

OPERATING INSTRUCTIONS

CONFIDENTIAL: DO NOT LEAVE INSTRUCTIONS IN GAME

Bally®

SPOT-LITE

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INSTALLATION & OPERATING INSTRUCTIONS.

Fasten 4 legs to cabinet with bolts and washers furnished. Place back-box in position. Remove C-clamp holding back door, remove door and fasten the back-box to cabinet with bolts and washers furnished. Remove top of back-box by opening lock on right side, lift out glass and lower insert by raising slide brackets on either side. Replace back door and lock with turn-bolts mounted on back door. Raise insert and lock in place. Replace glass and top of back-box and lock.

Plug power line into 110-115 volt 60 cycle alternating current only. Turn on power by turning toggle switch on in bottom of cabinet. (front right)

ACCESS TO MECHANISM

The above paragraph explains access to back box. Mechanism in cabinet can be reached by removing doors on either side of cabinet for minor repairs.

NOTE

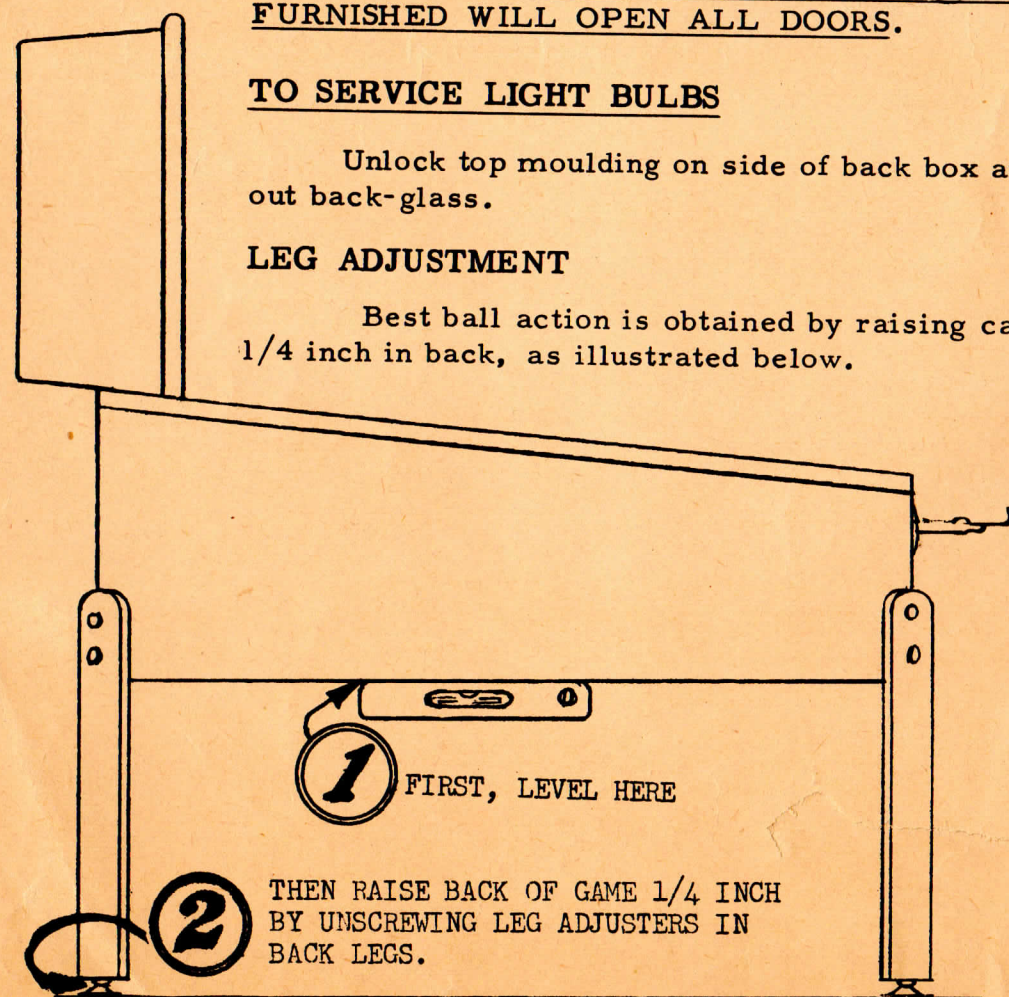
LOCKS ON SIDE DOORS AND TOP OF BACK BOX ARE COMMON AND ANY ONE OF 2 KEYS FURNISHED WILL OPEN ALL DOORS.

