

# **OPERATION and PARTS MANUAL**

*Chicago Coin's*

# **BASKETBALL CHAMP**

**MODEL No. 90-4700**

*Price \$1.00*

**ISSUE No. 1**

**CHICAGO COIN MACHINE COMPANY**

**1725 DIVERSEY BOULEVARD · CHICAGO 14, ILLINOIS**

## **FOREWORD**

This manual has been written for the operator of BASKETBALL CHAMP and for the serviceman. We urge them to read it carefully, to help them maintain their basketball machine in perfect operating condition.

The complete set of photographs and wiring diagrams contained herein are designed and labeled to clearly point out all possible spots where trouble may develop. Replacement parts should always be ordered by reference to part numbers as given by these drawings.

BASKETBALL CHAMP has been designed with special attention to the problems of wear and ease of replacement, and can be depended on to give many years of satisfactory, profitable service.

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## **WHAT THE GAME DOES**

Pushing in the coin chute after insertion of a nickel resets the ball count and scoring switches, the Game Over relay, and the time clock, registers the nickel on the counter, and starts the motors which control the thrower and guard mannikins. The guard begins to move from side to side, raising and lowering his arms to block the ball. The player manikin turns toward the ball tube to receive the ball which comes out at just the right time to fall into his hoop. Then he turns into playing position, facing the basket. During the short time he is in this position, the handle must be squeezed to raise his arms and toss the ball into the basket. This must be done when the guard is not in the way. If the ball is tossed properly it goes thru the basket, registering a point as it does so. The game may be set to give the player either 5, 10, 15, or 20 balls for a nickel.

## **TO REMOVE GLASS**

Remove the backrack door. Towards the front of the backrack will be found two long slots in which are the brackets which lock the top glass (Part 90-1102, Fig. 2) in place. Loosen the screws which hold the brackets, and slide the brackets back as far as they will go. Push the top glass back toward the brackets. Remove the top casting (Part 90-800, Fig. 2) after taking out the screws at each end. The top glass may now be lifted out together with the side moldings. Then the curved front glass may be lifted up and out, together with the front moldings. This exposes the side glasses, which may now be removed.

This procedure is reversed when putting the glass in. Put in first the side glasses, then the front glass, then the top glass. The moldings must be on the front glass and the top glass before they are put on the game. Make sure the rubber strips inside the moldings lie flat. Replace the top casting and screw it into place. Push the top glass against the casting as far as it will go, and lock it in place with the two brackets in the backrack.

## **TO REMOVE PLAYBOARD**

Open the back door of the cabinet. About 5 inches in from the back, just below the playboard, are the brackets which hold the playboard to each side of the cabinet. Remove the screws from these brackets and pull out the playboard as far as desired. Make sure the guard mannikin is centered on the board with his arms down, to avoid striking the basket.

## **TO REMOVE MANIKINS**

Unscrew the control fork bushing and lock nut (90-1507, Fig. 3) from the pull bar of the the manikin which is to be removed. Then take out the two screws from the base of the manikin, and lift the manikin out of the game.

## **THROWER MANIKIN ADJUSTMENTS**

The thrower manikin is turned thru an angle of 90° by means of a pinion (90-1500, Fig. 3), operated by a rack (90-513, Fig. 3). This motion is limited by two adjustable stops (90-518) on the mounting plate. These stops must be set so that the 90° rotation of the pinion is approximately centered between the ends of the rack. The correct distance between the stops is 1-5/16 inches. When this adjustment has been made, the manikin is then set so that the ball toss hoop (90-901, Fig. 2) is directly in line with the basket at one end of his travel, and directly in line with the ball tube cap (90-802, Fig. 2) at the other end of his travel. To adjust for this, loosen the two screws in the base of the figure, turn it to the desired position, and tighten the screws

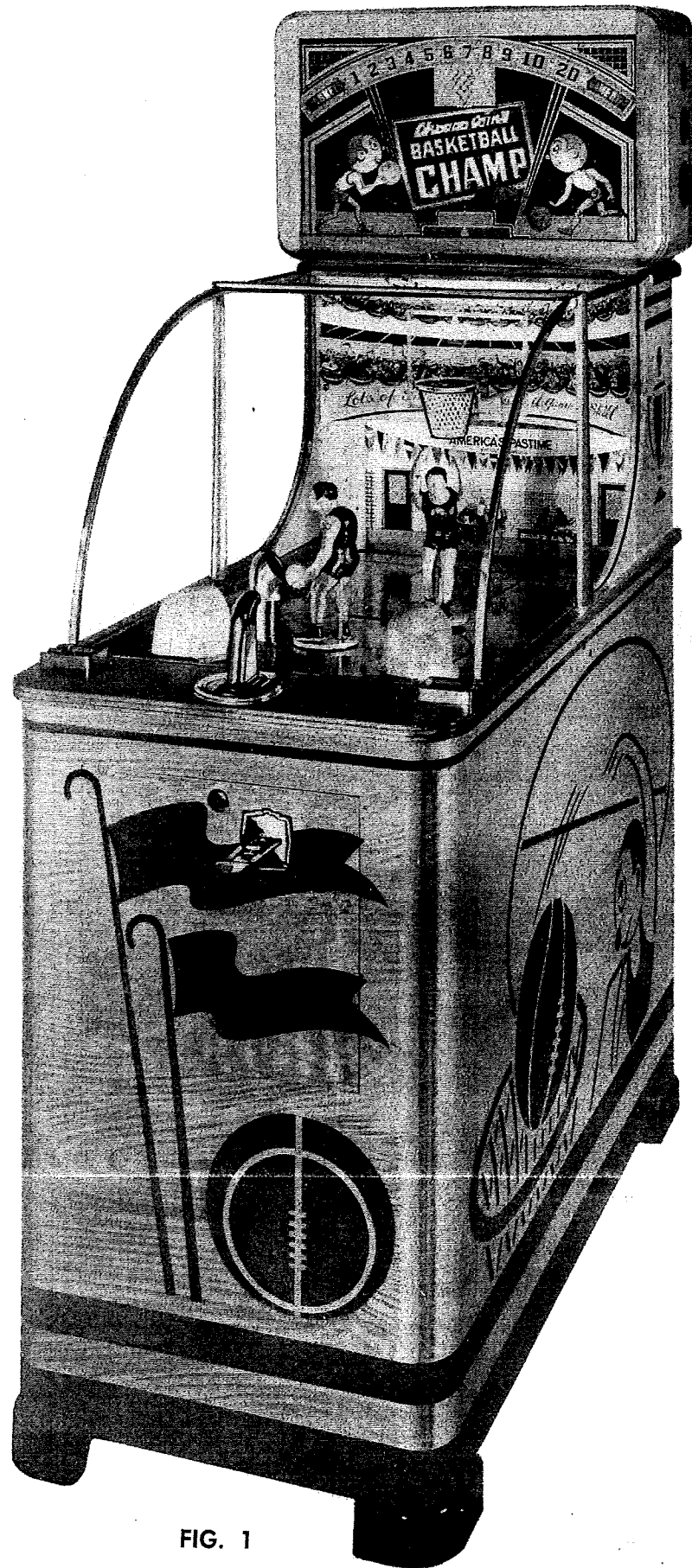


FIG. 1

## **THROWER MANIKIN ADJUSTMENTS (Cont.)**

again. The way that the ball falls into the hoop may be adjusted by raising, lowering, or turning the ball tube cap (90-802, Fig. 2). Use a ball for checking the accuracy of the toss into the basket while the manikin is stationary. The motion of the ball may be adjusted to the left or right by slightly twisting the ball toss hoop in the proper direction. Bending the ball toss lever (90-546, Fig. 2) slightly up or down will throw the ball higher or lower as desired. The amount of motion of the arms is controlled by the position of the control fork bushing (90-1507, Fig. 3) on the manikin pull bar. This must be locked in place in the position which will bring the ball toss hoop to just under the horizontal when the control handle is squeezed. The exact position for best results can be determined only by trial. The push bracket (90-515, Fig. 3) should be set so that when the operating handle is squeezed as far as it will go, the push bar can still be moved in by hand about 1/16 inch before any part of the mechanism or manikin starts to bind.

