



OPERATING MANUAL

FOR

M. KRAMER KRANE MODEL 2000

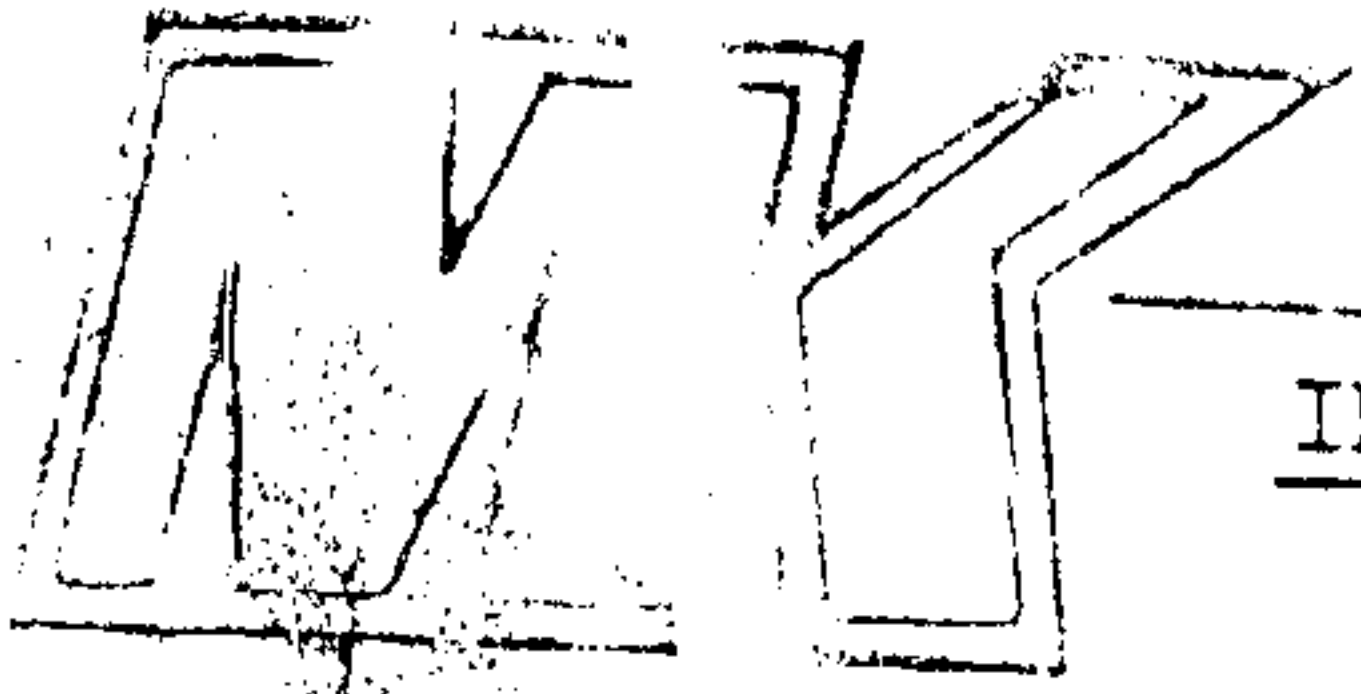
FOR SERVICE OR PARTS PLEASE CALL

(201) 367-9339

(201) 367-9345

CUS 20000

M. KRAMER MANUFACTURING CO., INC., 1100 Towbin Ave., Lakewood, NJ 08701, 201-367-7810, Out of State: 800-631-2126



IMPORTANT NOTICE TO GAME OPERATORS

Your individual method of Krane operation can greatly influence its legalities.

Your Kramer Krane has undergone extensive testing and examinations. We have considered your product investment, and player appeal as well as legal requirements.

Do not alter or tamper with the game's factory circuitry, program features or the retrieval claw without factory authorization.

Inspect your game daily to ascertain that it works smoothly and that each control functions properly. That way your customers obtain the best play for their value.

Game prizes must not be packed, or inaccessible to a player. Do not display any prize which, when optimally placed in the playfield, cannot be retrieved by the claw, when played by a skillful player in a reasonable amount of attempts.

It is your responsibility to ascertain that every prize you place in the game can be won by a player. Prizes too small, too large, or too heavy must not be used. If in doubt, test play your game with the actual prize items you offer.

Prizes should not exceed four ounces in weight and should be between 3 and 9 inches in length and from 1.5 - 3.5 inches in diameter.

The surface and textures of each prize can, of course, influence the suggested sizes and weights.

Check with local authorities where the game is to be used regarding any required business license, game permit or additional regulation. You may do so through your business lawyer.

Fair consideration toward your customers will ensure your best long-term profits.

The Kramer Crane is equipped with a microprocessor controlled logic board capable, via "DIP" switch settings, which allows the operator to select a minimum of 7 different modes of play.

GAME OPTION SWITCH, (SW3) SETTINGS

| | <u>POSITION 1</u> | <u>POSITION 2</u> | <u>POSITION 3</u> | <u>POSITION 4</u> |
|---------|-------------------|-------------------|-------------------|-------------------|
| GAME 1 | ON | ON | ON | Not Used |
| GAME 2A | ON | ON | OFF | Not Used |
| GAME 2B | ON | OFF | ON | Not Used |
| GAME 3 | ON | OFF | OFF | Not Used |
| GAME 4 | OFF | ON | ON | Not Used |
| GAME 5 | OFF | ON | OFF | Not Used |
| GAME 6 | OFF | OFF | ON | Not Used |

GAME 1 offers the player full 4 way joystick mobility, thereby controlling the claw in all directions by movement of the joystick. By depressing the fire button on the joystick, the claw is lowered until the switch is released. By depressing and releasing the fire button a second time, the claw is closed and the mechanism returns to the home position. When home, the claw opens to release the "prize".

GAME 2A offers the player a 2 way joystick control play mode. The joystick moves the claw front to back and left to right. Upon completion of left to right move the claw descends, closes, retracts the claw, and returns the mechanism to the home position. When home, the claw opens to release the "prize".

GAME 2B offers the player two button 2 way back and side claw control. The first button moves the claw away from the player. the second button moves the claw from left to right. Upon completion of the second move, the claw descends, closes, retracts, and the mechanism returns to the home position. When home, the claw opens to release the "prize".

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GAME 3 offers the player two button multiple nudge movement. The player nudges the claw front to back and from left to right. (No back to front or right to left moves are allowed). The game option will lower the claw after three seconds if neither button is depressed again, the claw descends, closes, retracts, and goes to the home position. When home, the claw opens to release the "prize".

GAME 4 offers the player two way joystick with identical features as those in Game 1.

GAME 5 offers the player full mobility using four buttons, one button for each direction: front to back, back to front, left to right, and right to left. This play mode will lower the claw if no button is pressed within three seconds. The claw will descend, close, retract, and return home. When home, the claw opens to release the "prize".

GAME 6 offers the player full joystick mobility. Claw control is slightly different in this game. When the fire button is depressed one time, the claw starts its descent to prize level. At prize level the claw closes, retracts, and returns the mechanism to the home position. When home, the claw opens to release the "prize".

The 20000 logic board also has "DIP" switch setting to control time per game (SW4), coins per game (SW2), games per coin (SW0), AND THE SELECTION OF 20 varied tunes that may be played to indicate coins in, prizes out, and "Warning...." end of game - claw will descend within five seconds. These options are controlled through (SW5) and (SW1).

GAME TIMER OPTION SWITCH (SW4)

TIMES ARE APPROXIMATE AND MAY VARY

| <u>GAME TIME</u> | <u>POSITION 1</u> | <u>POSITION 2</u> | <u>POSITION 3</u> | <u>POSITION 4</u> |
|------------------|-------------------|-------------------|-------------------|-------------------|
| 10 Seconds | OFF | ON | ON | ON |
| 15 Seconds | ON | OFF | ON | ON |
| 25 Seconds | OFF | OFF | ON | ON |
| 35 Seconds | ON | ON | OFF | ON |
| 40 Seconds | OFF | ON | OFF | ON |
| 50 Seconds | ON | OFF | OFF | ON |
| 60 Seconds | OFF | OFF | OFF | ON |
| 65 Seconds | ON | ON | ON | OFF |
| 75 Seconds | OFF | ON | ON | OFF |
| 80 Seconds | ON | OFF | ON | OFF |
| 90 Seconds | OFF | OFF | ON | OFF |
| 100 Seconds | ON | ON | OFF | OFF |
| 105 Seconds | OFF | ON | OFF | OFF |
| 115 Seconds | ON | OFF | OFF | OFF |
| 125 Seconds | OFF | OFF | OFF | OFF |
| NO LIMIT | ON | ON | ON | ON |

COINS PER GAME OPTION SWITCH (SW2)

| <u>COINS/GAME</u> | <u>POSITION 1</u> | <u>POSITION 2</u> | <u>POSITION 3</u> | <u>POSITION 4</u> |
|-------------------|-------------------|-------------------|-------------------|-------------------|
| 1 | ON | ON | OFF | OFF |
| 2 | ON | OFF | ON | OFF |
| 3 | ON | OFF | OFF | OFF |
| 4 | OFF | ON | ON | OFF |
| 5 | OFF | ON | OFF | OFF |
| 6 | OFF | OFF | ON | OFF |
| FREE PLAY | OFF | OFF | OFF | OFF |

GAMES PER COIN OPTION SWITCH (SW0)

| <u>GAMES/COIN</u> | <u>POSITION 1</u> | <u>POSITION 2</u> | <u>POSITION 3</u> | <u>POSITION 4</u> |
|-------------------|-------------------|-------------------|-------------------|-------------------|
| 1 | OFF | ON | ON | OFF |
| 2 | ON | OFF | ON | OFF |
| 3 | OFF | OFF | ON | OFF |
| 4 | ON | ON | OFF | OFF |
| 5 | OFF | ON | OFF | OFF |

By selecting various switch settings for the melody switches (SW1 and SW5) any of the following melodies may be played for coins in, prize out, and end of game warning.

| <u>SW1-1</u> | <u>SW1-2</u> | <u>SW1-3</u> | <u>SW1-4</u> | <u>SW5-1</u> | <u>SW5-2</u> | <u>SW5-3</u> | <u>SW5-4</u> | <u>TUNE</u> |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------------|
| OFF | OFF | OFF | OFF | ON | OFF | OFF | OFF | TREADORE |
| OFF | OFF | OFF | OFF | OFF | ON | OFF | OFF | WILLIAM TELL OVERTURE |
| OFF | OFF | OFF | OFF | OFF | OFF | ON | OFF | ALLELUIA (ITALIEN/ITALIAN) |
| OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON | STAR SPANGLED BANNER |
| ON | OFF | OFF | OFF | ON | OFF | OFF | OFF | JOHN BROWN'S BODY |
| ON | OFF | OFF | OFF | OFF | ON | OFF | OFF | CLEMENTINE |
| ON | OFF | OFF | OFF | OFF | OFF | ON | OFF | GOD SAVE THE QUEEN |
| ON | OFF | OFF | OFF | OFF | OFF | OFF | ON | COLONEL BOGEY |
| OFF | ON | OFF | OFF | ON | OFF | OFF | OFF | AMERICA, AMERICA |
| OFF | ON | OFF | OFF | OFF | ON | OFF | OFF | DEUTCHLAND LEID |
| OFF | ON | OFF | OFF | OFF | OFF | ON | OFF | THE WEDDING MARCH |
| OFF | ON | OFF | OFF | OFF | OFF | OFF | ON | BEETHOVEN'S FIFTH |
| OFF | OFF | ON | OFF | ON | OFF | OFF | OFF | O SOLO MIA |
| OFF | OFF | ON | OFF | OFF | ON | OFF | OFF | SANTA LUCIA |
| OFF | OFF | ON | OFF | OFF | OFF | ON | OFF | THE END |
| OFF | OFF | ON | OFF | OFF | OFF | OFF | ON | BLUE DANUBE |
| OFF | OFF | OFF | ON | ON | OFF | OFF | OFF | BELLS BELLS |
| OFF | OFF | OFF | ON | OFF | ON | OFF | OFF | JUNGLE BELLS |
| OFF | OFF | OFF | ON | OFF | OFF | ON | OFF | LA VIN A ROSE |
| OFF | OFF | OFF | ON | OFF | OFF | OFF | ON | STAR WARS |

M. KRAMER MANUFACTURING CO., INC.

KRAMER KRANE

Claw Adjustment Options

1. The variable resistor (POT) located on the printed circuit board controls the voltage going to the pick up coil inside the chrome cylinder above the claws. Adjusting this pot clockwise or counter-clockwise will, in turn, control the strength of the grip of the claw mechanism.
2. The collar, A in Figures 2 and 3, can be moved up or down by loosening the set screws. This collar controls the closed position of the claws. The higher up the chrome collar (Figure 3), the more open the claws remain when the mechanism is in the home position.
3. The cam, B in Figures 4 and 5, located on the collar holding the three claws, can be adjusted to control how wide the claws open. To adjust this cam, loosen the large slotted head screw "C" on the underside of the collar and rotate the cam in either direction. When the large sides of the cam are positioned over the three claws, the claws will not open wide enough for plush. This setting is recommended for watches or other forms of jewelry or smaller prizes. (Figure 5).
Rotate the cam "B" so that the smallest diameter is in contact with the three claws to their maximum for large plush. The cam "B" may be set anywhere between the two extremes for various size prizes.
4. A final adjustment is also available. The claws can be physically bent as shown in Figure 1 to add to the versatility of your KRAMER KRANE.

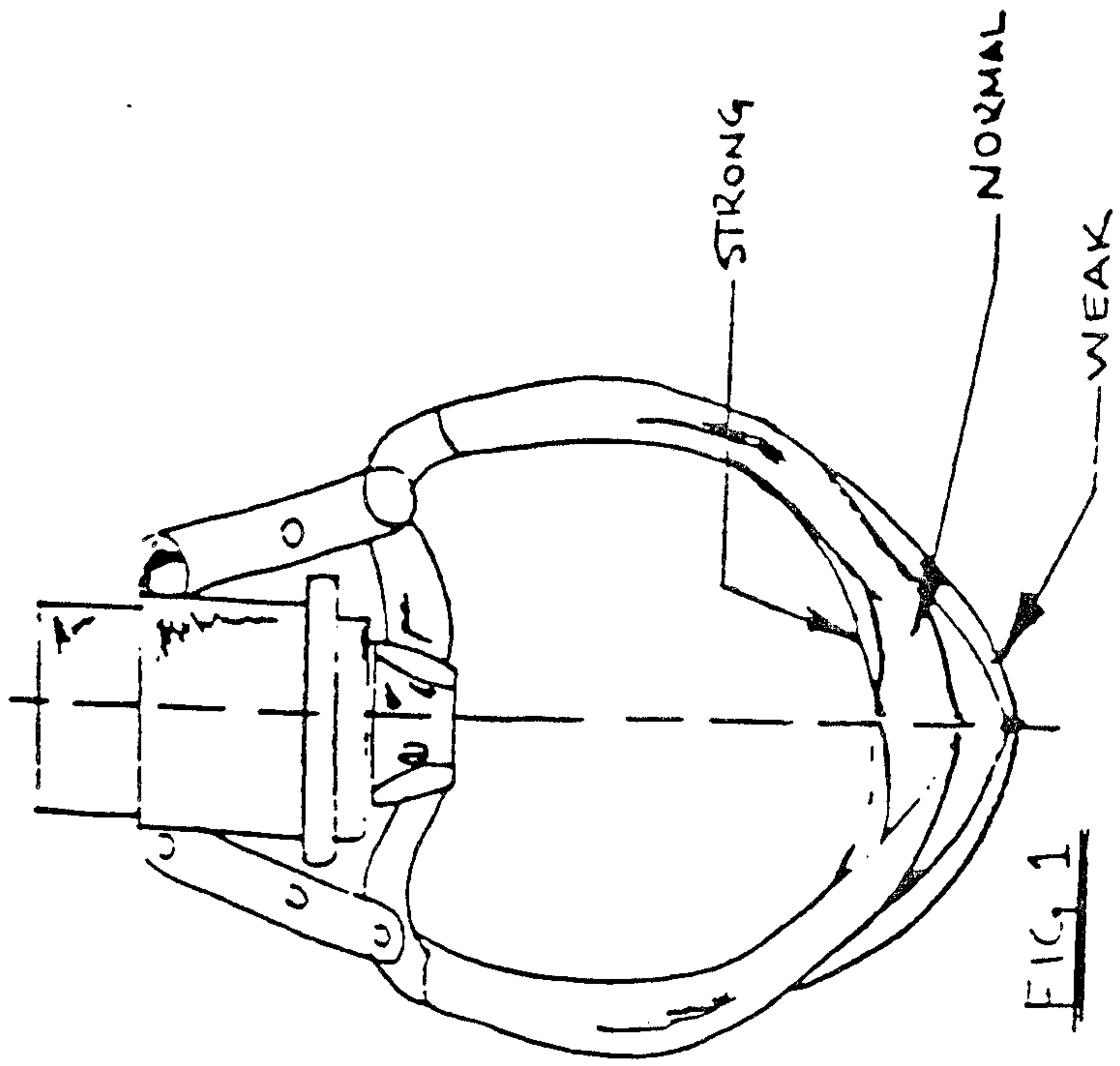


FIG 1

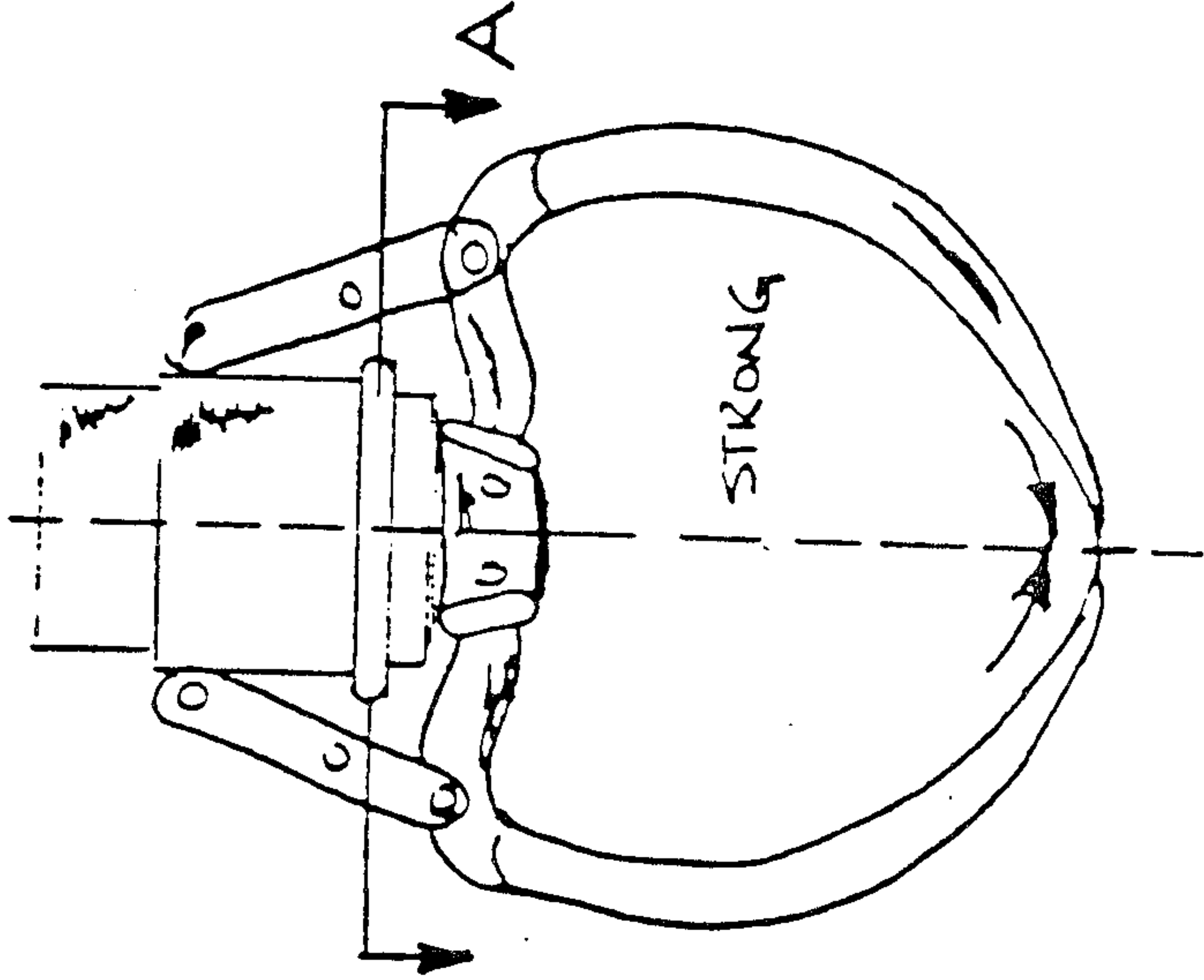


FIG 2

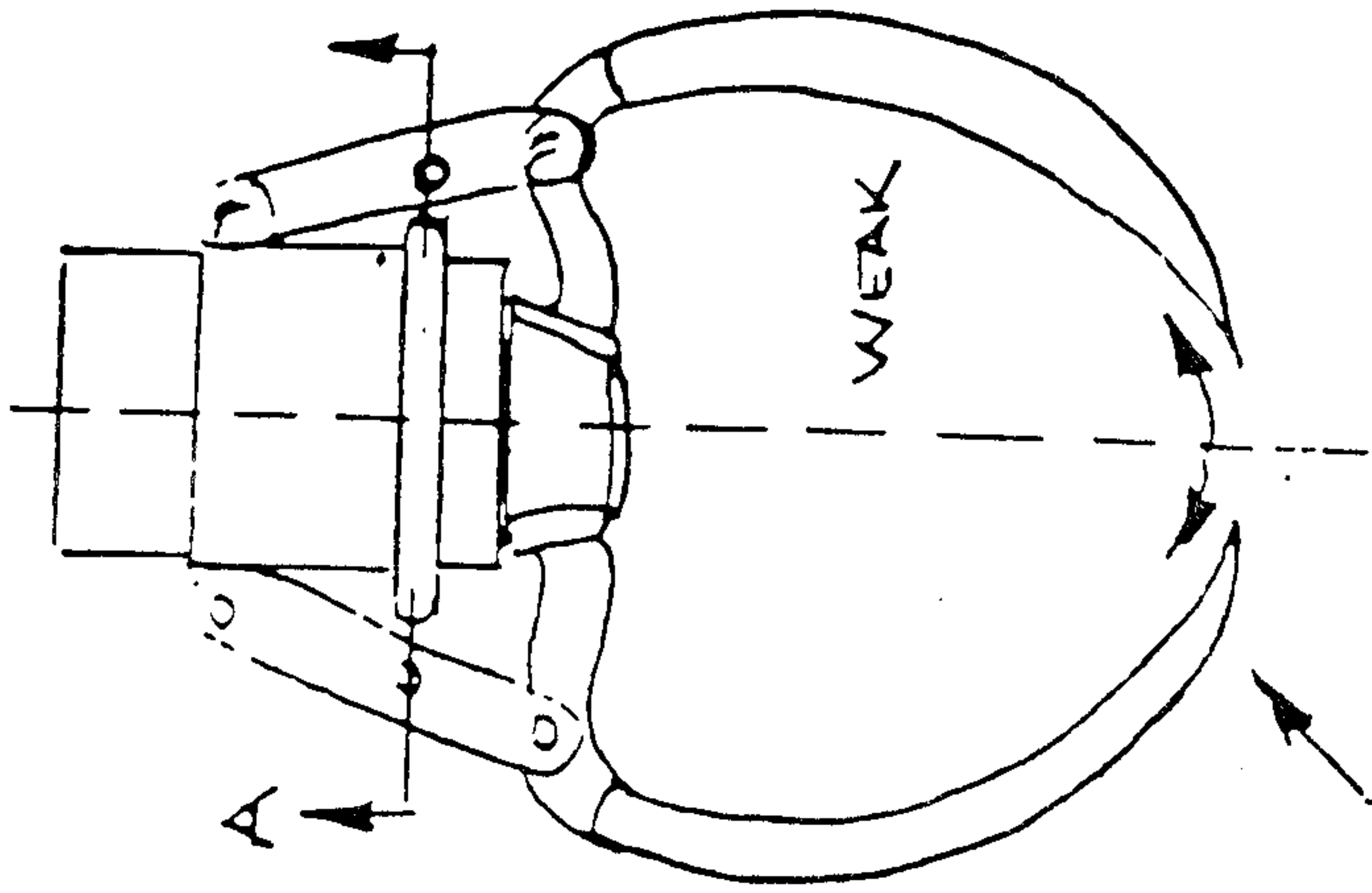
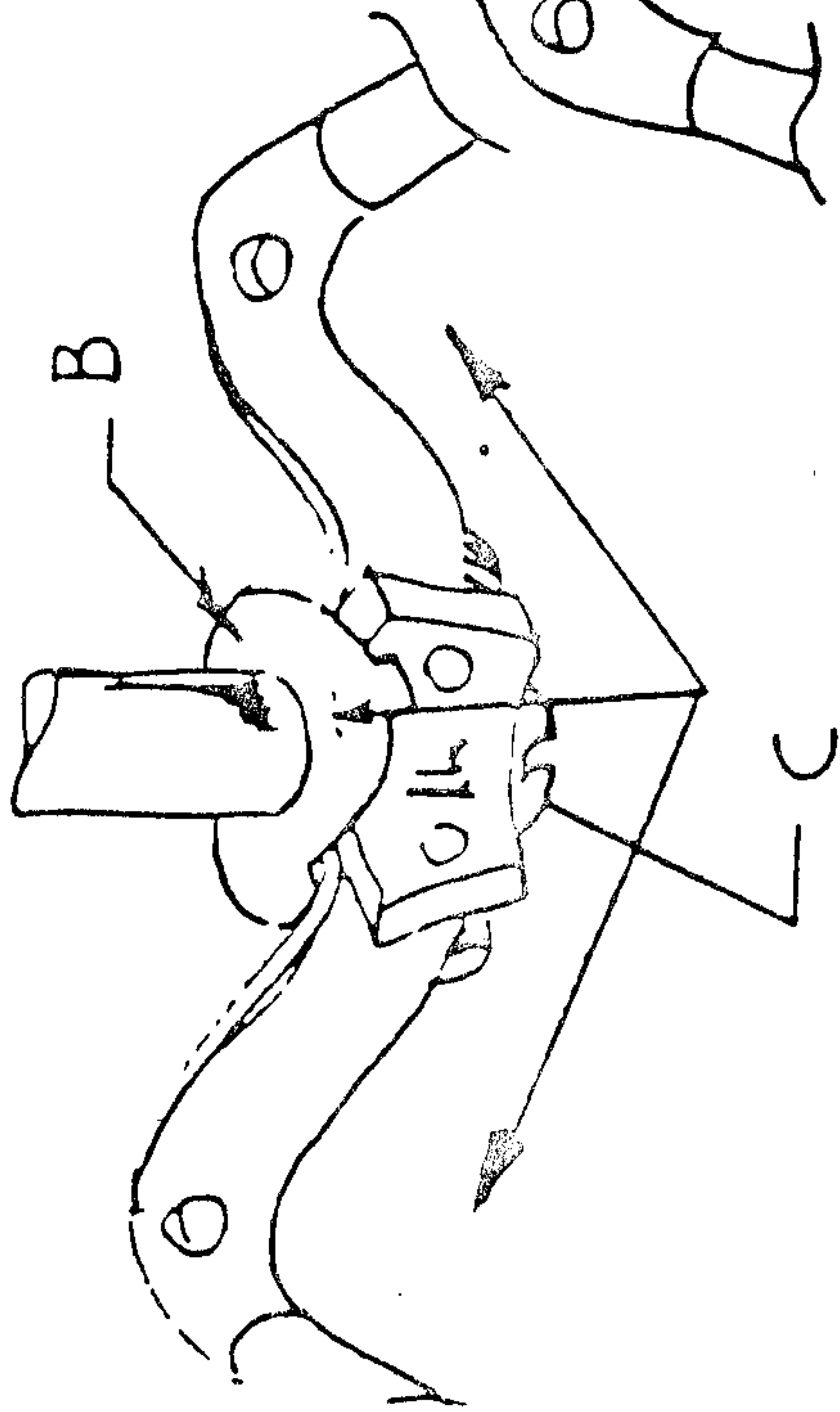
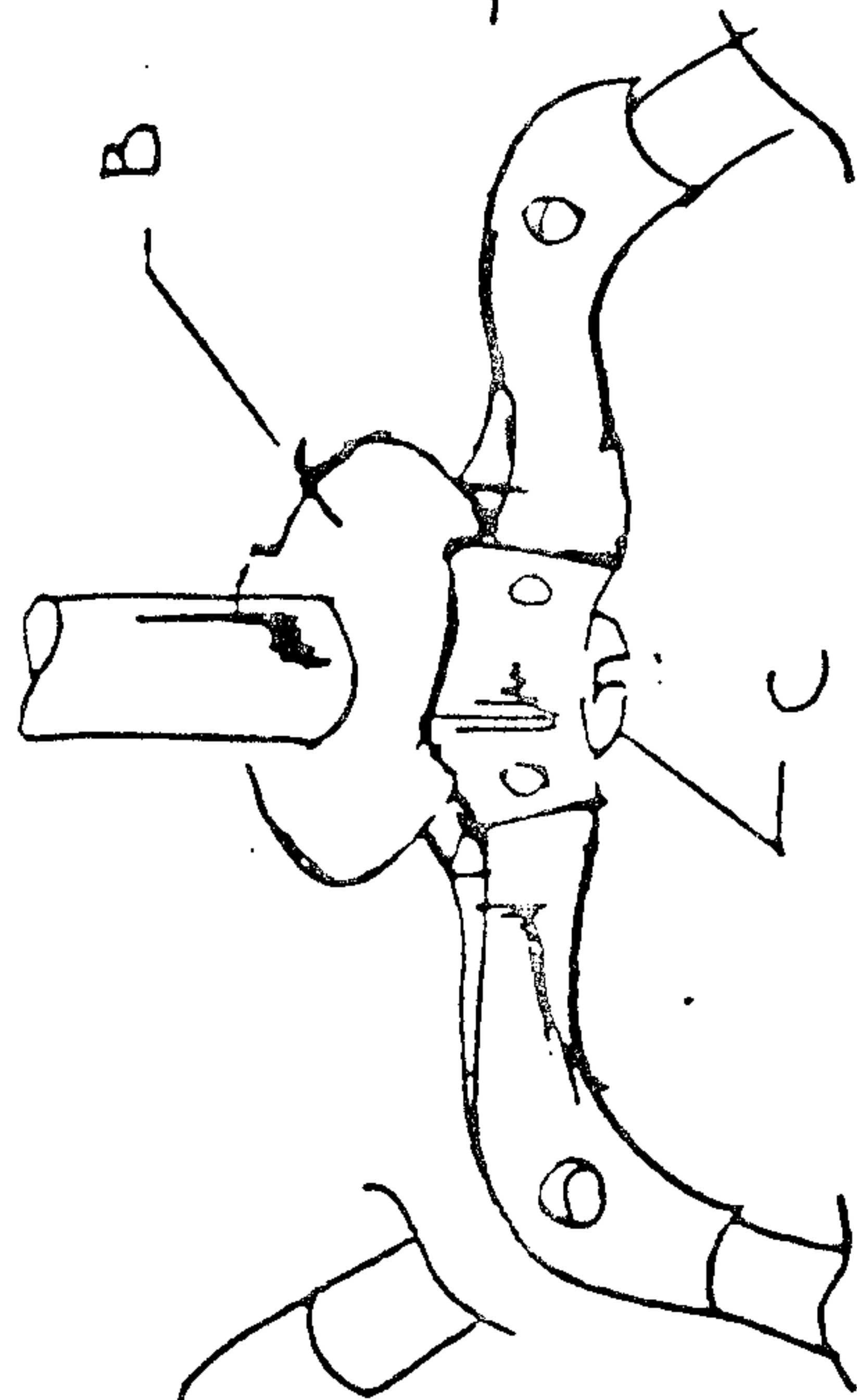


FIG 3



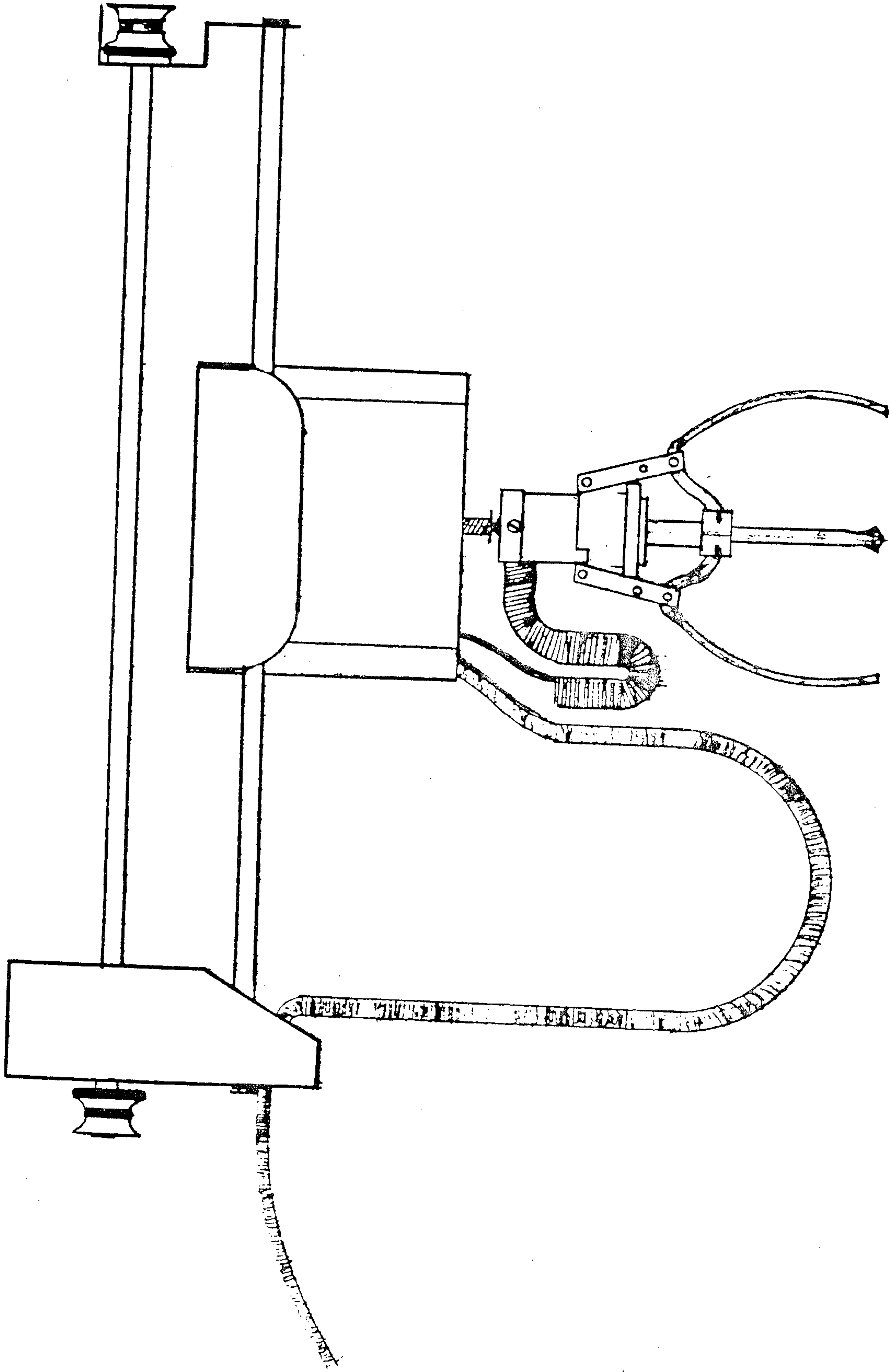
OPEN FORK PLUSHI
FIG 4



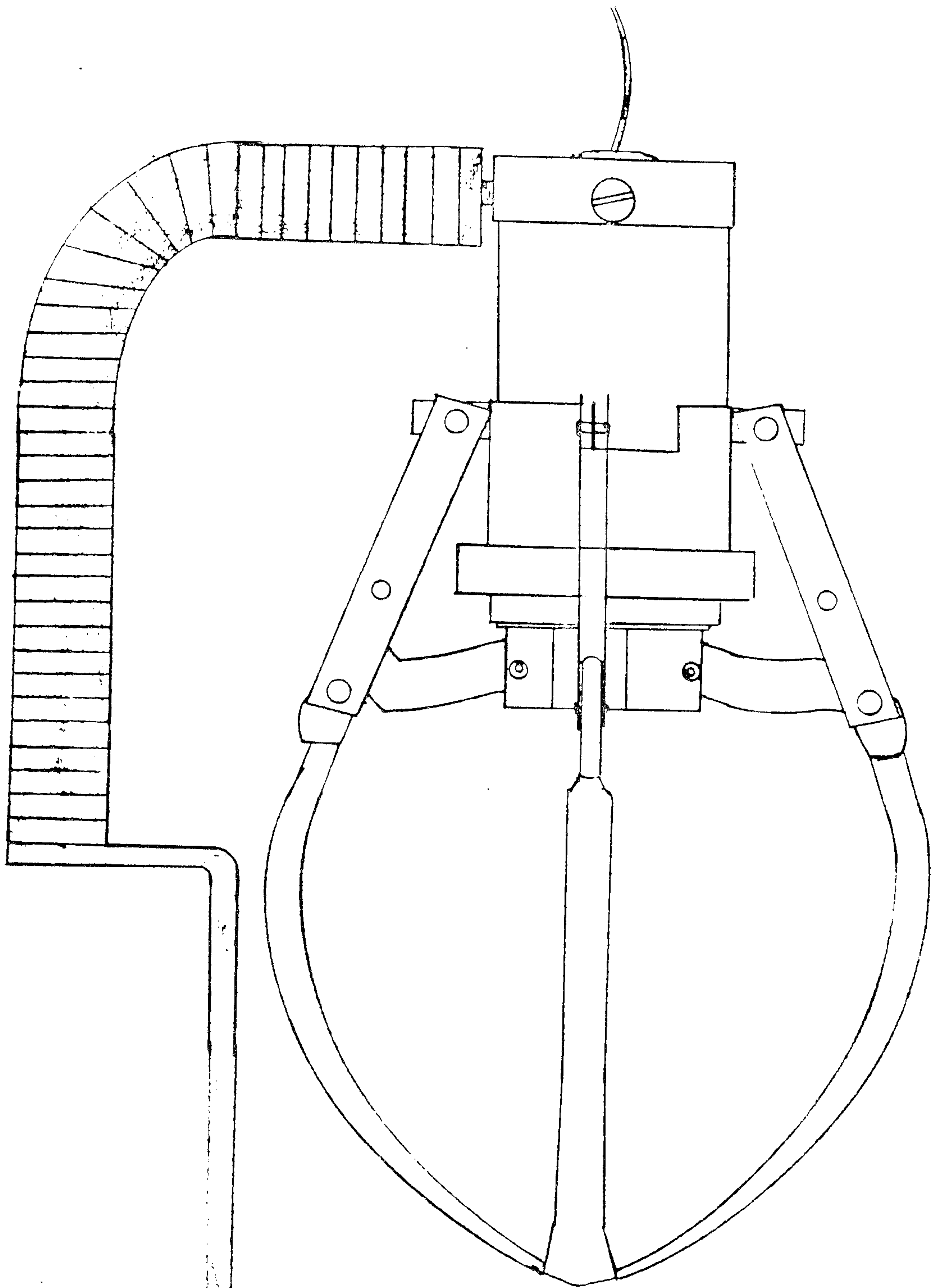
CLOSED FORK JEWELRY etc.
FIG 5

JEWELRY

M. KRAMER MANUFACTURING
"KRAMER KRANE"
ADJUSTMENTS



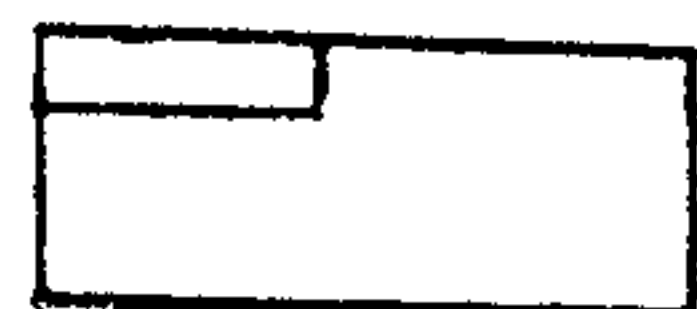
M. KRAMER MANUFACTURING
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA20011