TO SERVICE LIGHT BULBS

Unlock top moulding on side of back box and slide out back-glass.

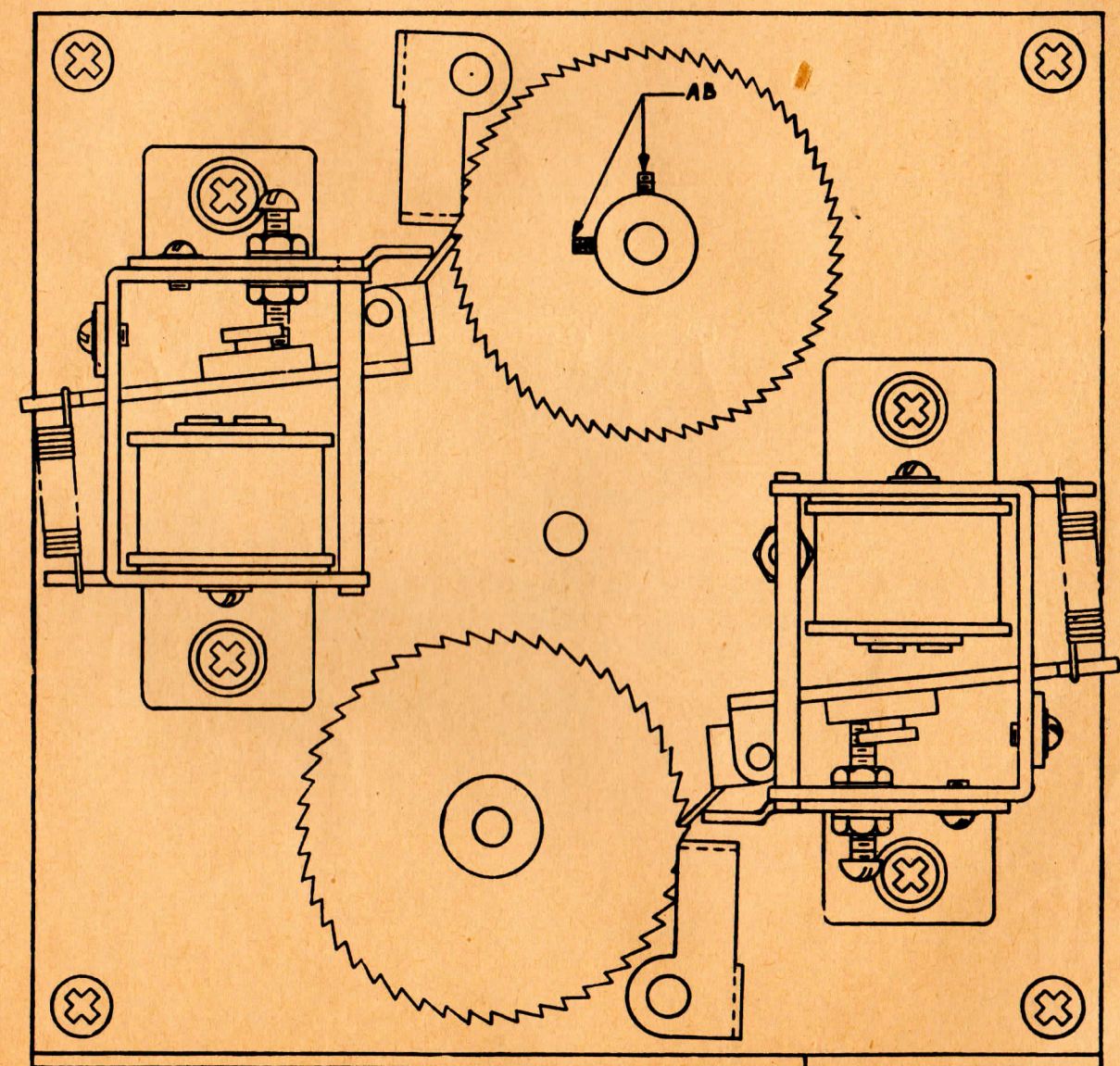
LEG ADJUSTMENT

Best ball action is obtained by raising cabinet 1/4 inch in back, as illustrated below.