## **GUARD MANIKIN ADJUSTMENT**

The arms of the guard should be almost directly over his head when they are in their highest position. This is controlled by the position of the bushing (90-1507, Fig. 3) on the pull bar.

## **PLATE ASSEMBLY TIMING**

The various moving parts on the plate assembly must be set so that they operate in the proper sequence. The contact on the plate which steps up the ball count switch is operated directly by the pin on the motor. This pin also operates the rest of the mechanism by means of the connector fork (90-2517, Fig. 3) and shaft (90-1502). The connector fork and the cam assembly (90-2501, Fig. 3) are pinned to the shaft at an angle of 40 degrees from each other so that the ball count contact is operated just before the cam engages the slide mechanism. The crank on the ball lift linkage (90-2518, Fig. 4) must be fastened to the shaft in the position which will force a ball out of the tube just when the manikin is in position to receive it.

## **BASKET ADJUSTMENTS**

When the ball enters the basket it tends to bounce around. To avoid incorrect scoring, it must be brought to a stable position before dropping past the scoring contact. This is accomplished by means of a flat spring (Part 90-551, shown in Fig. 9). This spring should be adjusted so that the ball will just go between it and the basket without excess play. The operating leaf on the sensitive switch (5-301, Fig. 9) which is just below the flat spring should be

## **BASKET ADJUSTMENTS (Cont.)**

set to give maximum movement to the switch, but it must not be out so far as to stop any ball, no matter how slow, from passing by. Note that the two brackets which hold up the back-board are used as leads to carry current to the switch.

## **STEPPING SWITCH OPERATION**

The setting for number of balls given per game is mounted directly on the contact disc of the Ball Count Step-Up (90-2508, Fig. 5). The movable plug is set to give 5, 10, 15, or 20 balls as the operator may desire. This switch is stepped-up by the contact which is operated by the playing motor (90-1520, Fig. 3). It will be noted that the adjustment for five balls is reached on the fourth step of the switch, the adjustment for 10 balls is reached on the 9th step, and so on. The adjustment plug works thru the contact on the stepping switch to trip the Game Over relay (90-2510, Fig. 6) after the proper number of balls have been played.

The Scoring Step-Up (90-2510, Fig 5) is operated by the sensitive switch (5-301, Fig. 9) every time a ball drops thru the basket. The scoring lights in the backrack are lit up in proper sequence as the contact fingers on the step-up pass over successive buttons on the contact disc.

Since all electrical connections to both step-up switches are made thru disconnecting plugs, the switches are easily removable from the slide panel for adjustment or replacement.

## **LUBRICATION**

The playing motor and the guard motor should receive a few drops of medium grade oil in the oil holes at the motor bearings occasionally, and a tablespoon of oil into the gear case every 3 months. These motors are guaranteed for a period of three months. In case of defect, they should be returned to the factory. They must not be taken apart or tampered with, otherwise the guarantee is void. On all other moving parts a light oil may be used. Grease or vaseline tend to dry out, and should be avoided, except for the rack and pinion, where a very light grease is permissible. For general lubrication purposes, the compound known as "LUBRI-PLATE" is recommended.

## **TO REMOVE BACKRACK LIGHTS AND GLASS**

The backrack lights are mounted on a board which is supported by two hinges at one end and held in place by a spring clip at the other end. The spring clip may be pushed aside to permit swinging out the light board, so that both the backrack glass and the lamps are exposed for easy removal.