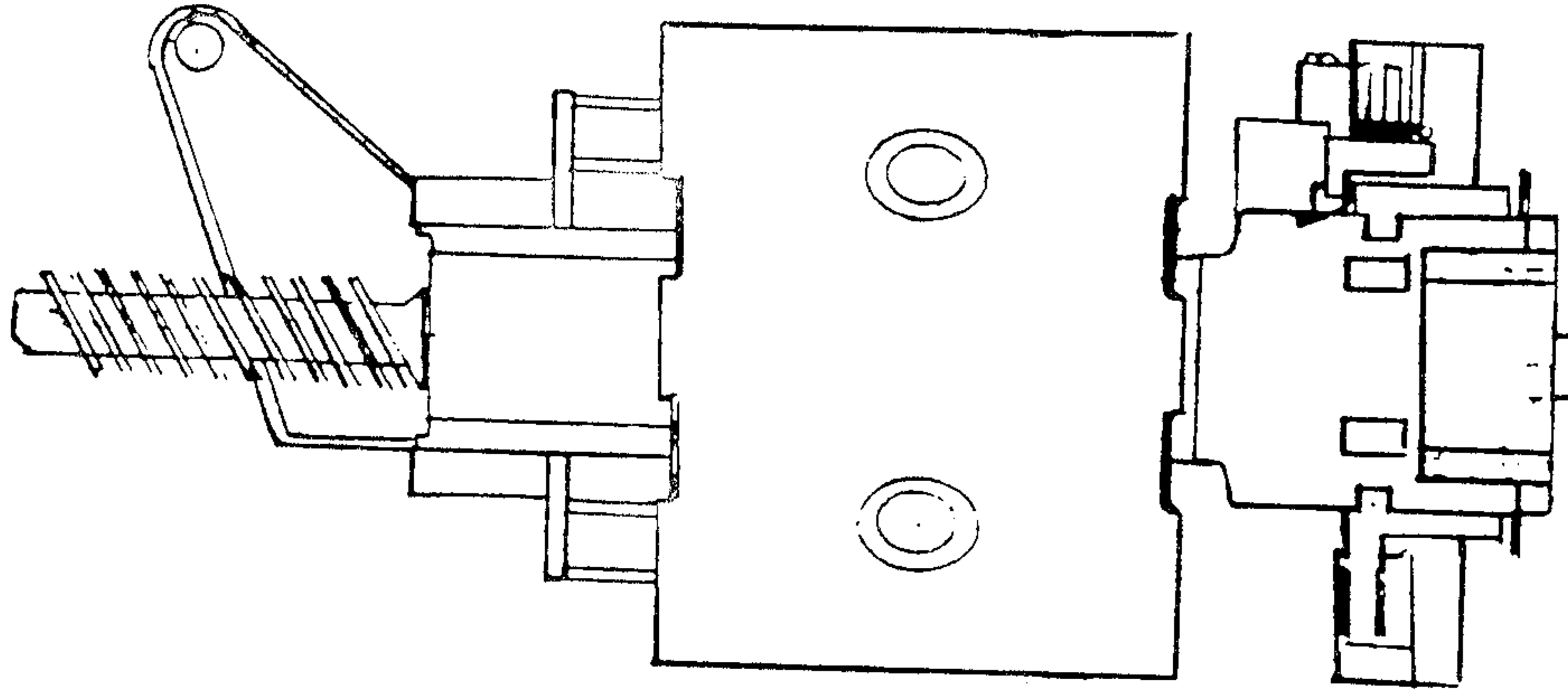
CLA20100
CLAW ASSEMBLY

KRAMER MFG.
DEL 20000 KRANE
ANE ASSEMBLY
A20010 & CRA20011

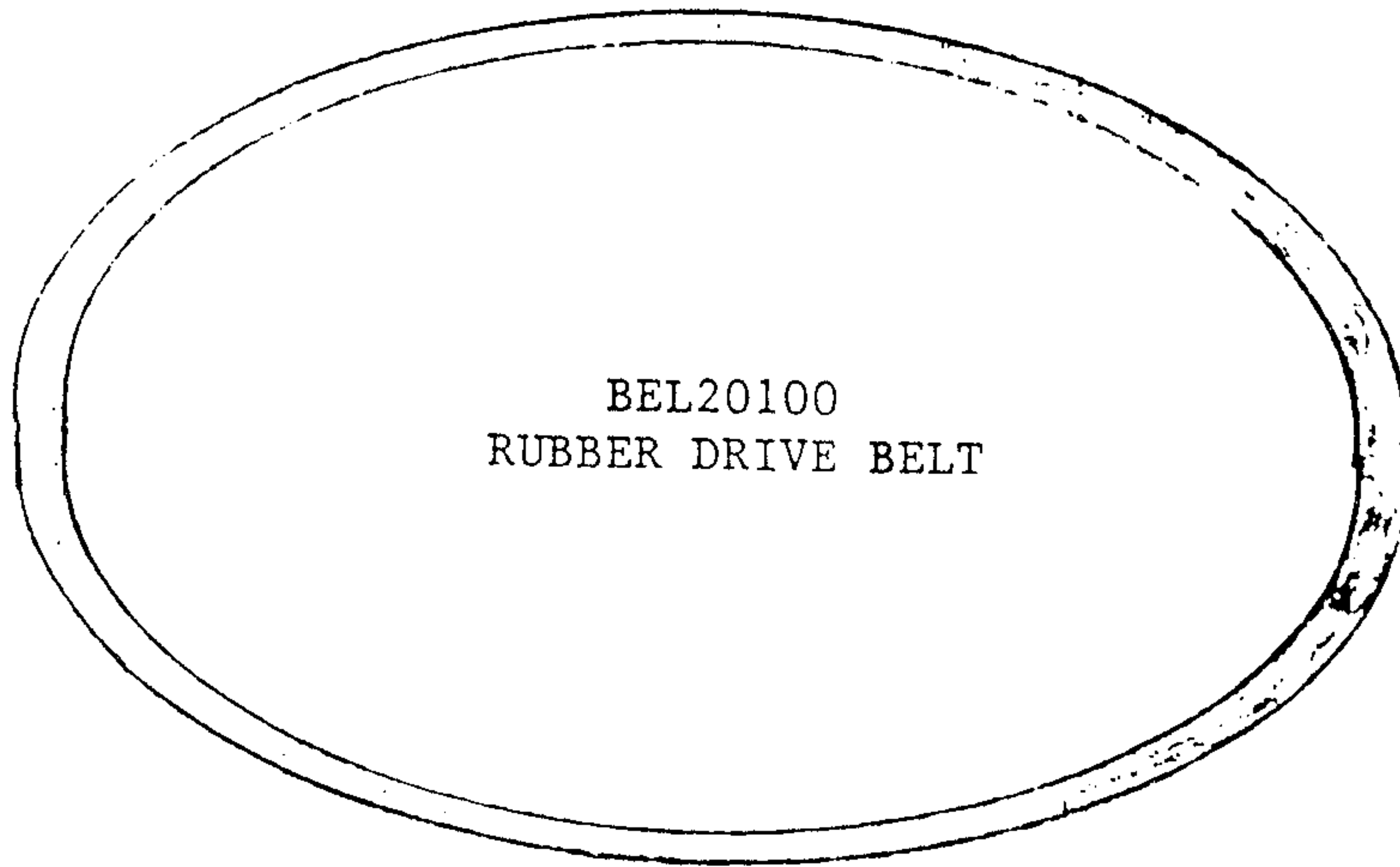
CON5522
2 PIN .063
RECEPTACLE



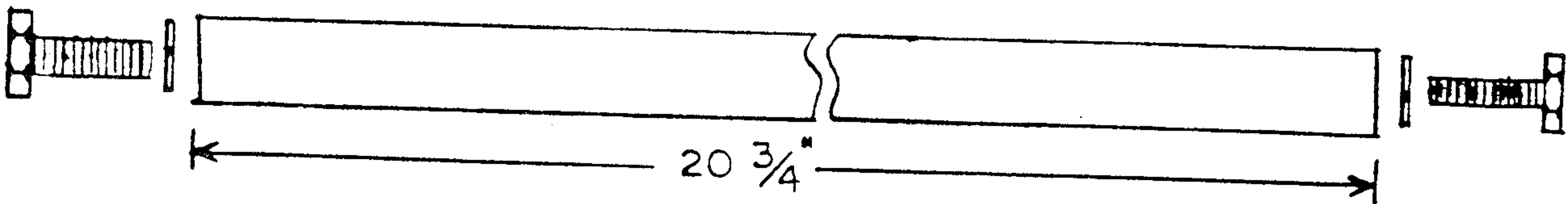
CON5527
2 PIN .063 PLUG



MOT20100
MECH MOTOR

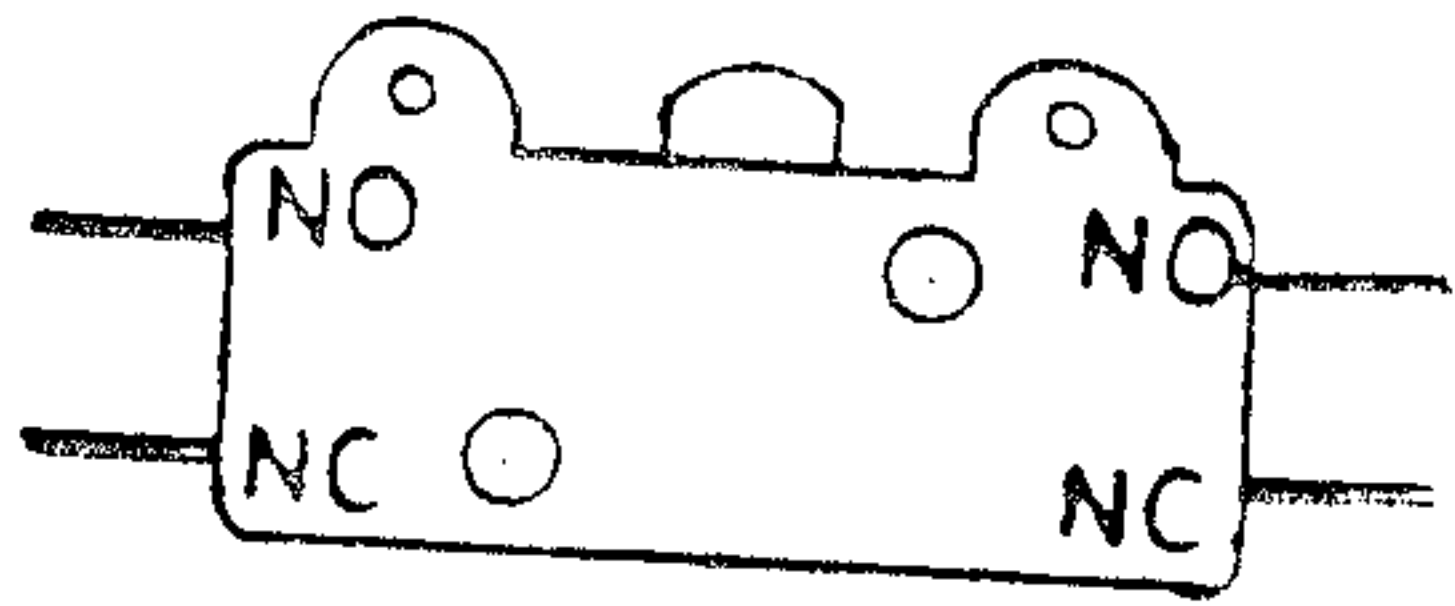


BEL20100
RUBBER DRIVE BELT



BAR20100
INTERNAL SUPPORT BARS

M. KRAMER MFG.
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA20011



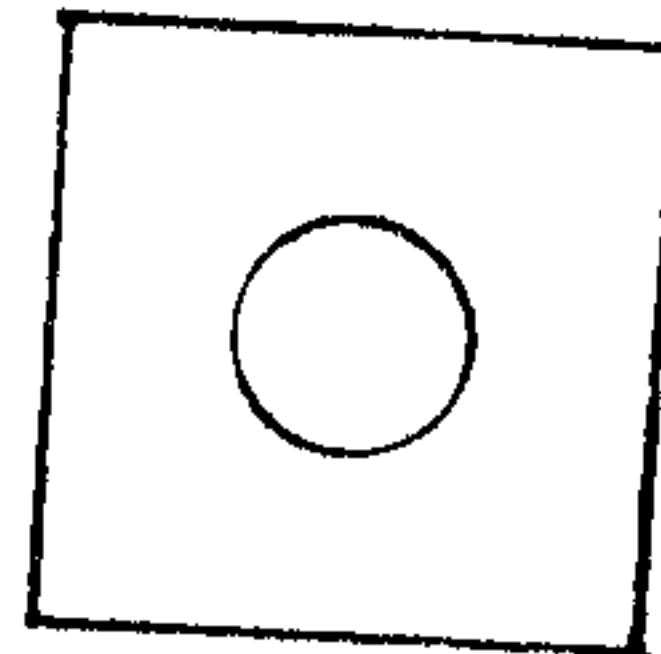
SWI20109
UP/DOWN LIFT SWITCH



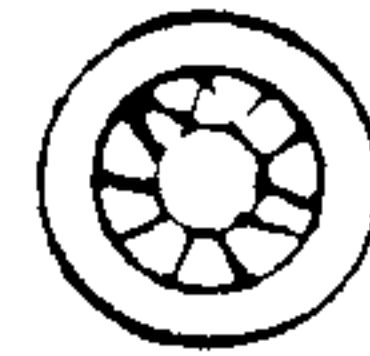
CLI20100
CLAW SPACER CLIP



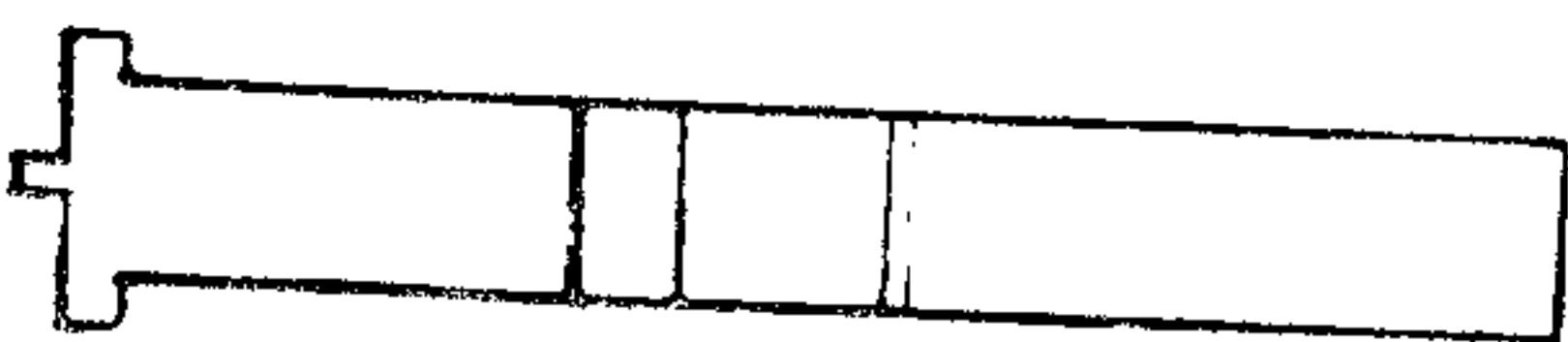
CLI20101
LARGE ROLLER CLIP



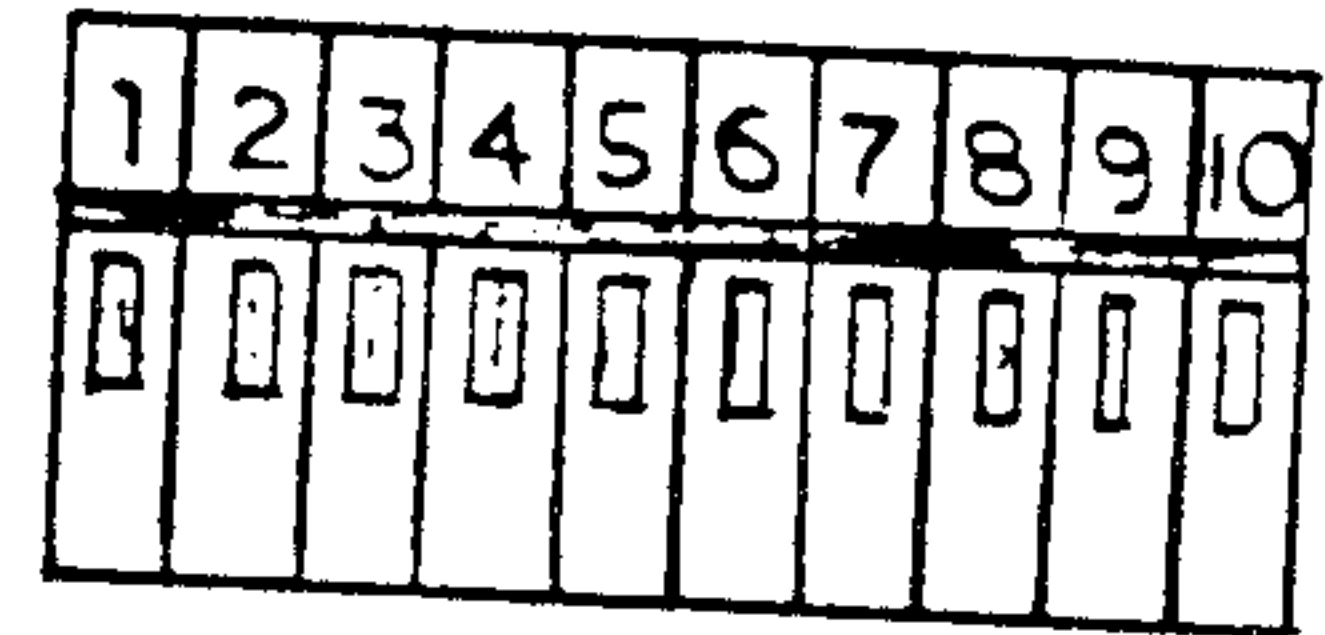
WAS20100
LIFT SWITCH WASHER



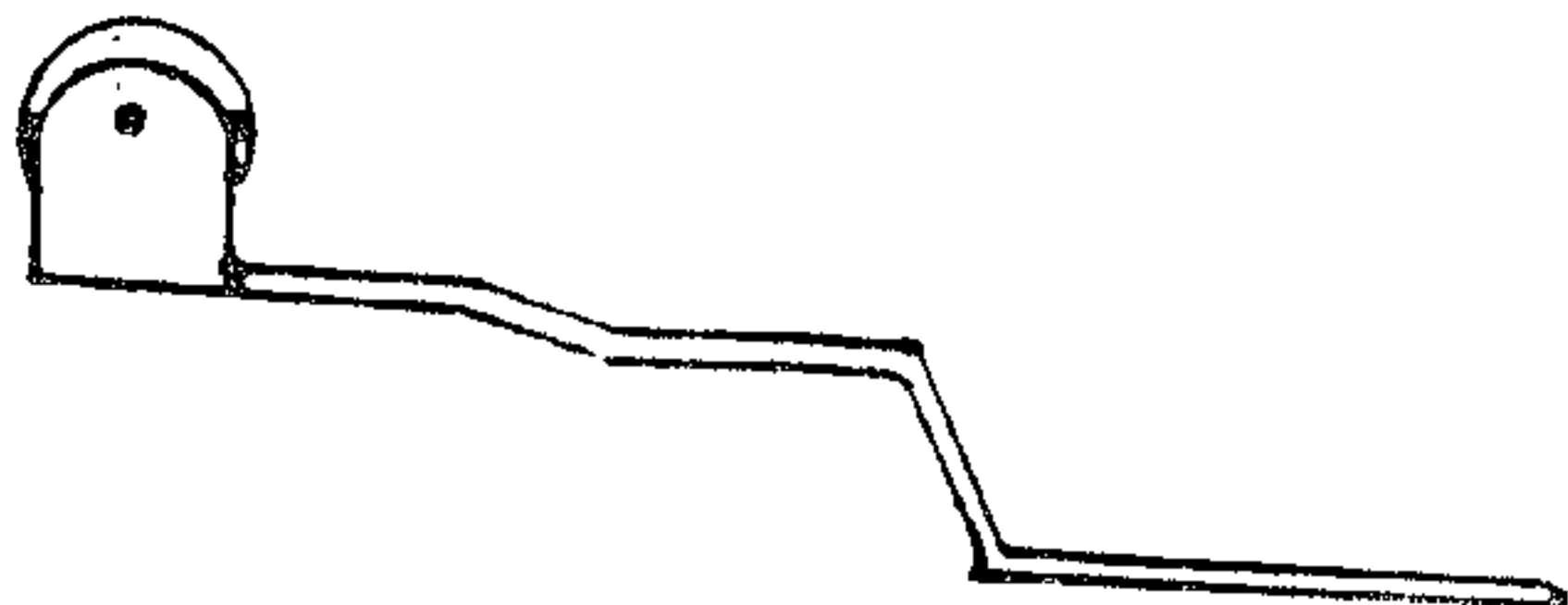
CLI20102
SMALL ROLLER CLIP



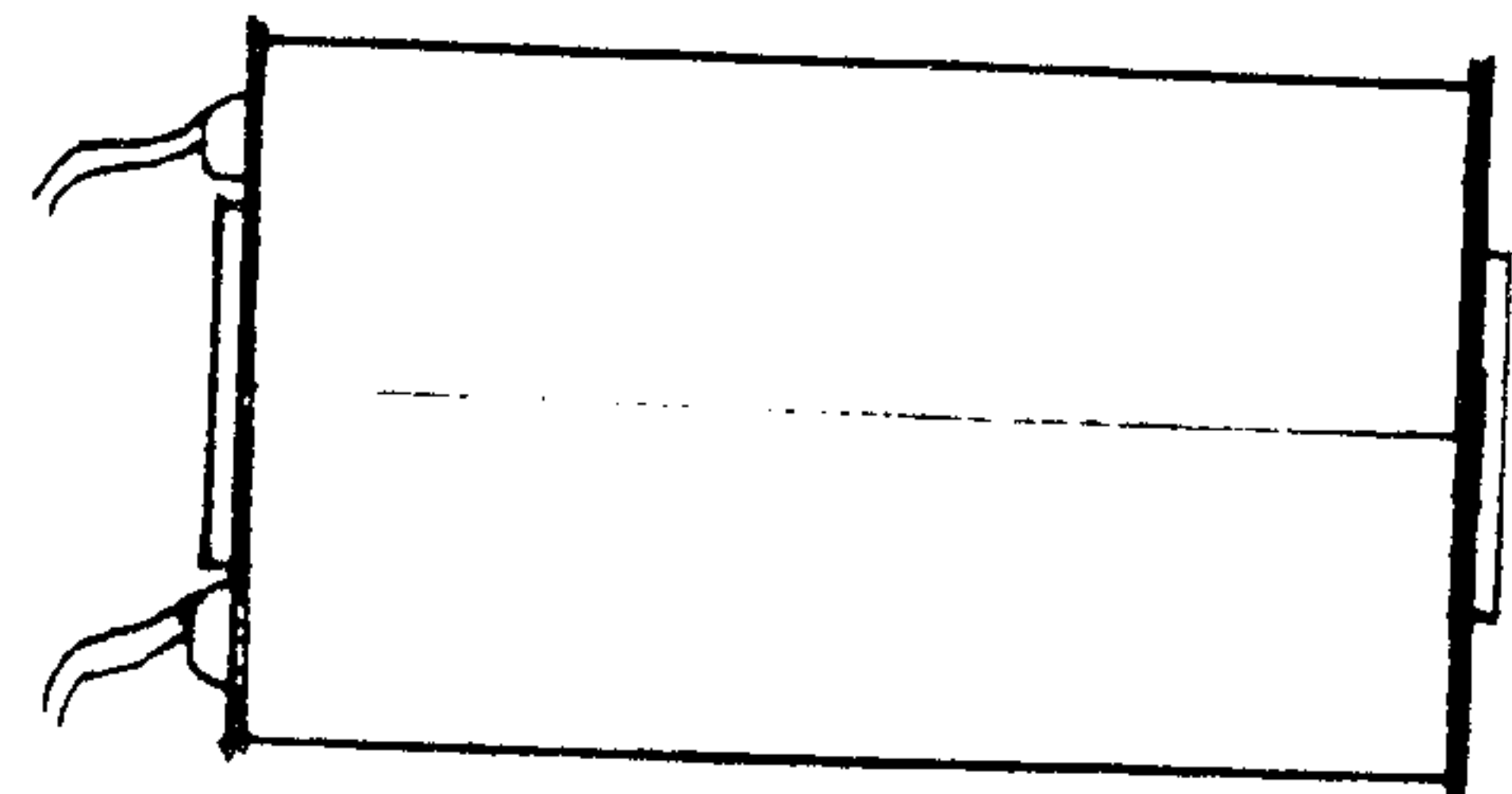
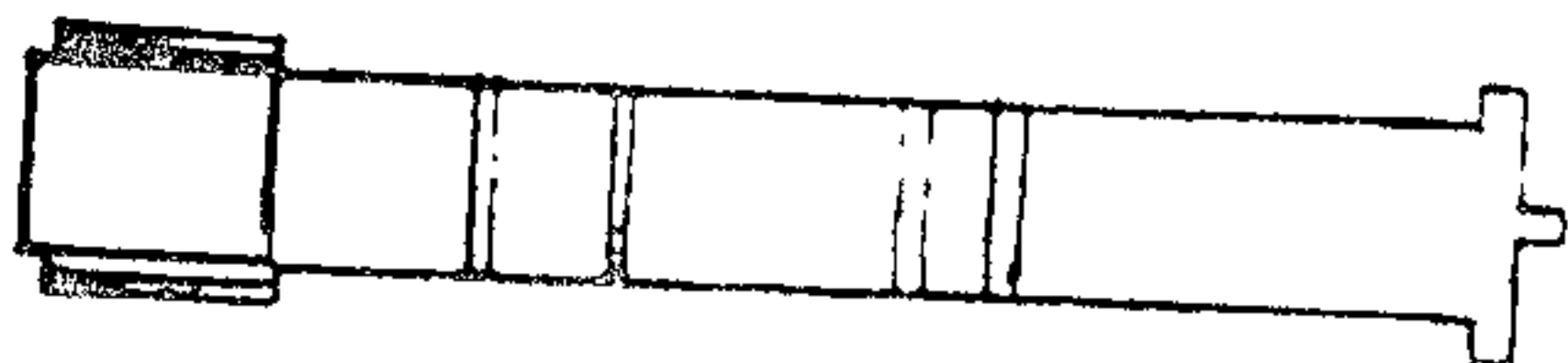
ACT20121
LIFT SWITCH ACTUATOR



