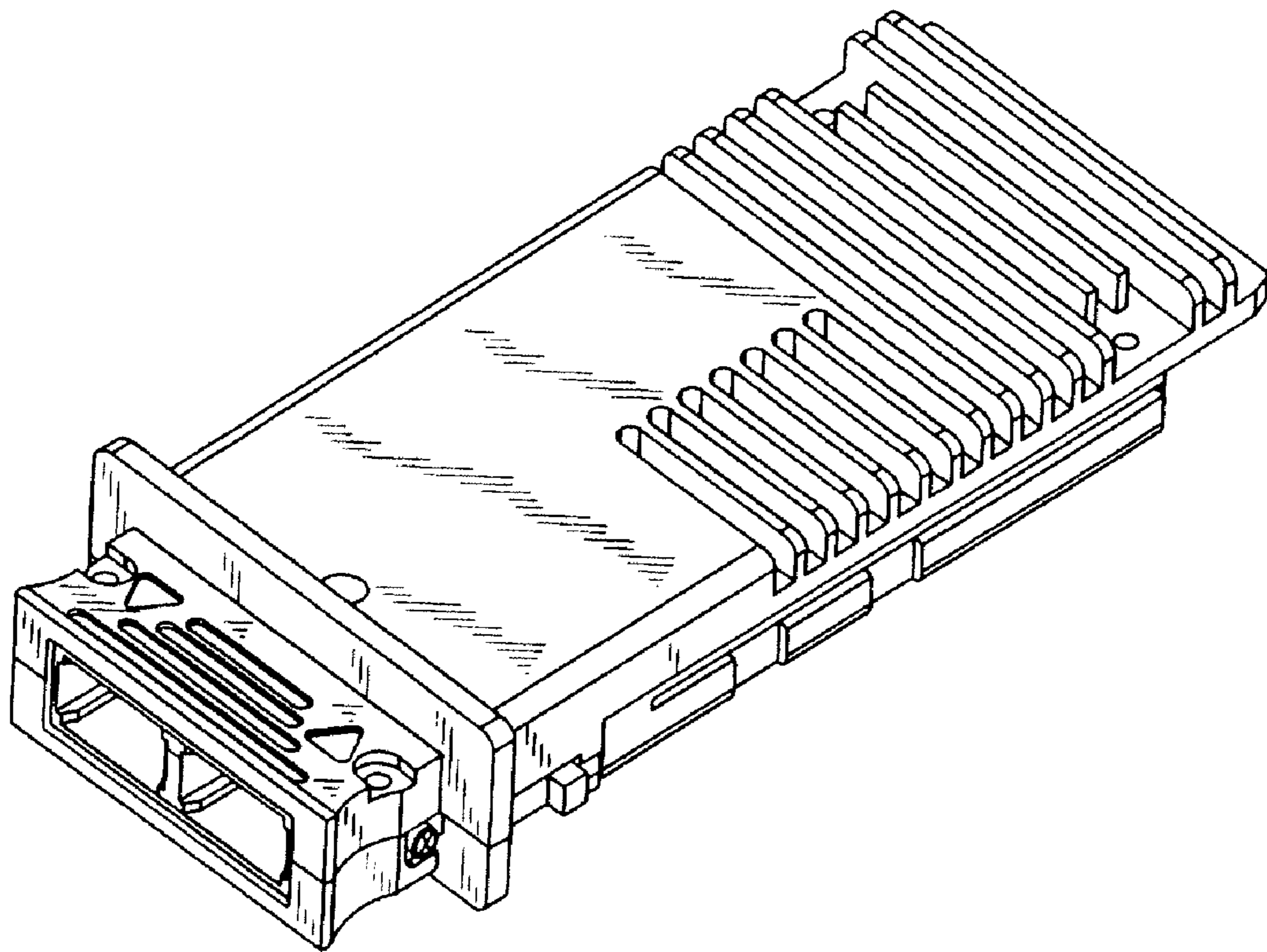
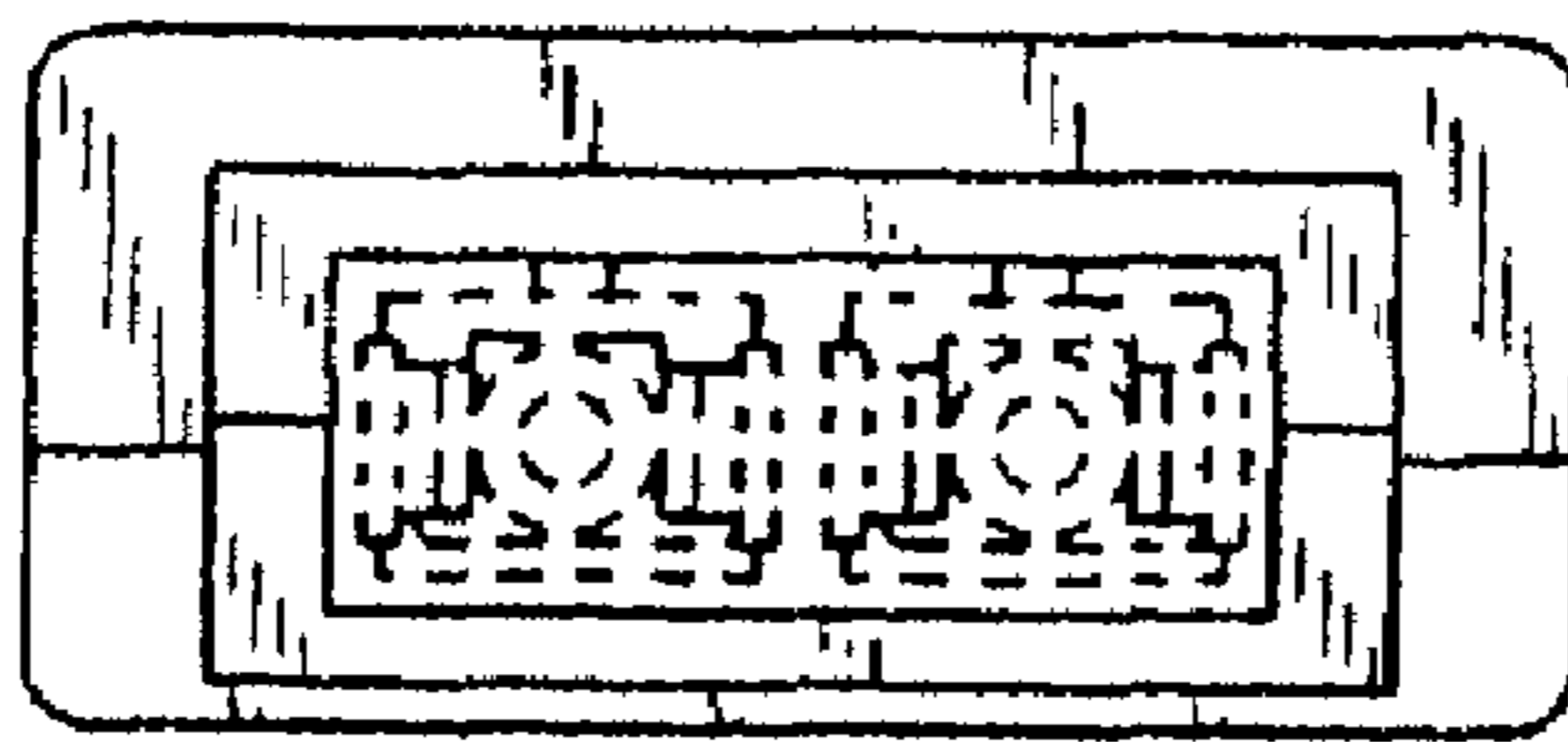