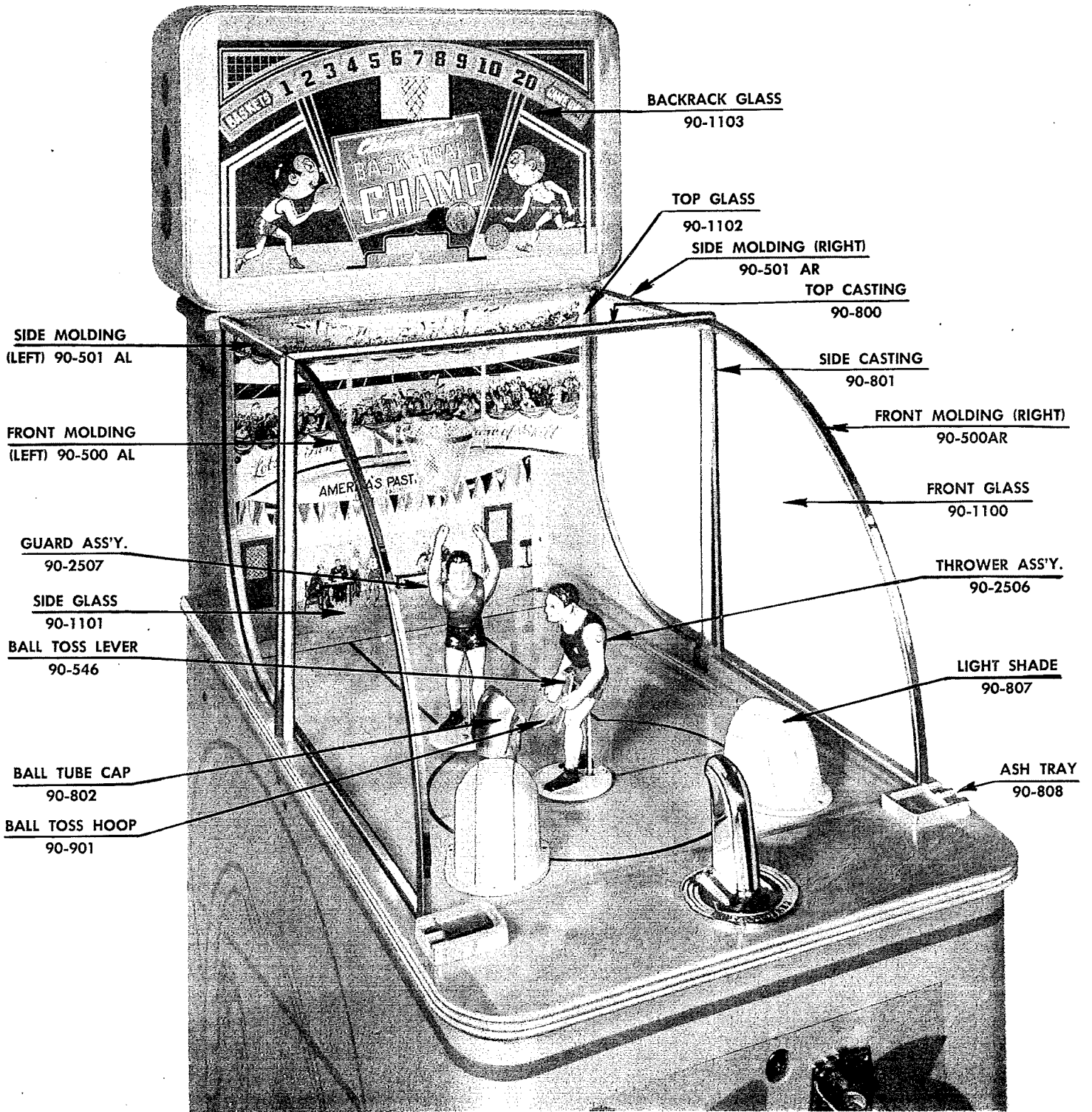


FIG. 2



PLAYING MOTOR  
90-1520

RACK 90-513

PINION  
90-1500

CONTROL  
FORK BUSHING  
90-1507

GUARD SWING  
LINK 90-533

GUARD MOTOR  
90-1521

SHOULDER SCREW  
89-1500

PUSH BAR  
BRACKET 90-519

CONNECTOR FORK  
90-2517

CAM ASSY.  
90-2501

SHAFT  
90-1502

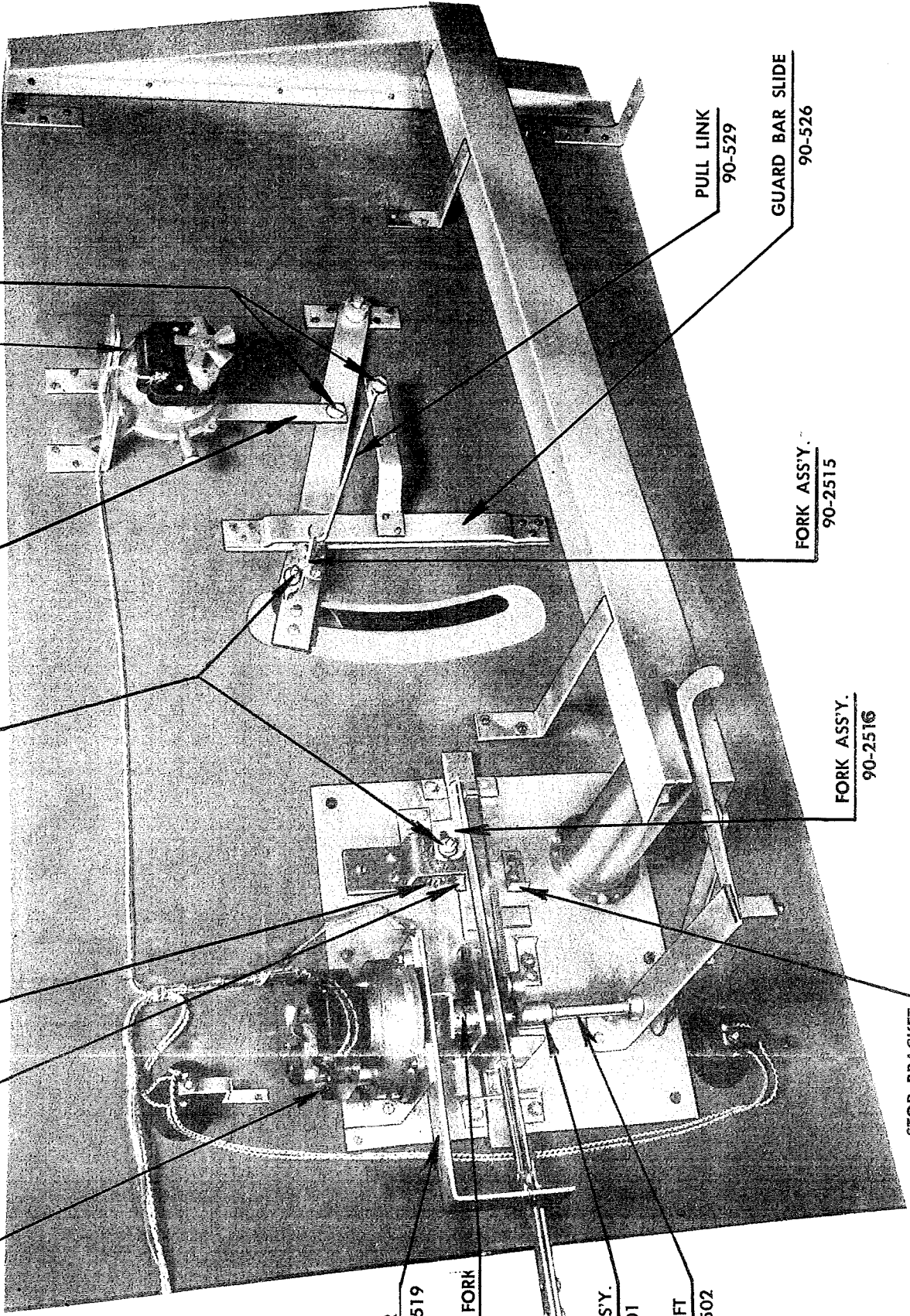
STOP BRACKET  
90-518

FORK ASSY.  
90-2515

FORK ASSY.  
90-2516

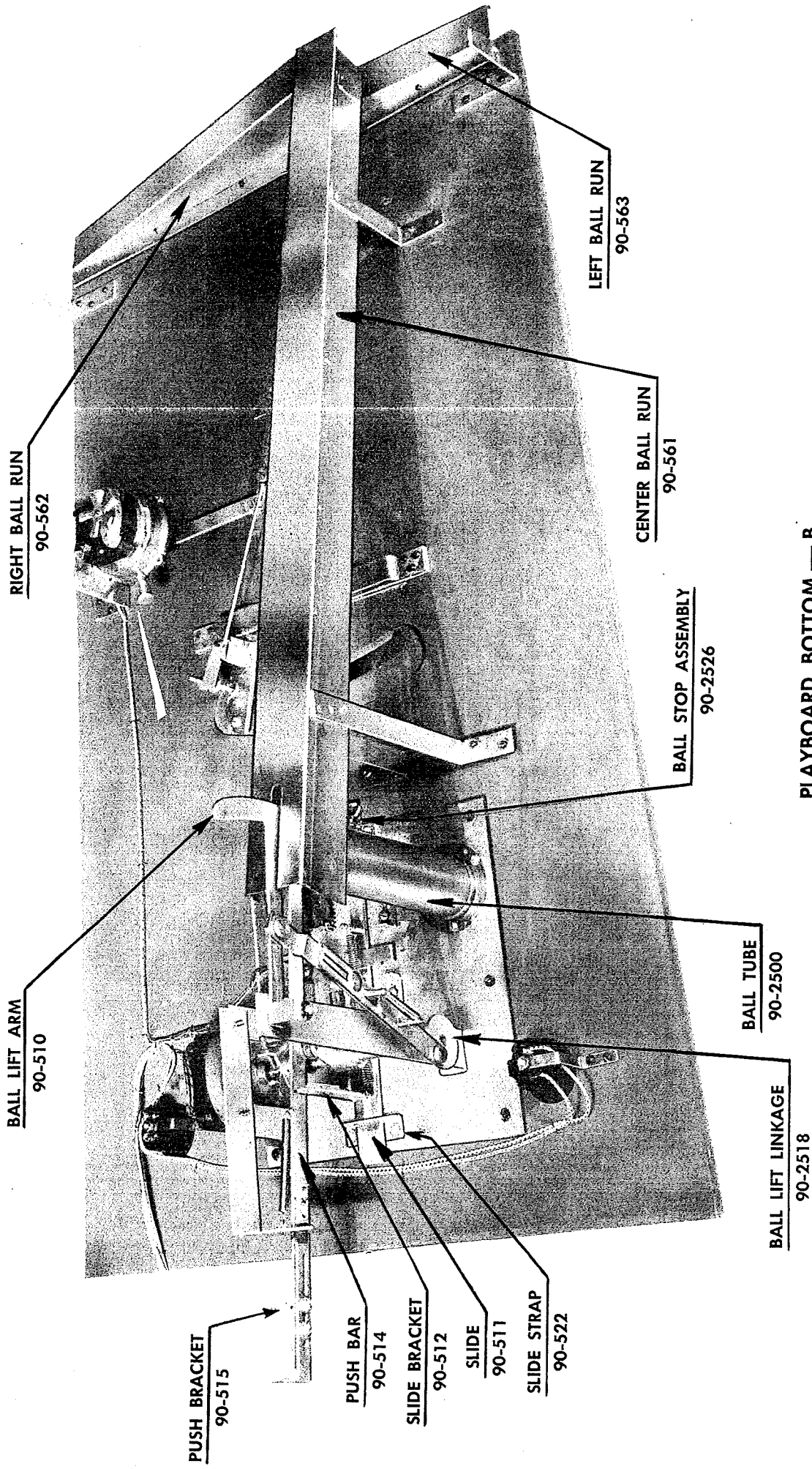