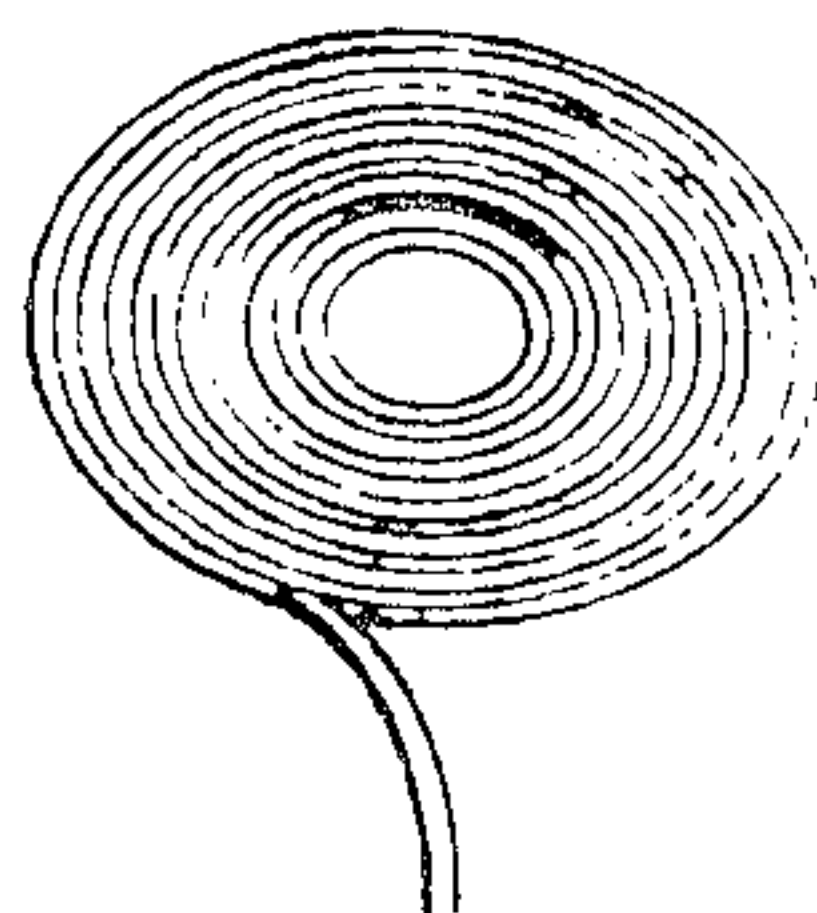
CON20010
MAIN CABLE CONNECTOR



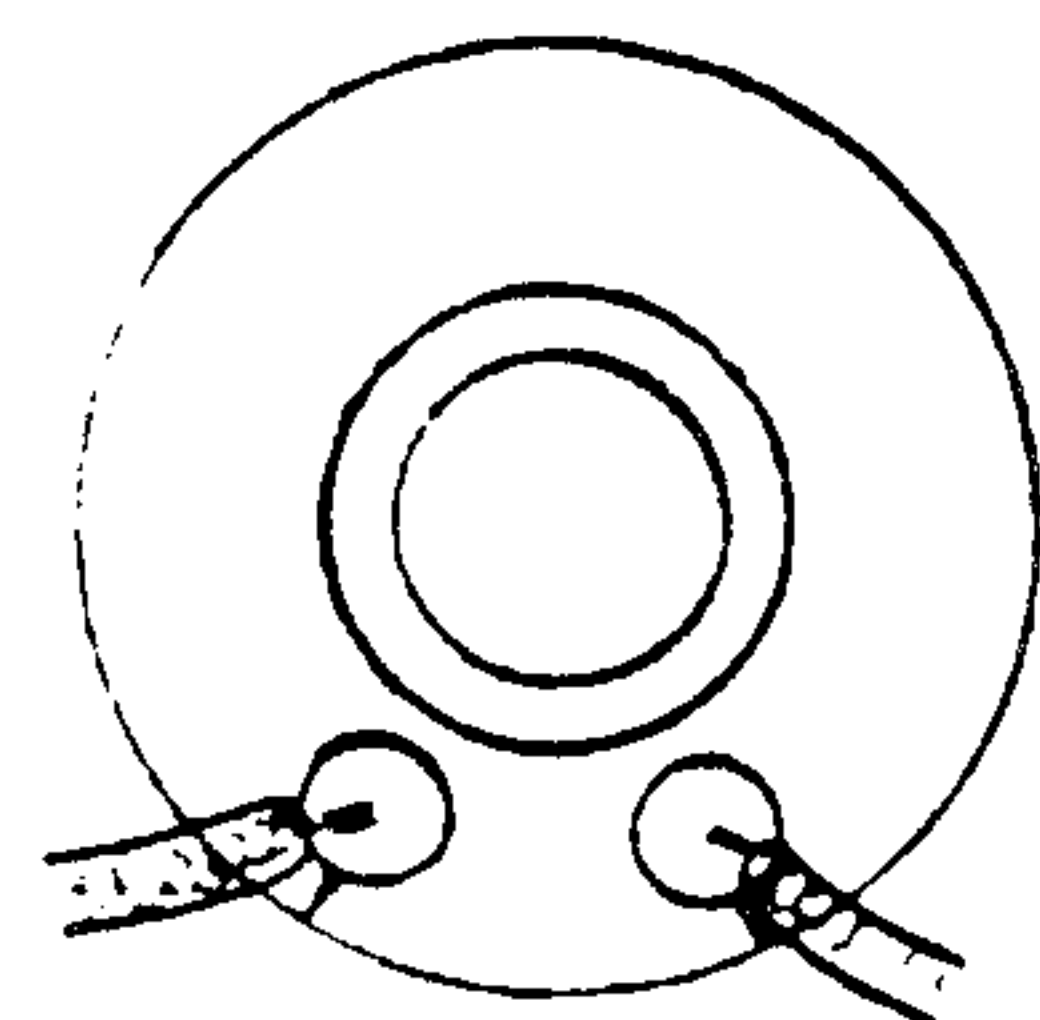
ACT20120
UP/DOWN SWITCH ACTUATOR



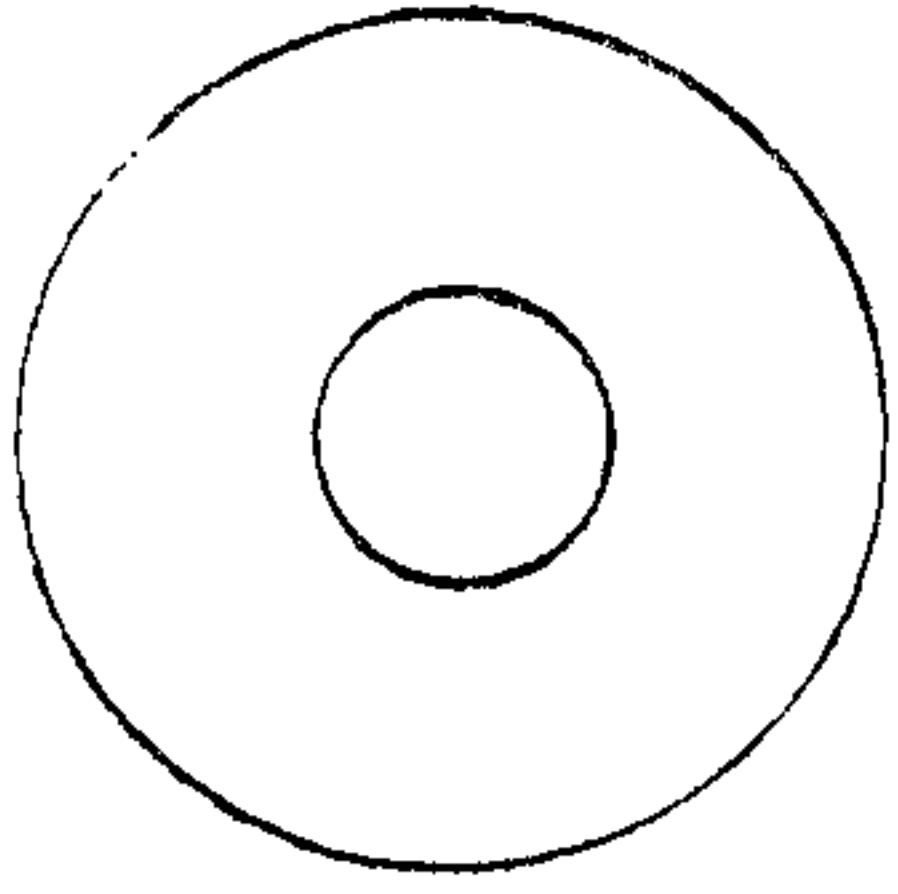
COI20120
CLAW COIL



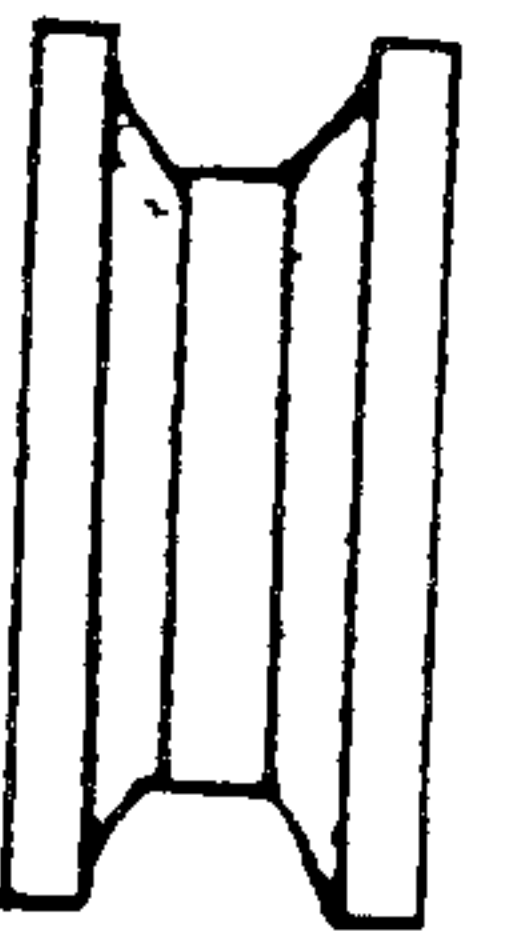
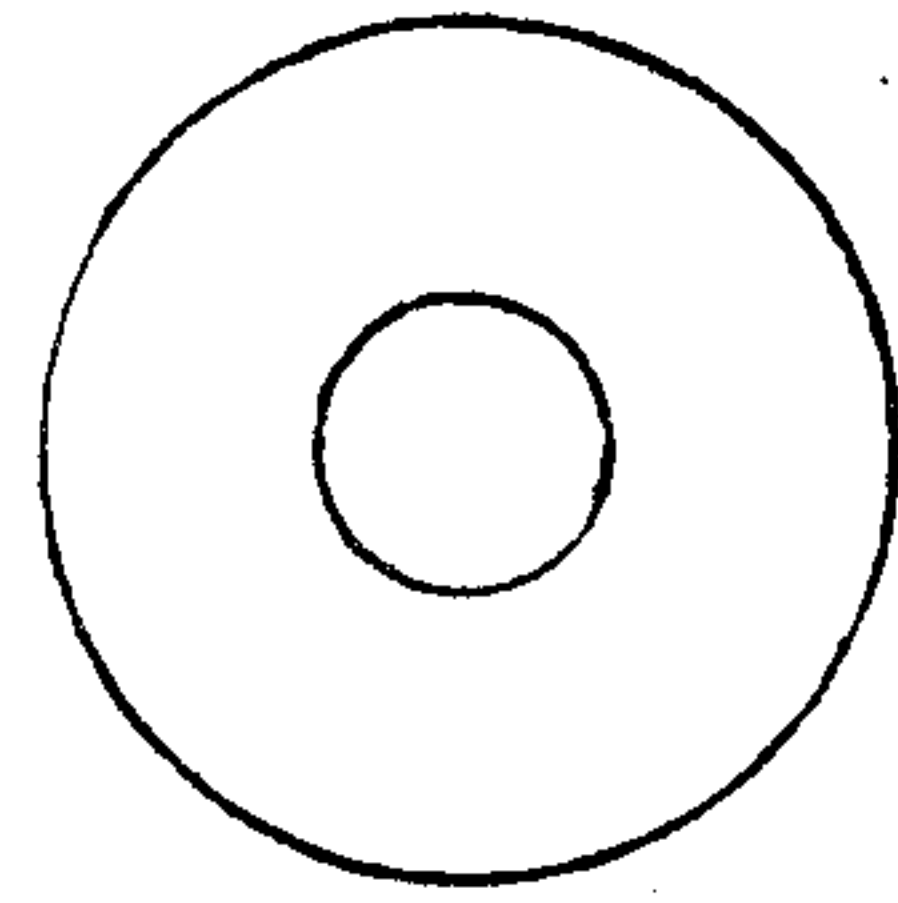
COR20101
CLAW CORD



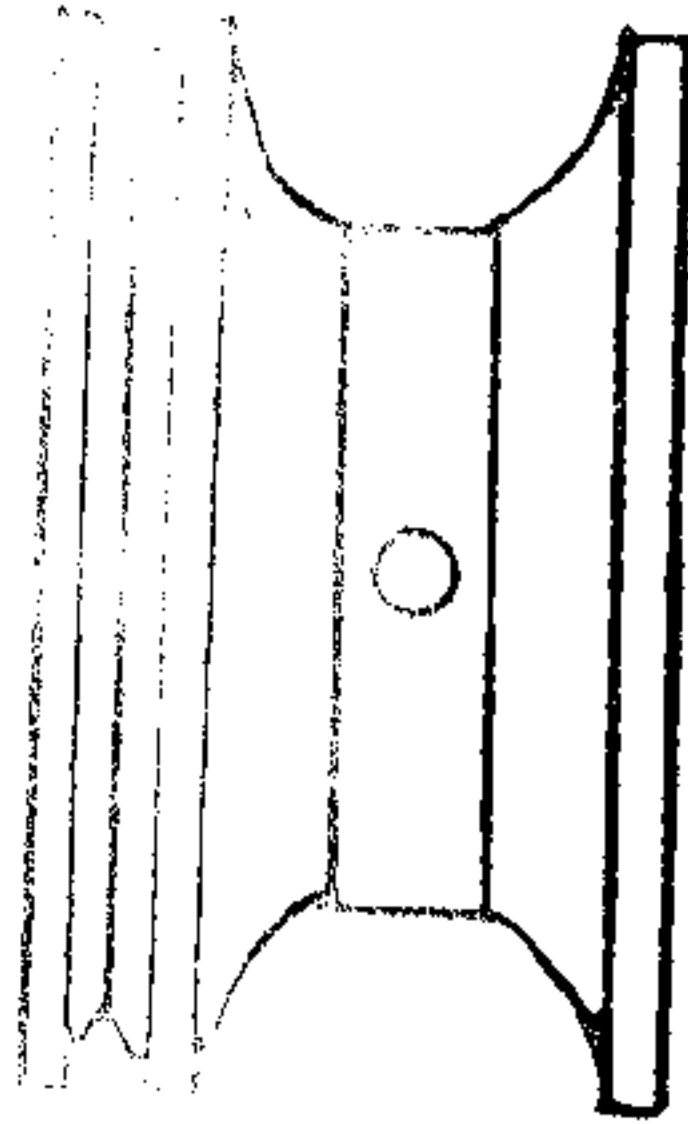
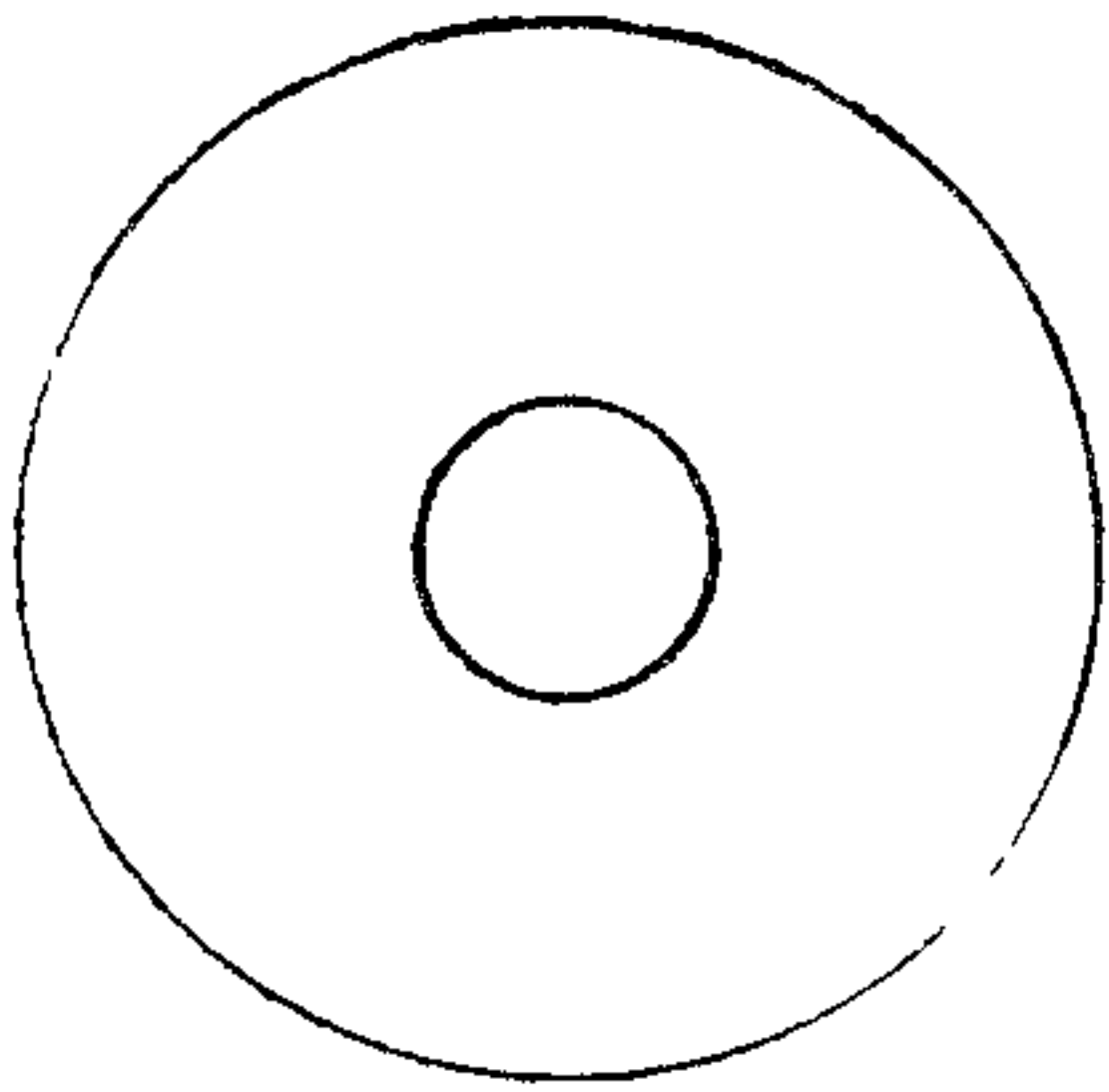
M. KRAMER MFG.
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA20011



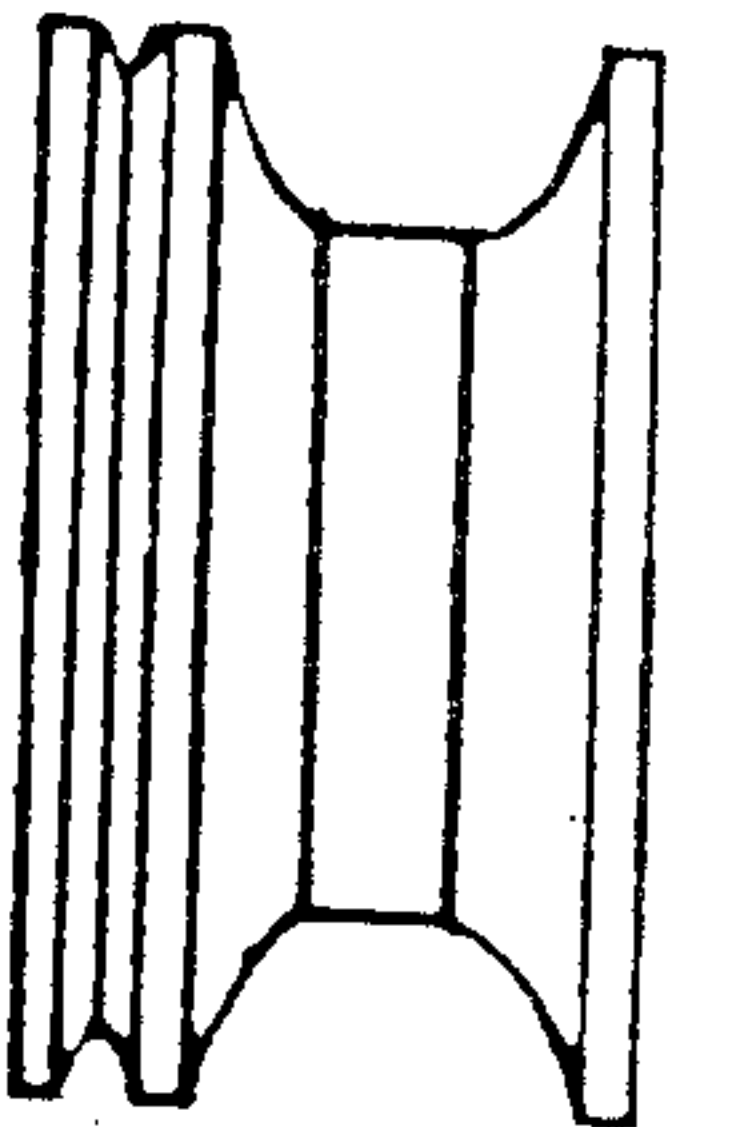
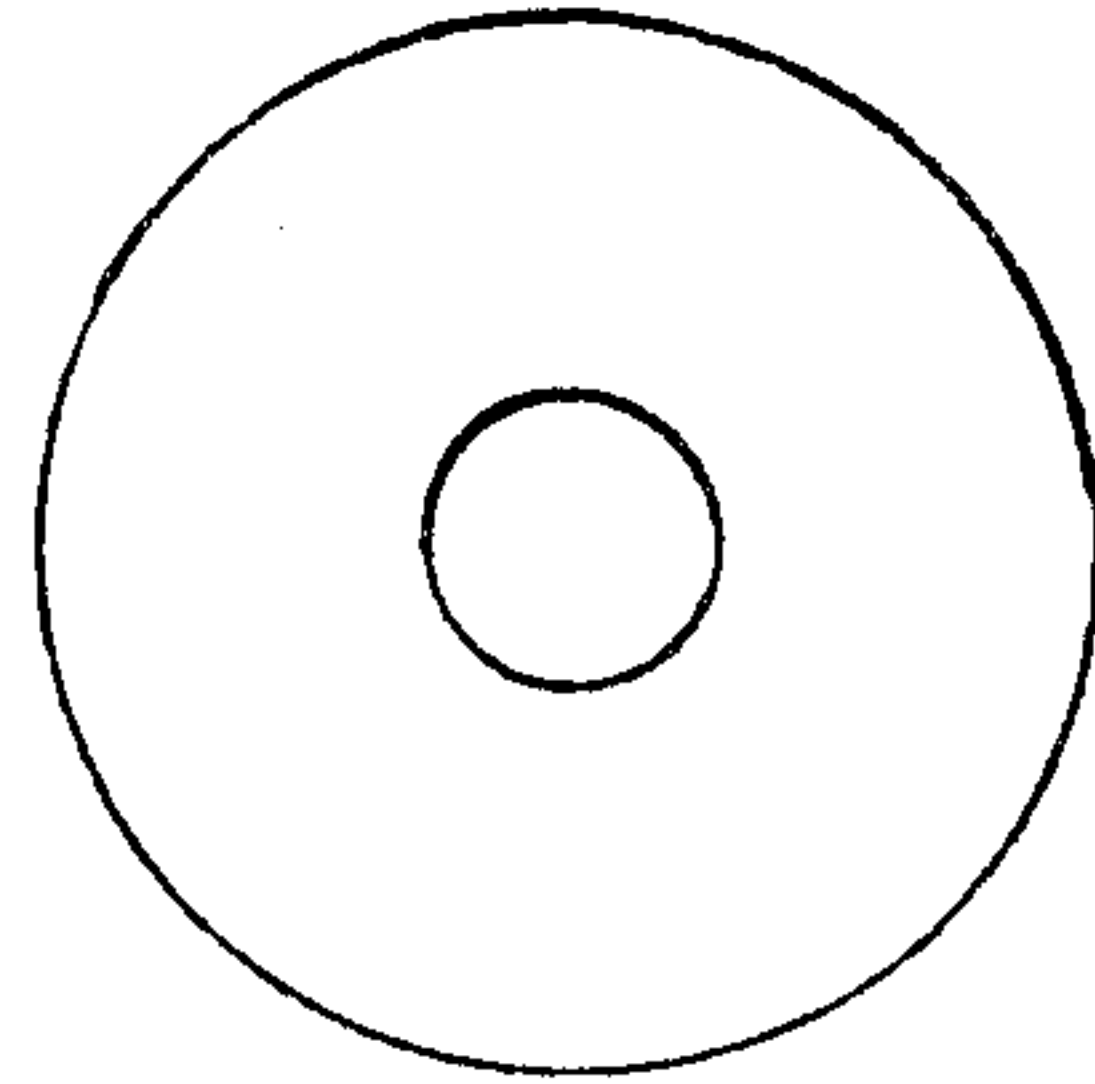
ROL20111
SIDEWARD ROLLERS



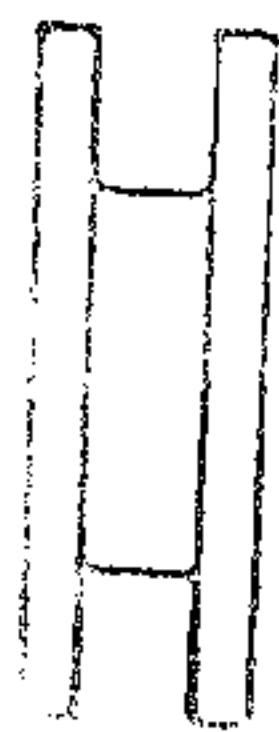
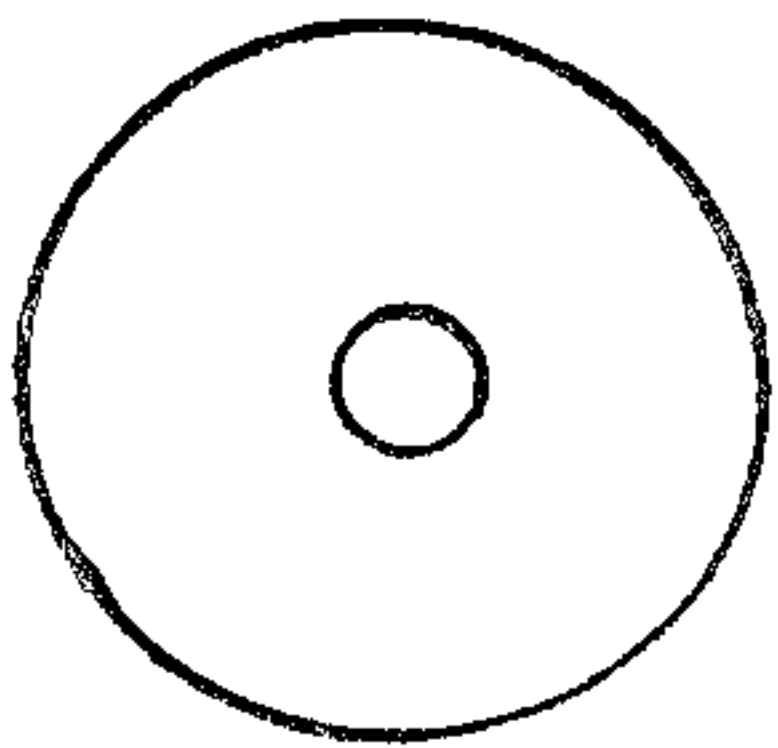
ROL20110
LOWER CLAW ROLLERS



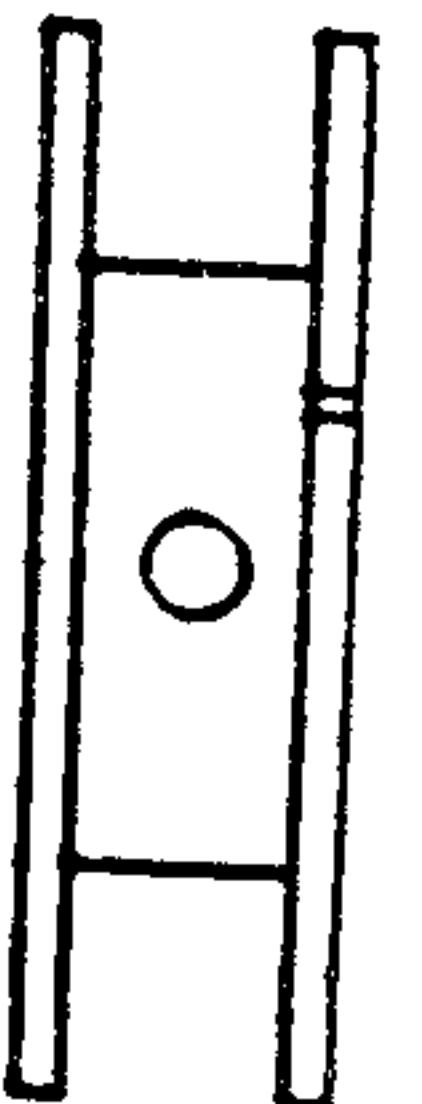
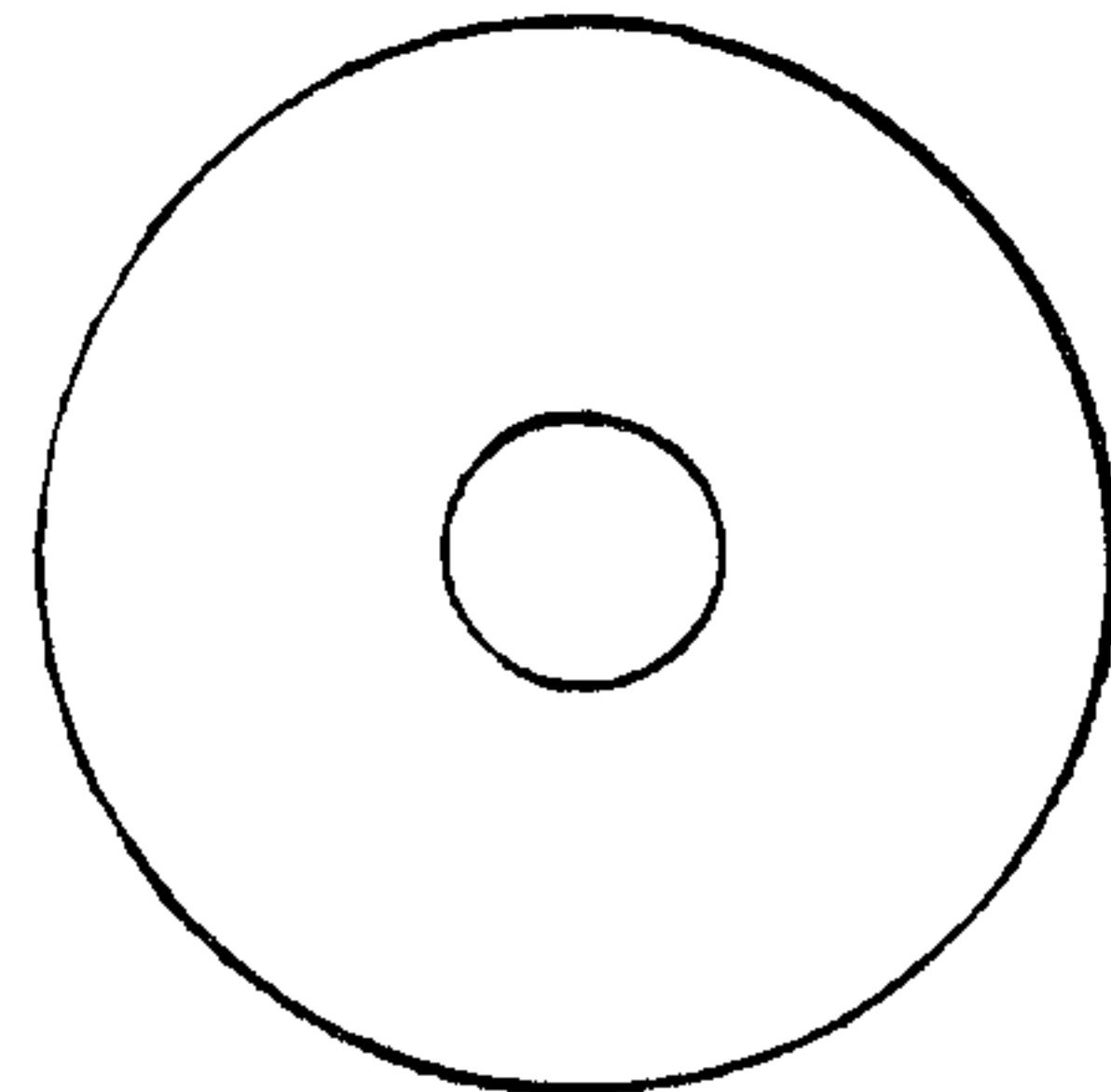
ROL20113
BACK DRIVE ROLLER



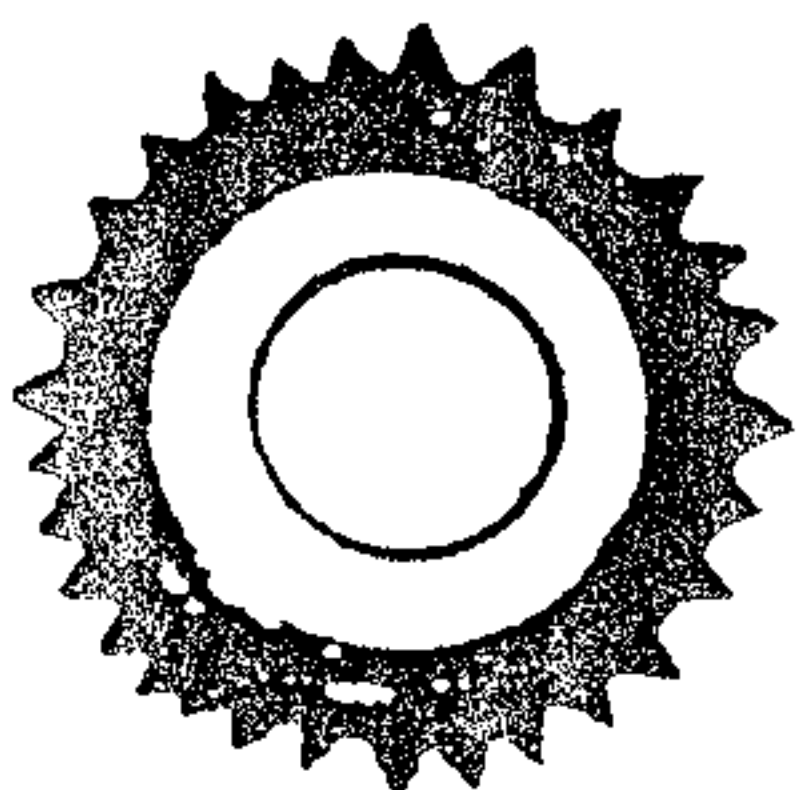
ROL20114
BACKWARD ROLLER



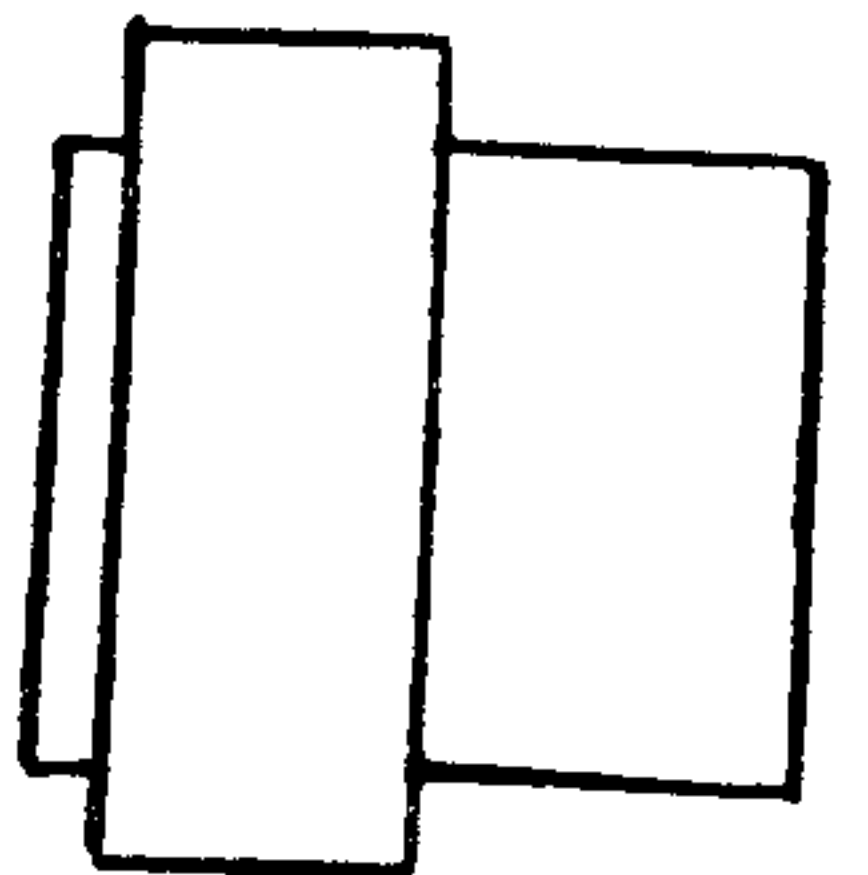
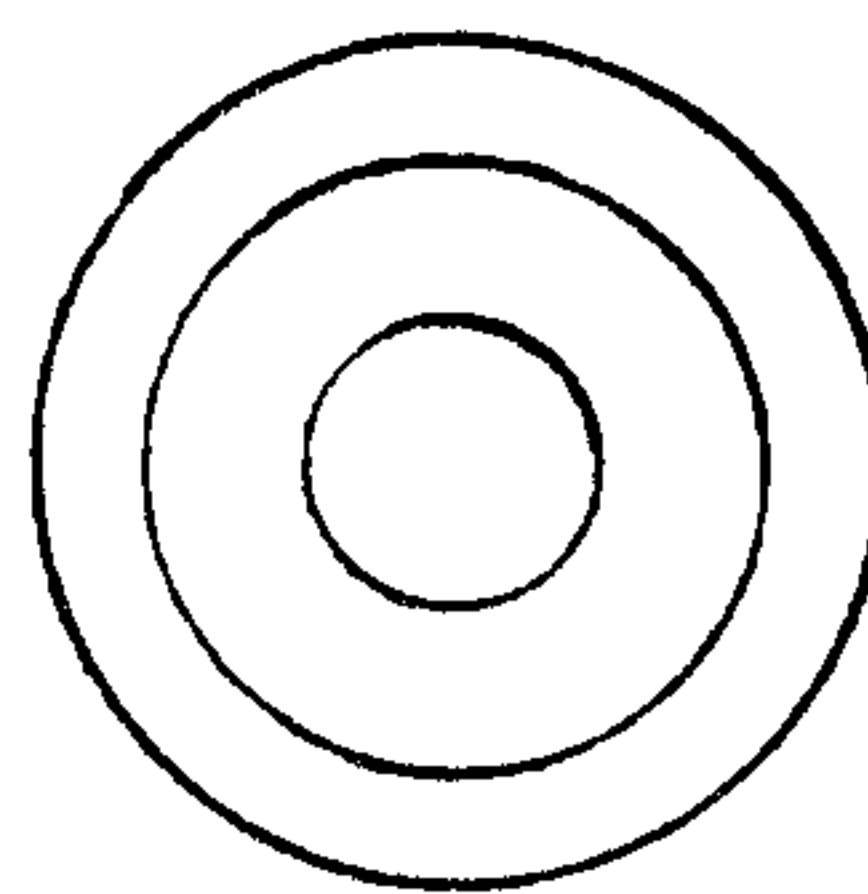
ROL20102
CLAW CORD ROLLER