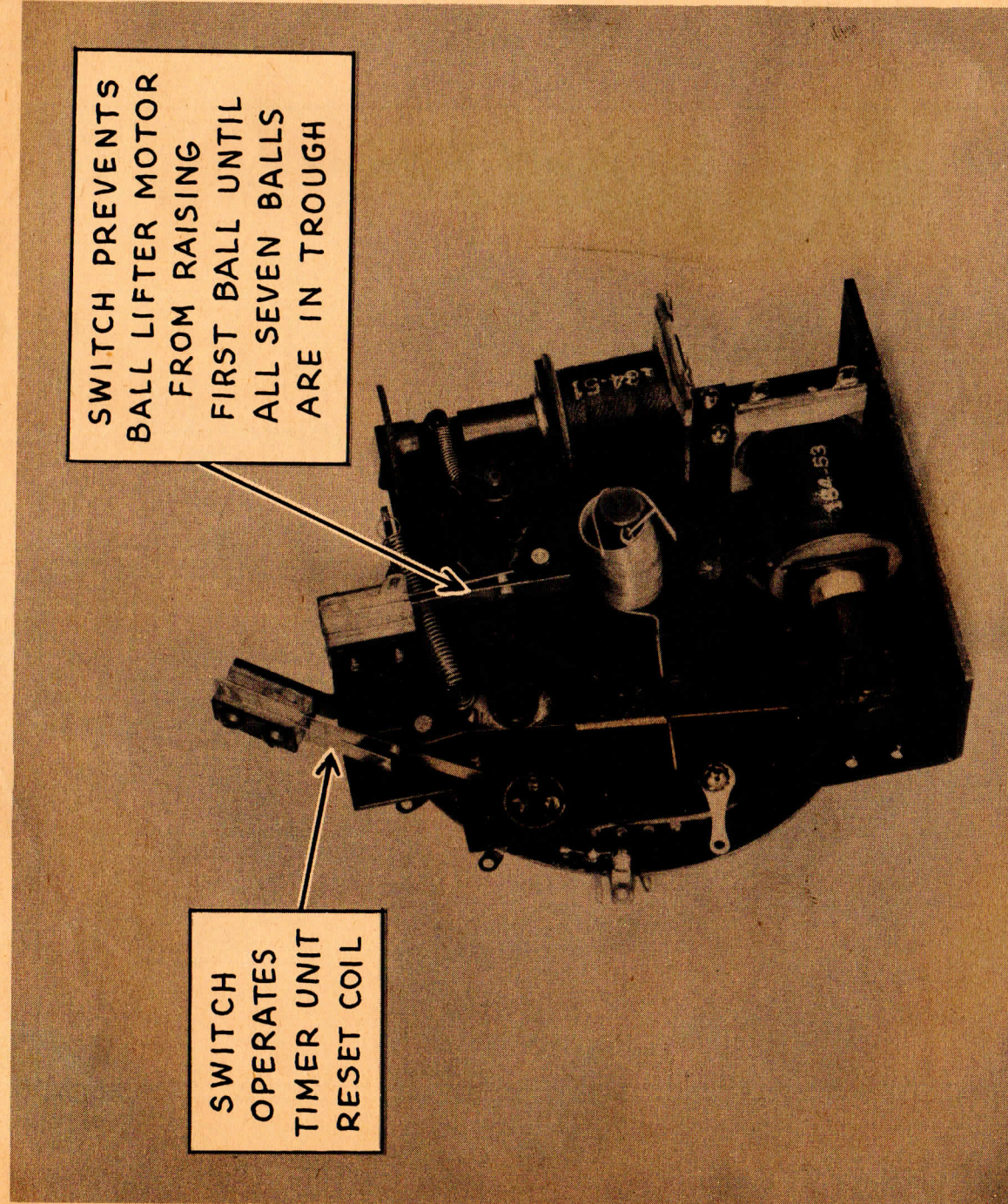
GAME PROPORTIONING

OVERALL PROPORTIONING of game to maintain a maximum amount of play is the function of the REFLEX UNIT which is located on the mechanism board door. Two additional ratchets are supplied if the type of play in some locations require a change. See diagram below for location of set screws (A and B) for fastening ratchets.