PULL LINK  
90-529

GUARD BAR SLIDE  
90-526



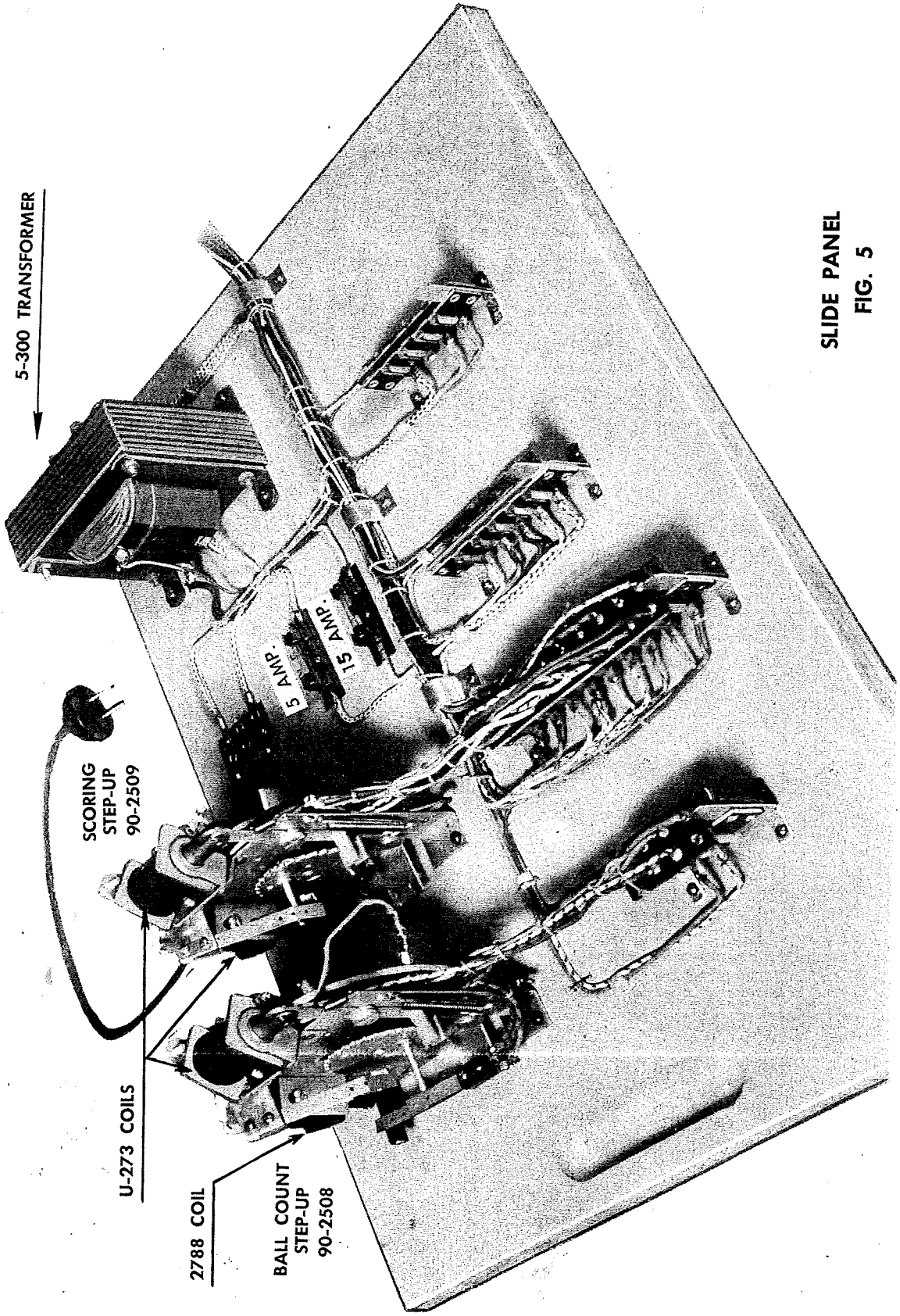
PLAYBOARD BOTTOM — A  
FIG. 3





PLAYBOARD BOTTOM — B

FIG. 4



5-300 TRANSFORMER

SCORING  
STEP-UP  
90-2509

U-273 COILS

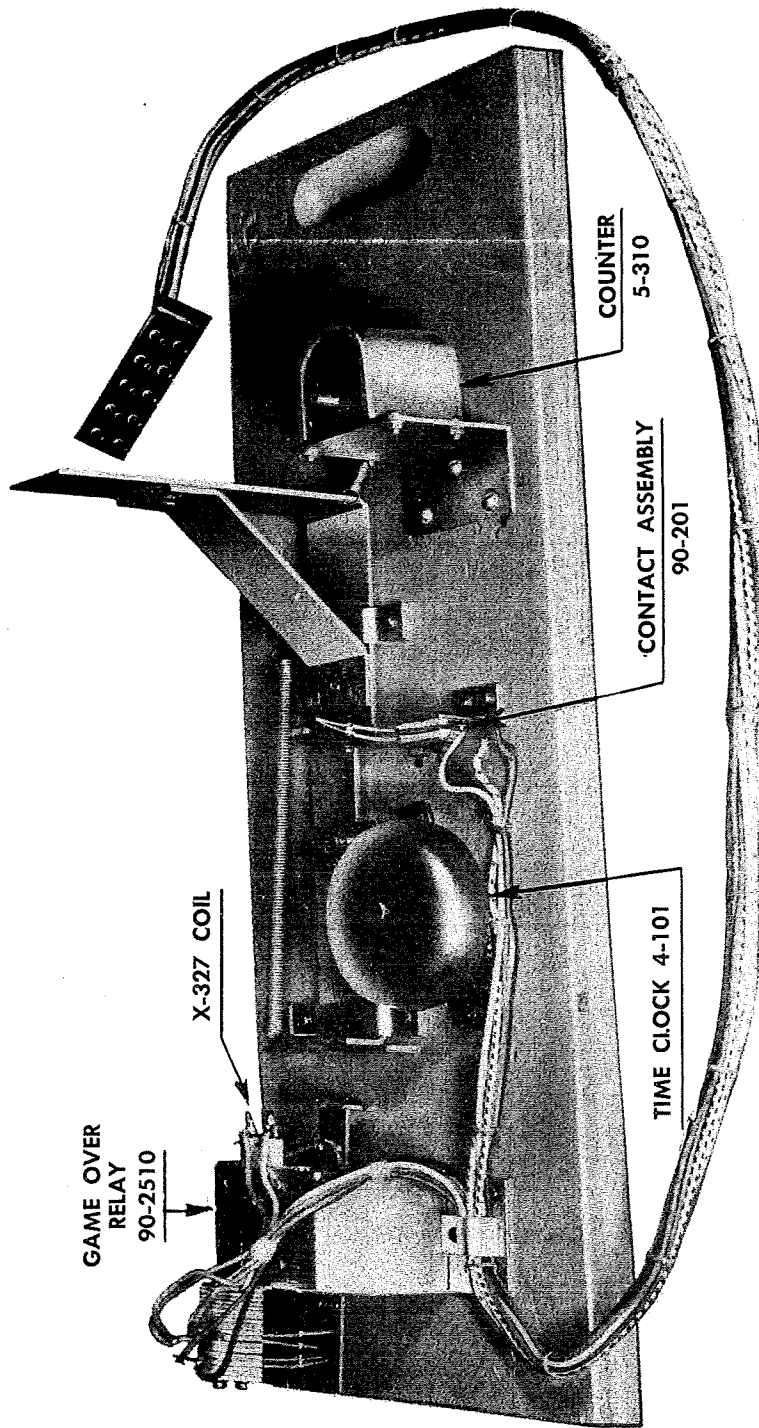
2788 COIL

BALL COUNT  
STEP-UP  
90-2508

5 AMP

15 AMP

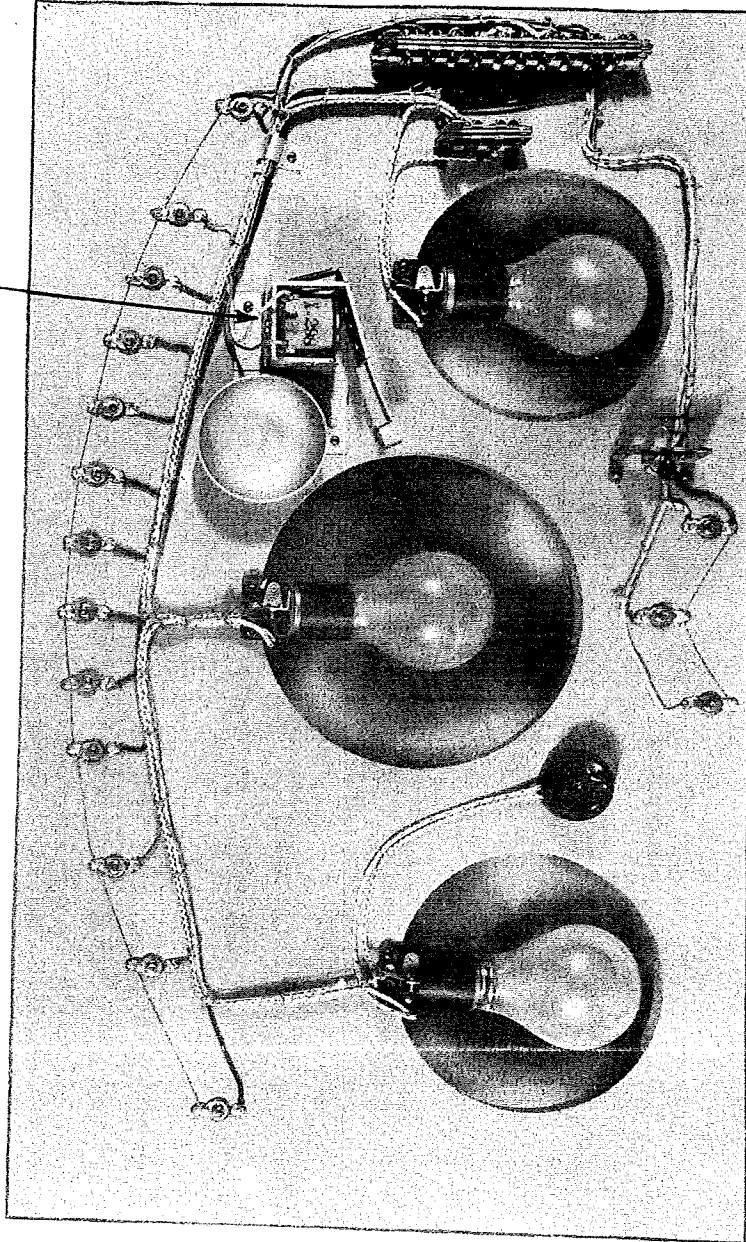
SLIDE PANEL  
FIG. 5



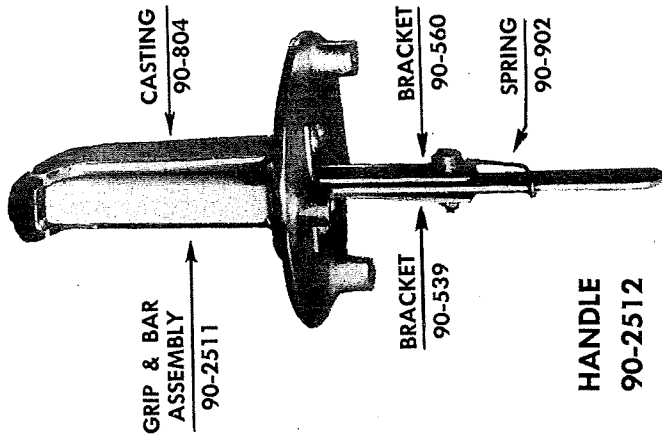
SHUFFLE PANEL

FIG. 6