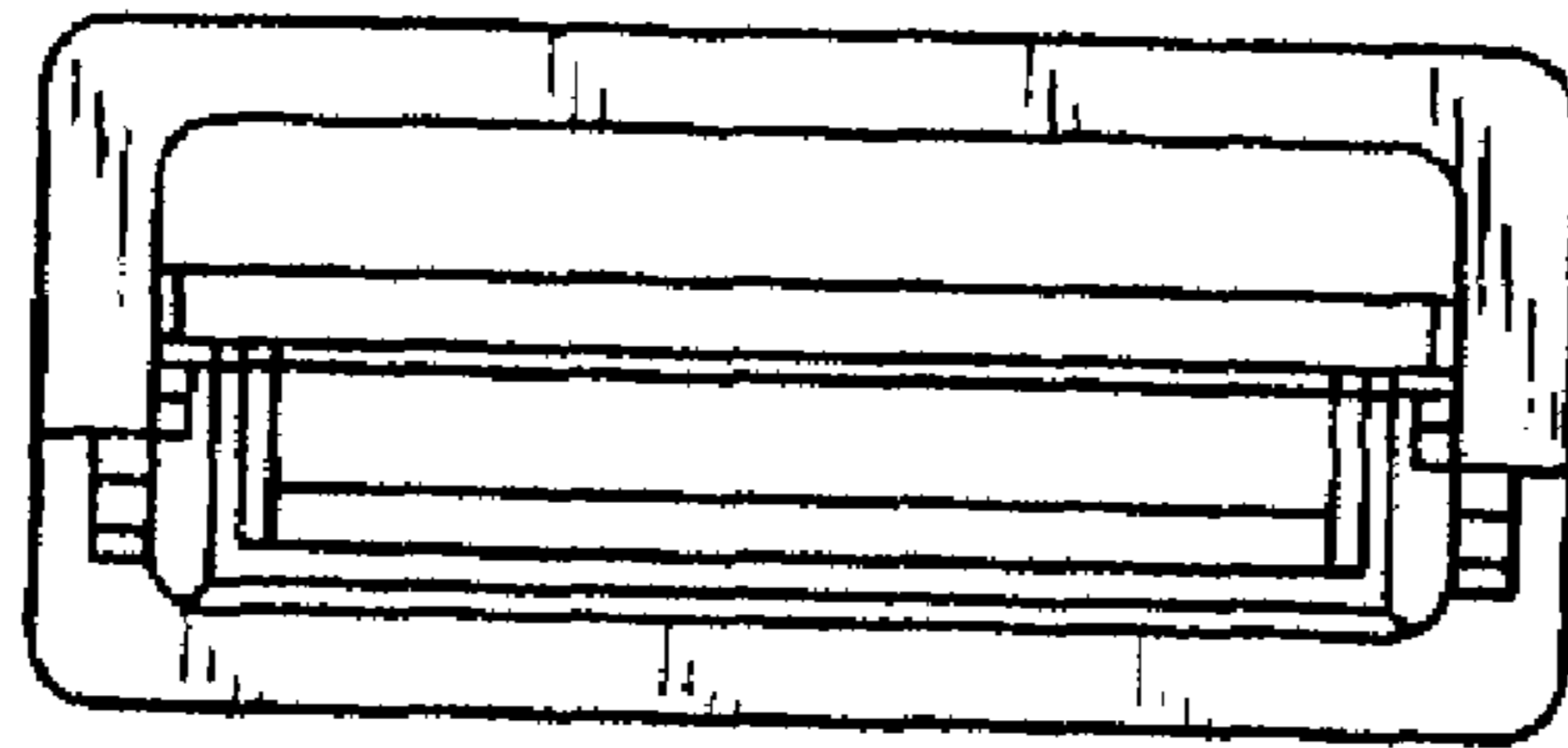