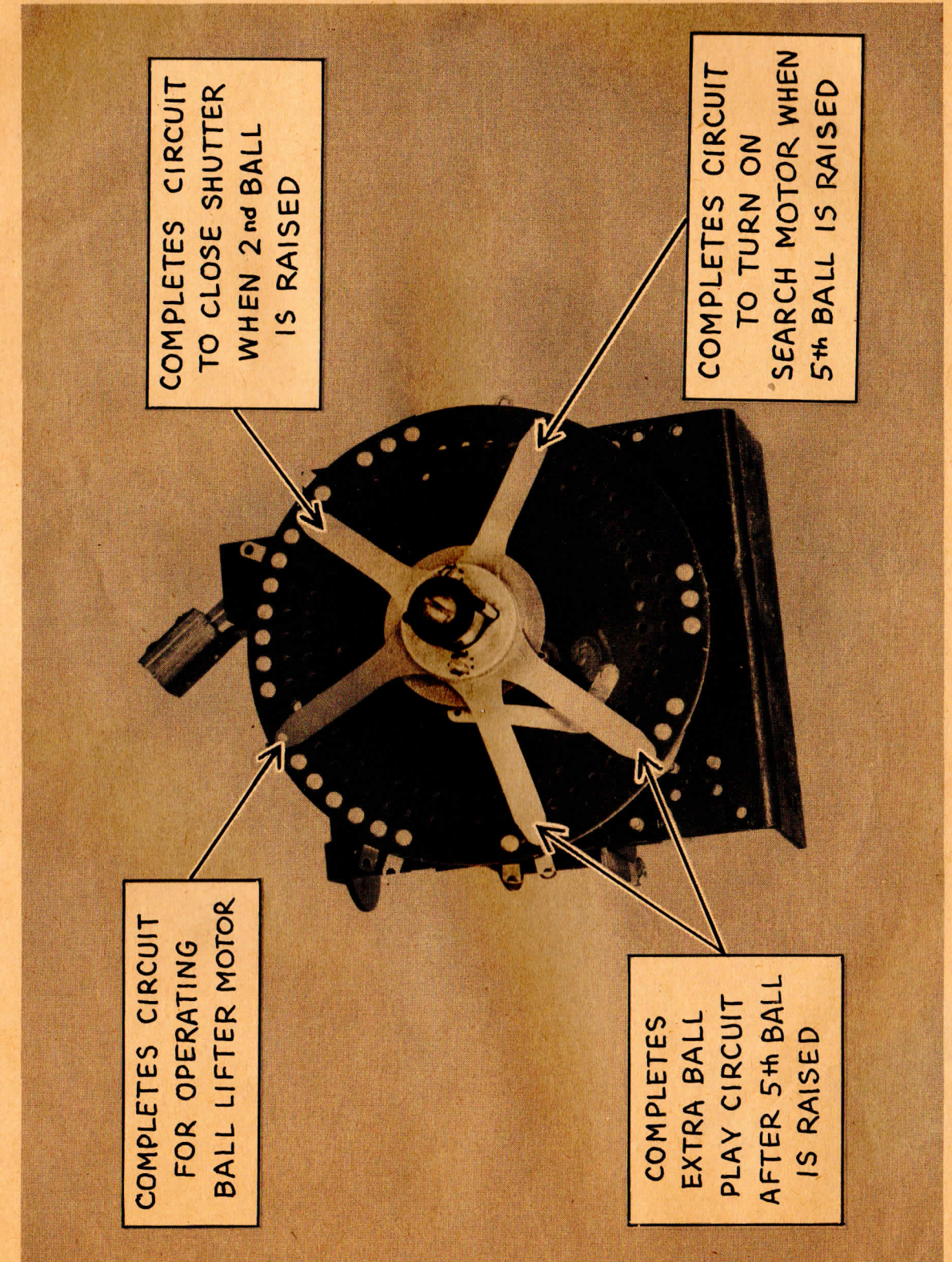
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BALL COUNTER — SWITCH SIDE