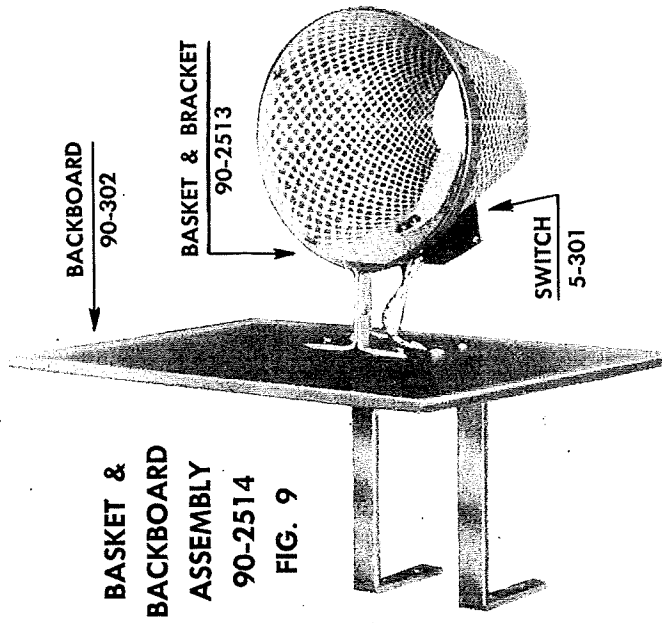
BELL ASSEMBLY  
90-2521



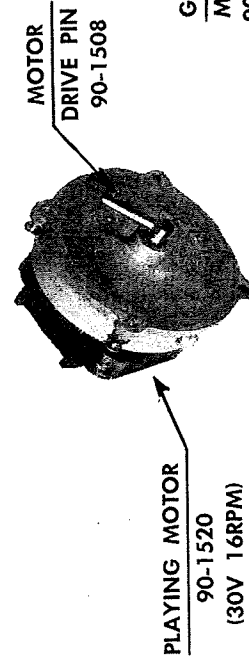
BACKRACK  
FIG. 7



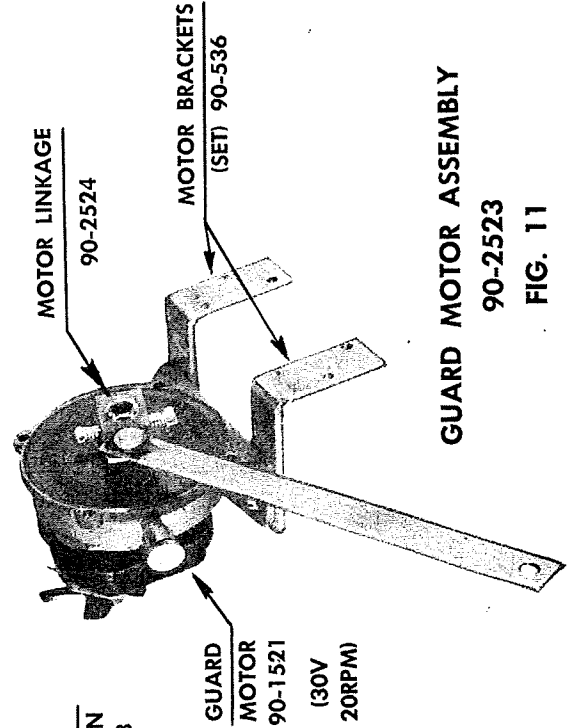
**HANDLE**  
90-2512  
FIG. 8



**BASKET & BACKBOARD ASSEMBLY**  
90-2514  
FIG. 9



**PLAYING MOTOR & PIN ASSEMBLY** 90-2522  
FIG. 10



**GUARD MOTOR ASSEMBLY** 90-2523  
FIG. 11

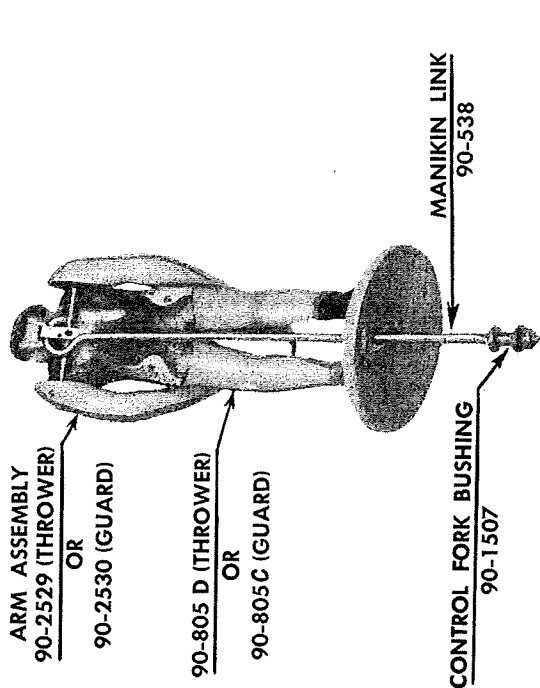


FIG. 13. MANIKIN DETAILS

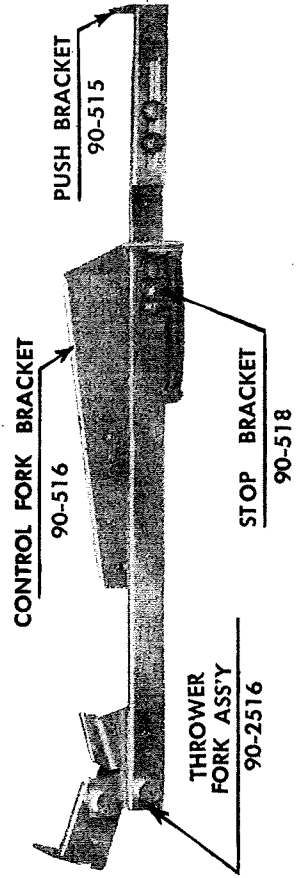