FIG. 1



**FIG. 2**



**FIG. 3**

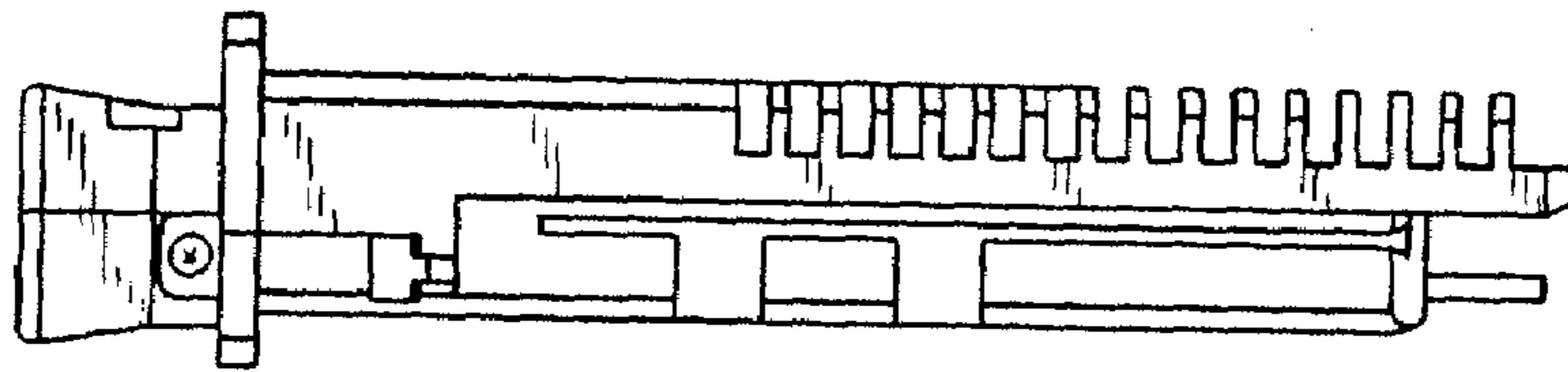


FIG. 4

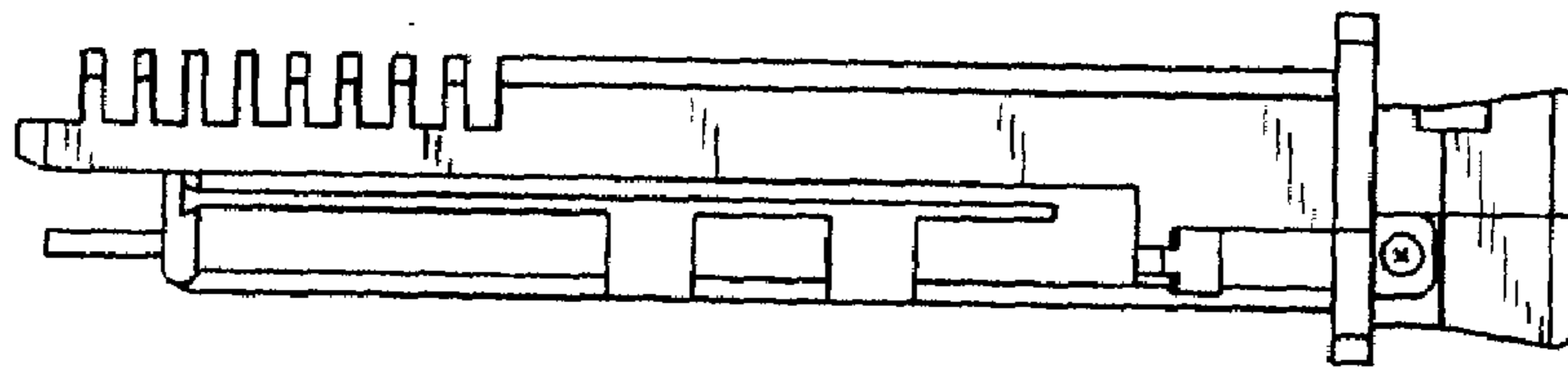


FIG. 5

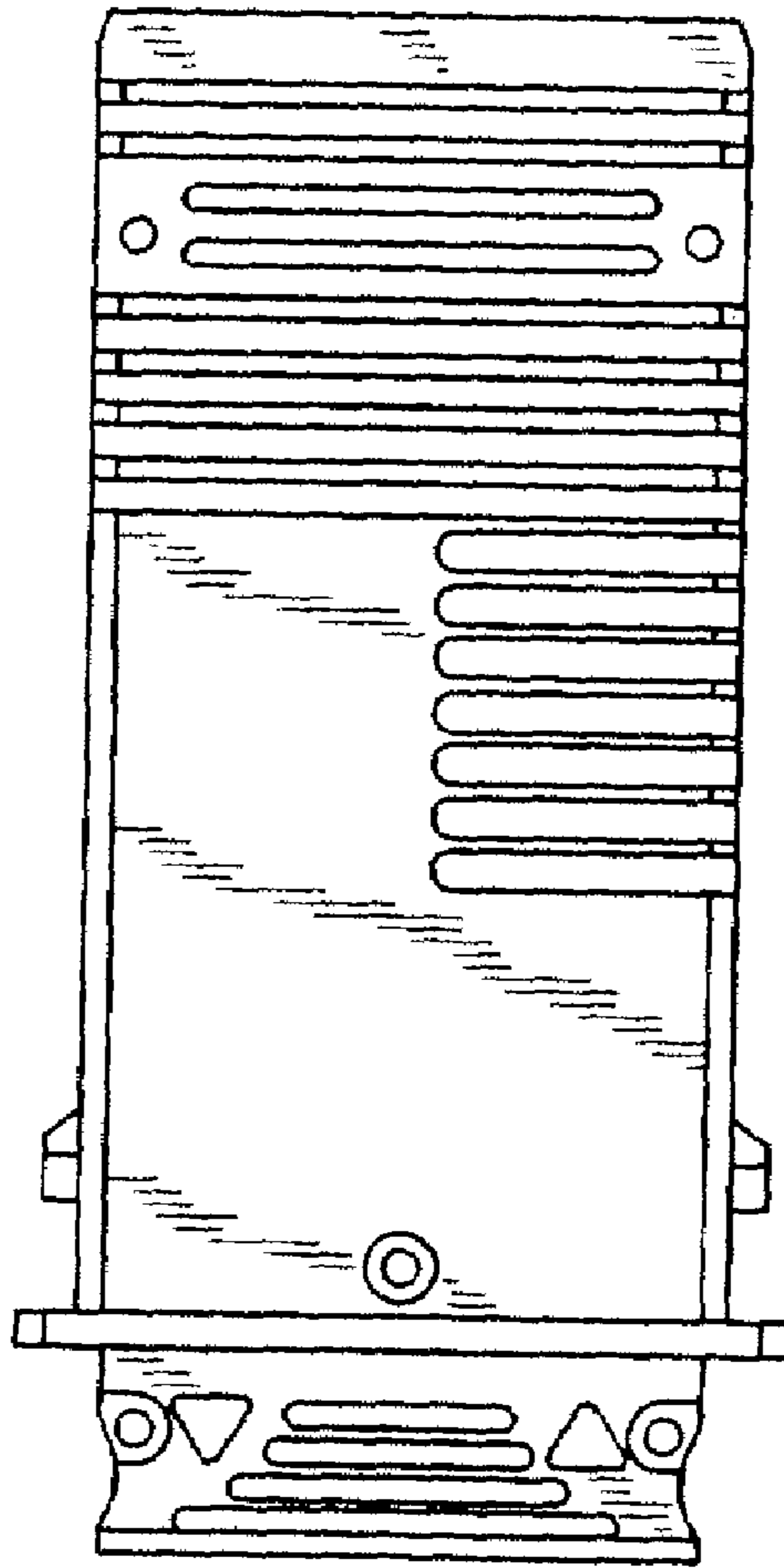