ROL20112
CORD HOLDER ROLLER

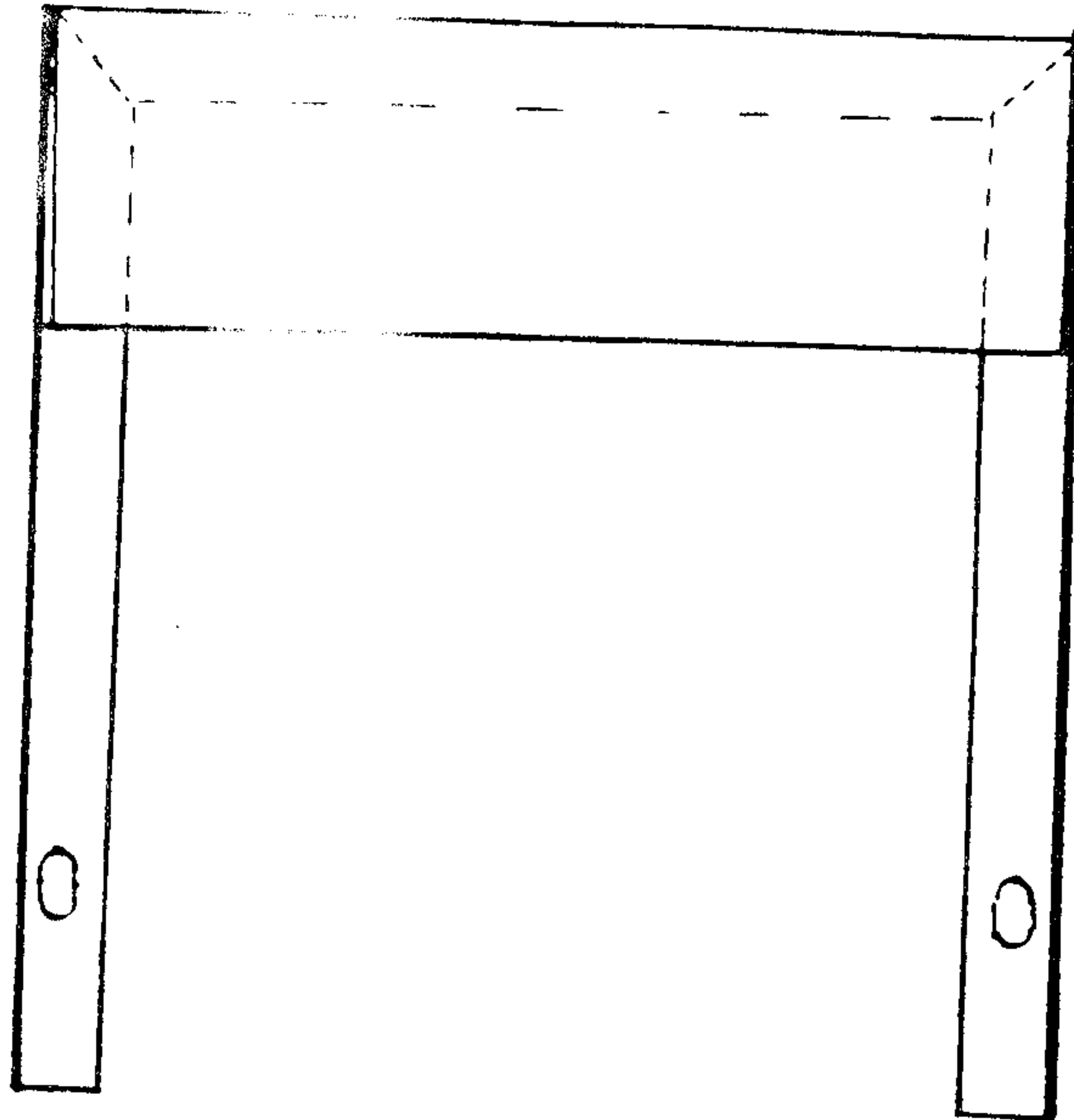


GEA20100
DRIVE GEAR

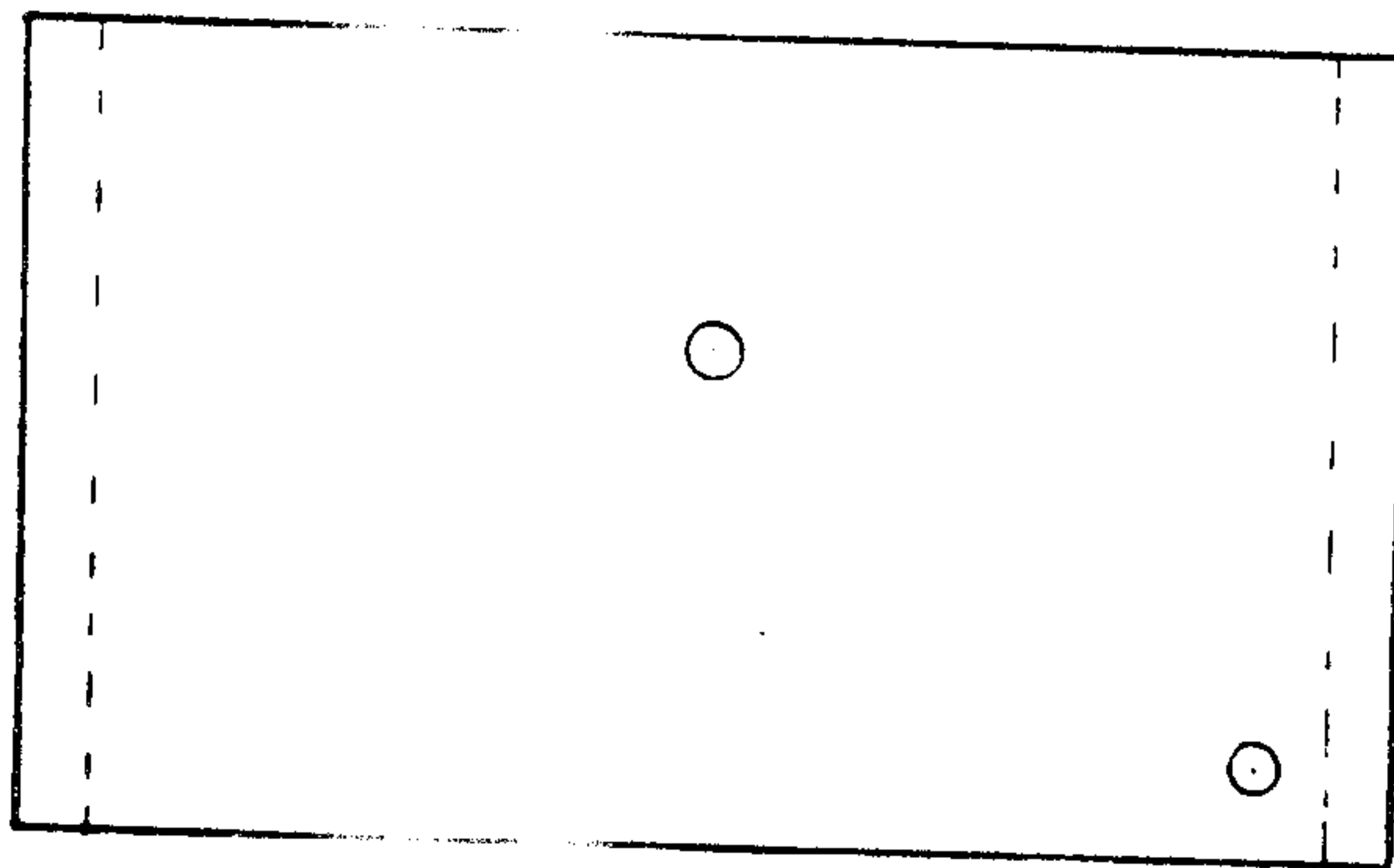


SPA20123
DRIVE GEAR SPACER

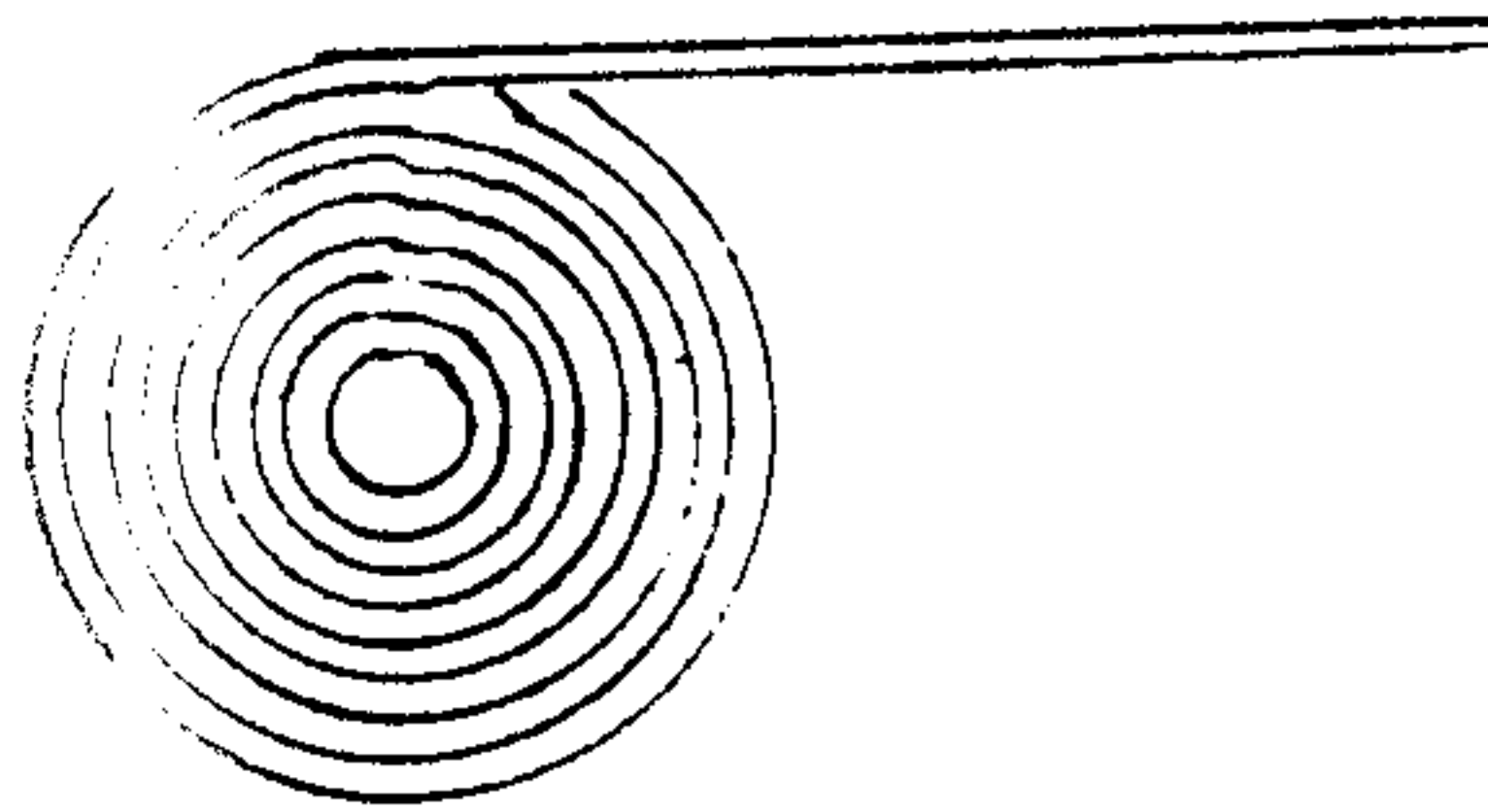
M. KRAMER MFG.
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA 20011



COV20103
FRONT SIDE COVER

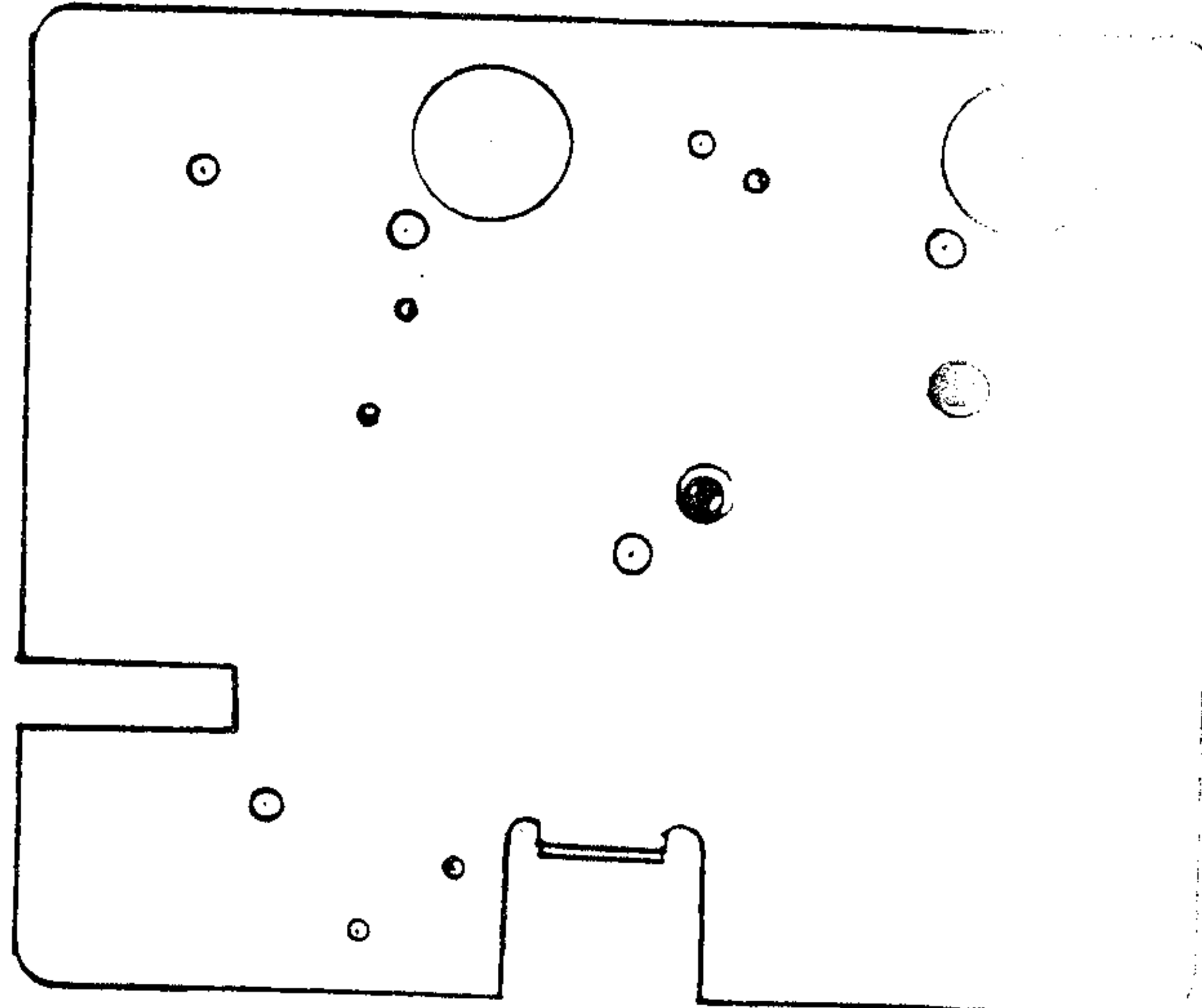


COV20102
BACK COVER

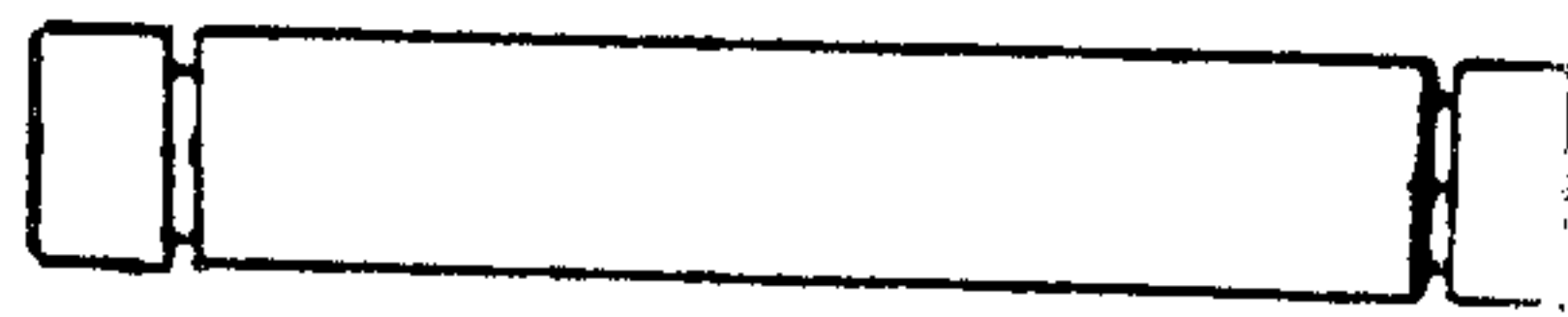


SPR20120
UP/DOWN SPRING

M. KRAMER MFG.
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA20011



BRK20110
SIDE & CLAW MOTOR PLATE



SPA20122
LOWER CLAW SPACER

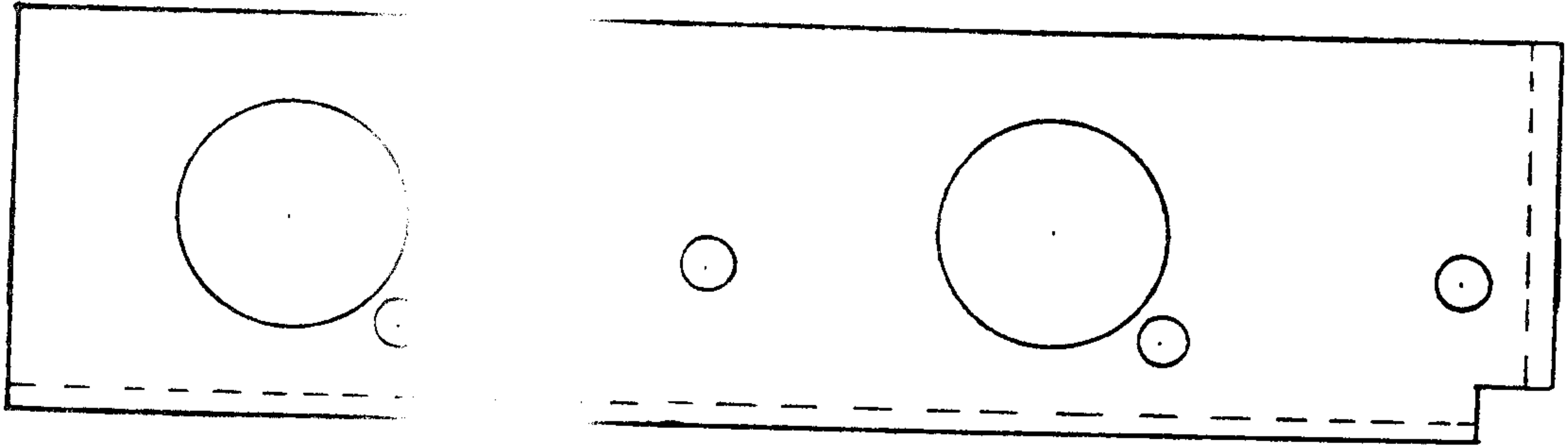


SPR20103
LOWER CLAW SPRING

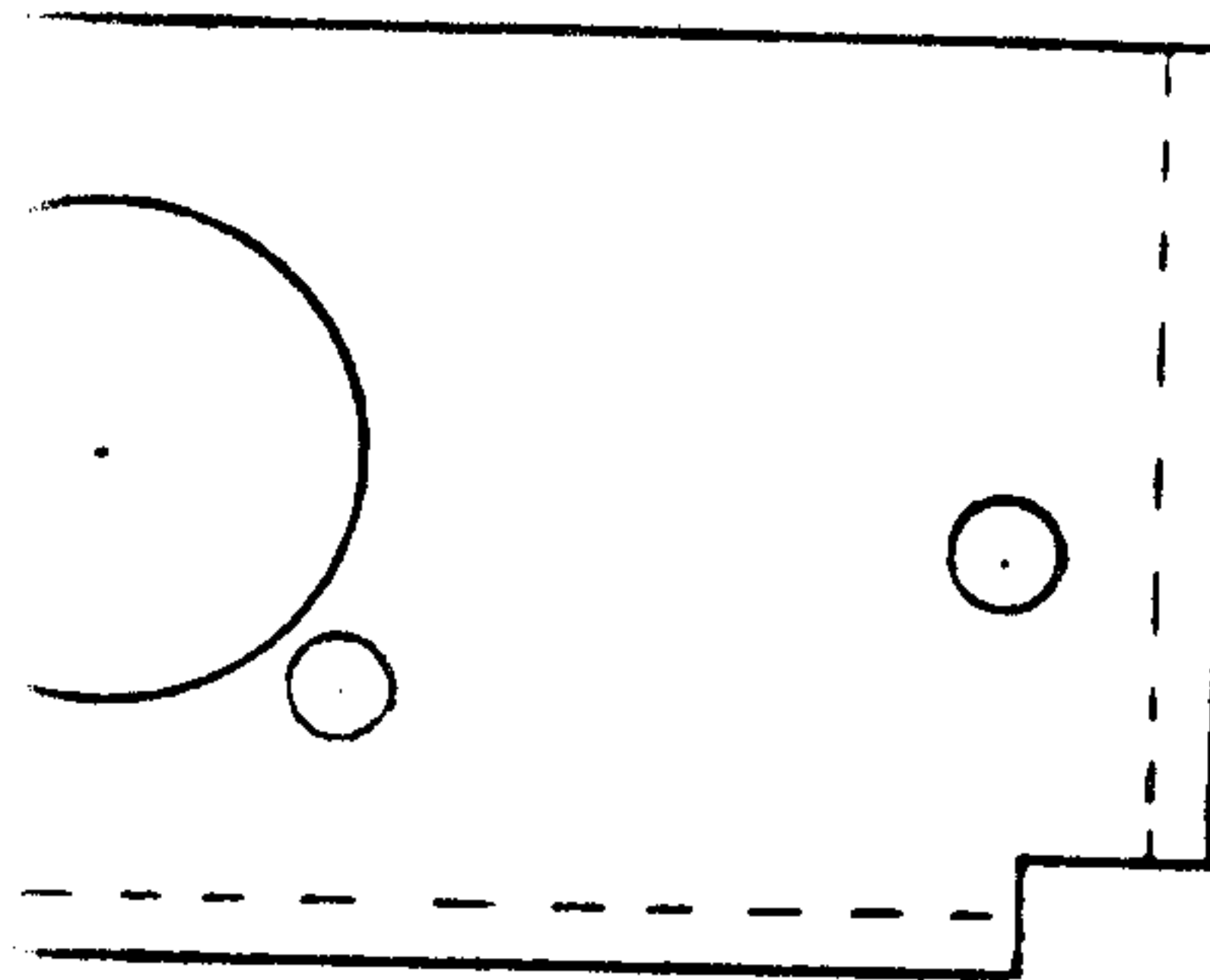
M. KRAMER MFG.
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA20011



BRK20111
HING BRACKET



BRK20112
AS ROLLER BRACKET



BRK20113
WARDS ROLLER BRACKET

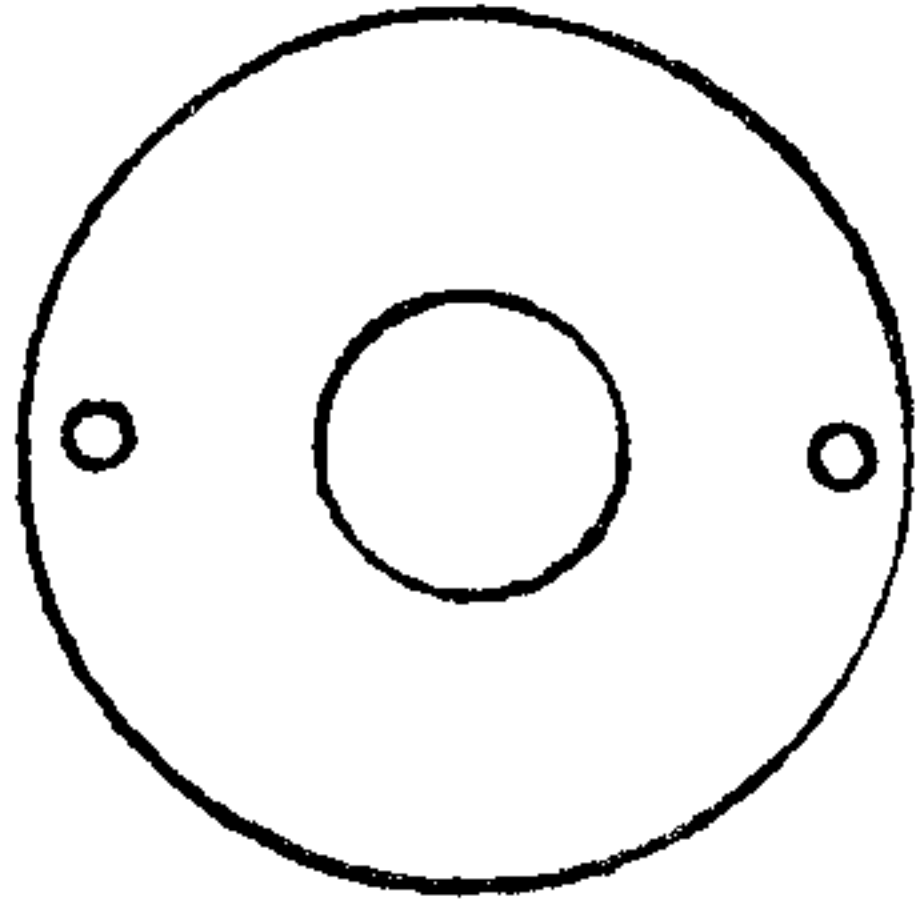


SPA2012
RIGHT SIDE ROLLER SPACER

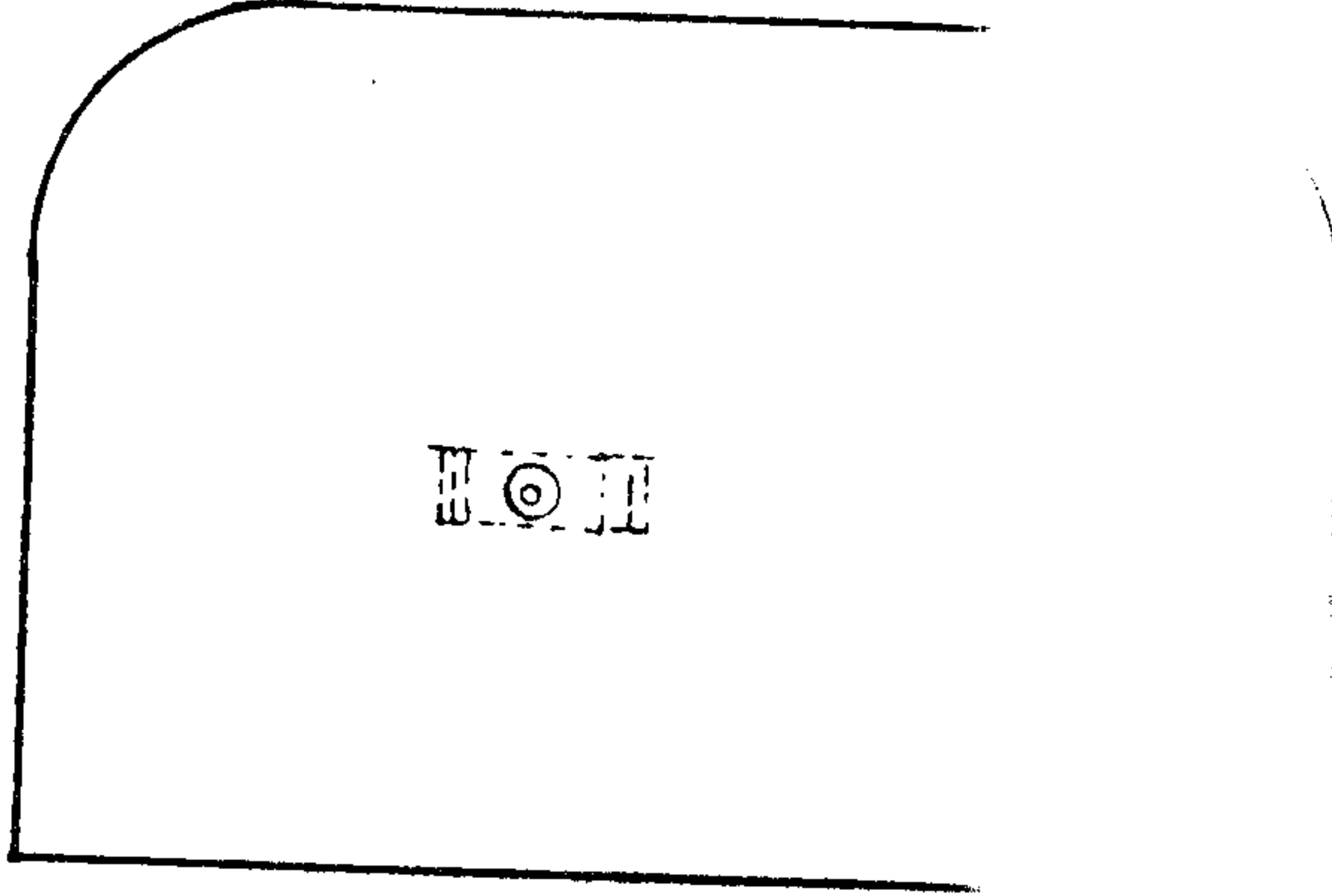


SPA20121
LEFT SIDE ROLLER SPACER

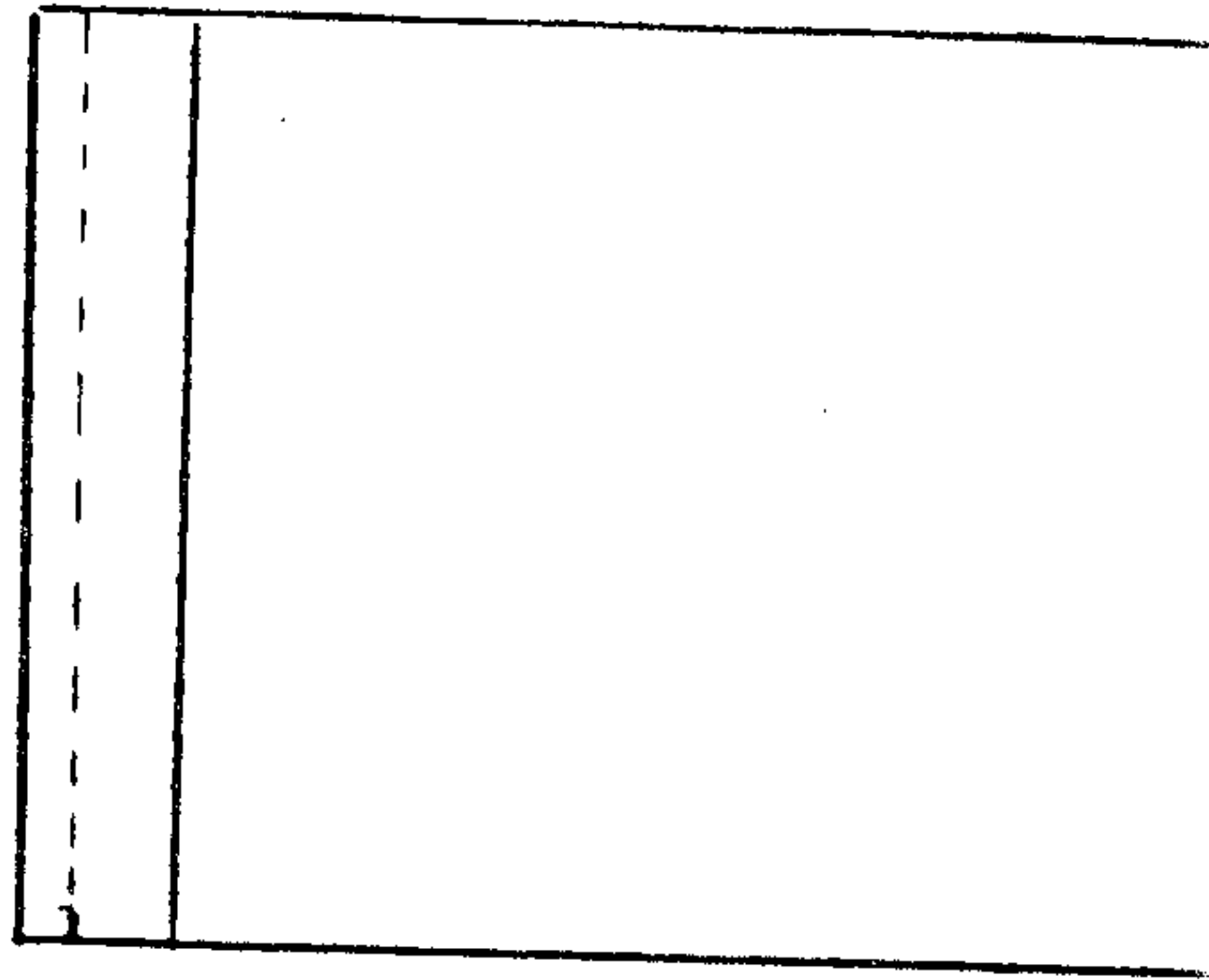
M. KRAMER MFG.
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA20011