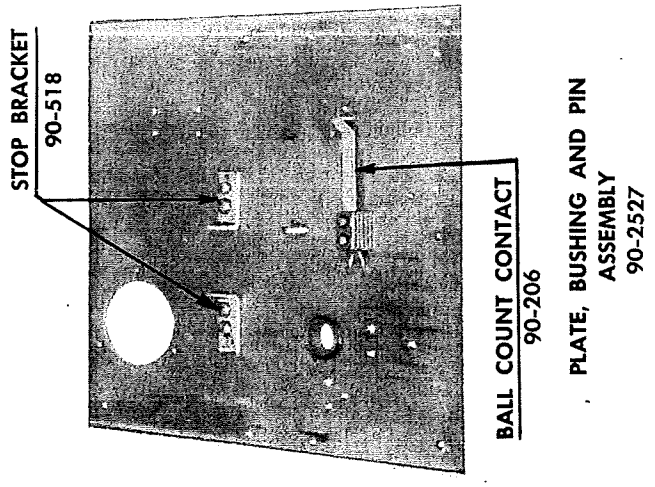
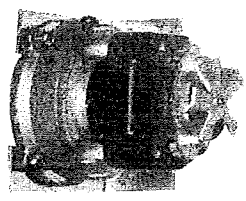
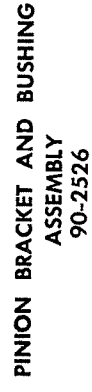
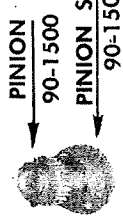
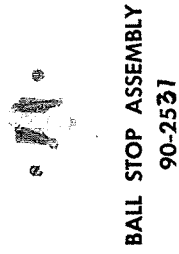
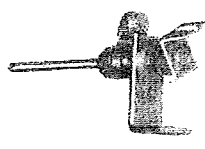
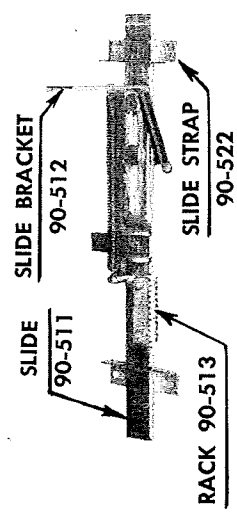
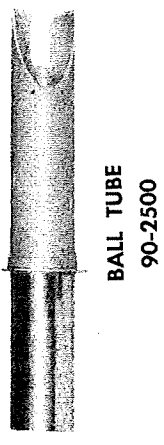
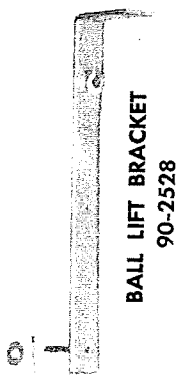
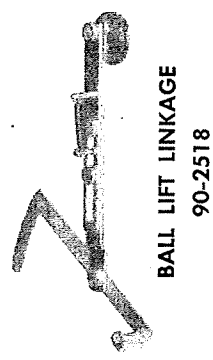
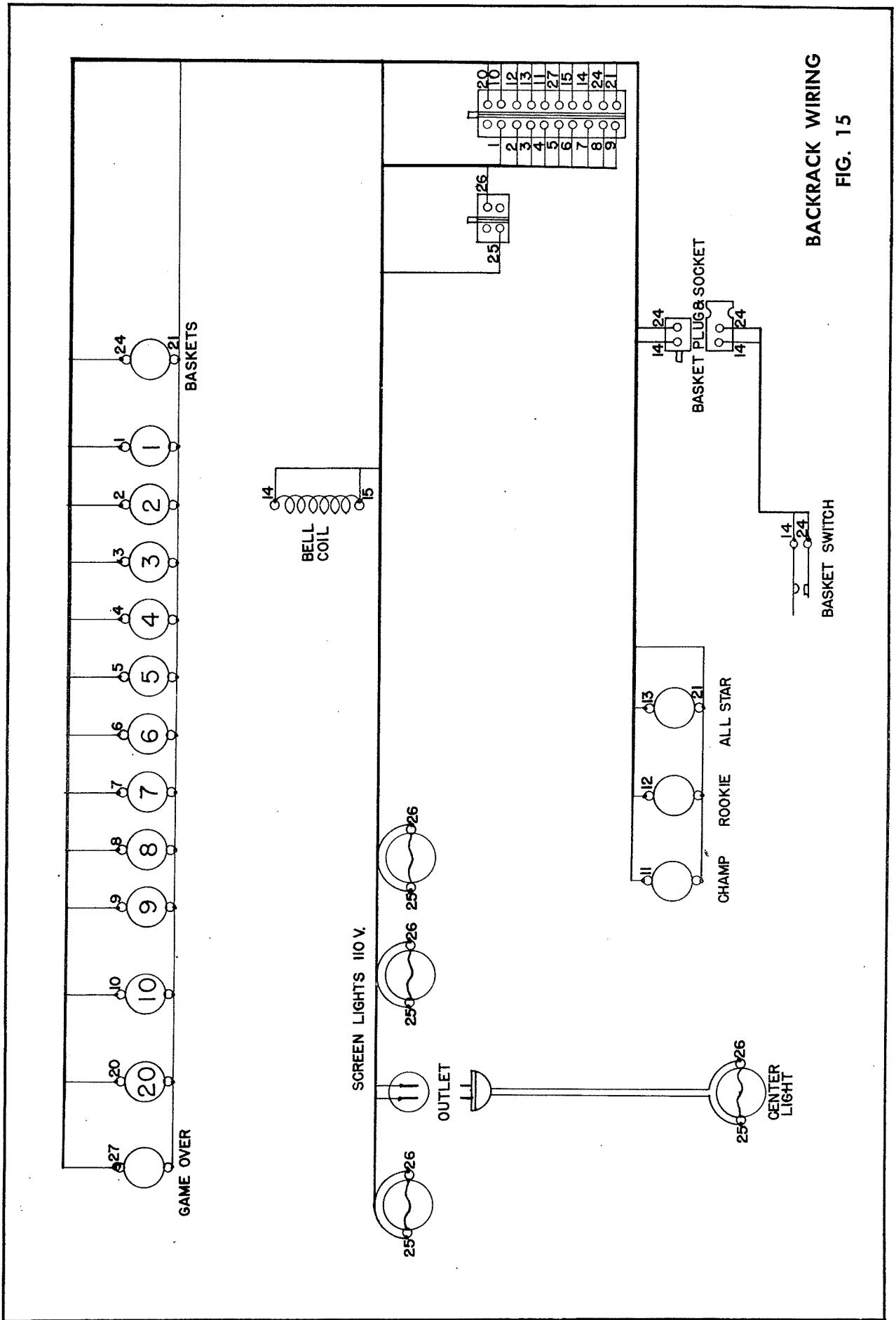