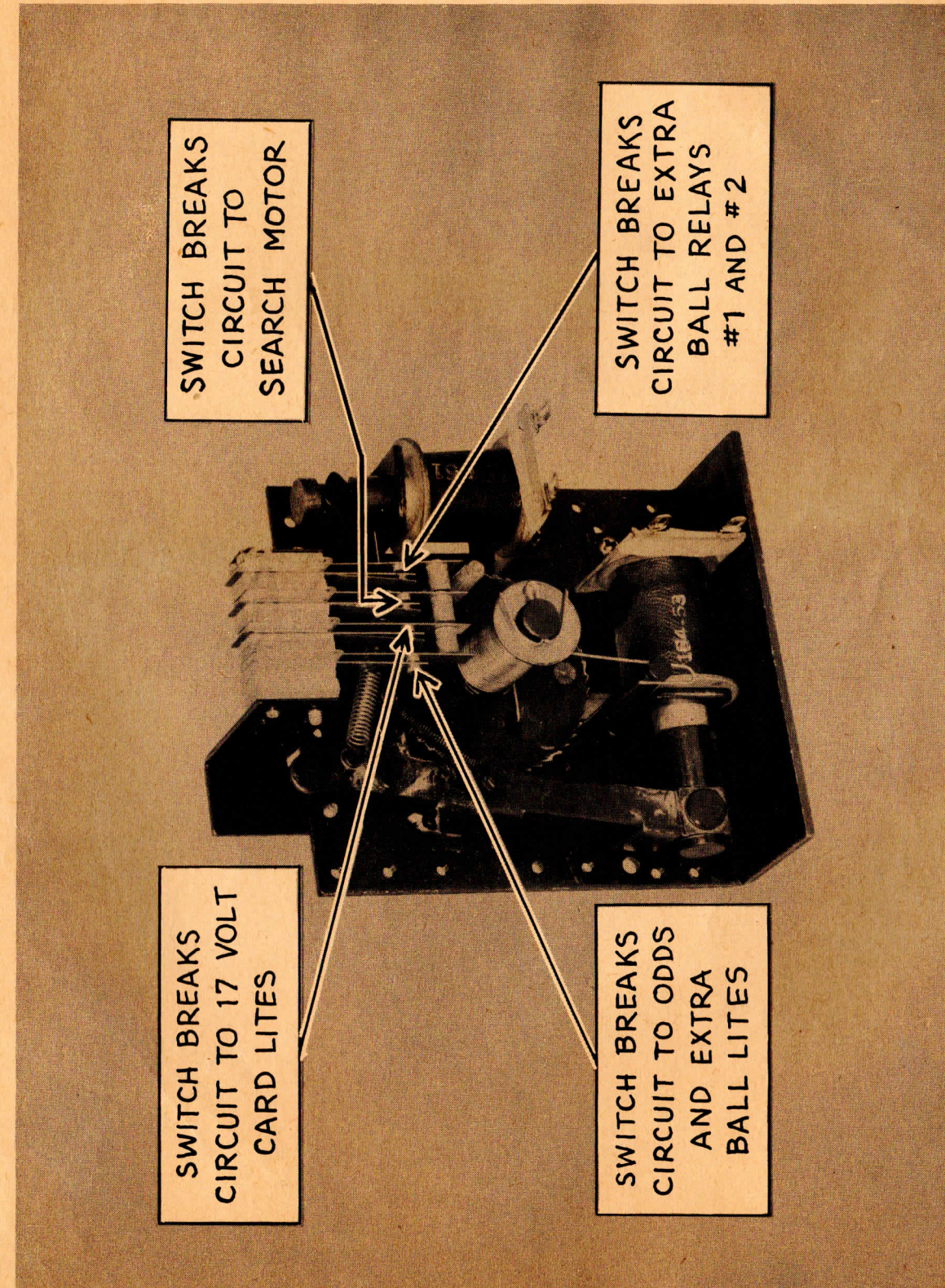
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BALL COUNTER — WIPER SIDE