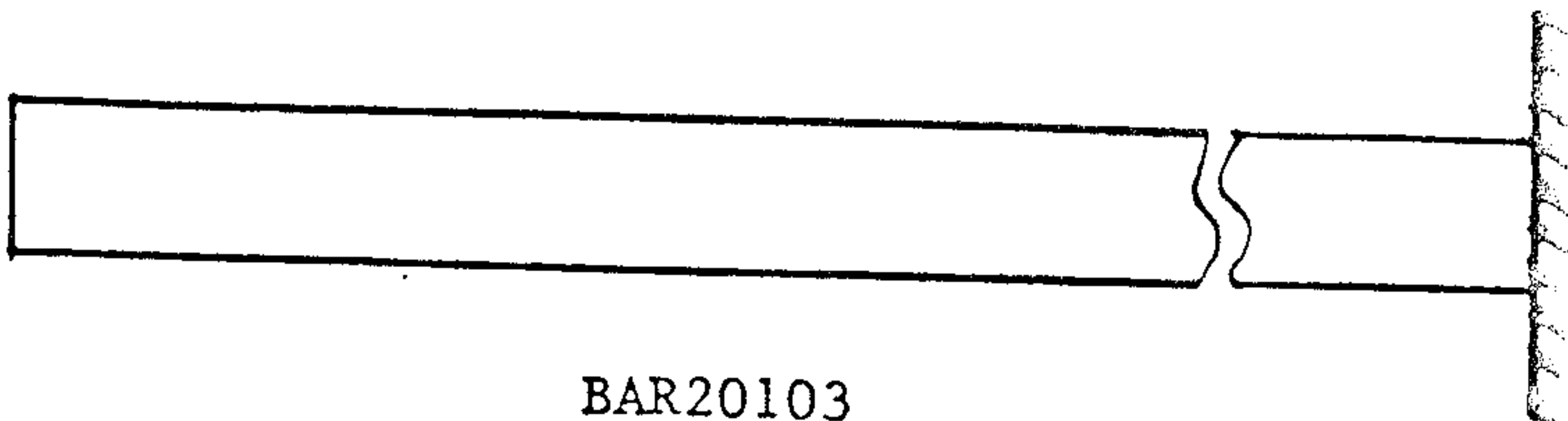
SPA20124
RIGHT SIDE SPACER



COV20104
MECH TOP COVER



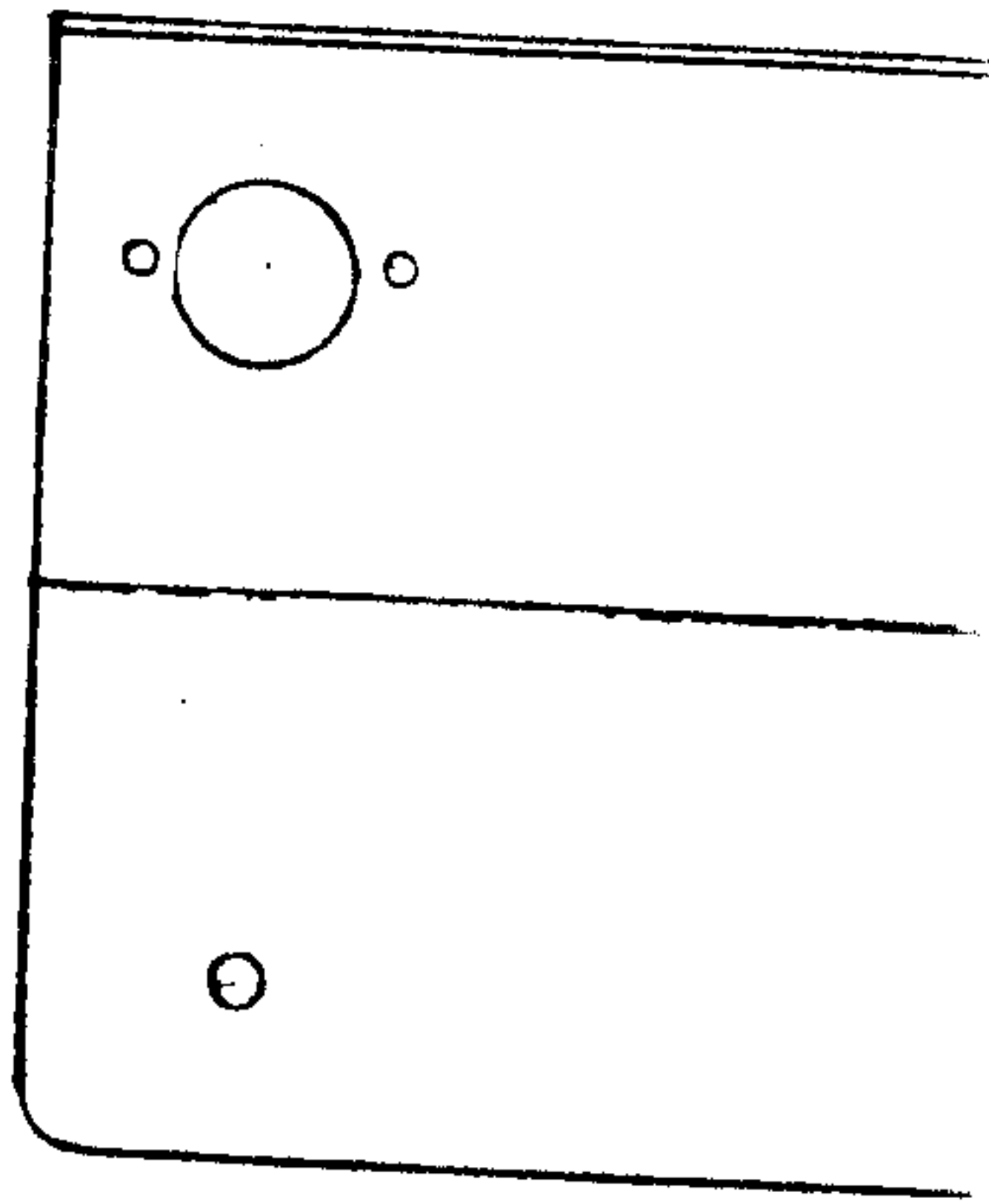
COV20101
MECH FRONT COVER



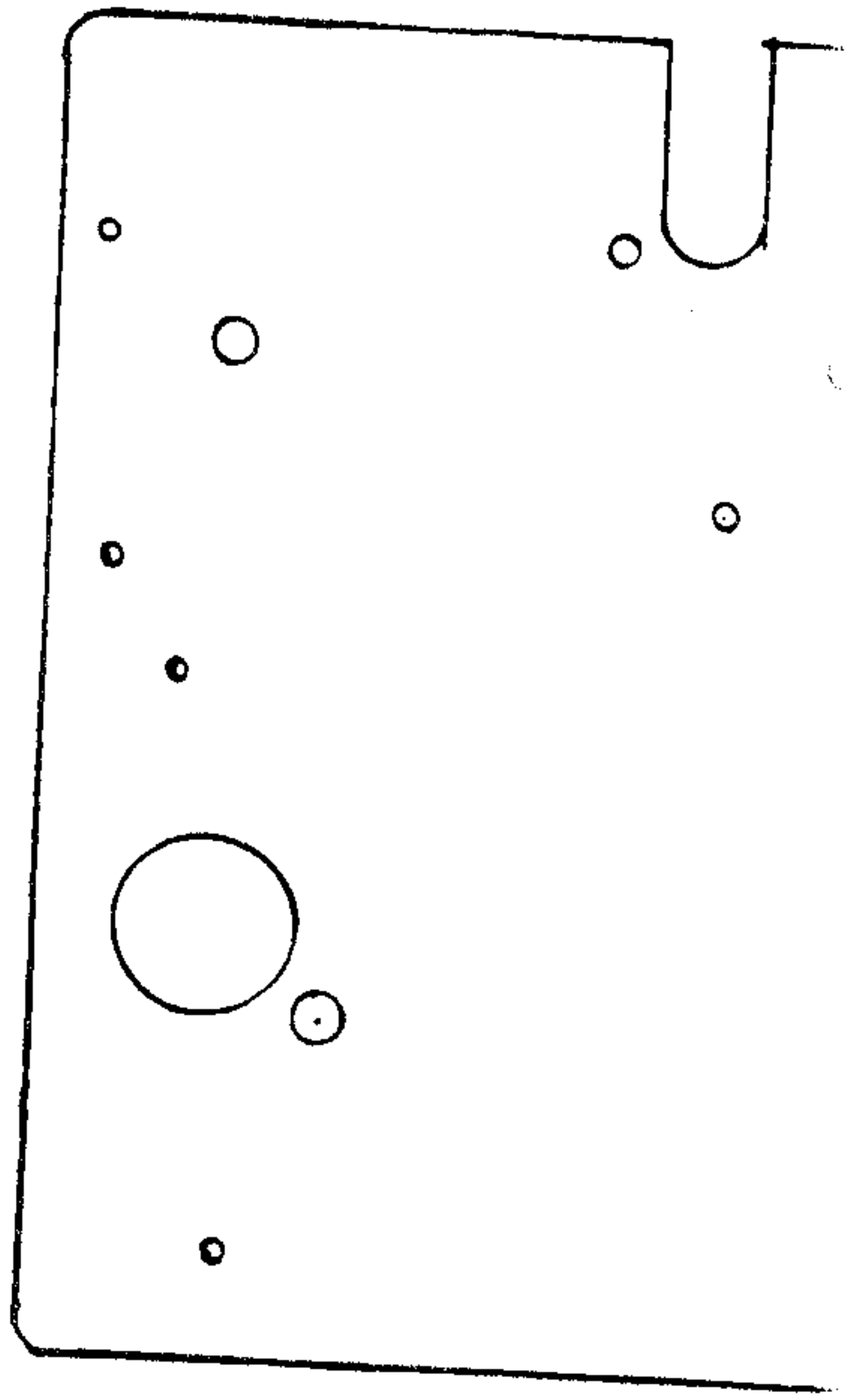
BAR20103
BACKWARDS DRIVE BAR



M. KRAMER MFG.
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA20011

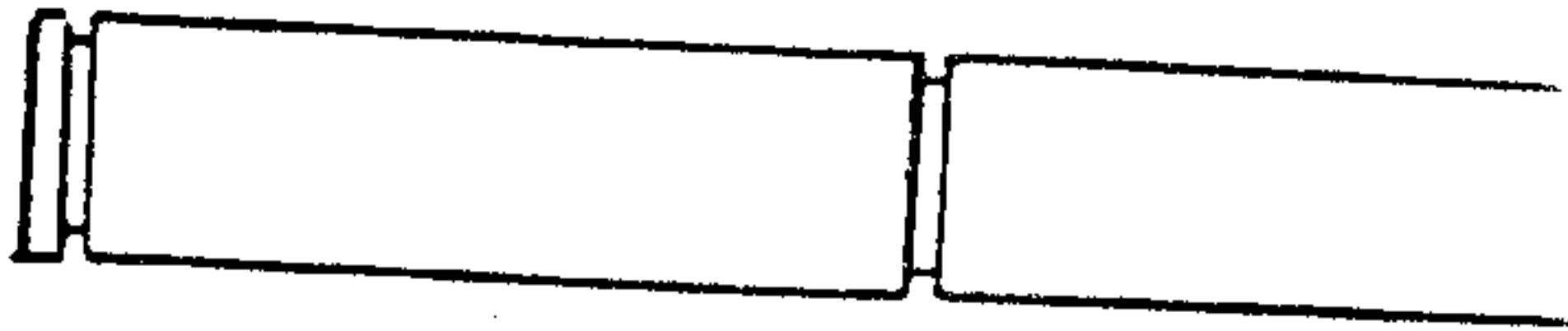


BRK20108
RIGHT SIDE SUPPORT PLATE

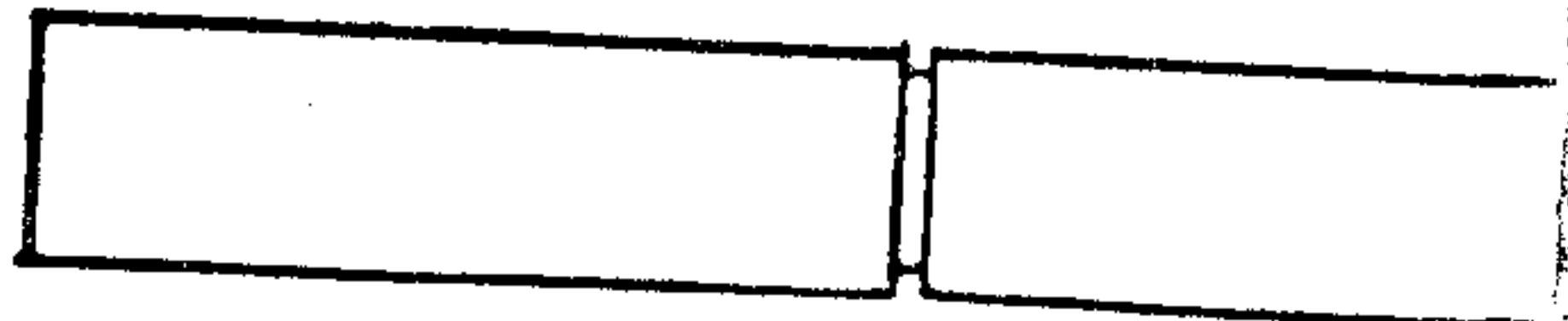


BRK20109
LEFT SIDE SUPPORT PLATE

BAR20104
CLAW DRIVE BAR



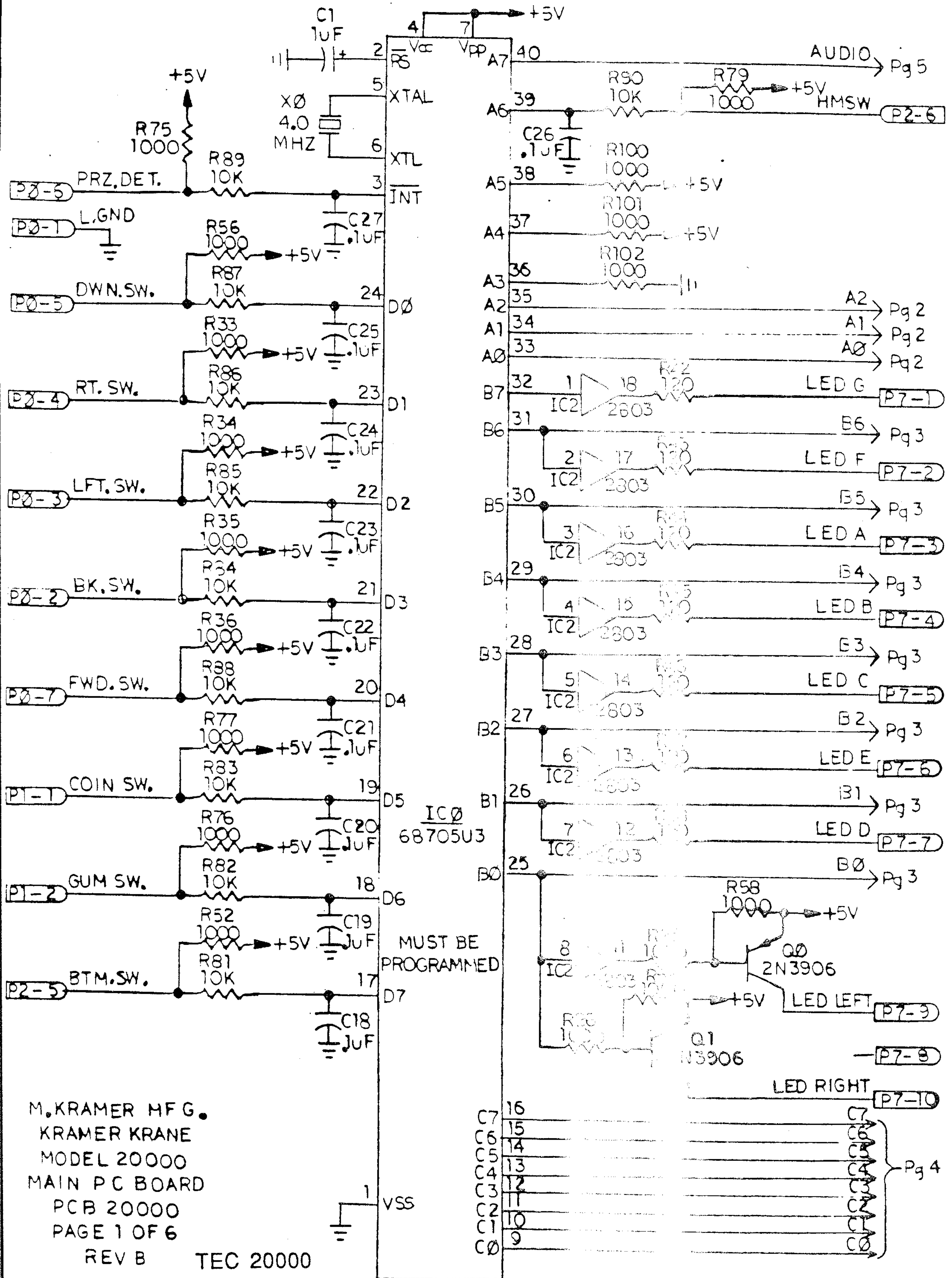
BAR20105
SIDEWARDS DRIVE BAR



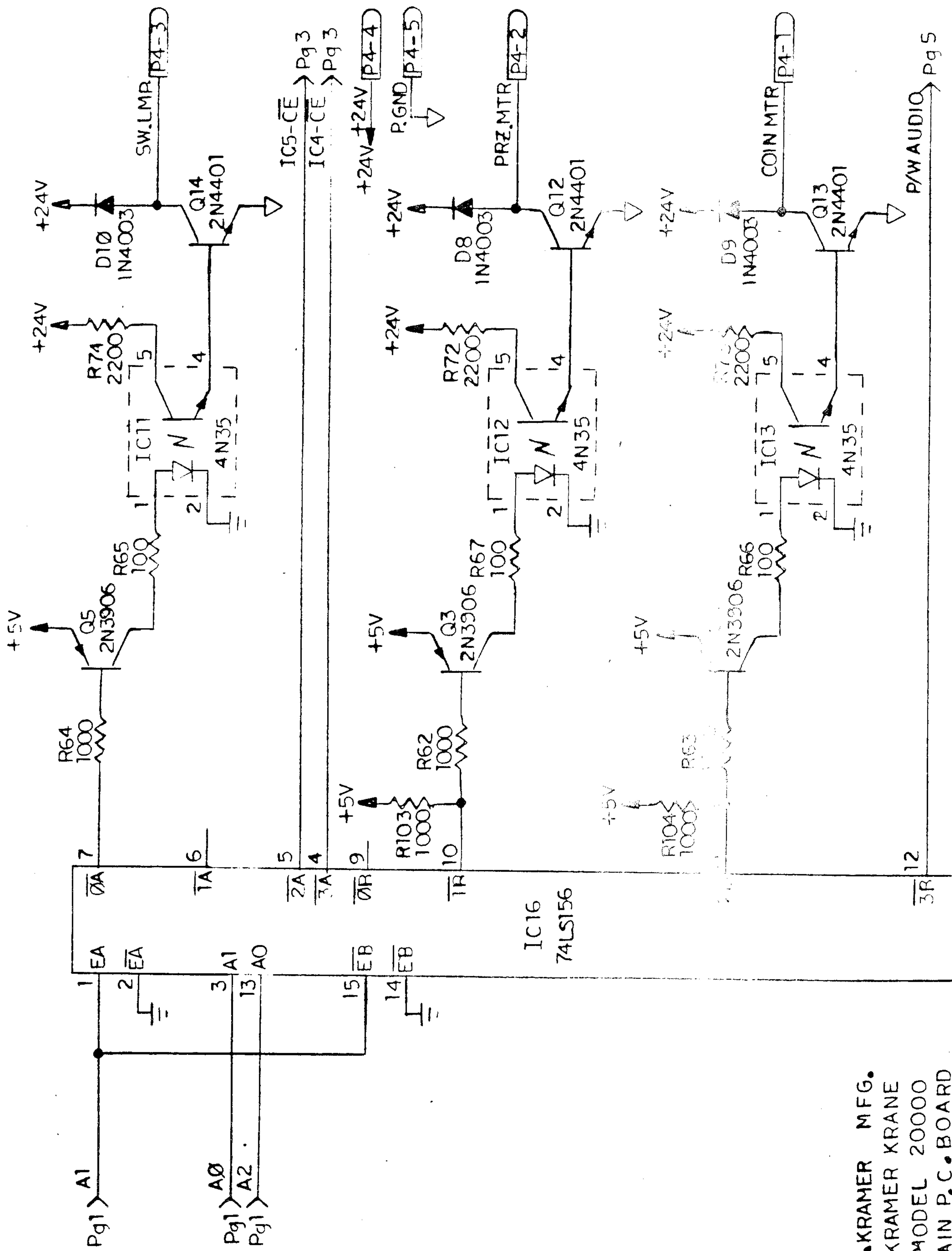
M. KRAMER MFG.
MODEL 20000 KRANE
CRANE ASSEMBLY
CRA20010 & CRA20011

KIT20021
KRAMER MODEL 20000 UPRIGHT KRANE
JOYSTICK CONVERSION TO BUTTON MOUNTING
INSTALLATION OF BUTTONS

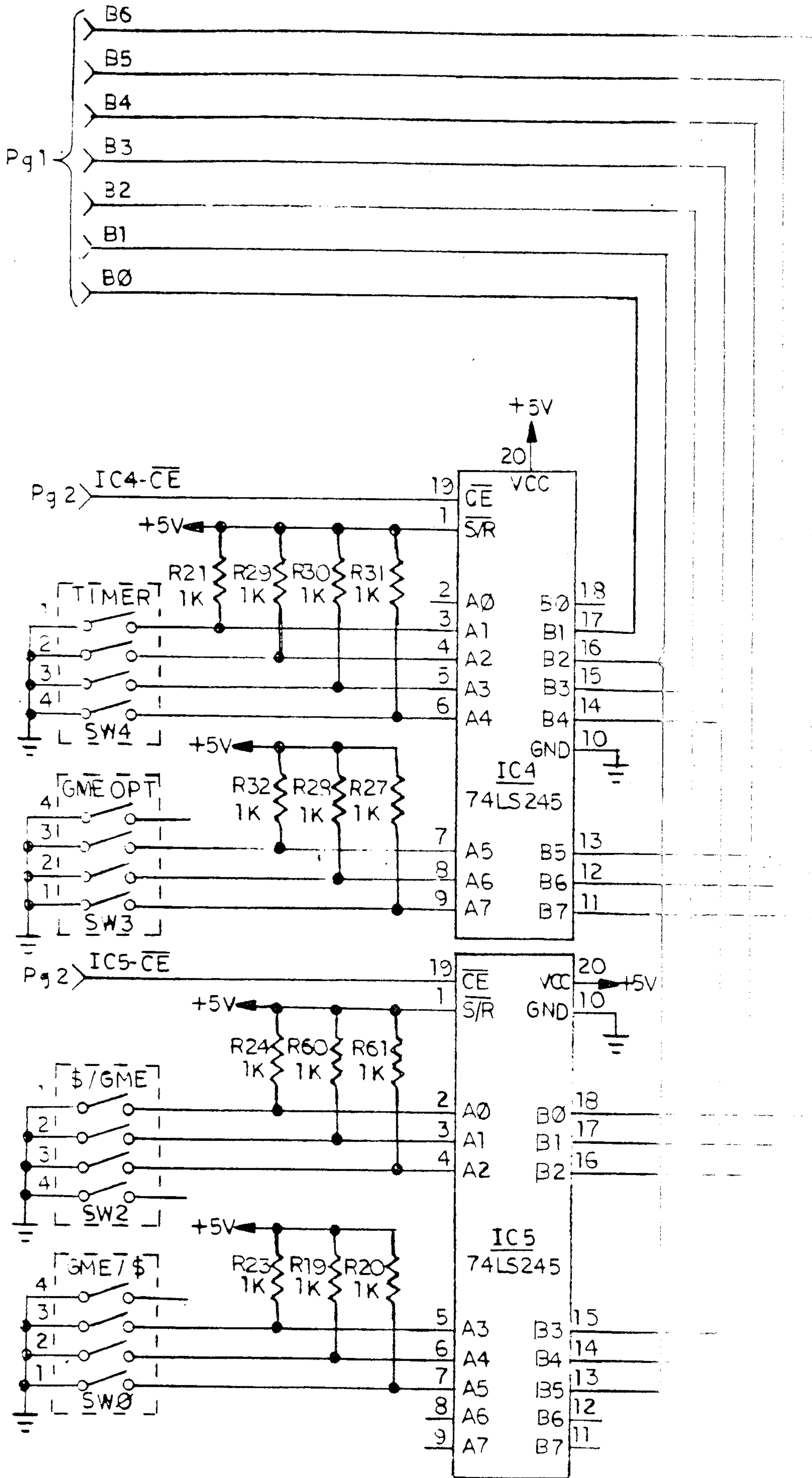
1. Release holding cams on joystick/finger panel and disconnect LED Display connector.
2. Remove joystick/finger panel by lifting towards top of cabinet.
3. Remove all wiring from joystick.
4. Using a 11/32 open end wrench, remove 4 joystick retaining nuts and 4 joystick plate retaining nuts.
5. Install button panel with 8 retaining nuts.
6. Gently pull switches from legends.
7. Install legends in holes provided in button panel. Install retaining nuts. Reinstall switches with lamps.
8. Wire both common sides of switches with black wires.
9. Wire reverse "↑" switch with white/purple wire.
10. Wire side "→" switch with white/orange wire.
11. Untie orange and red wires from harness.
12. Wire both switches (lamp side) with orange and red wires.
13. Reinstall LED display connector.
14. Reinstall button/finger panel. Retighten holding cams.
15. Reset game switches on logic board to game "B" and test operation: Insert coins. Depress back switch; carriage should move backward. Depress side switch; carriage should move sideways to the right. Claw will drop after time is out. Switch lamps should remain lit until claw is dropped or game is over.



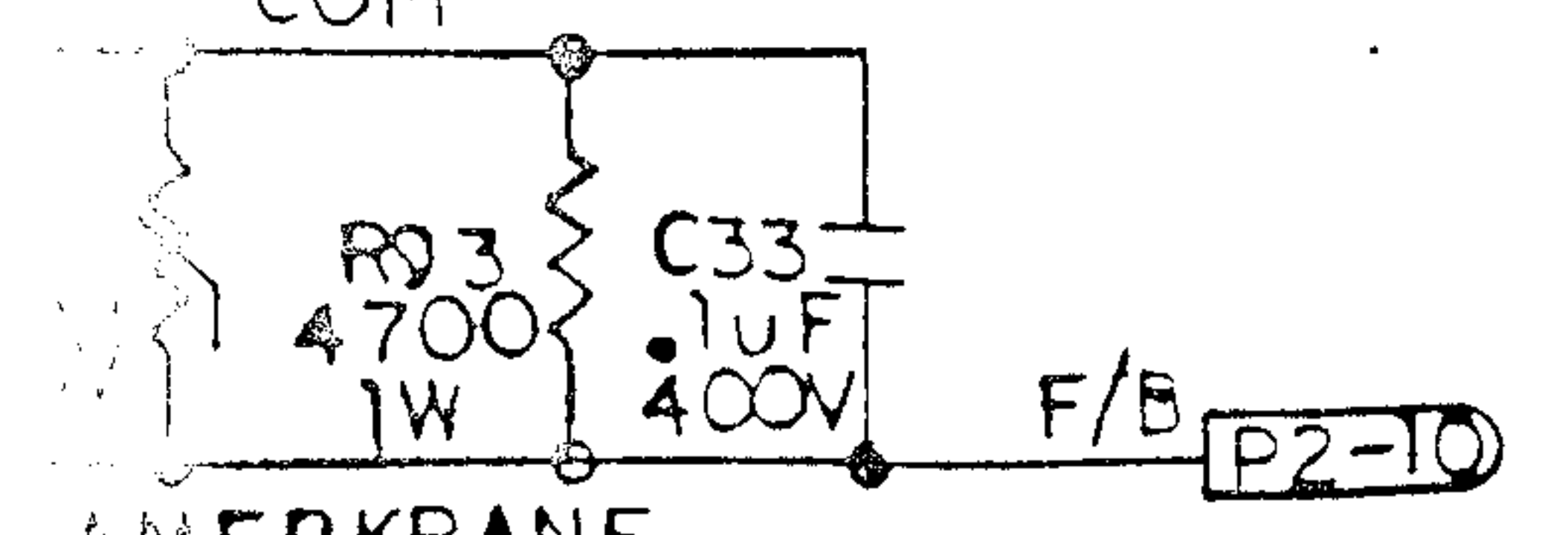
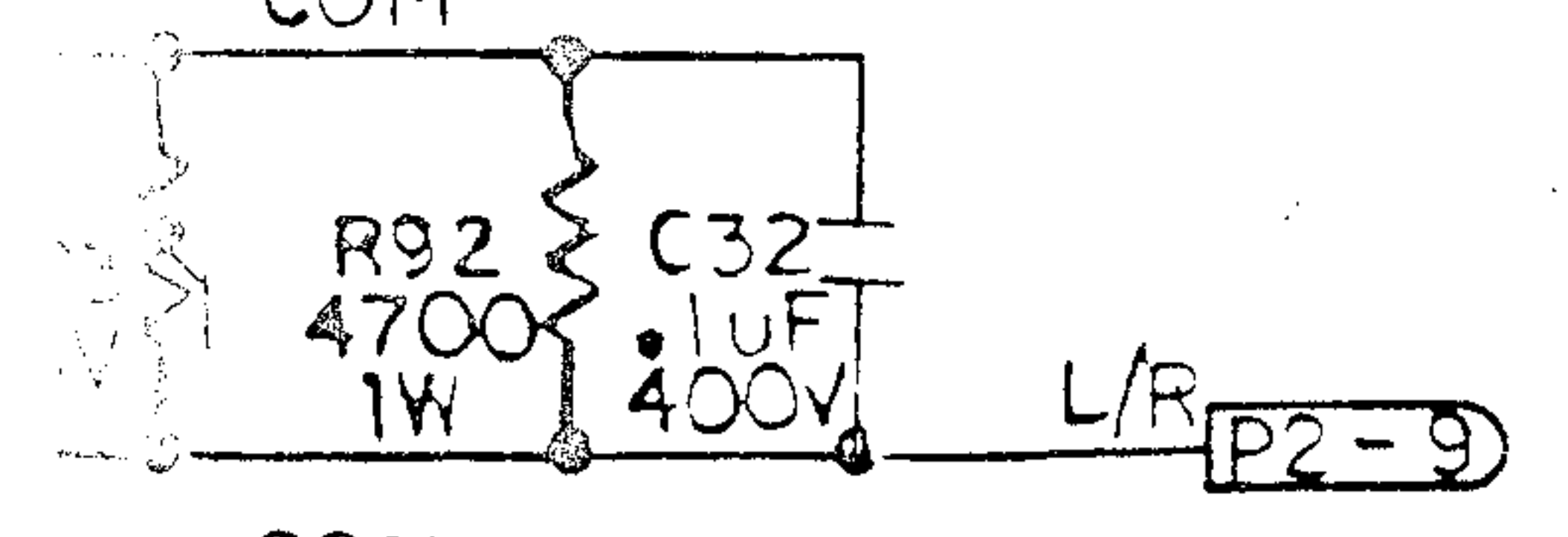
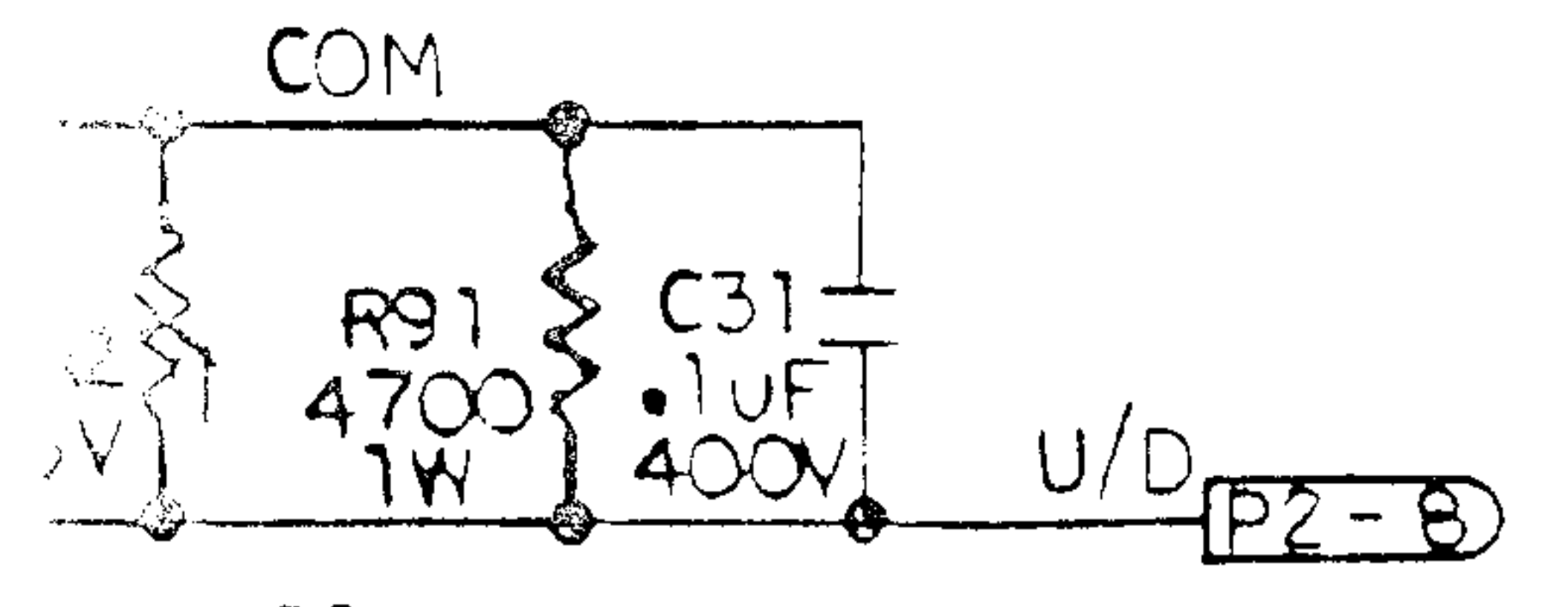
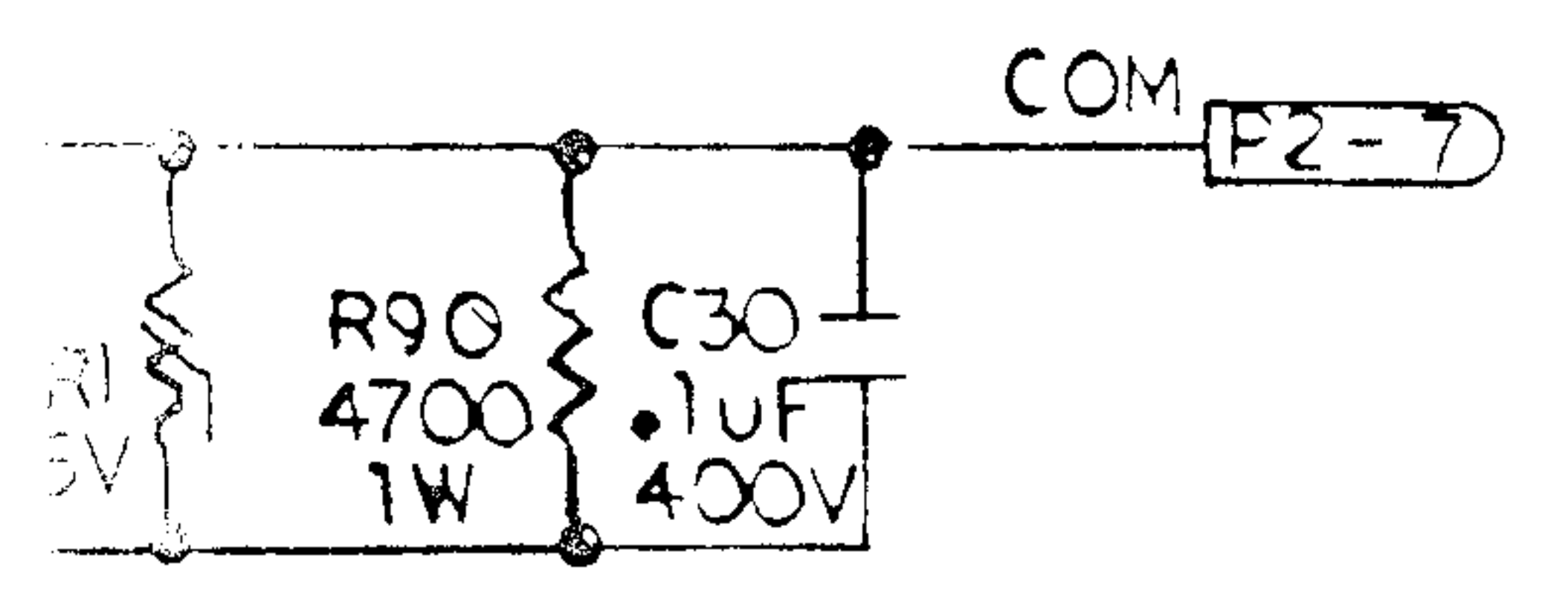
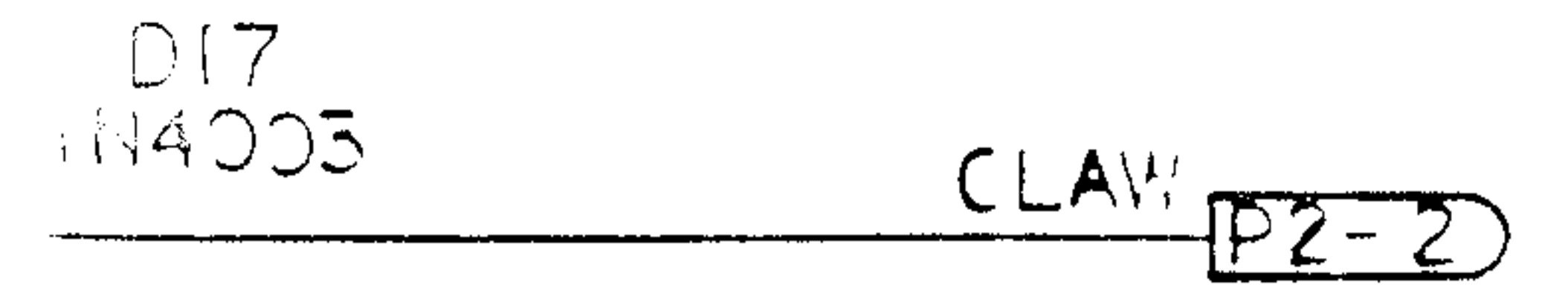
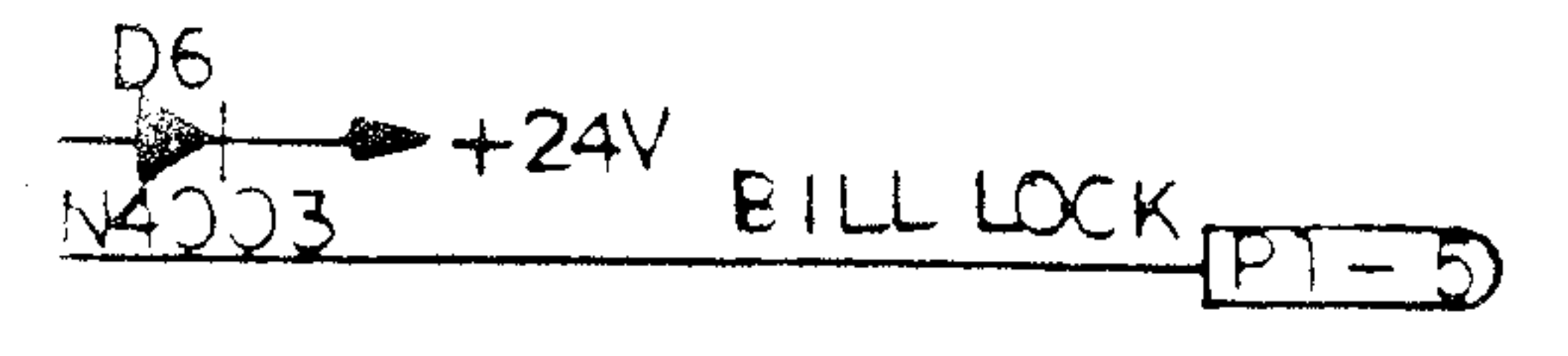
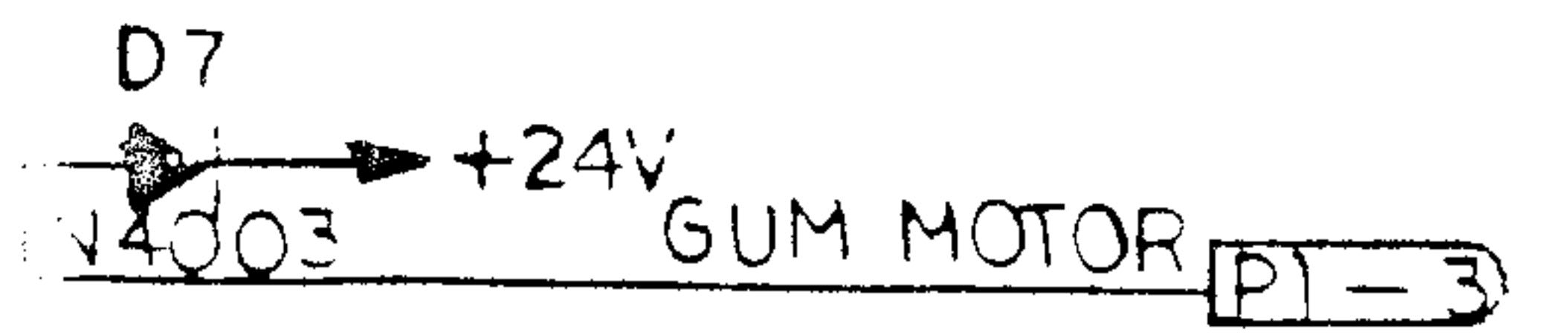
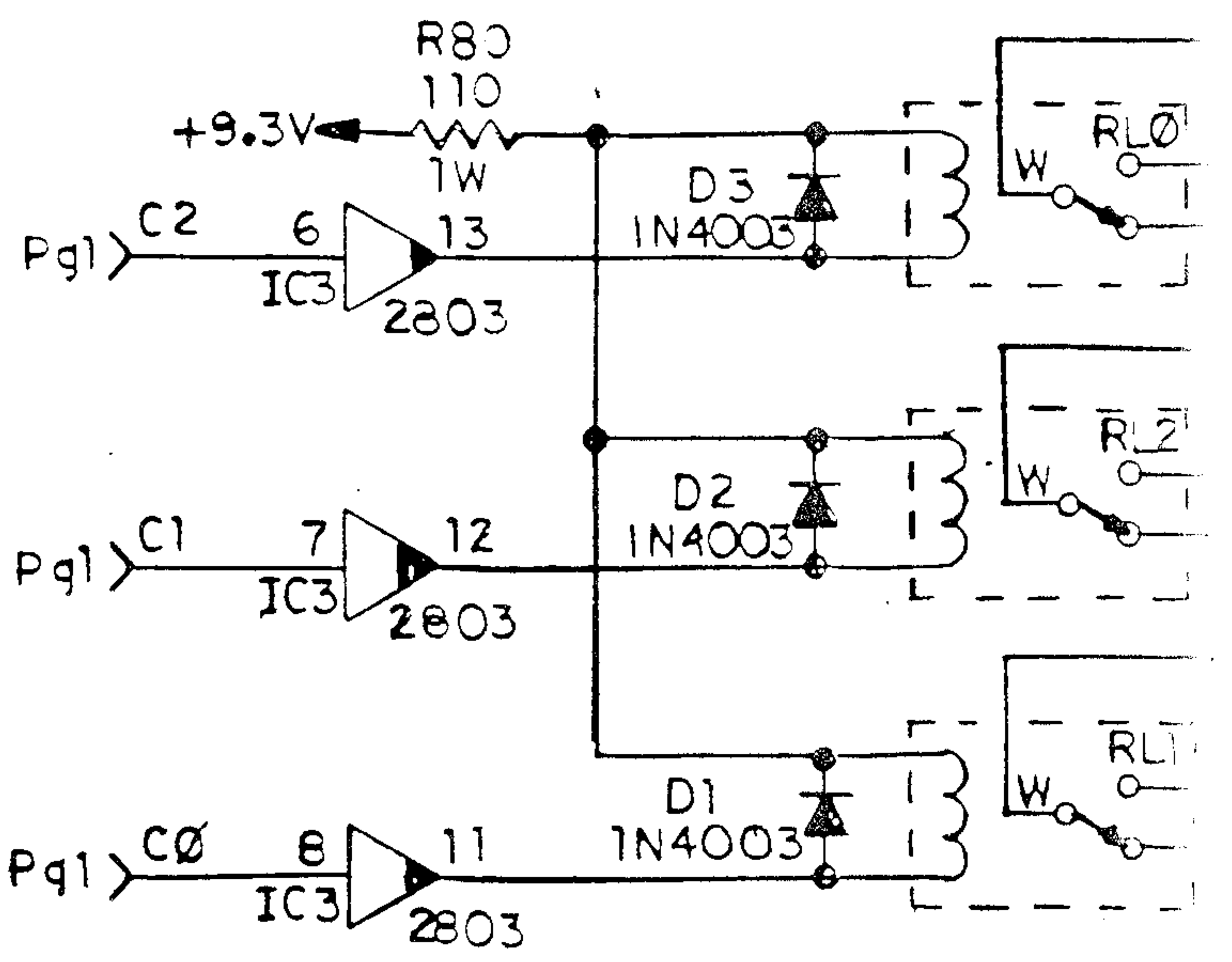
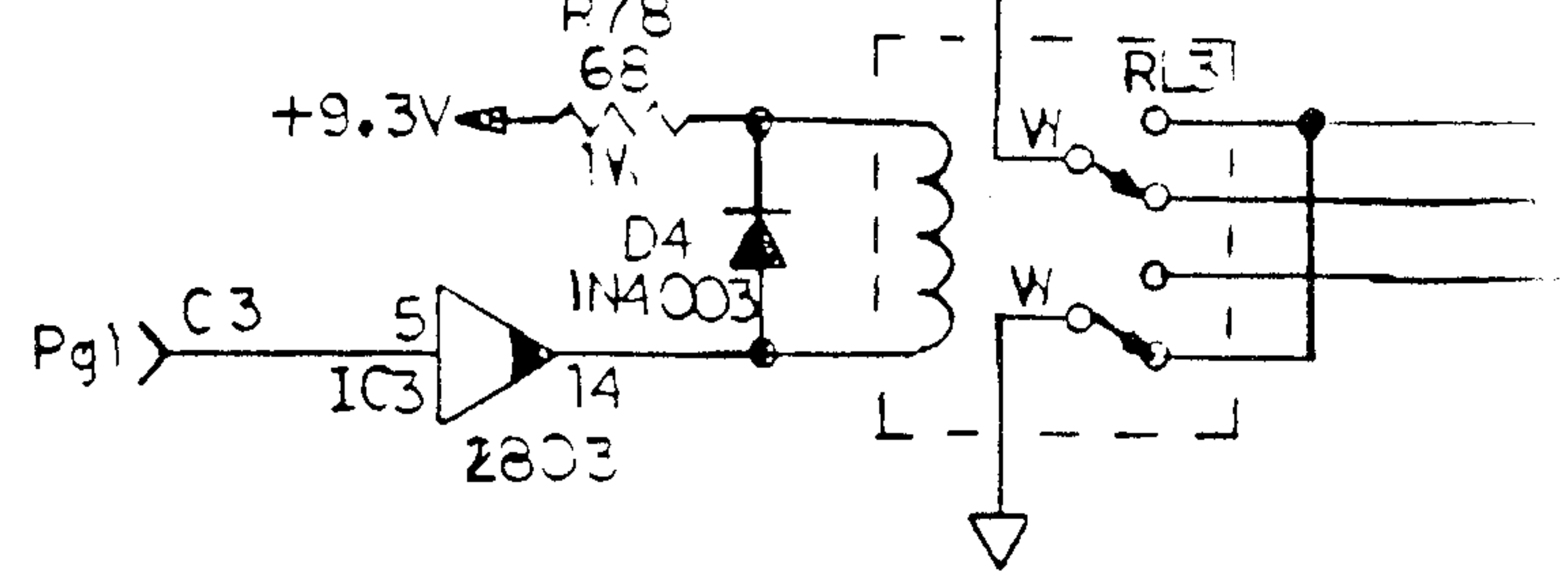
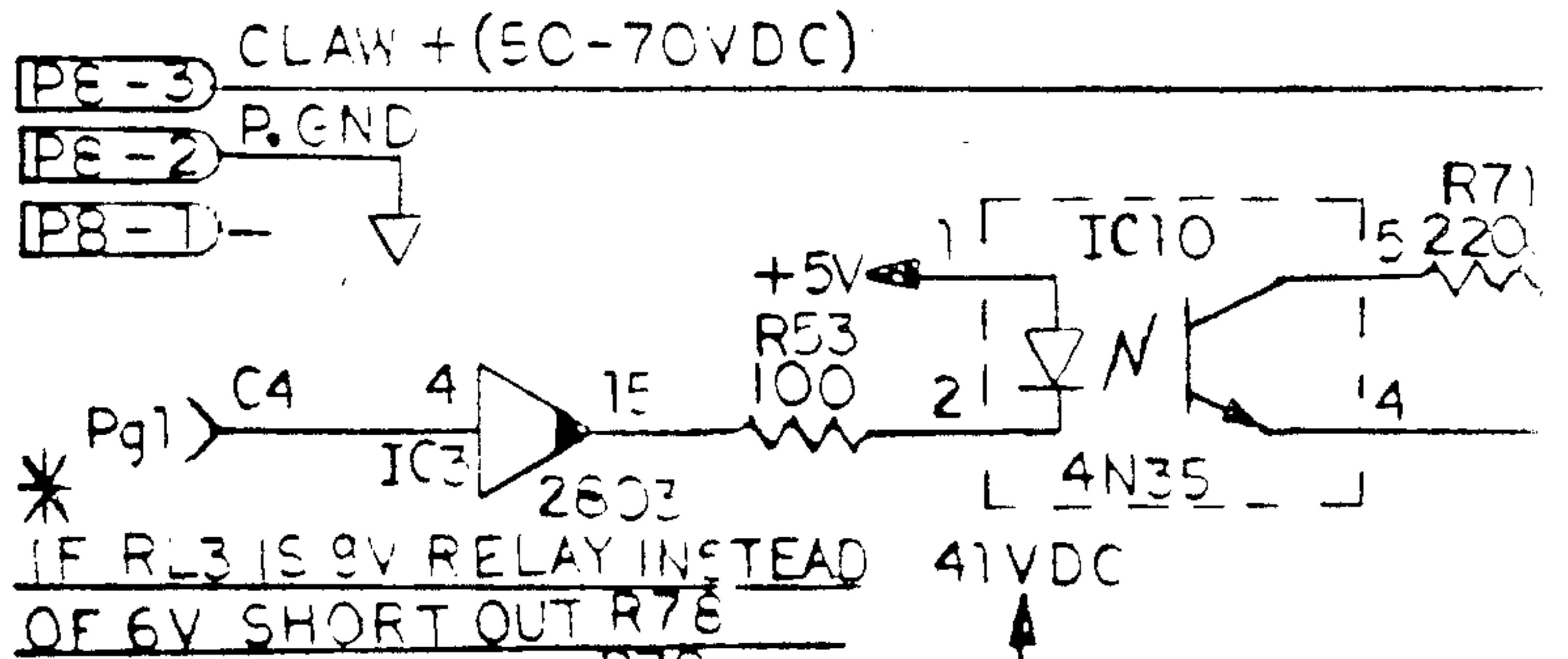
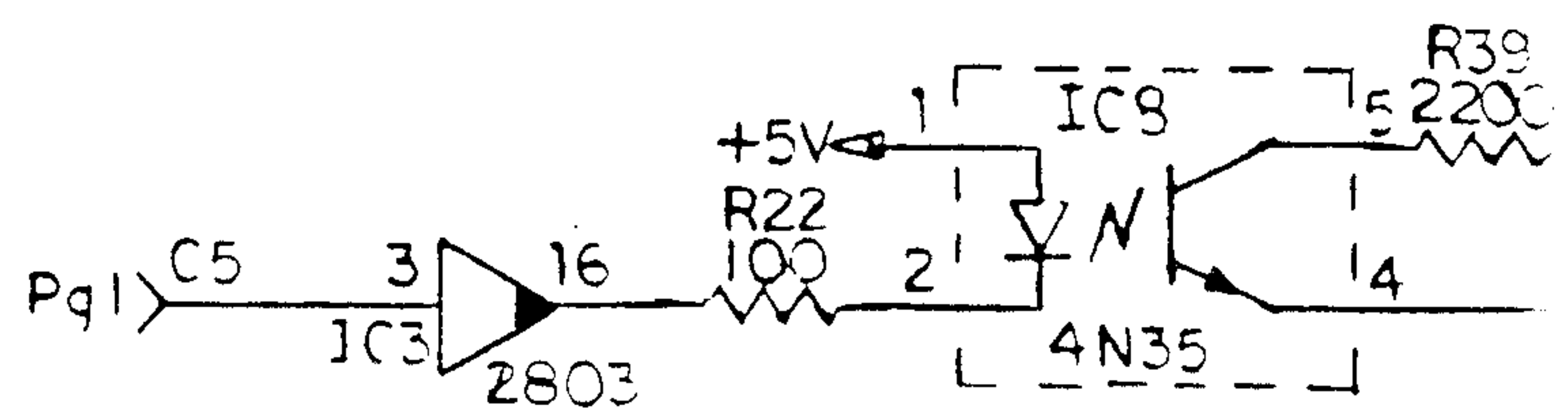
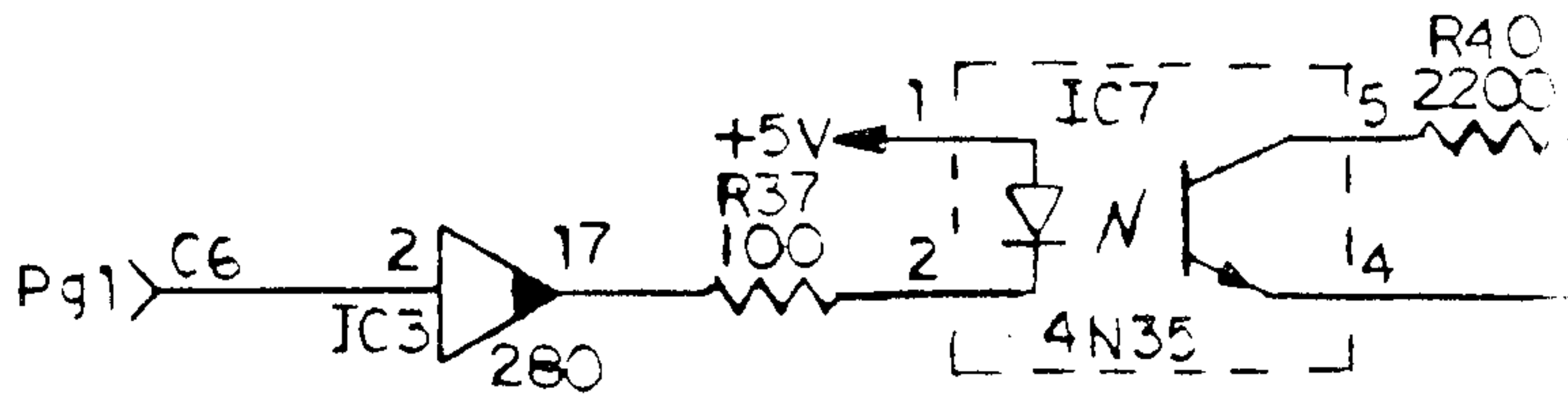
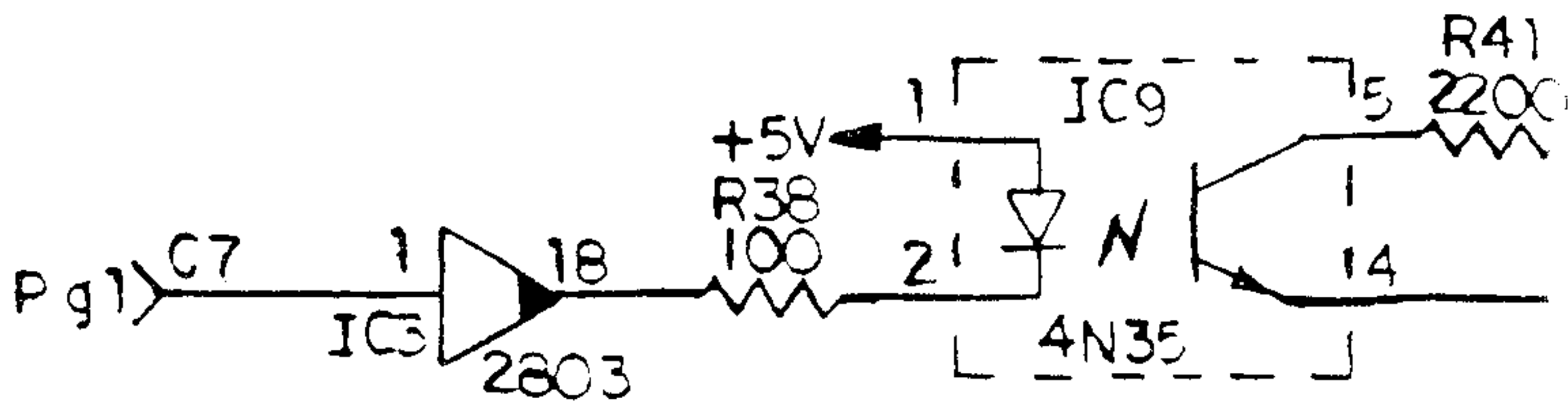
M. KRAMER MFG.
 KRAMER KRANE
 MODEL 20000
 MAIN PC BOARD
 PCB 20000
 PAGE 1 OF 6
 REV B TEC 20000