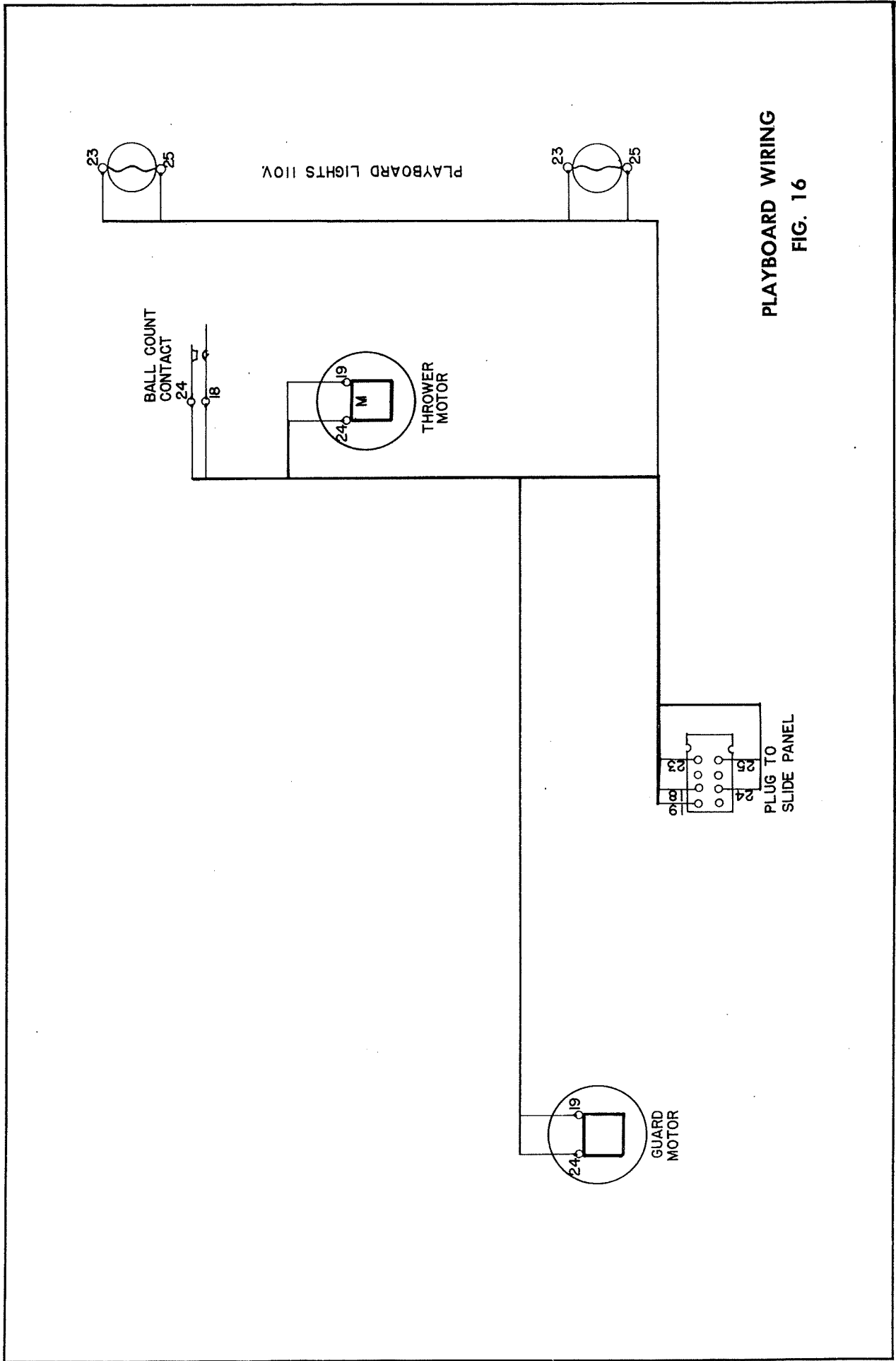
FIG. 12. PLATE ASSEMBLY DETAILS



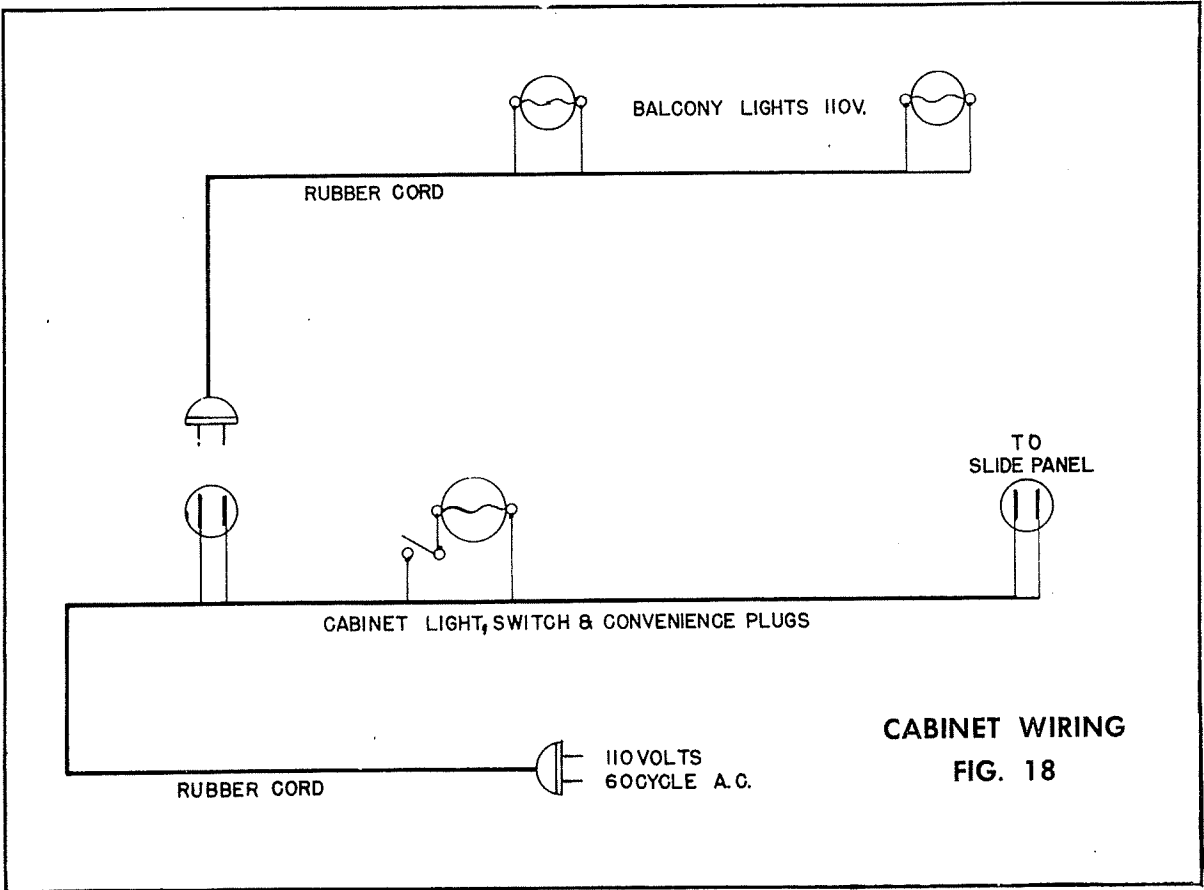
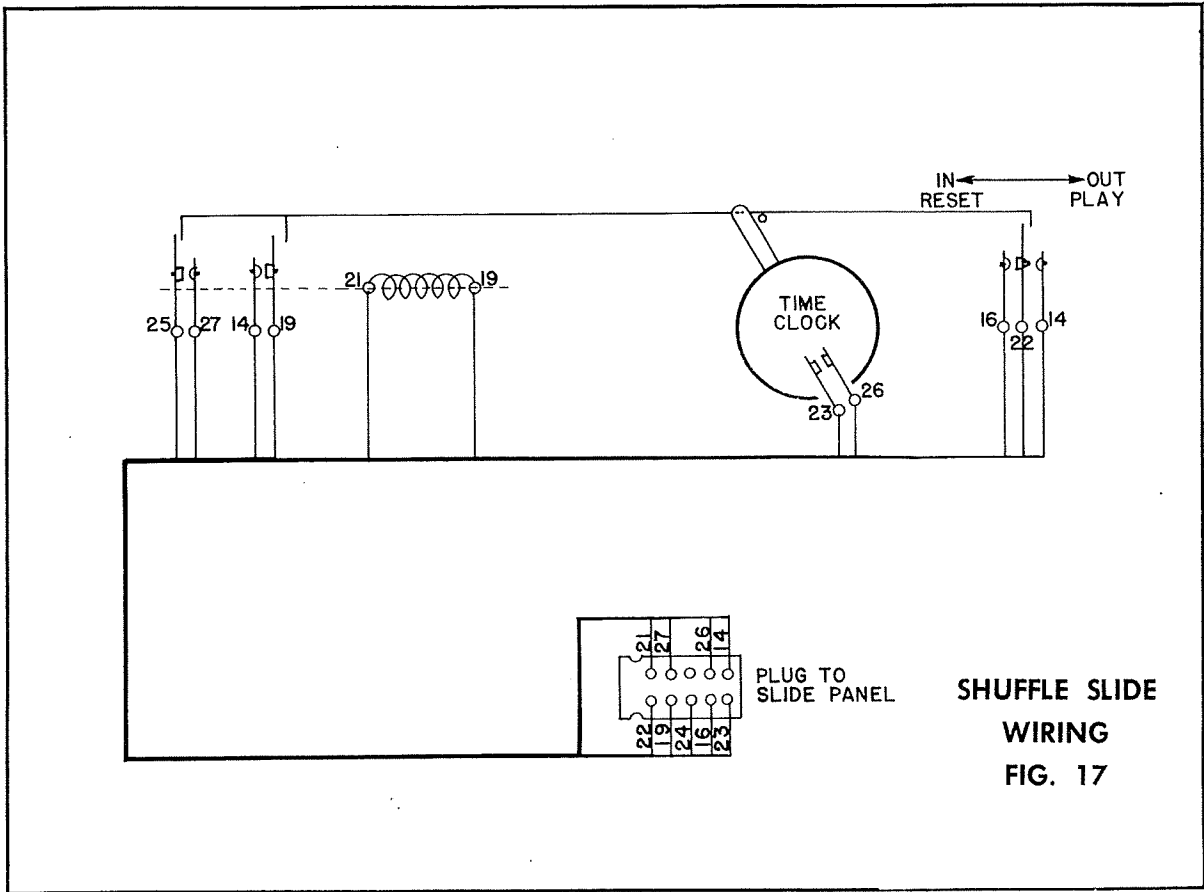