FIG. 6



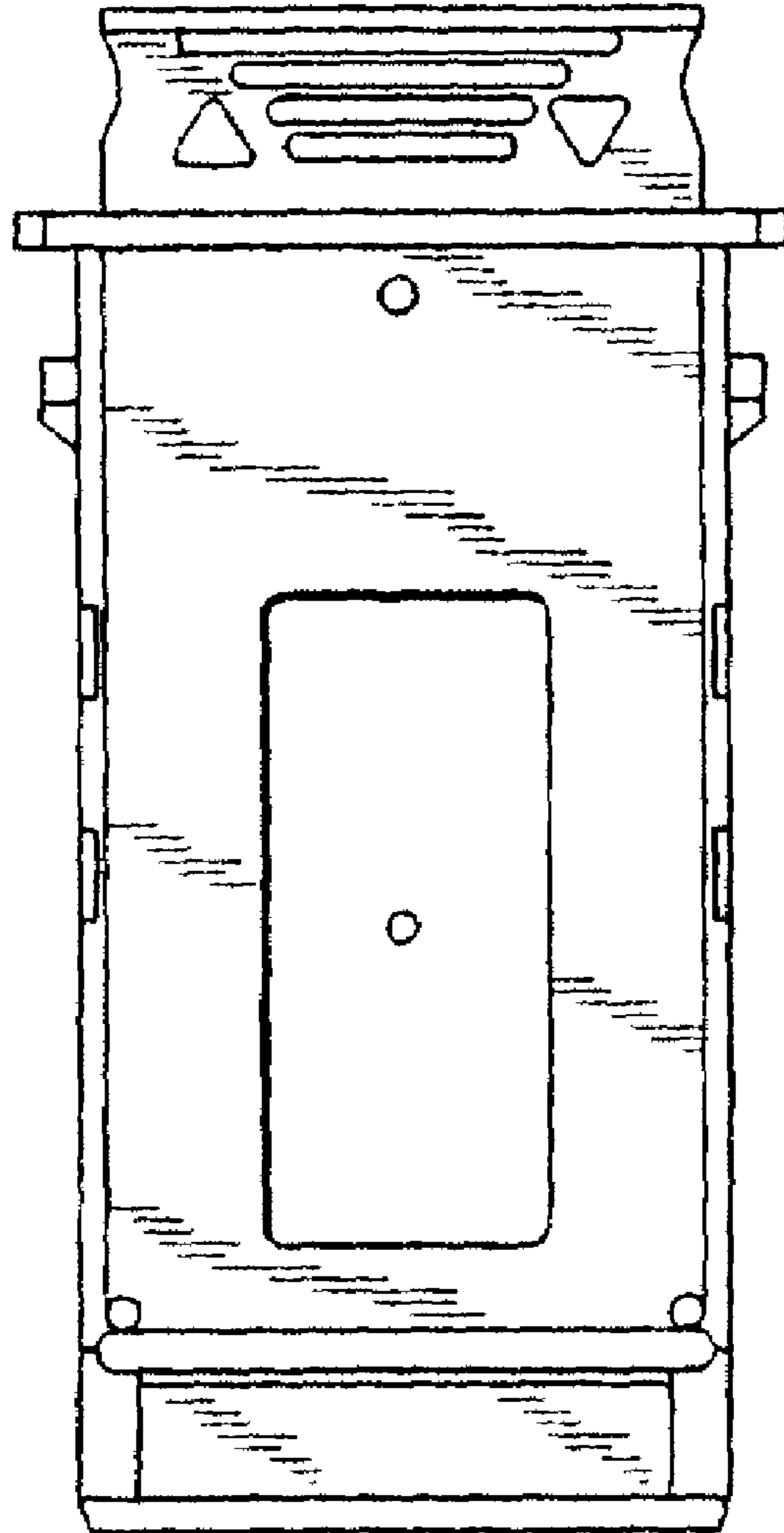


FIG. 7

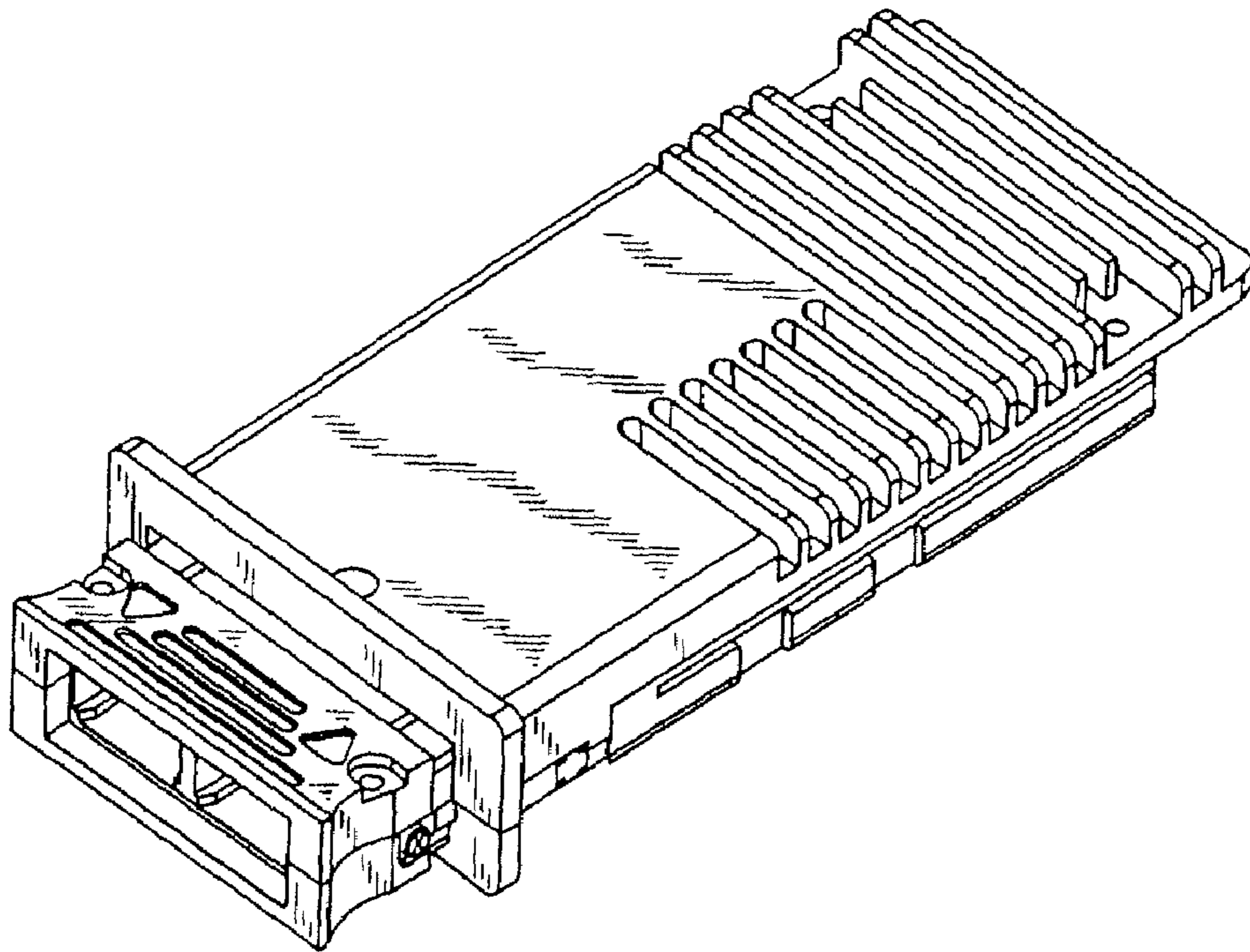
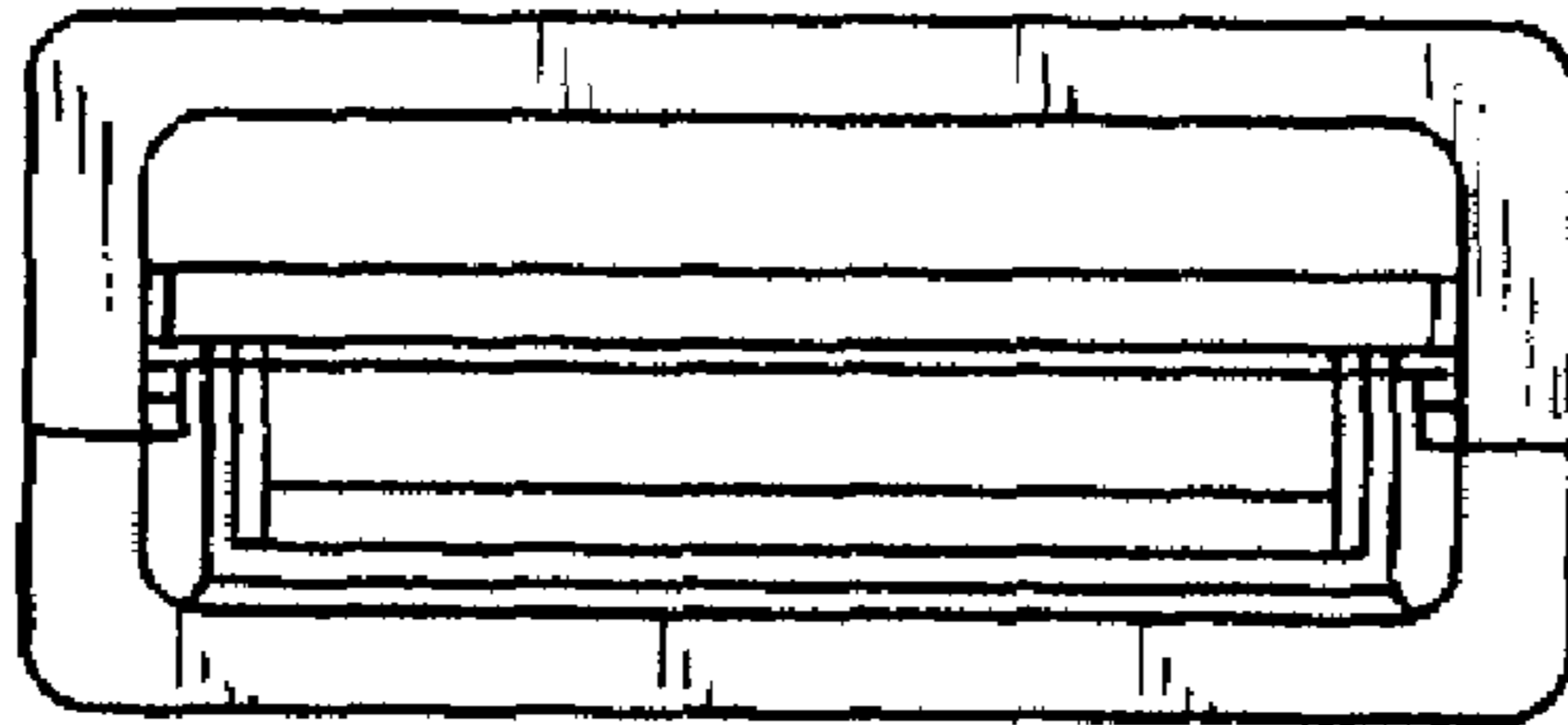