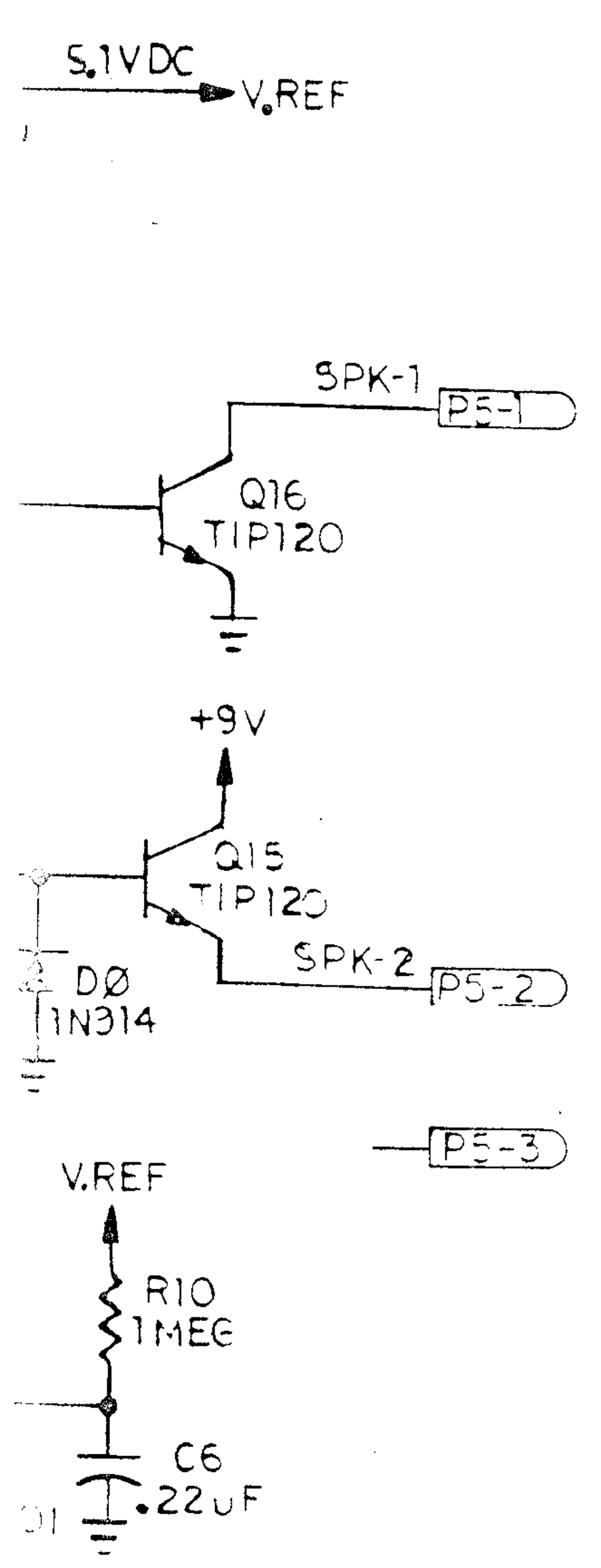
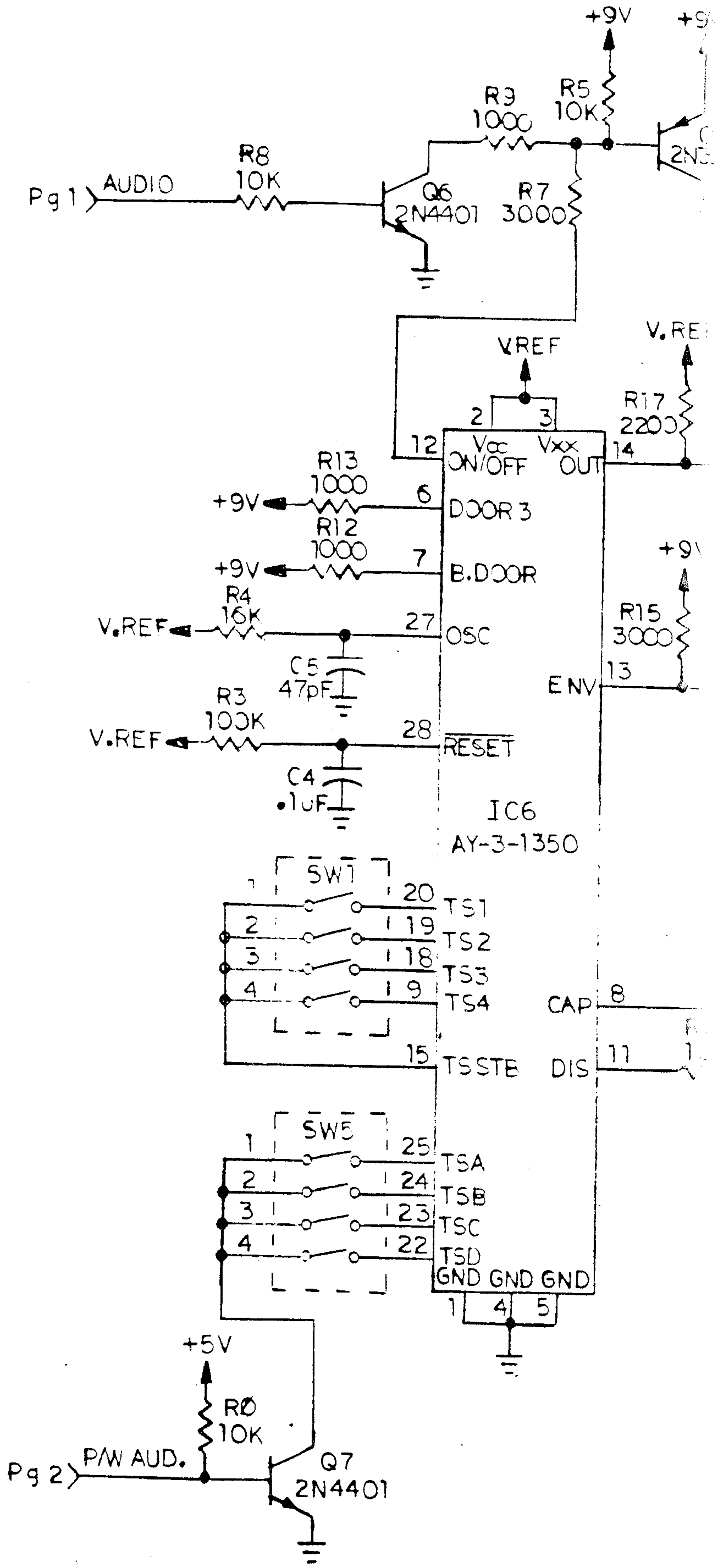
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 KRAMER KRANE
 MODEL 20000
 MAIN P.C. BOARD
 PCB 20000
 PAGE 2 OF 6
 REV B



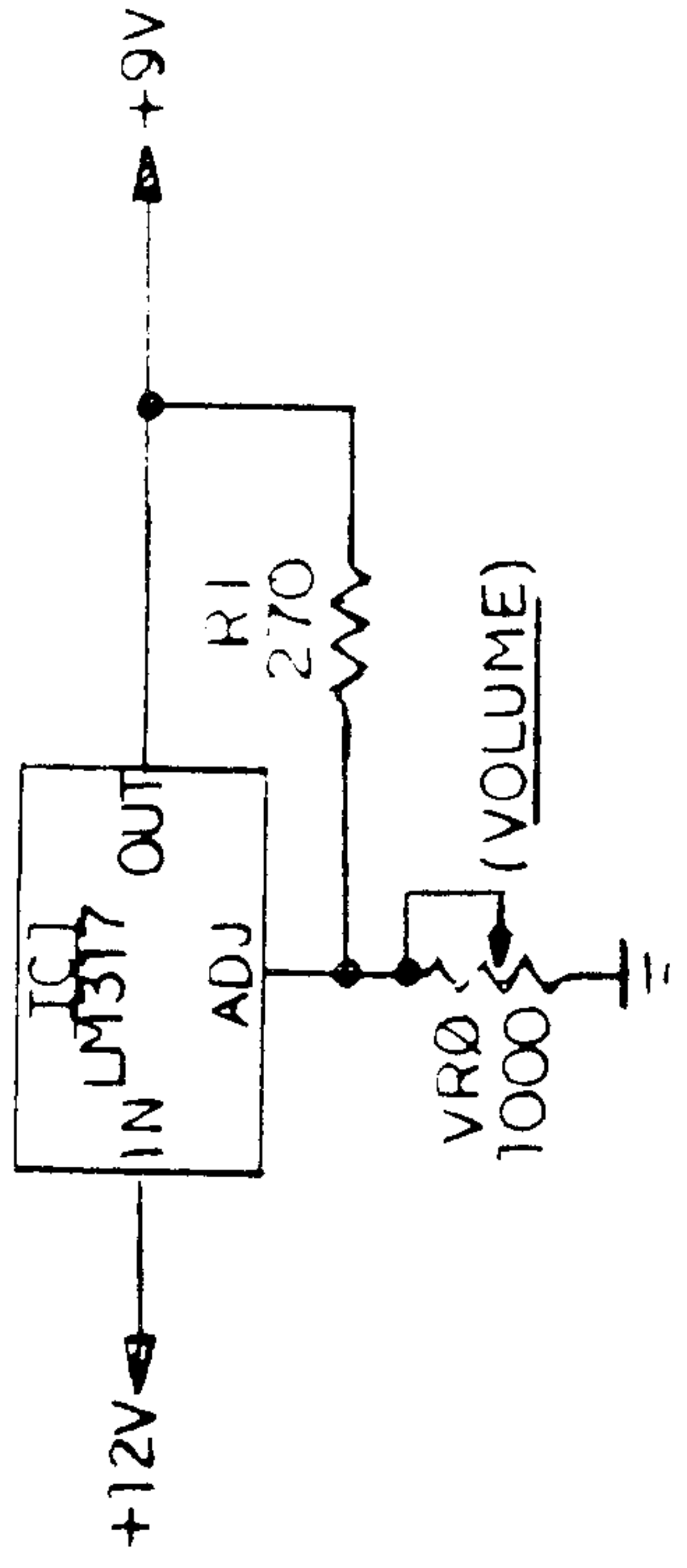
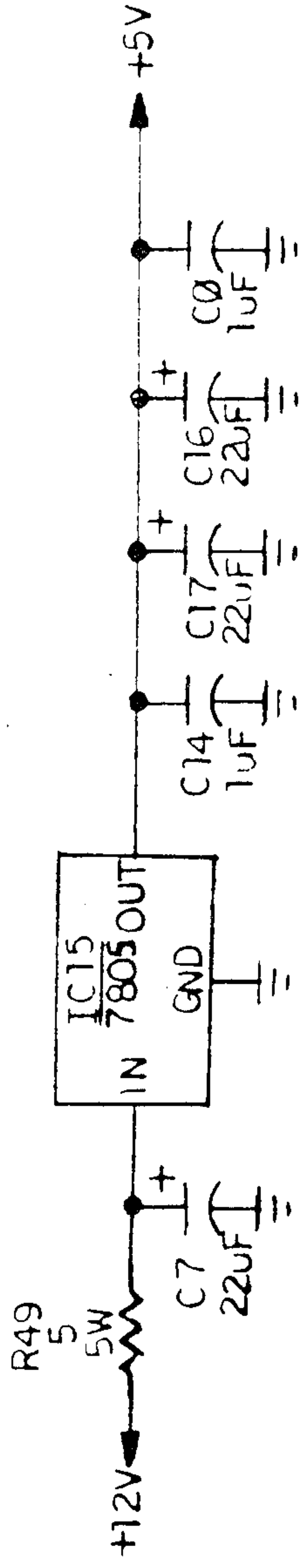
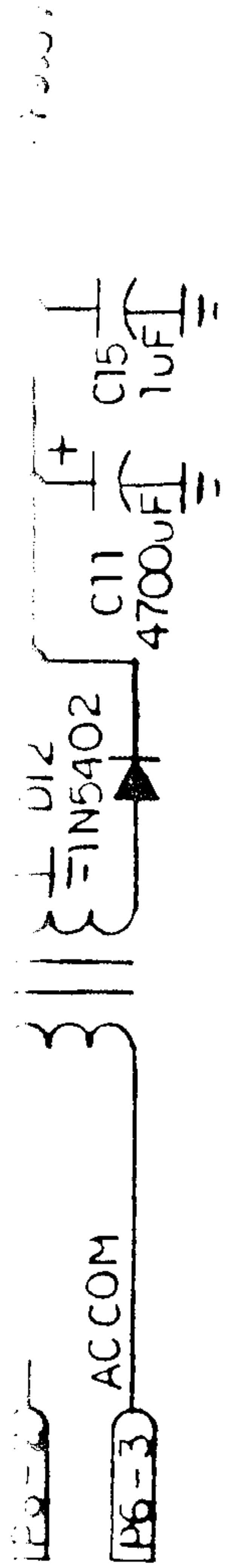
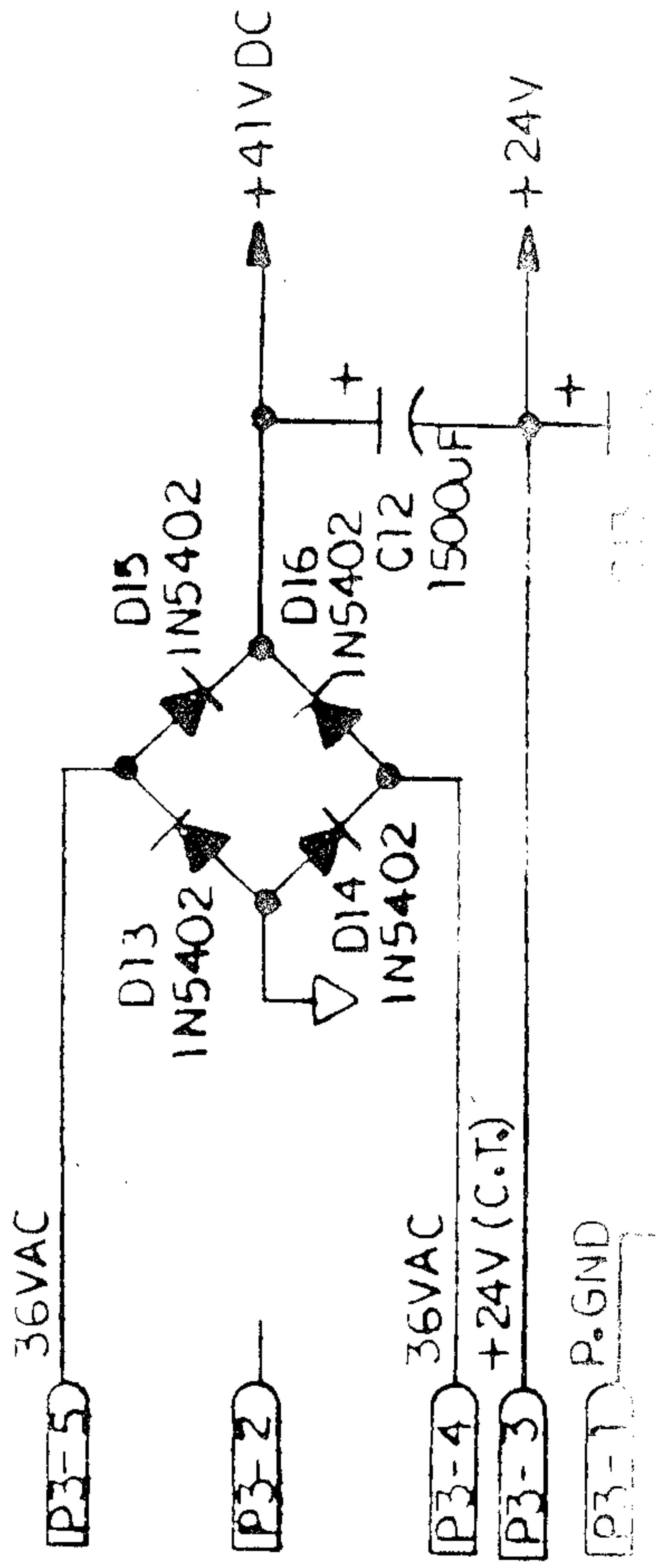
M. KRAMER MFG.
 KRAMER KRANE
 MODEL 20000
 MAIN P.C. BOARD
 PCB 20000
 PAGE 3 OF 6
 REV B

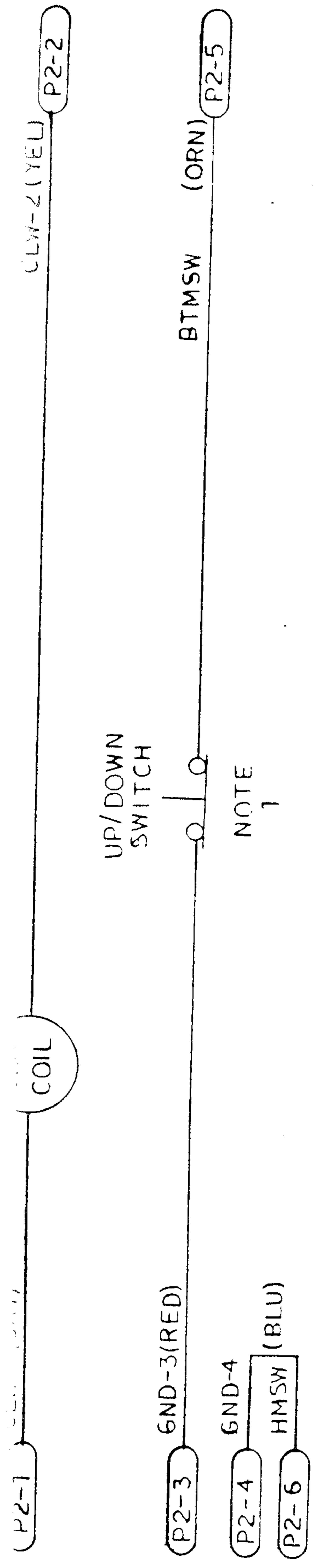
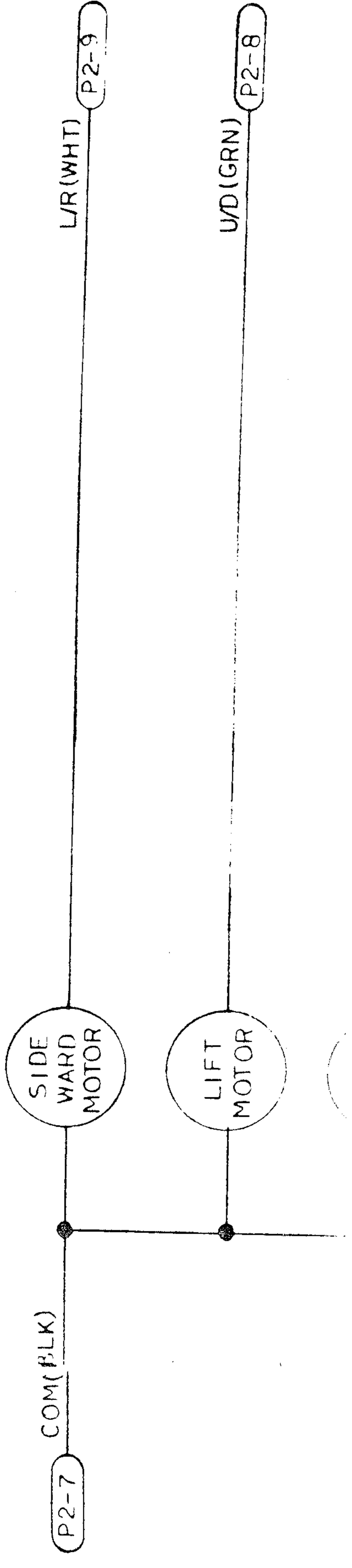