**BACKRACK WIRING**  
**FIG. 15**



PLAYBOARD WIRING  
FIG. 16



## SERVICE HINTS

For the convenience of the serviceman, a light has been placed inside of the cabinet, controlled by a toggle switch on the left wall which may be reached thru the front door opening.

The following suggestions may be helpful in tracing down troubles which may develop in the game.

### **IF THE GAME IS DEAD, ALTHO BACK LIGHTS ARE LIT:**

Power is fed to the game thru a cord in the slide panel which plugs into an outlet towards the front of the cabinet. Make sure the plug is in the socket, and check the condition of the cord.

### **IF MOTORS DO NOT OPERATE:**

Check cleanliness and pressure in contact assembly (90-201, Fig. 6) and Game Over relay (90-2510, Fig. 6). Check for loose jack connections. Check fuses.

### **IF GAME PLAYS CONTINUOUSLY WITHOUT SHUTTING OFF:**

The motor operated contact on the plate assembly (Fig. 3) may be dirty or not closing. Check also the side contacts and the wiper contacts and buttons on the Ball Count Step-Up (90-2508, Fig. 5). Check for loose jack connections.

### **IF SCORE DOES NOT LIGHT UP:**

Check wiper fingers and contact buttons on the Scoring Step-Up. Check Connection to step-up plate. Check for loose jack connections on sliding panel and backrack.

### **IF STEP-UP SWITCHES DO NOT RESET:**

Check contact assembly (90-201, Fig. 6). Check reset contact on the step-up switch. This is the contact which operates from the ratchet, and must be closed at all times except when the switch is fully reset.

### **IF BALL GOING THRU BASKET GIVES NO SCORE:**

Check the basket spring and switch for proper operation as explained in paragraph above on "Basket Adjustments," page 4. Check leads from basket to backrack for broken wires or loose jack.

### **IF BALLS DO NOT FEED PROPERLY:**

Check for balls which are out of round, as these may stick in the tube. Too many balls may cause jamming in the runway, while too few may result in a short count on the number of balls played. Twelve balls in the machine will give good results.

## PARTS LIST

Part No.	Description	Amount Used
<b>Fig. 2.</b>		
90-1100	Front (Curved) Glass	1
90-1101	Side glass	1
90-1102	Top glass	1
90-1103	Backrack (Screened) glass	1
90-501 AR	Straight glass molding channel—Right	1
90-501 AL	Straight glass molding channel—Left	1
90-500 AR	Curved glass molding channel—Right	1
90-500 AL	Curved glass molding channel—Left	1
90-2506	Thrower manikin assembly	1
90-2507	Guard manikin assembly	1
90-546	Ball toss lever	1
90-901	Ball Toss hoop	1
90-802	Ball tube cap	1
90-807	Light shade	2
90-808	Ash tray	2
4-106	Coin chute	1
<b>Fig. 3.</b>		
90-2517	Connector fork	1
90-519	Push bar support bracket	1
90-2501	Cam assembly	1
90-1502	Shaft	1
90-2525	Cam, shaft, and fork assembly	1
90-2522	Playing motor and pin assembly	1
90-513	Rack	1
90-1500	Pinion	1
90-2515	Guard fork assembly	1
90-2516	Thrower fork assembly	1
90-518	Stop bracket	3
90-1521	Guard motor	1
90-533	Guard swing link	1
90-529	Pull link	1
90-526	Guard bar slide	1
89-1500	Shoulder screw	2
<b>Fig. 4.</b>		
90-515	Push bracket	1
90-514	Push bar	1
90-512	Slide bracket	1
90-511	Slide	1
90-522	Slide strap	2
90-2518	Ball lift linkage	1
90-2500	Ball tube	1
90-510	Ball tube arm	1
90-561	Center ball run	1
90-562	Right ball run	1
90-563	Left ball run	1
90-2526	Ball stop assembly	1
<b>Fig. 5.</b>		
P-273	Step-up and reset coil	3
2788	Operating coil	1
90-2508	Ball count step-up	1
90-2509	Scoring step-up	1
5-300	Transformer	1

## PARTS LIST (Cont.)

Part No.	Description	Amount Used
<b>Fig. 6.</b>		
90-2510	Game-over relay	1
90-201	Contact assembly	1
X-327	Relay coil	1
4-101	Time clock	1
5-310	Counter	1
<b>Fig. 7.</b>		
90-2521	Bell assembly	1
X-298	Bell coil	1
<b>Fig. 8.</b>		
90-2512	Handle assembly complete	1
90-2511	Handle grip and bar assembly	1
90-804	Handle casting	1
90-902	Handle spring	1
90-1519	Handle pivot screw	1
<b>Fig. 9.</b>		
90-2514	Basket and backboard assembly	1
90-2513	Basket and bracket assembly	1
90-302	Backboard	1
90-551	Flat spring	1
5-301	Sensitive switch	1
<b>Fig. 10.</b>		
90-2522	Playing motor (16 RPM) with pin	1
<b>Fig. 11.</b>		
90-2523	Guard motor assembly	1
90-1521	Guard motor (20 RPM)	1
90-2524	Guard motor linkage	1
90-536	Guard motor brackets (set)	1
<b>Fig. 12.</b>		
90-1501	Pinion shaft	1
90-2526	Pinion bracket and bushing assembly	1
90-2527	Plate, bushing and pin assembly	1
90-2528	Ball lift bracket	1
90-206	Ball count contact	1
<b>Fig. 13.</b>		
90-538	Manikin link	2
90-1507	Control fork bushing	2
90-2529	Thrower arm assembly	1
90-2530	Guard arm assembly	1
90-805 D	Thrower body casting	1
90-805 C	Guard body casting	1
<b>Miscellaneous</b>		
3-175	Ping Pong ball	12
90-553	Backrack latch clip	1
92-507	Backrack hinge plate—male	2
92-508	Backrack hinge plate—female	2
90-200	Screened balcony scene (masonite)	1
90-206	Screened back scene (cardboard)	1
90-202	Contact disc for Ball Count step-up	1
90-203	Contact disc for Scoring step-up	1

90-503  
90-504  
90-505

Contact disc for Scoring step-up