FIG. 8



**FIG. 9**



**FIG. 10**

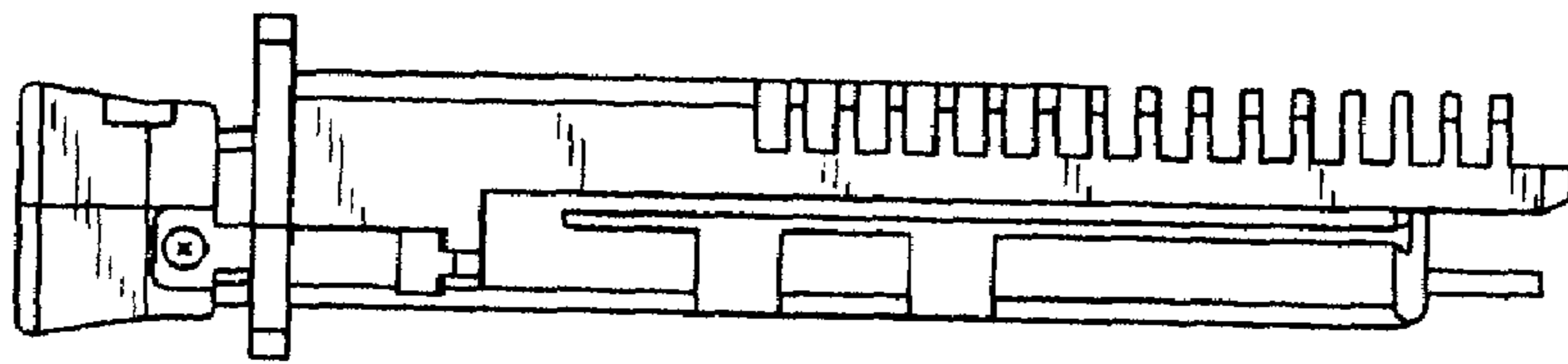


FIG. 11

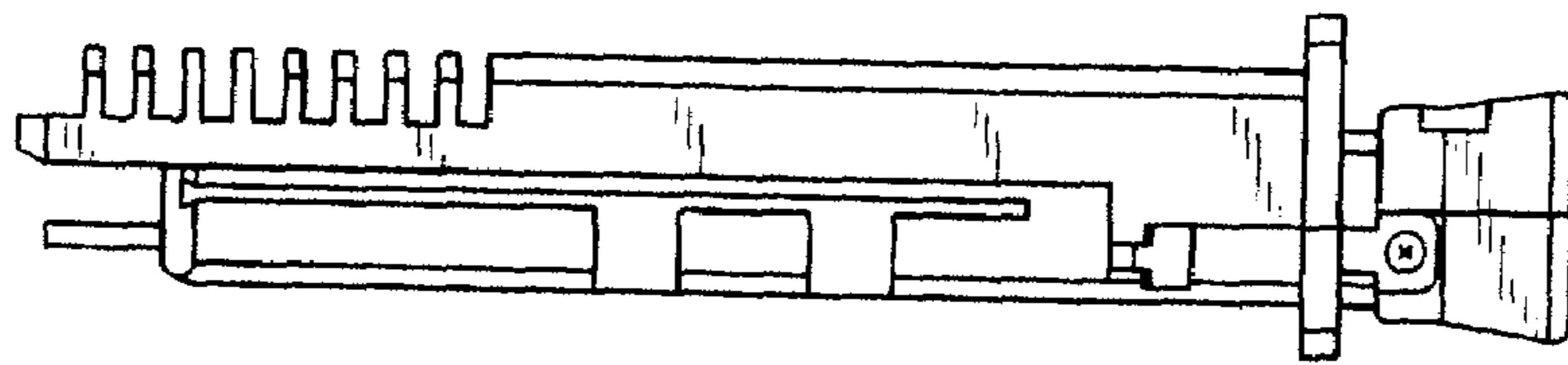