AMERKRANE
100 MAIN P.C.B.
PAGE 4 OF 6 REV E



AMER MFG.
 MER KRANE
 EL 20000
 P.C. BOARD
 B 20000
 5 OF 6
 IV B





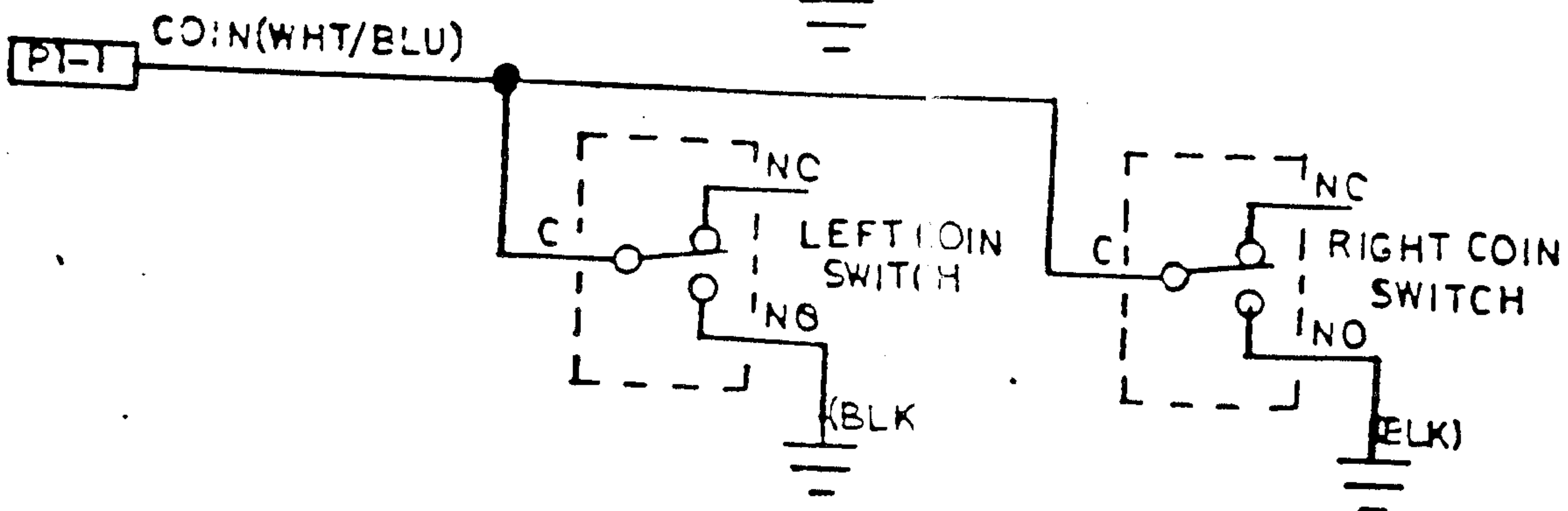
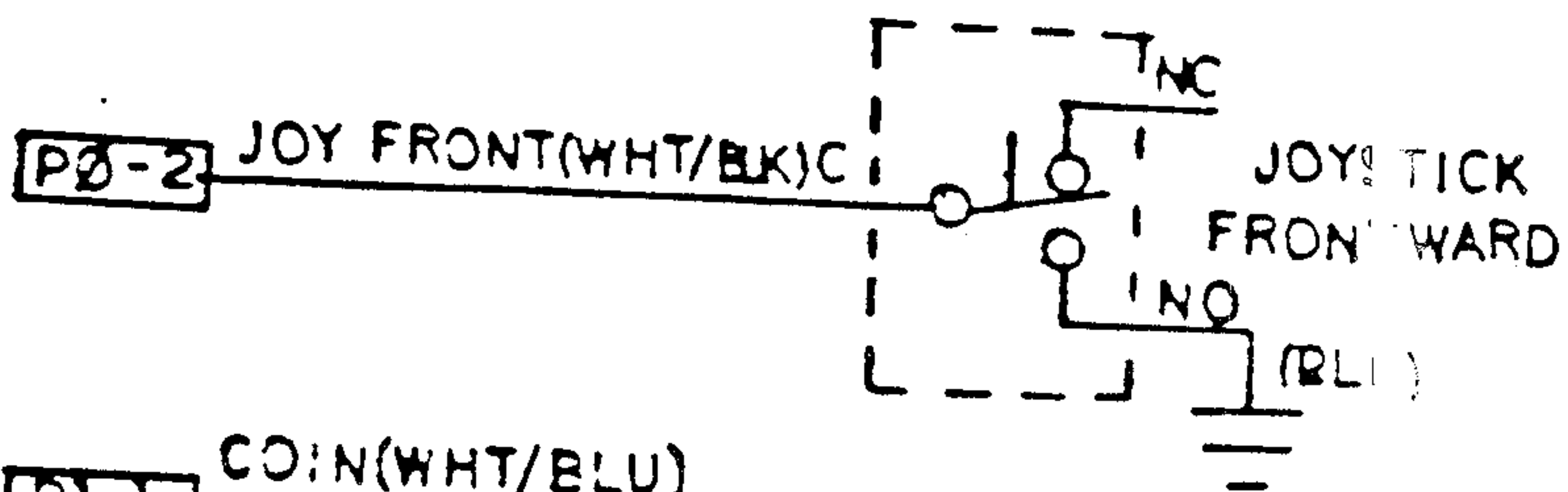
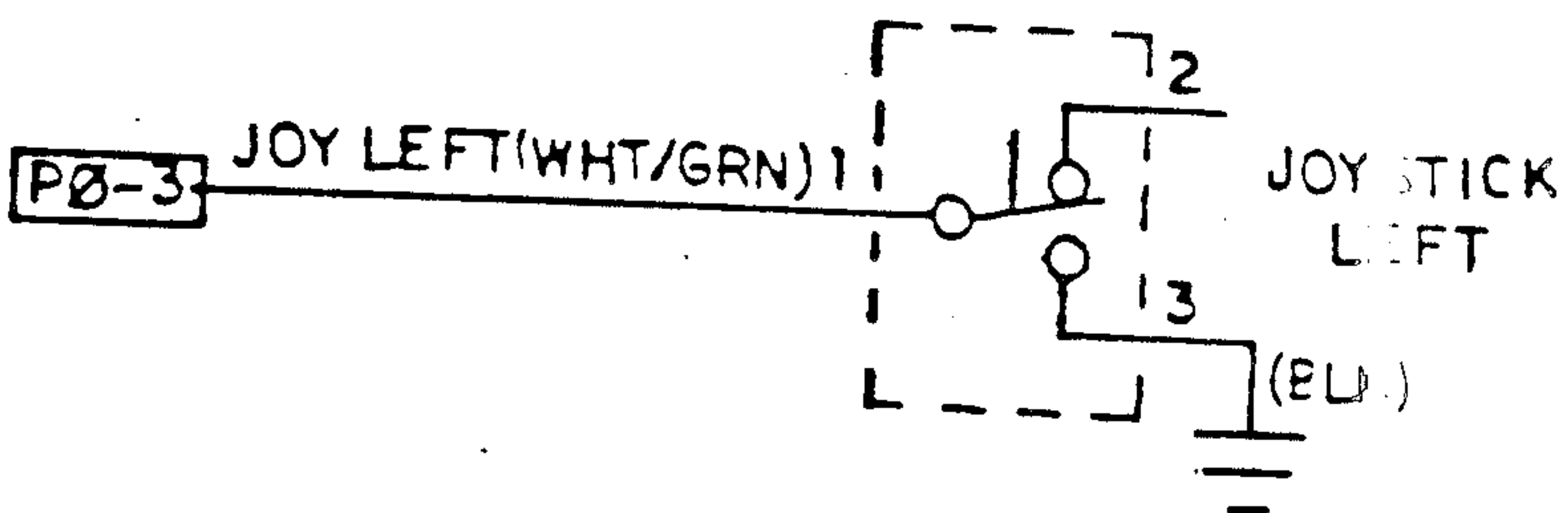
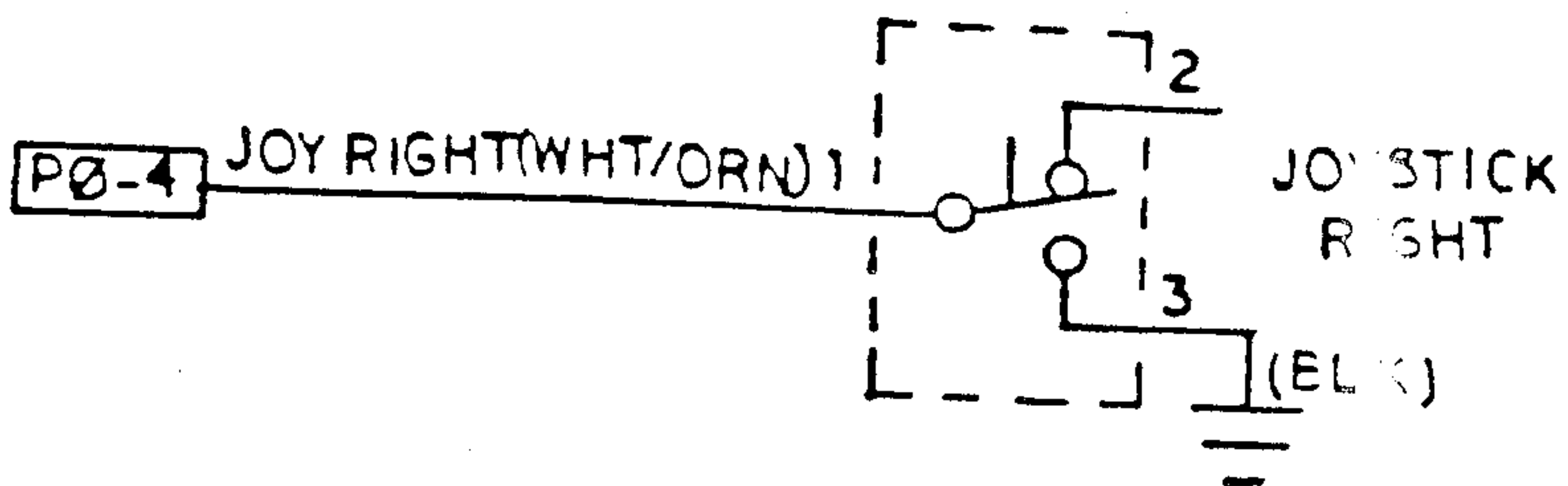
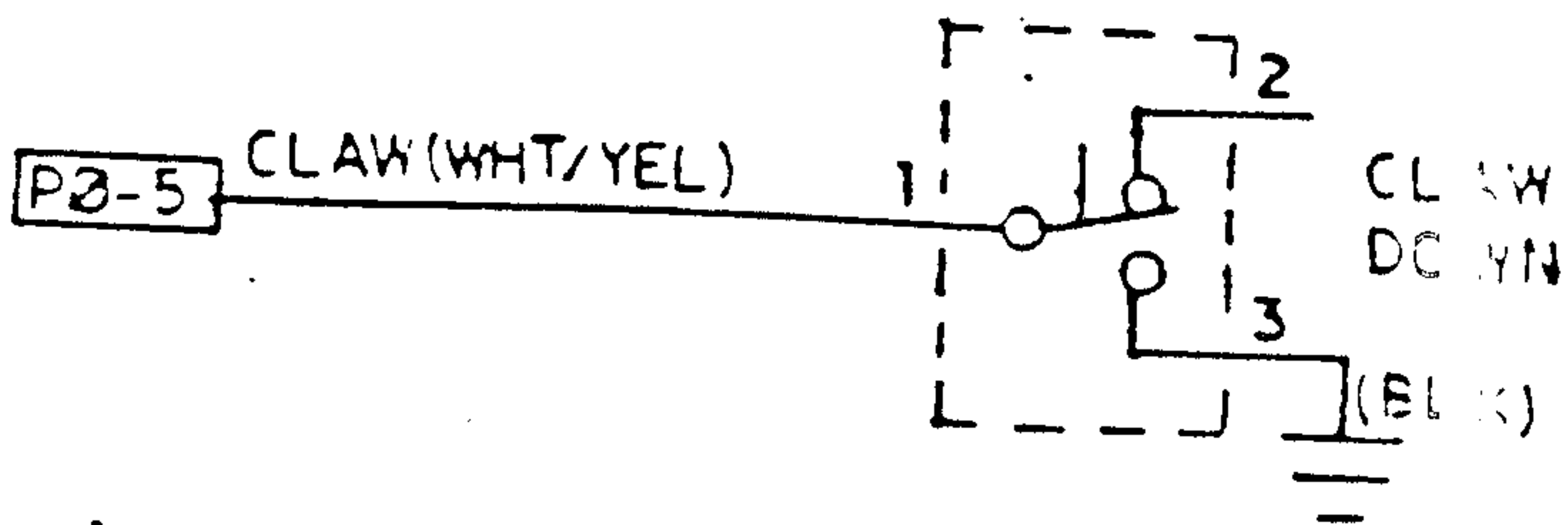
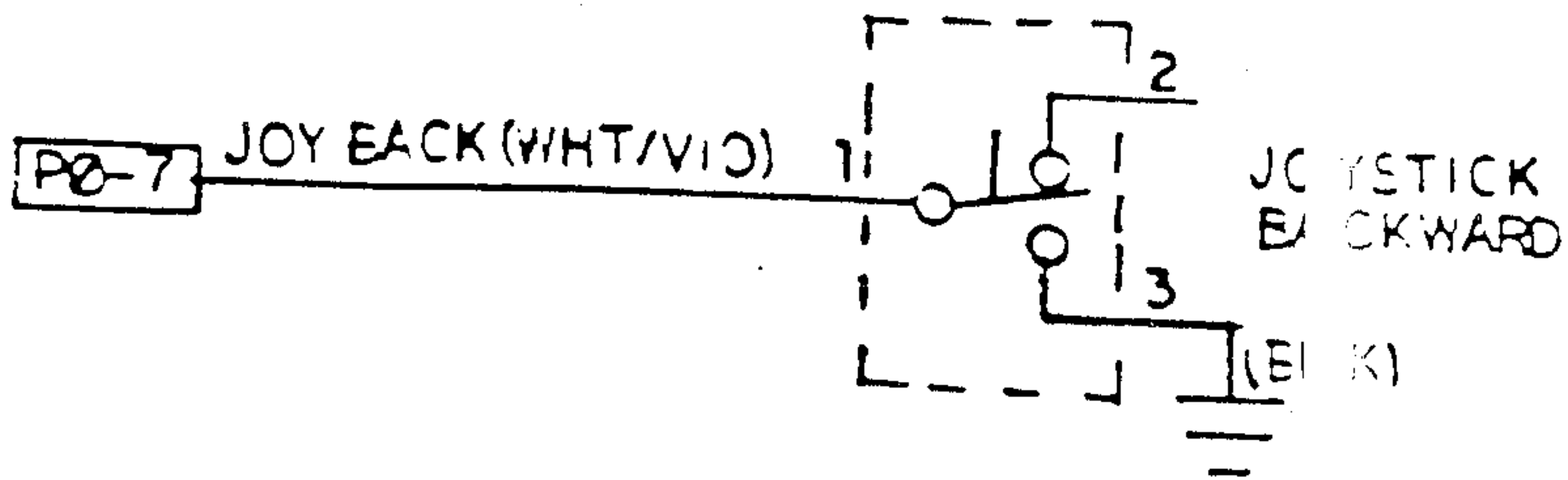
NOTE
1

NOTES:

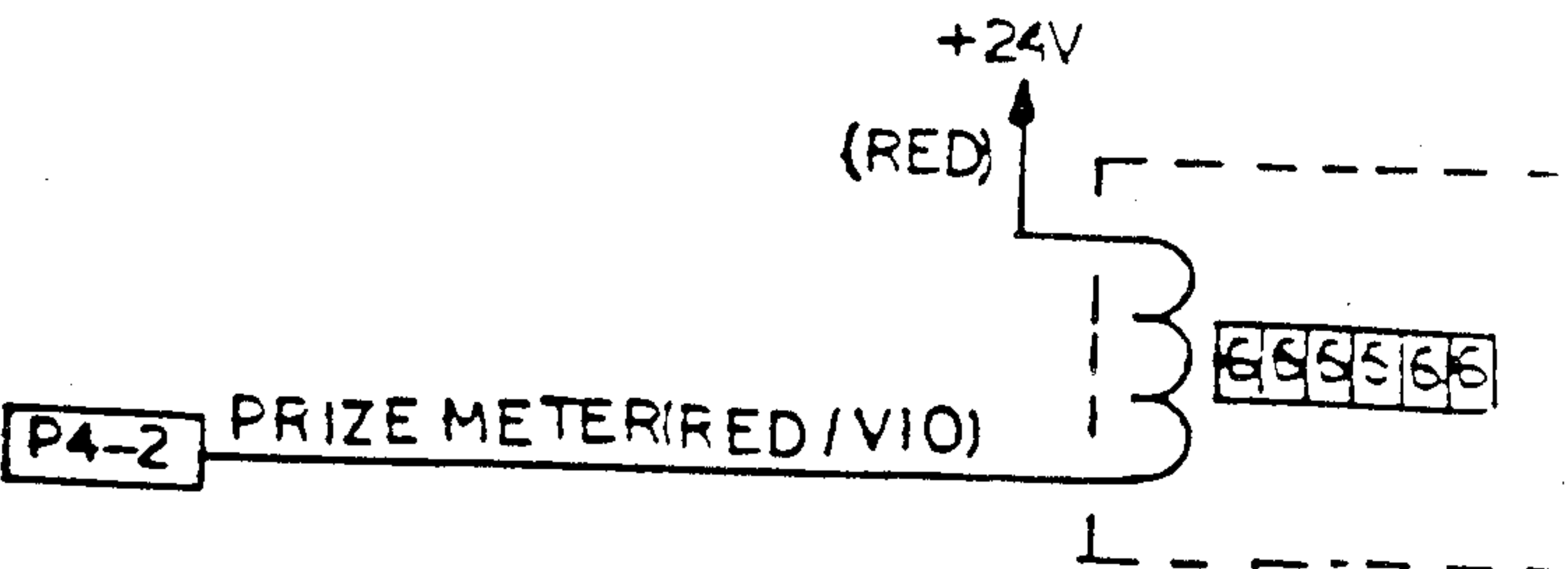
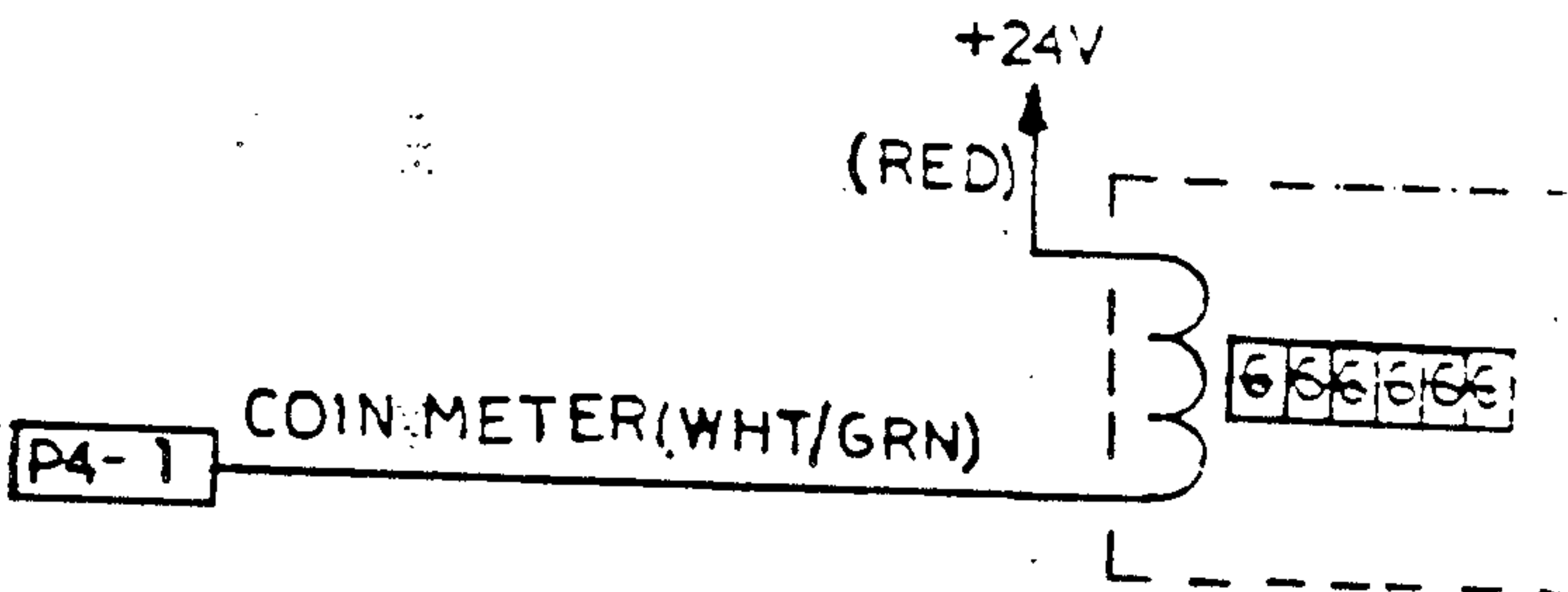
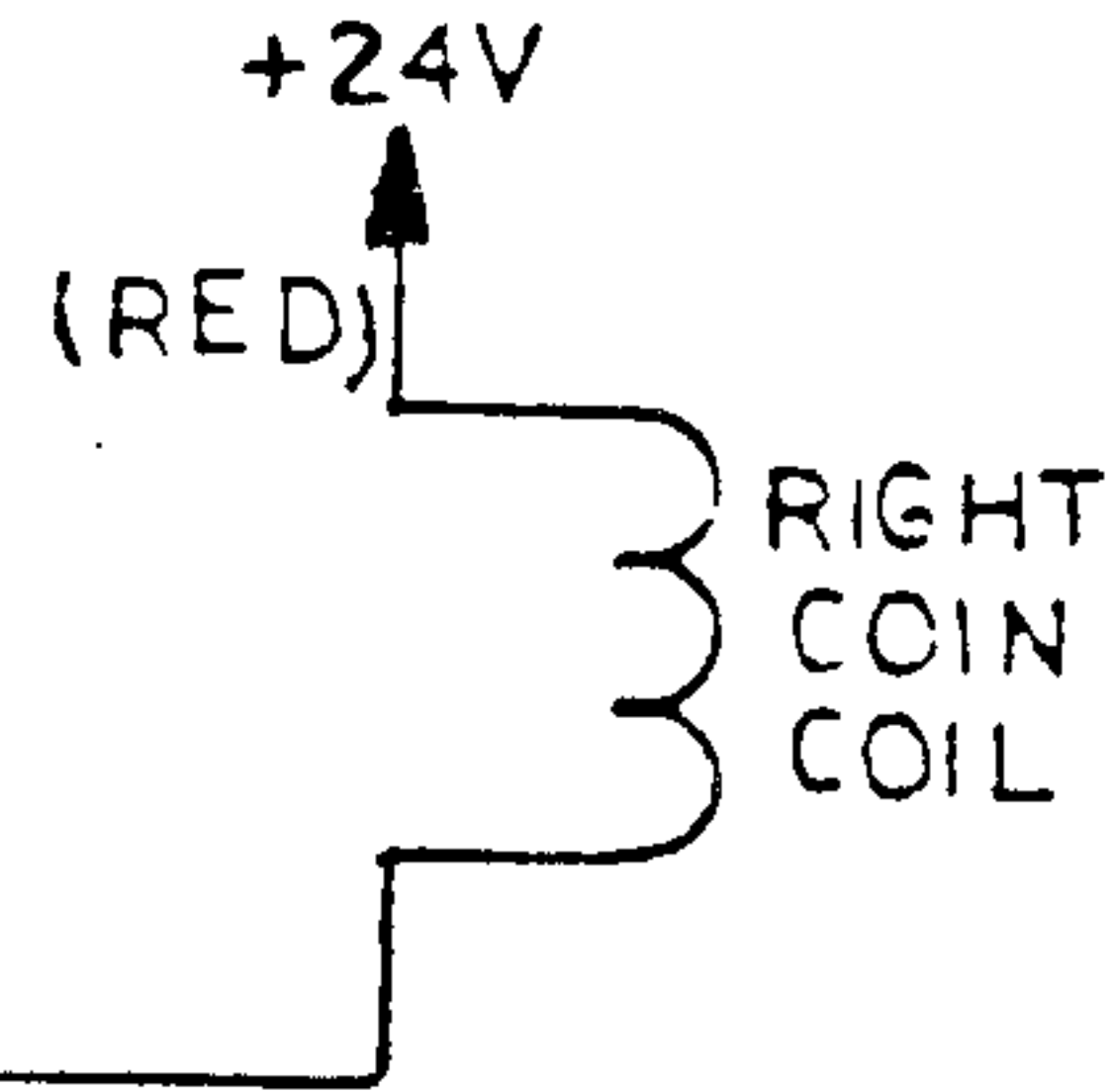
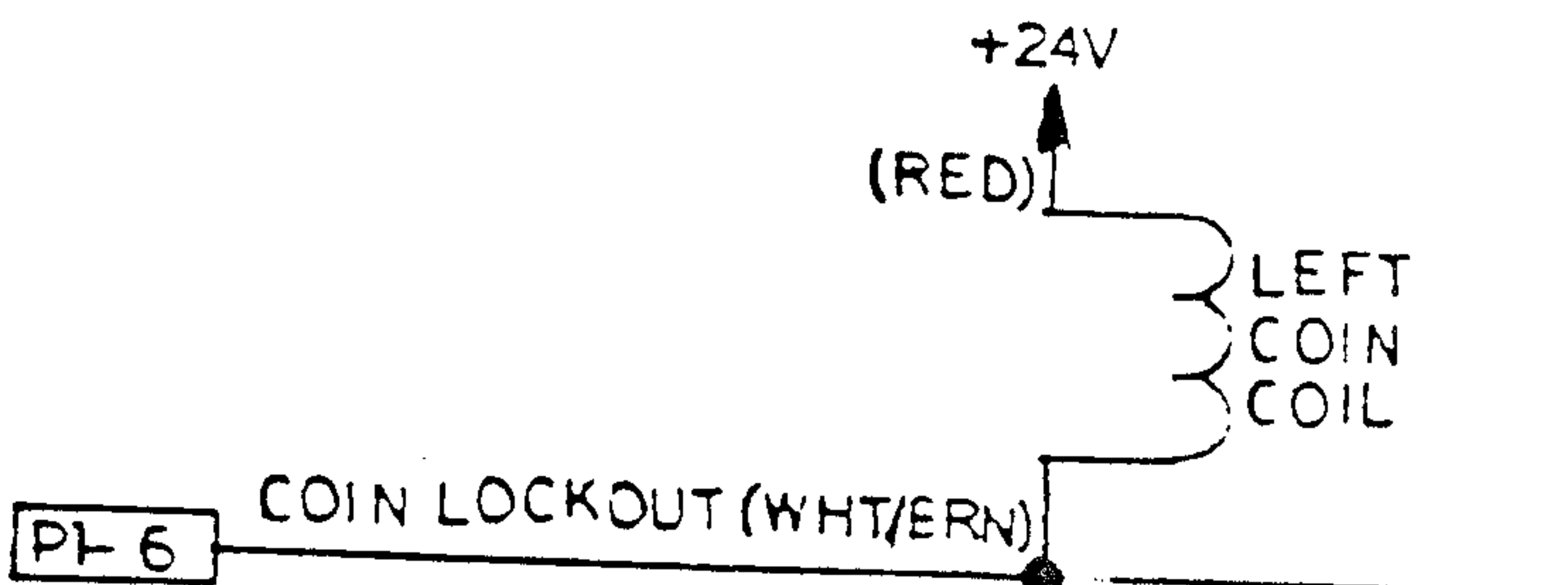
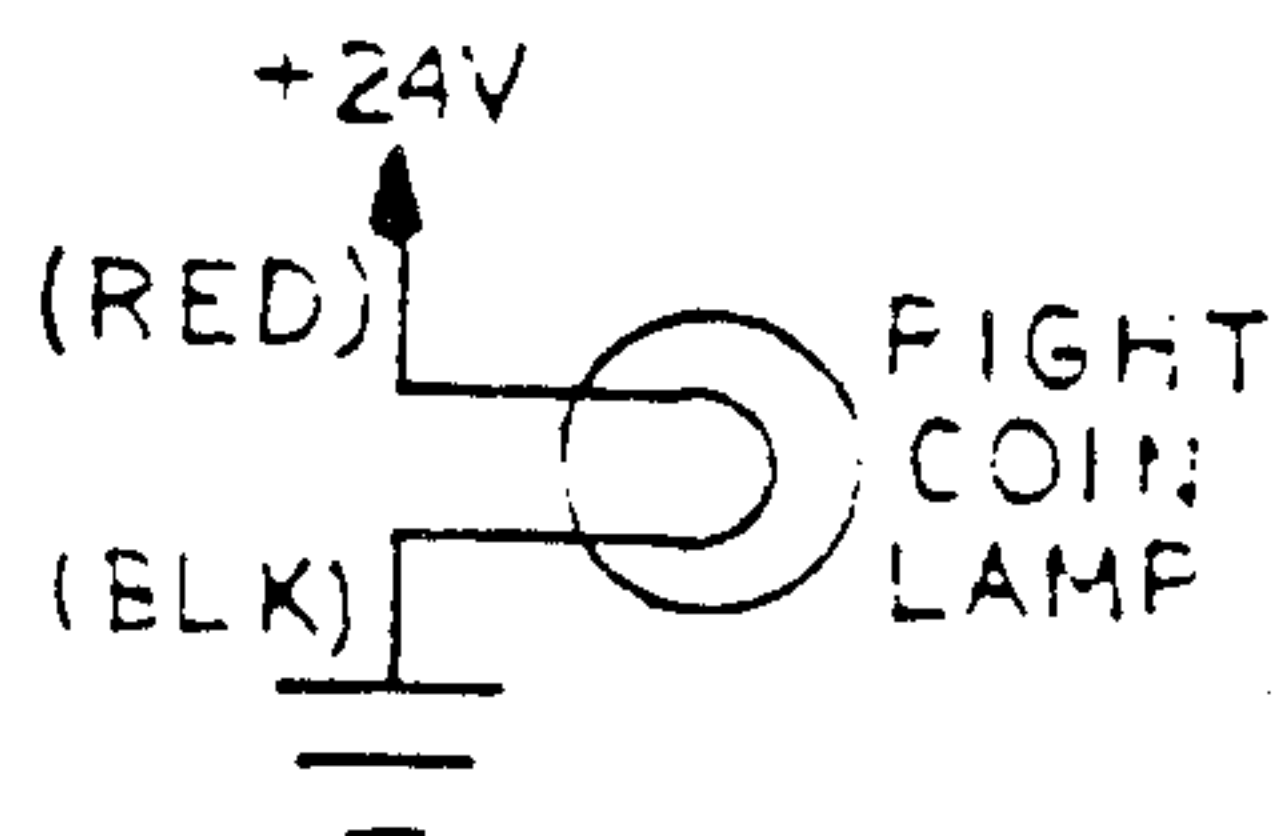
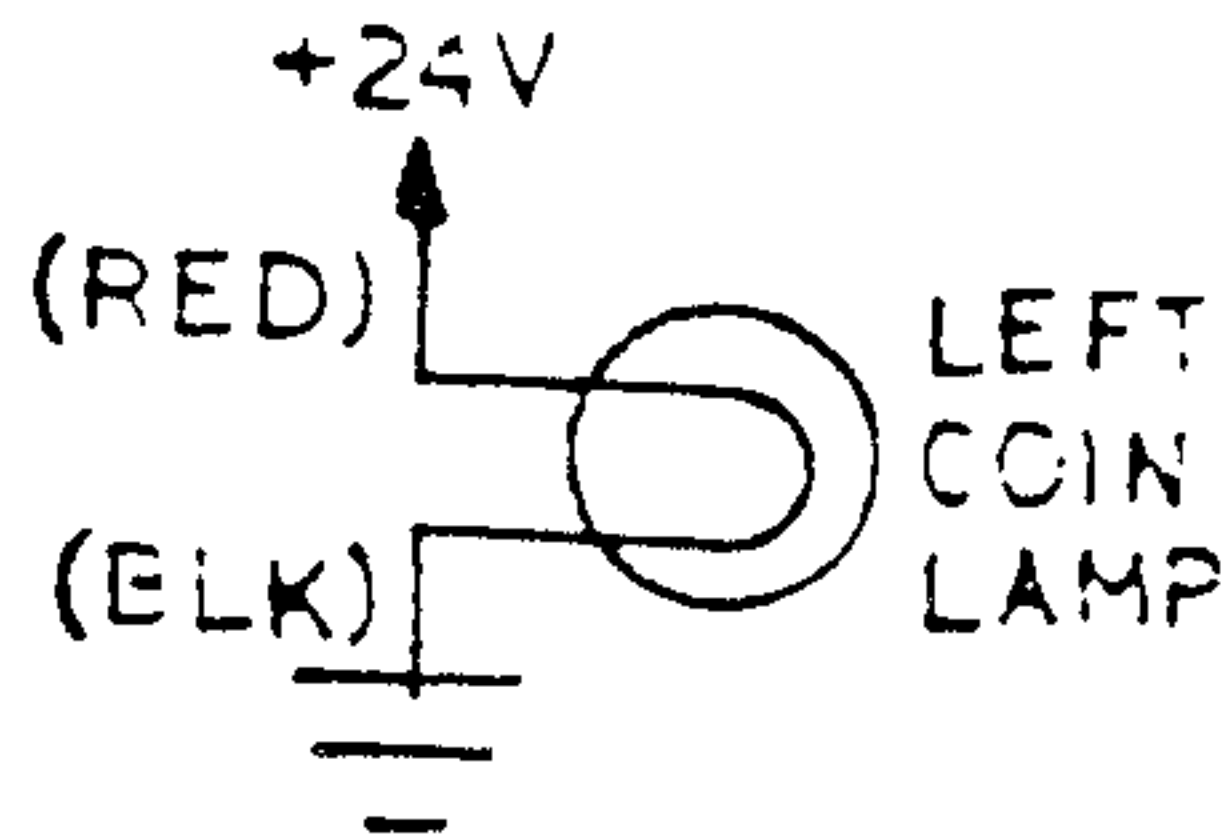
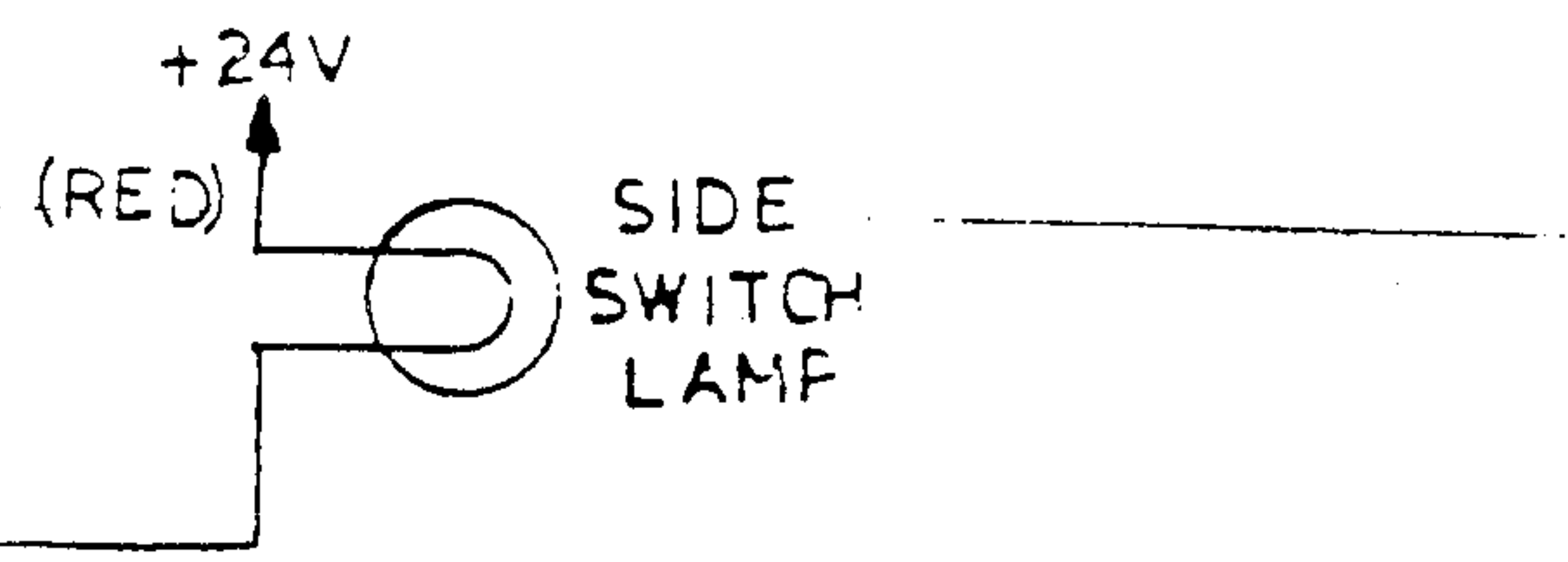
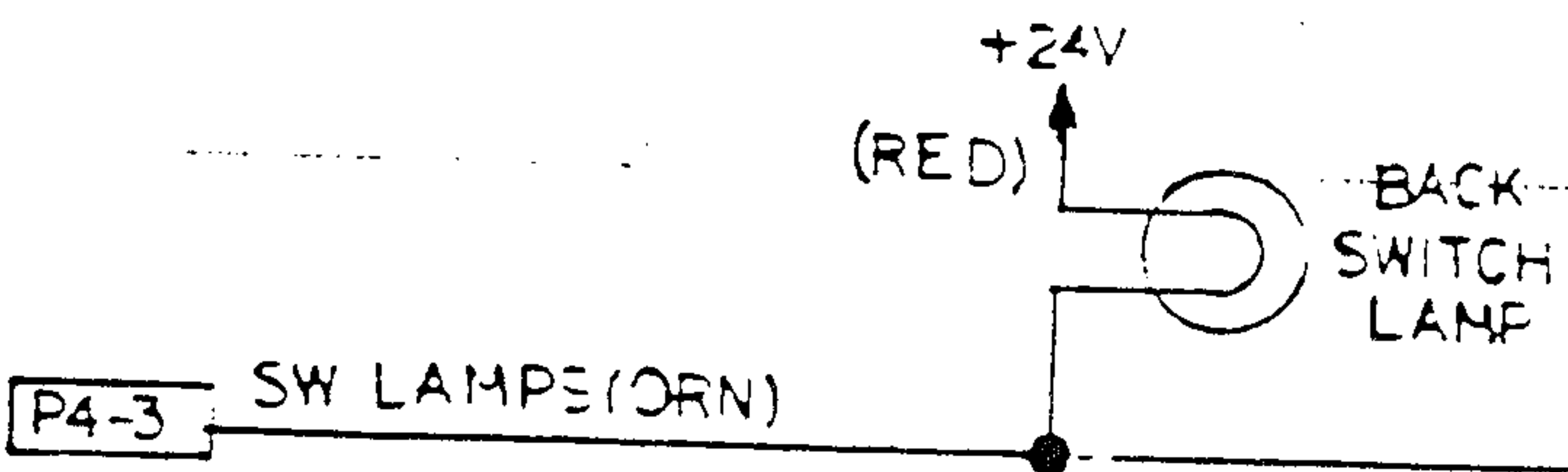
1. SWITCH CHANGES WHEN CLAW IS AT THE BOTTOM.