FIG. 12

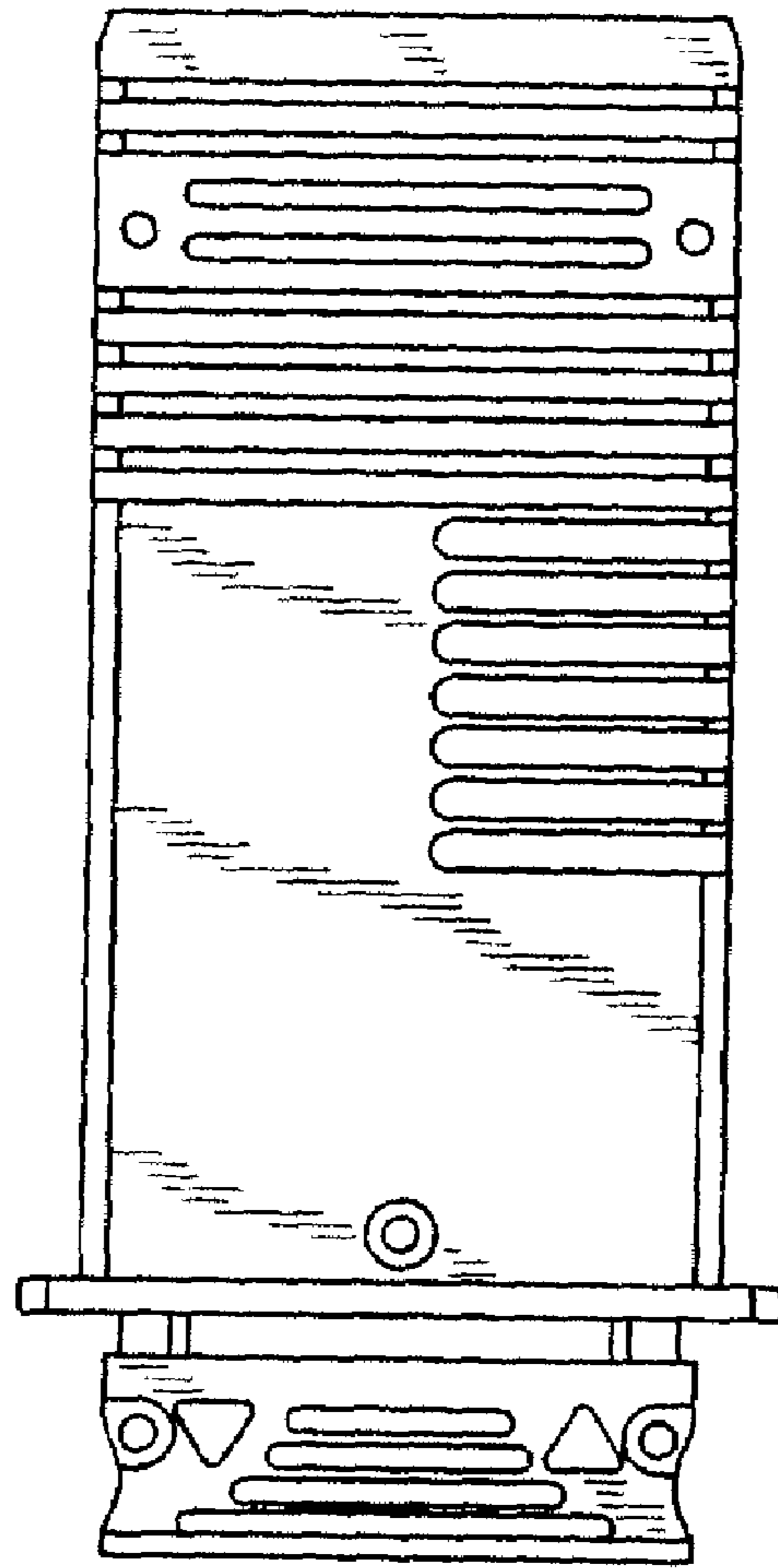
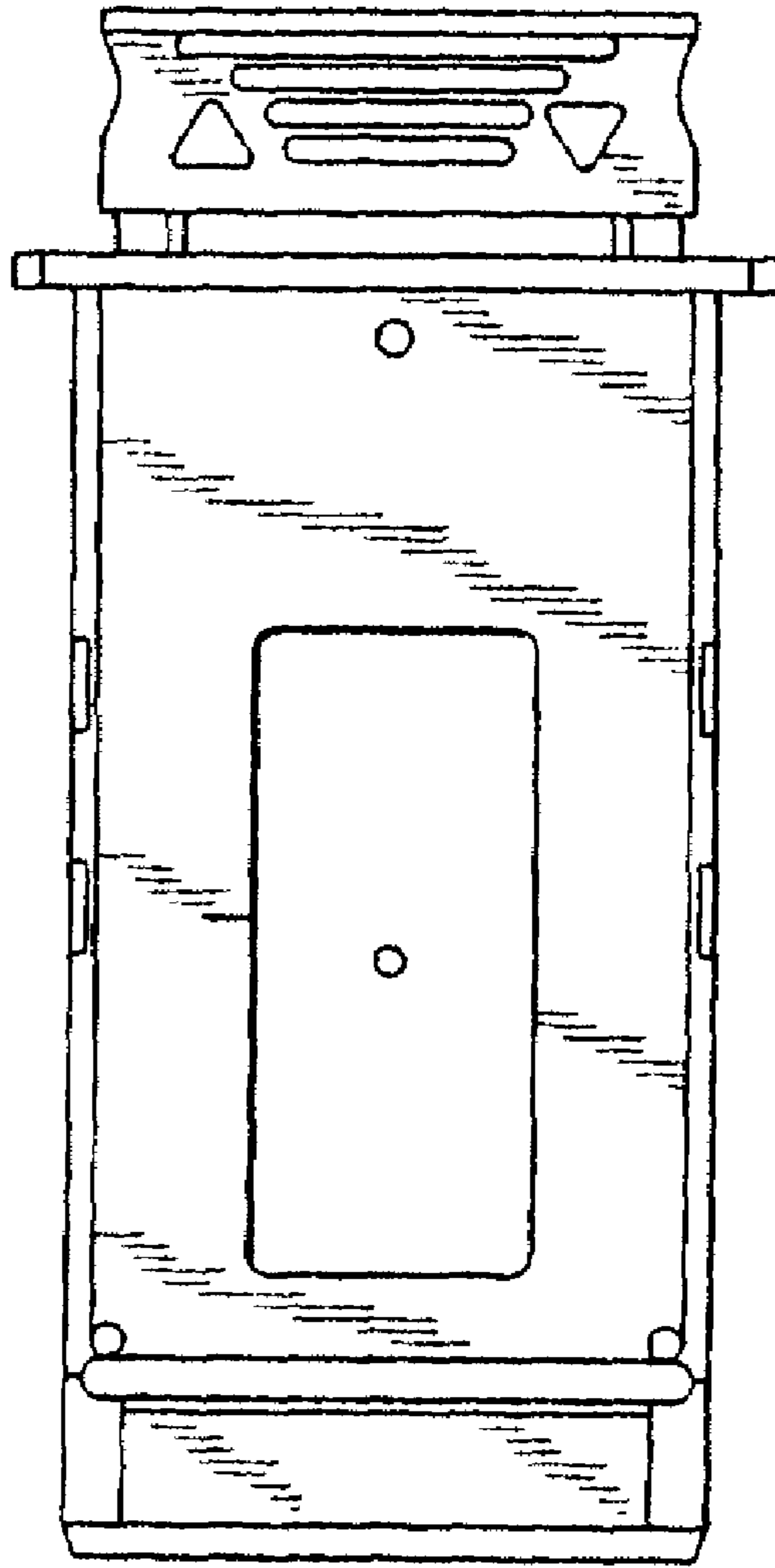
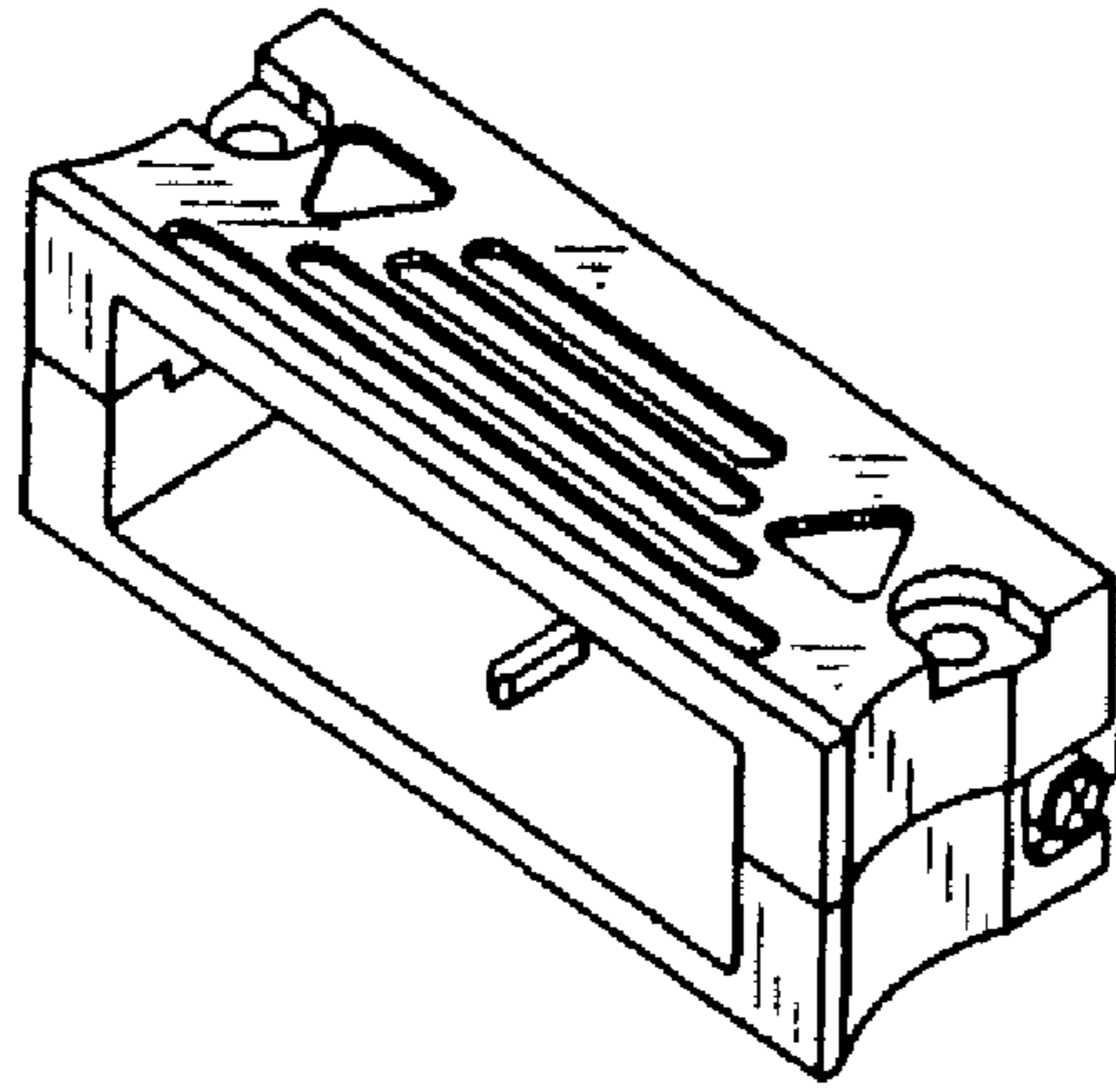


FIG. 13

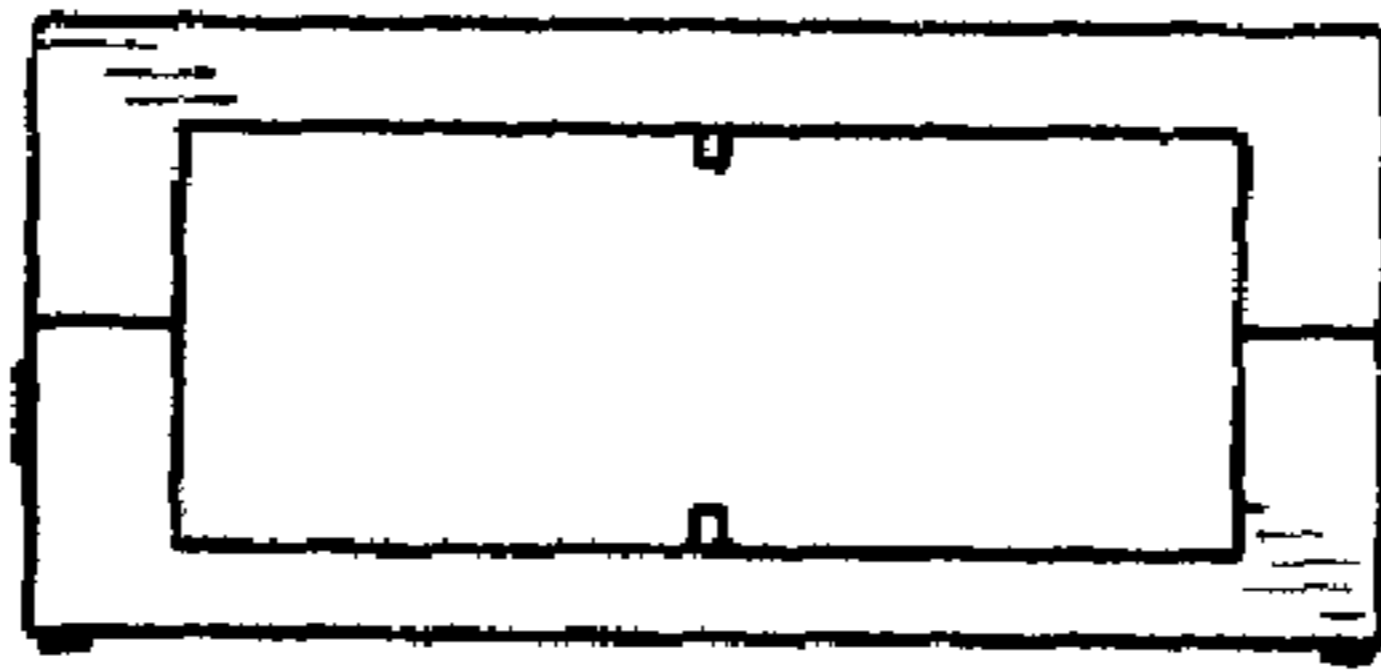


**FIG. 14**

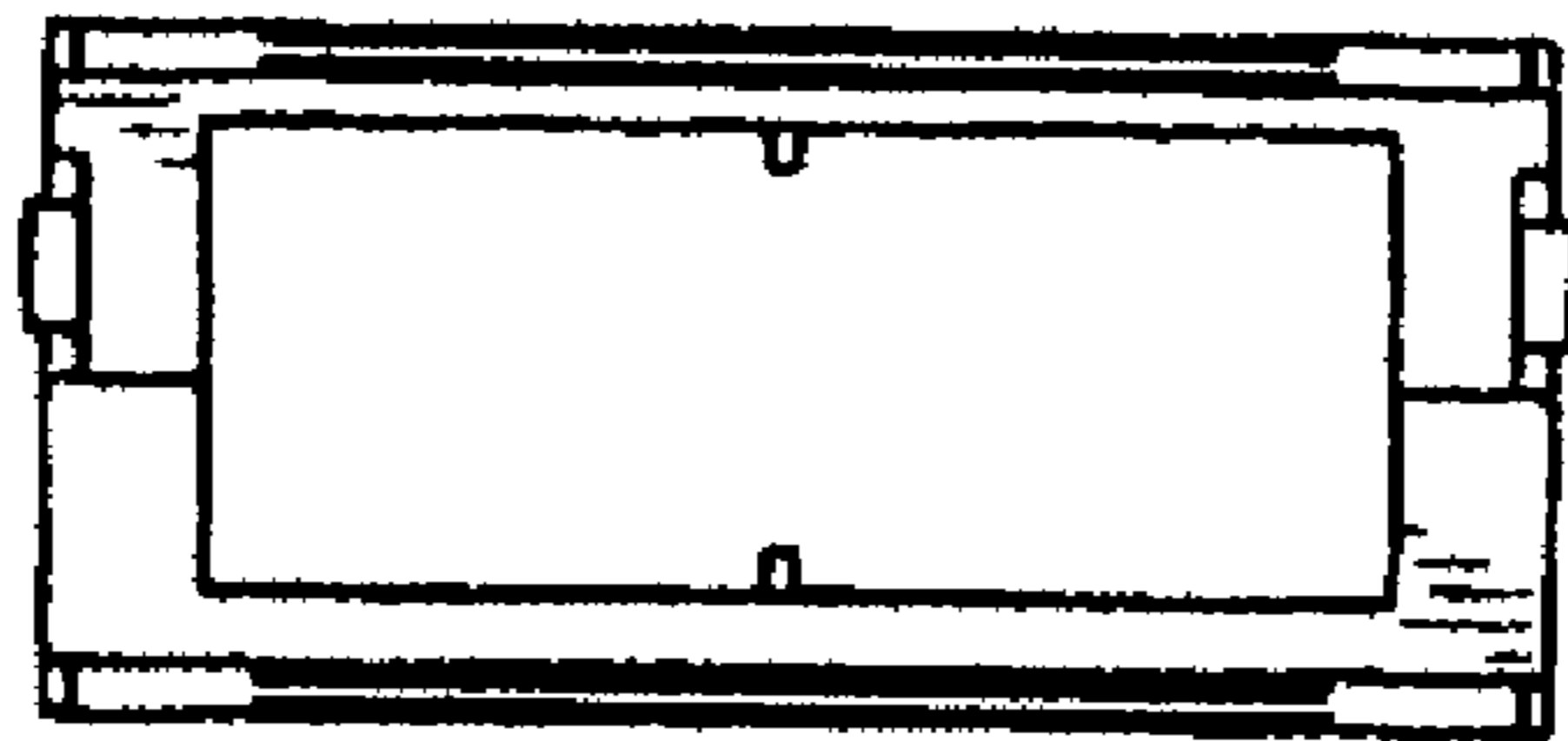




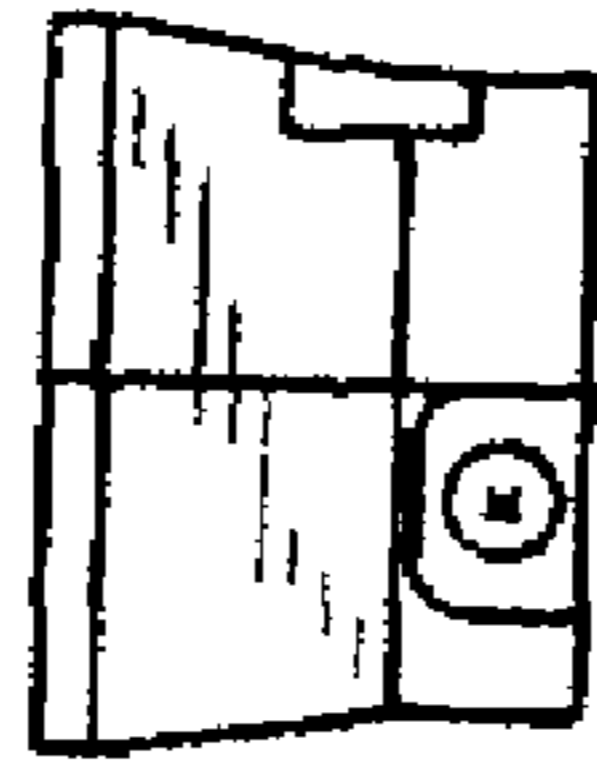
**FIG. 15**



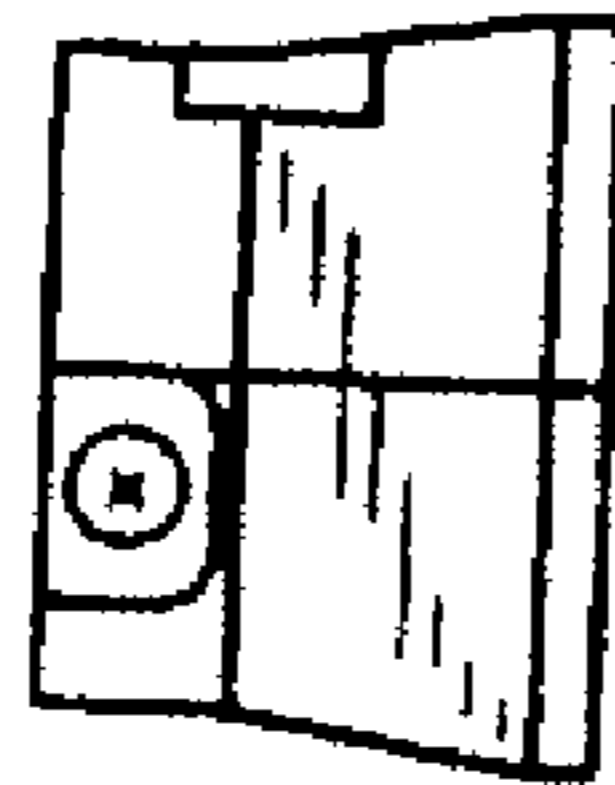