M. KRAMER MFG.
MODEL 20000
KRAMER KRANE
CRA20010 & 11

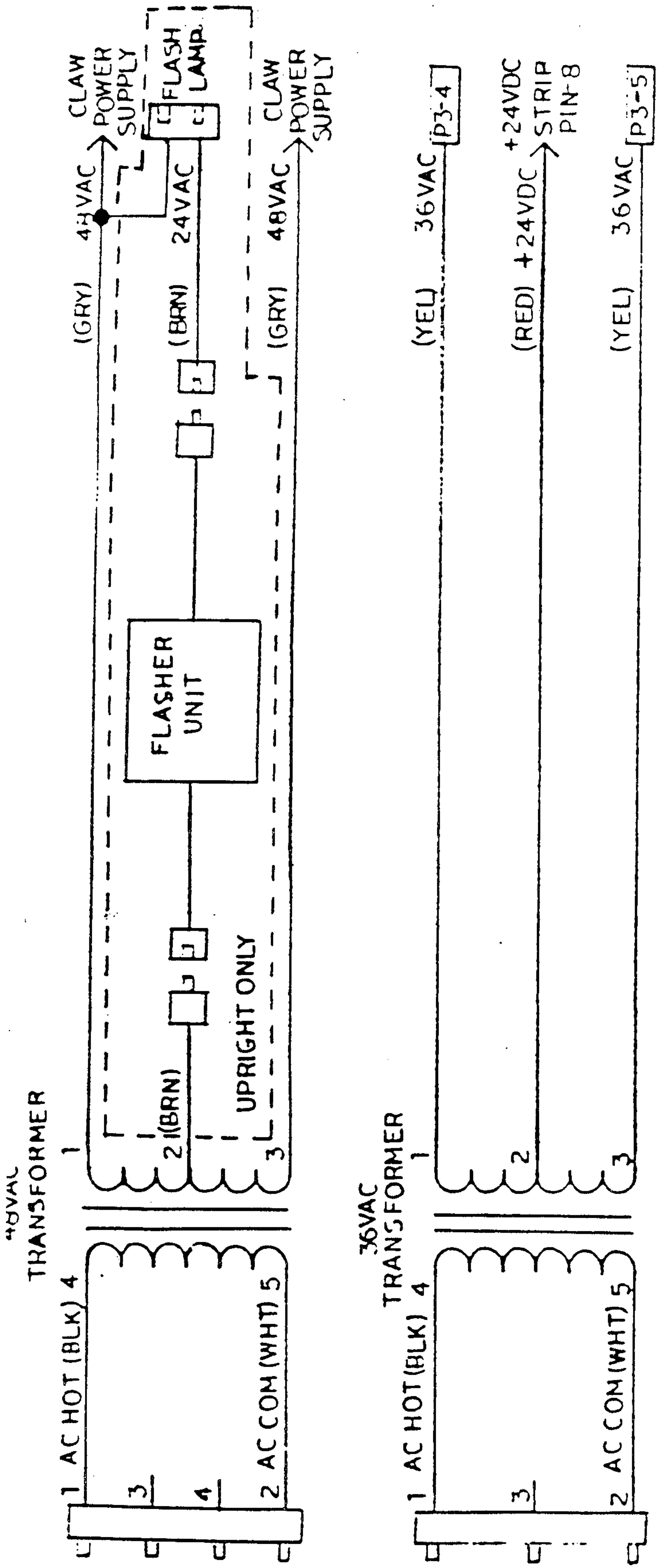
REVC



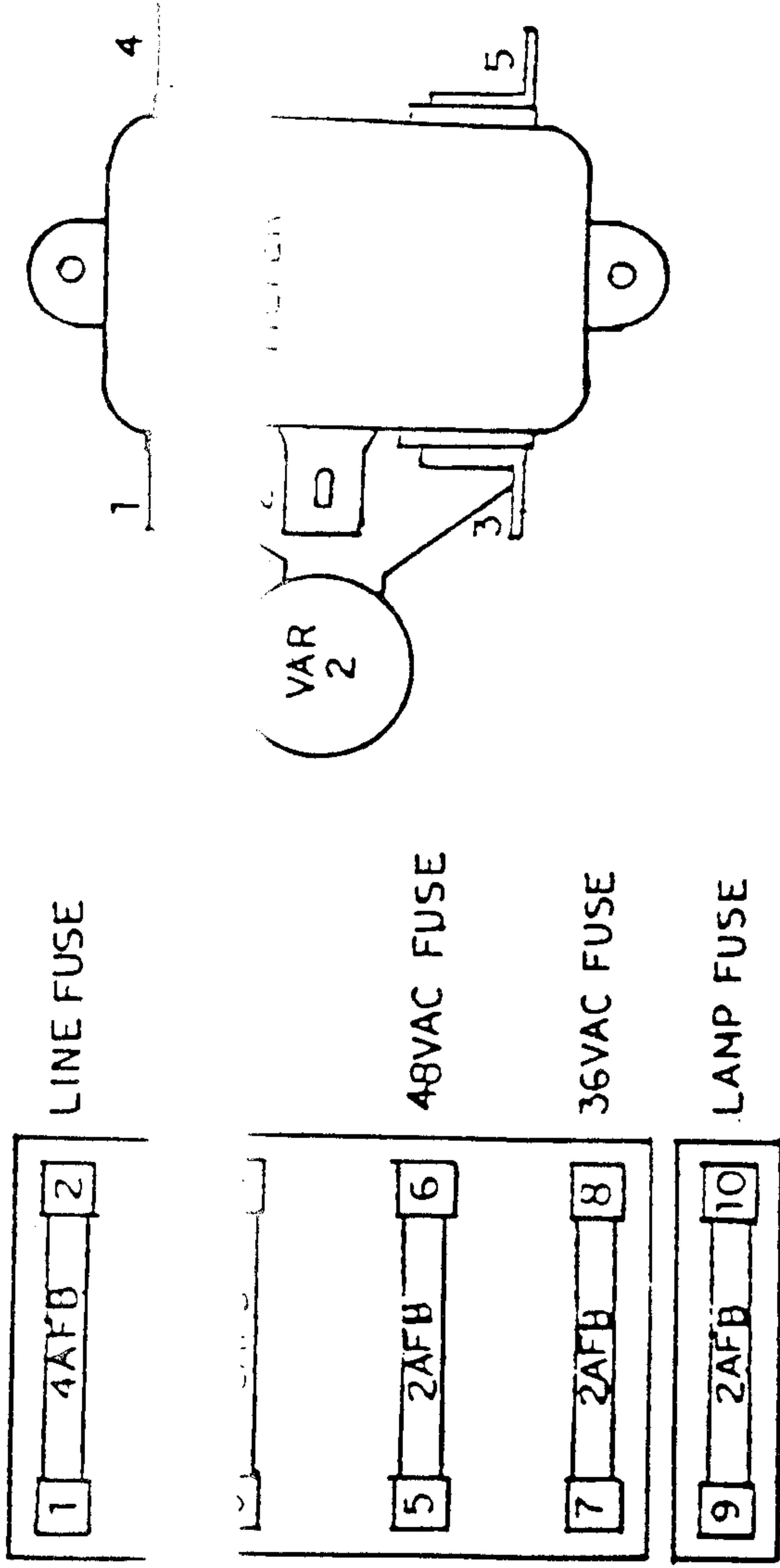
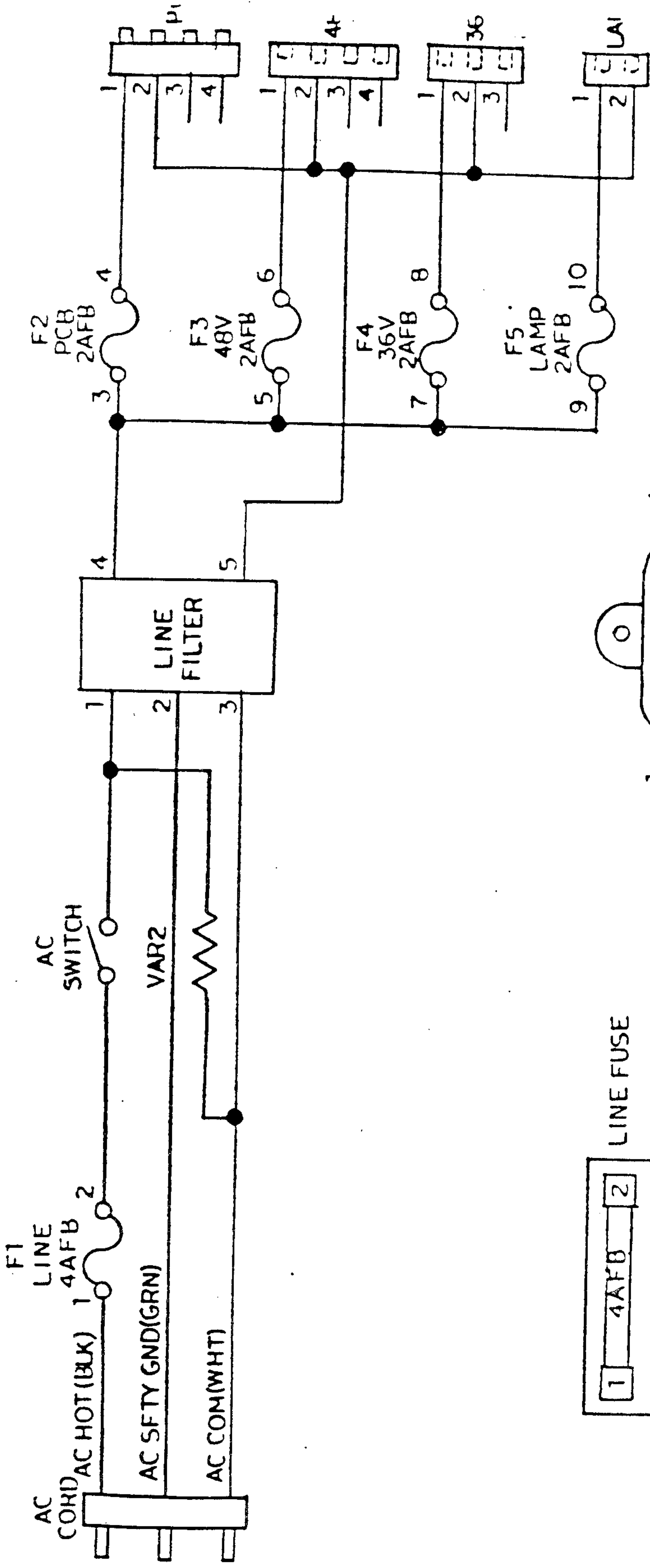
M. KRAMER MFG.
KRAMER KRANE
MODEL 20000



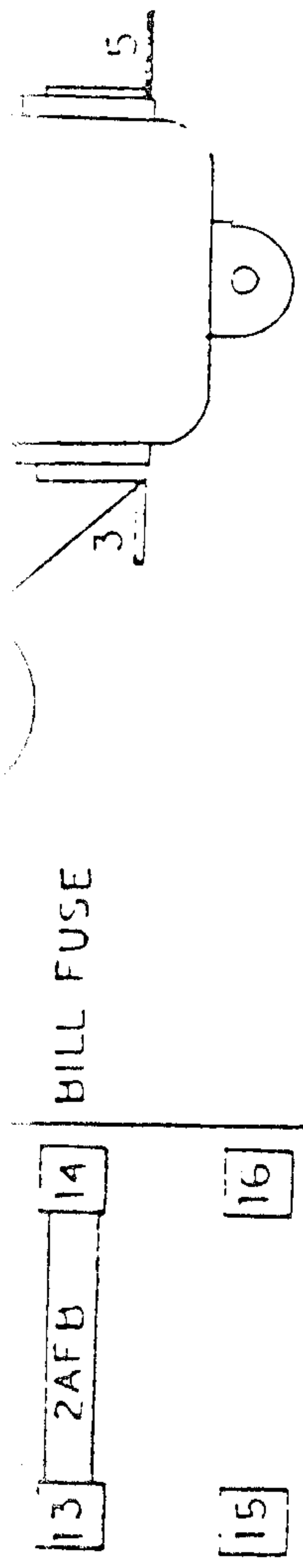
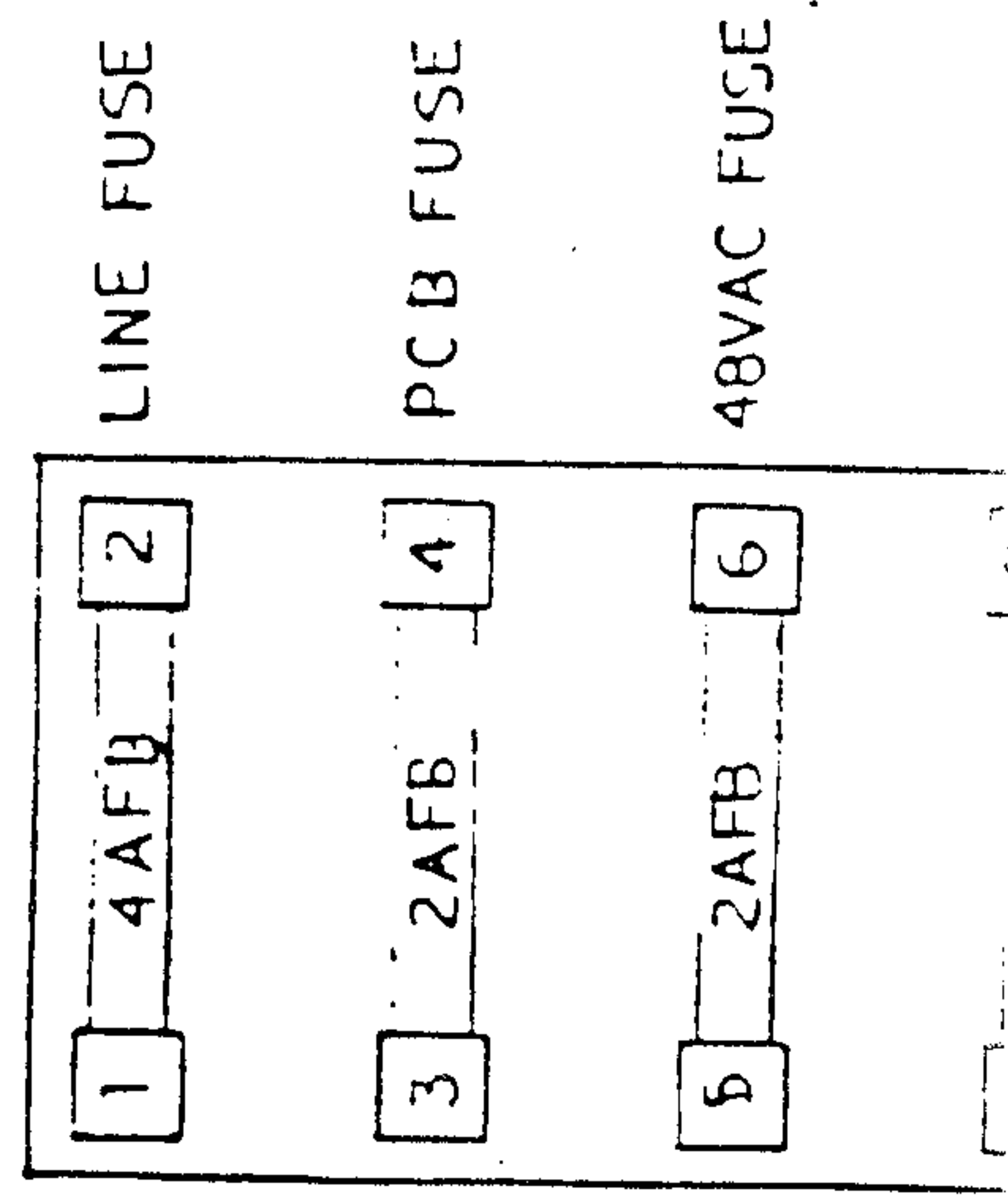
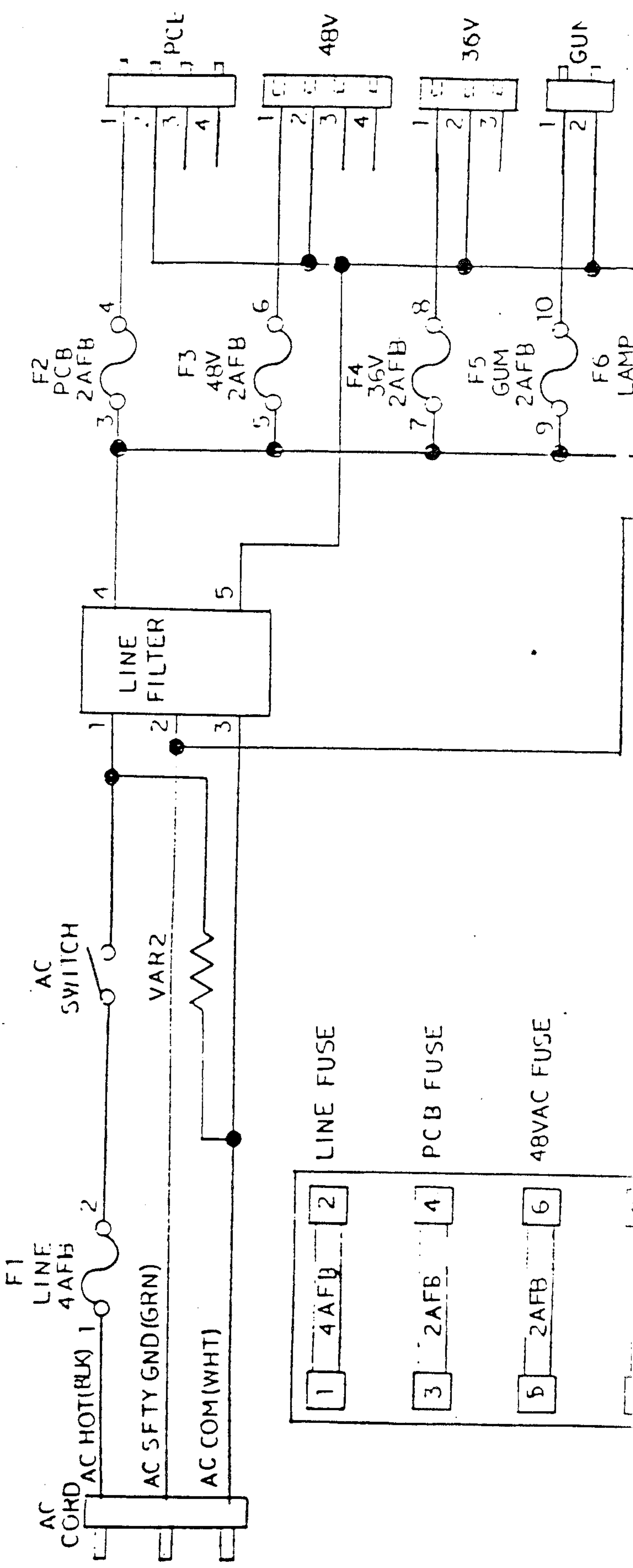
M. KRAMER MFG.
KRAMER KRANE
MODEL 20000



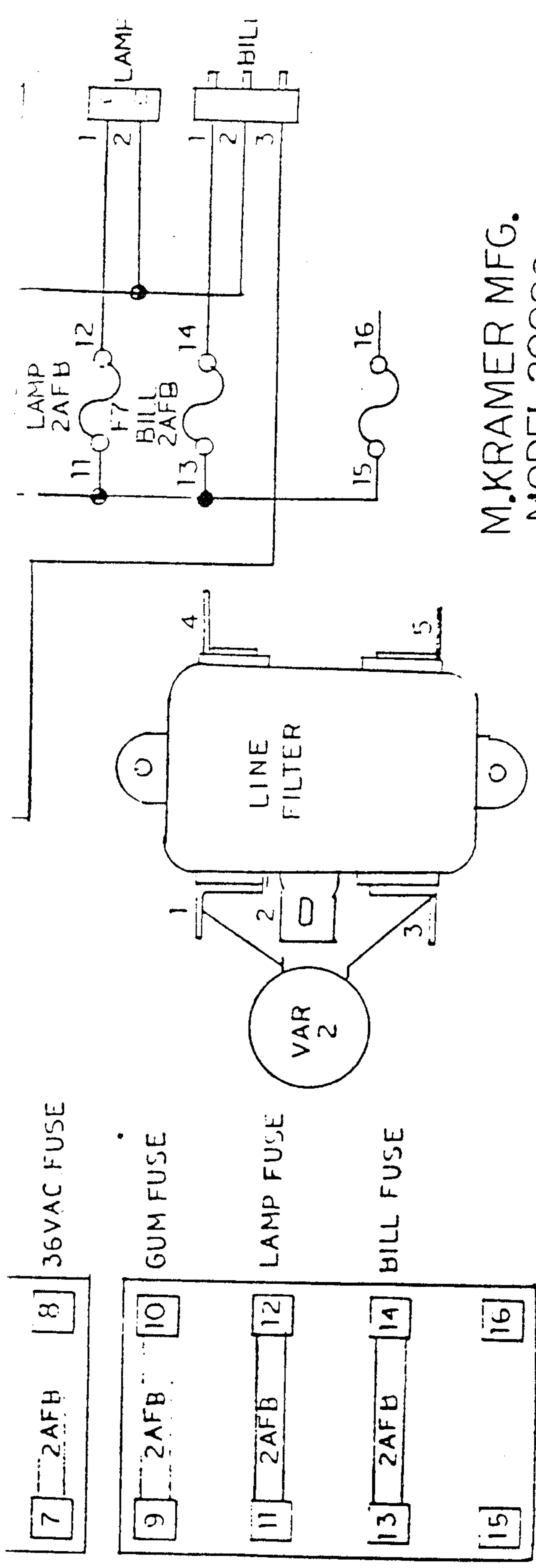
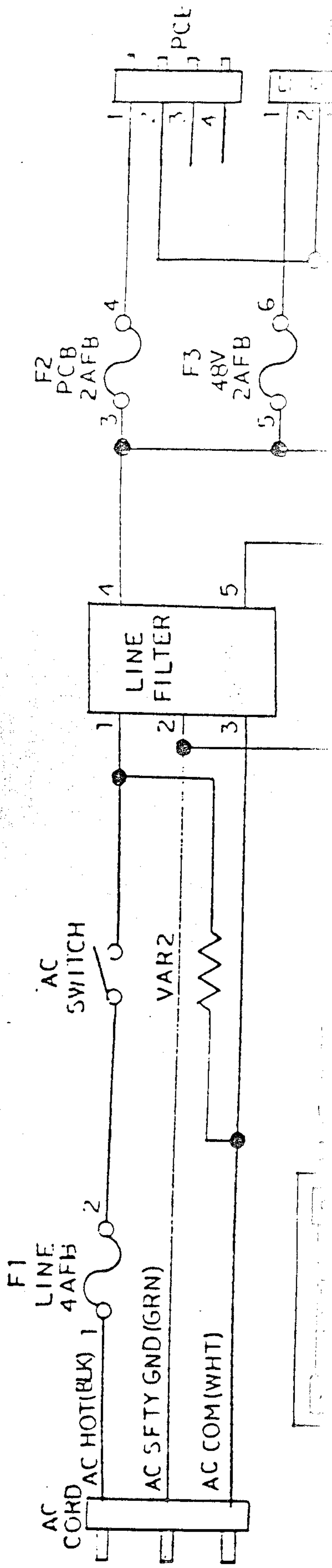
M. KRAMER MFG.
 KRAMER KRANE
 MODEL 20000



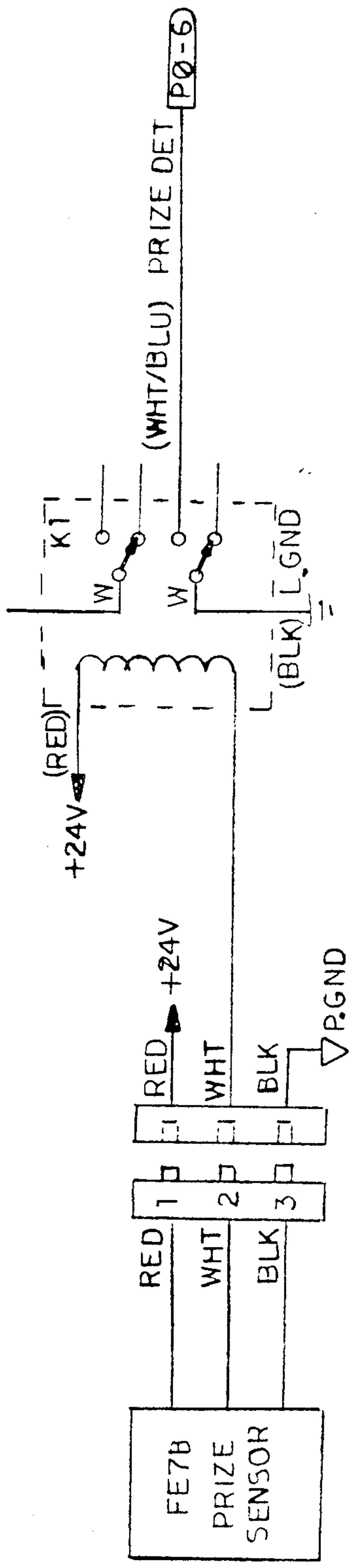
M. KRAMER MFG.
 MODEL 20000
 KRAMER KRANE
 FUSEBLOCK ASSY.
 COUNTER TOP

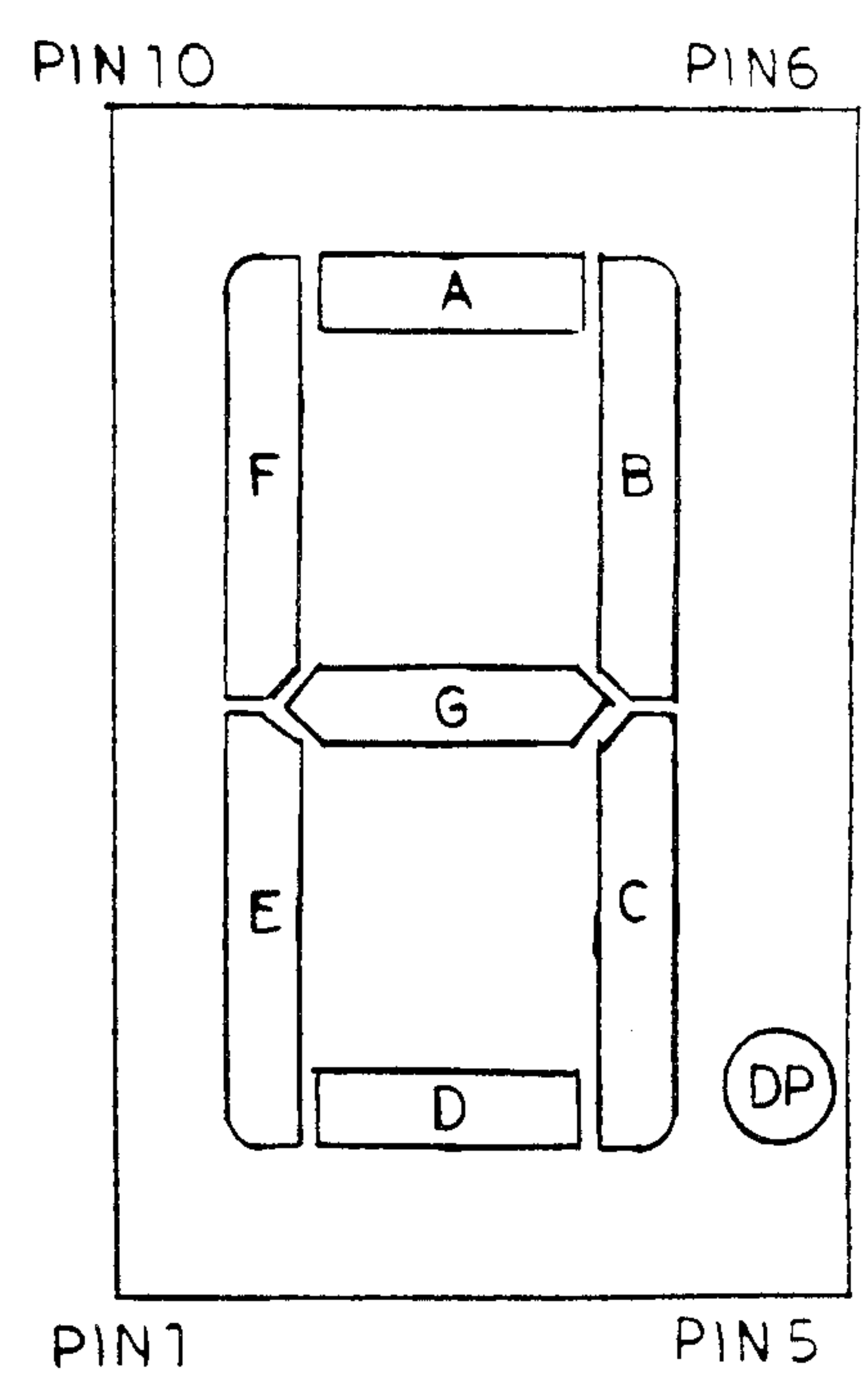
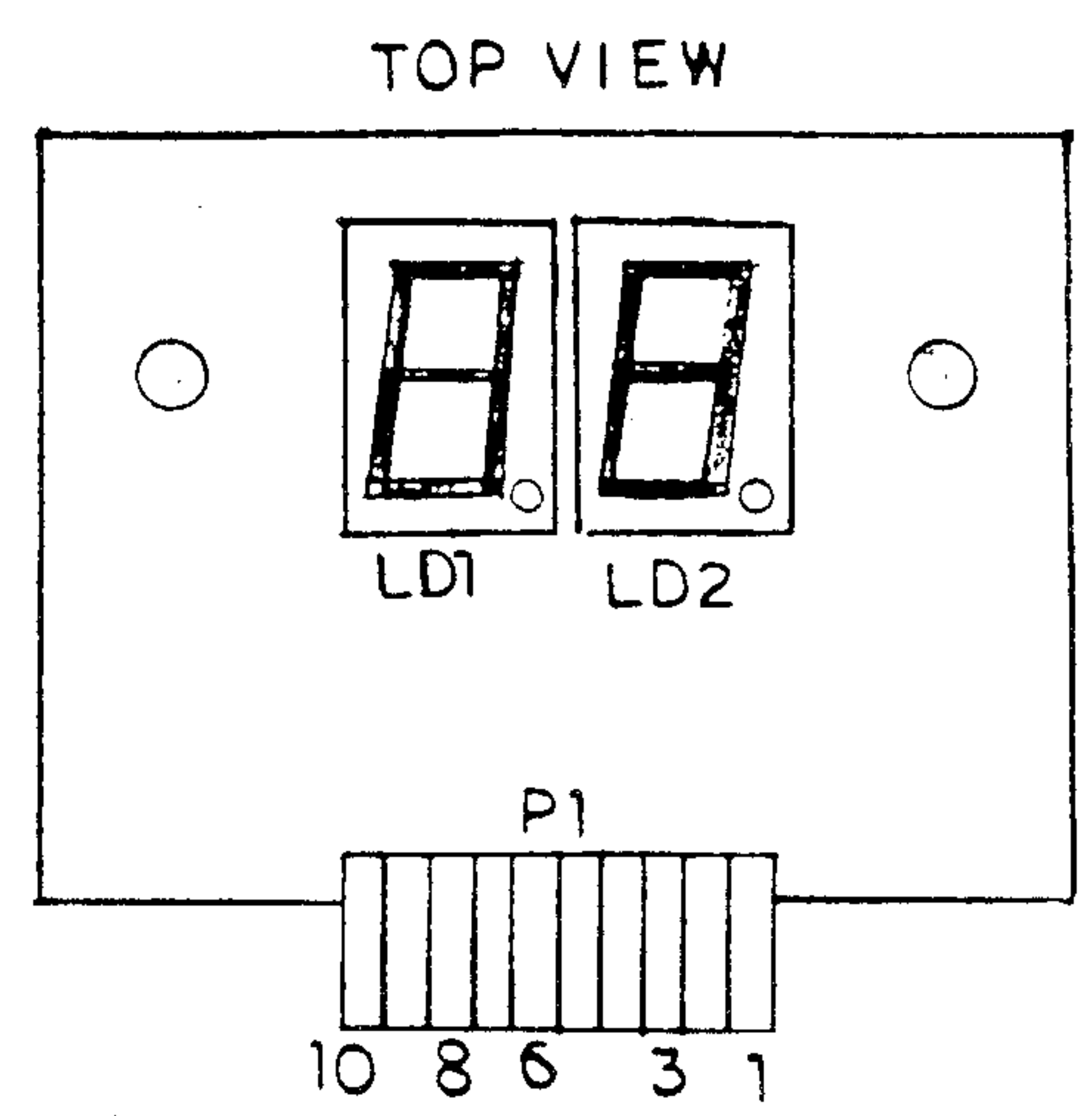
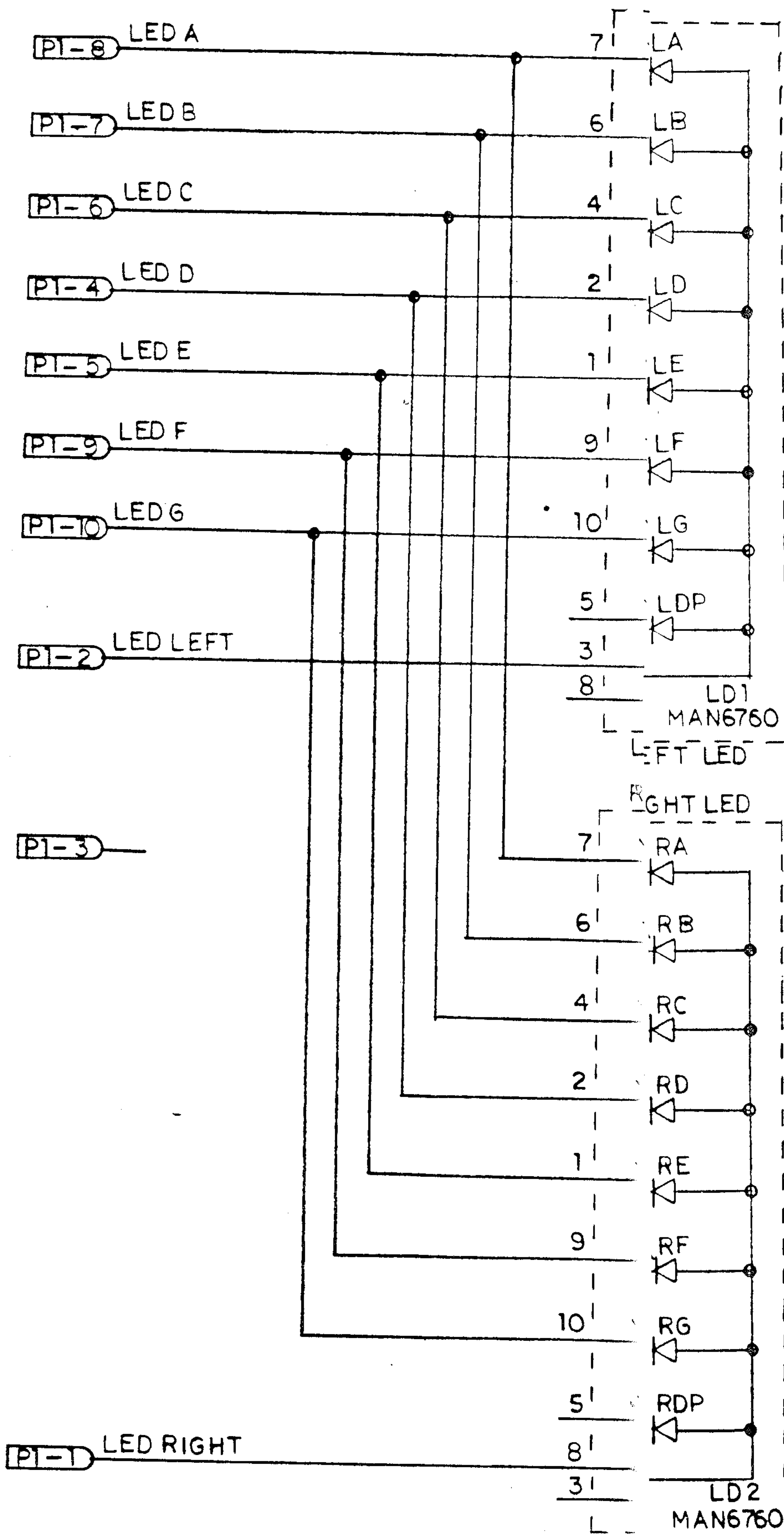


M. KRAMER MFG.
 MODEL 20000
 KRAMER KRANE
 FUSE BLOCK ASSY.
 UPRIGHT



M. KRAMER MFG.
 MODEL 20000
 KRAMER KRANE
 FUSE BLOCK ASSY.
 UPRIGHT





M. KRAMER MFG.
 KRAMER KRANE
 MODEL 20000
 LED BOARD
 PCB20002
 PAGE 1 OF 1