**FIG. 16**



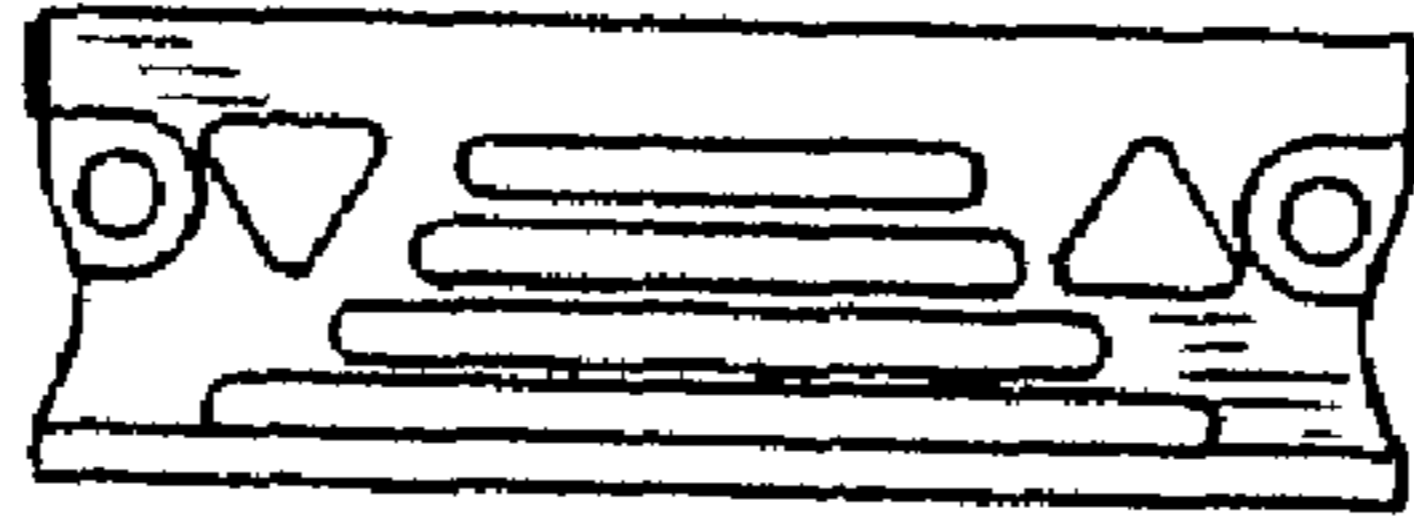
**FIG. 17**



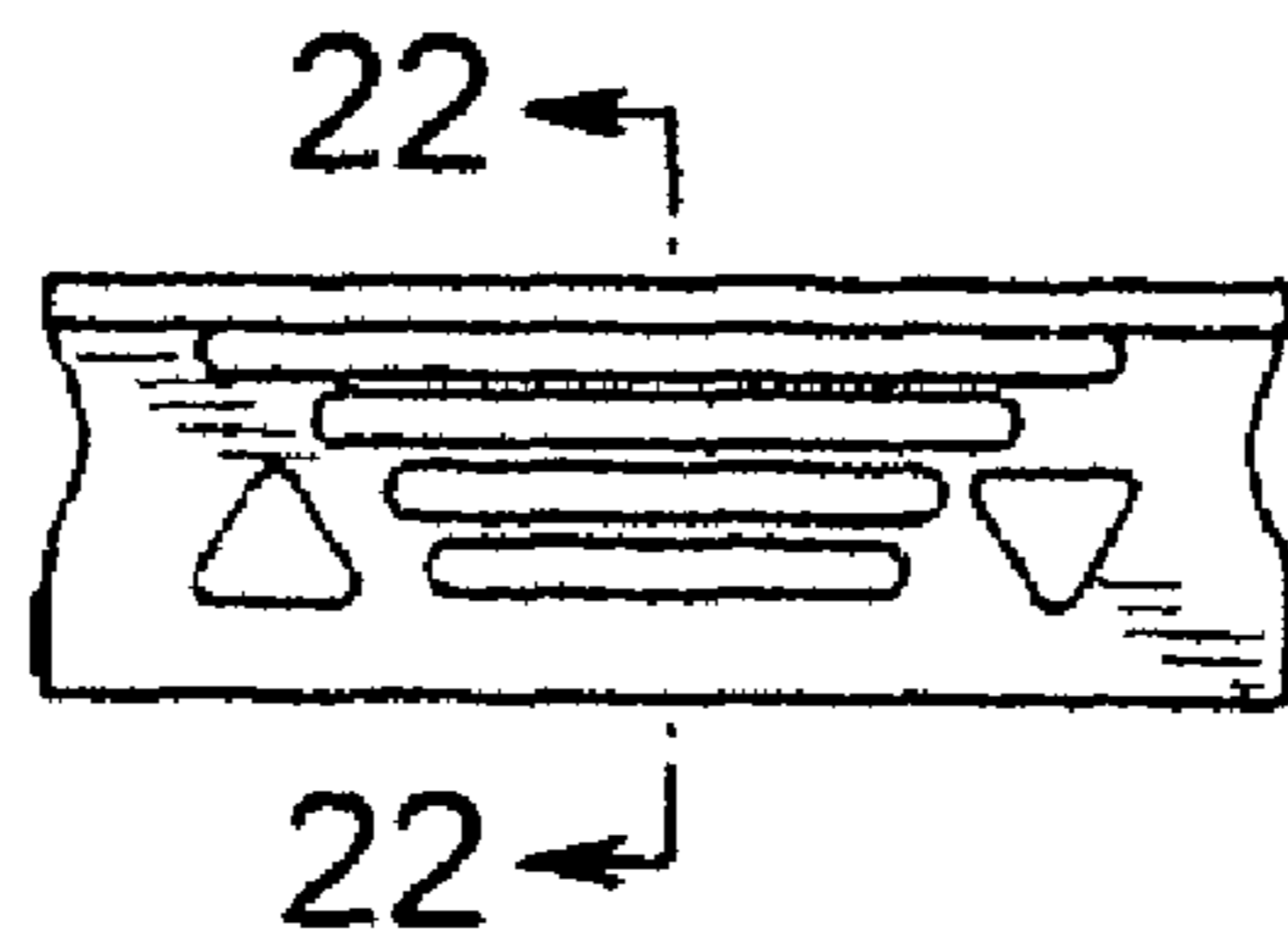
**FIG. 18**



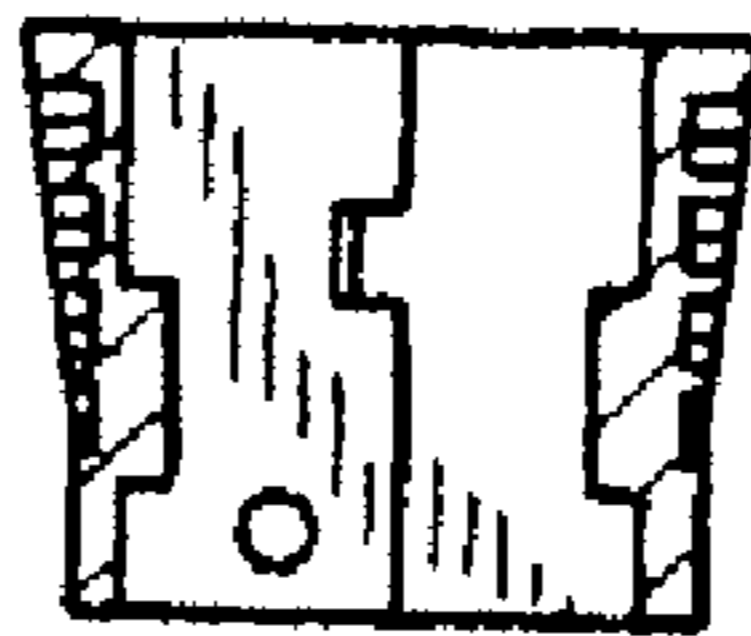
**FIG. 19**



**FIG. 20**



**FIG. 21**



**FIG. 22**