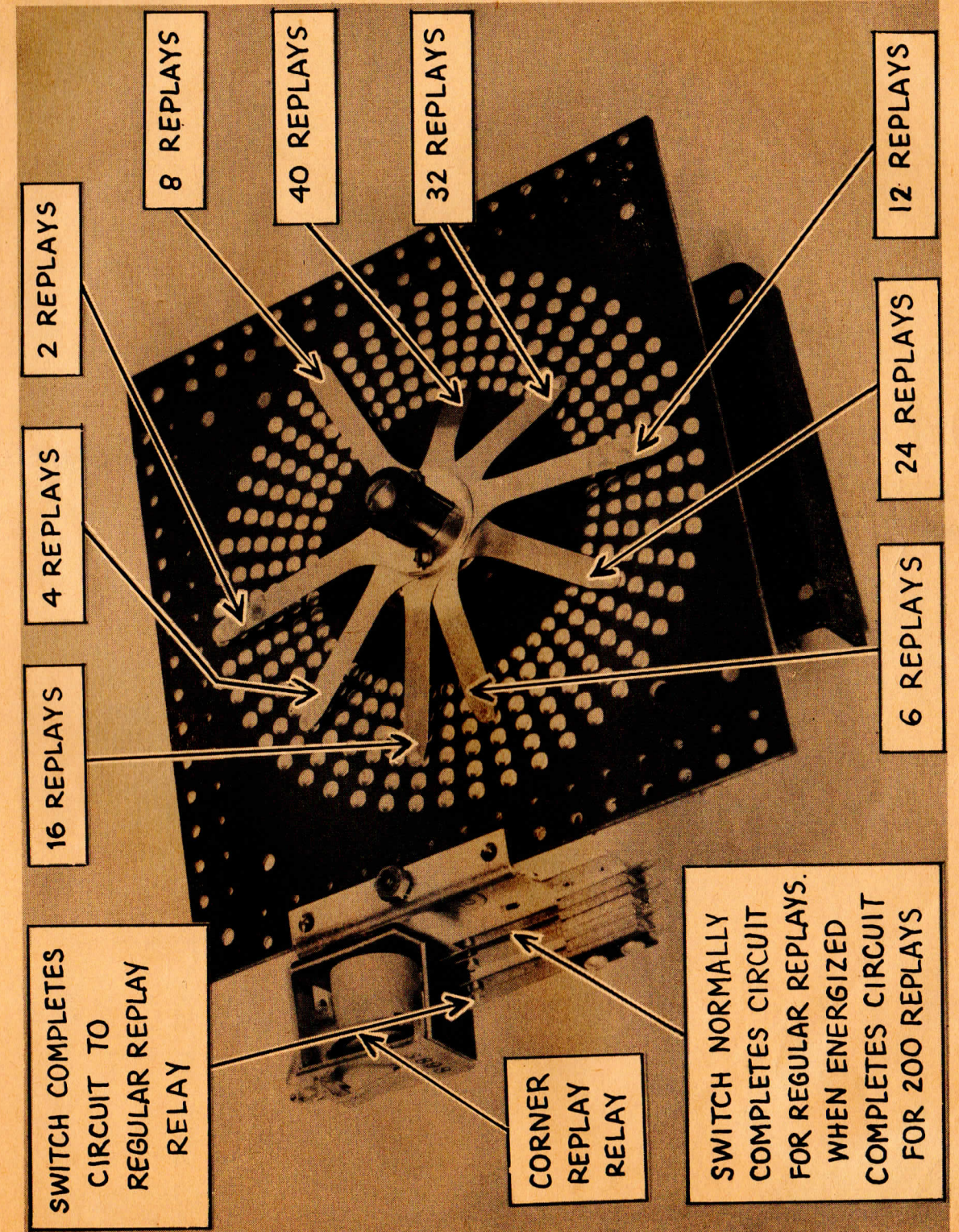
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TIMER STEPPER



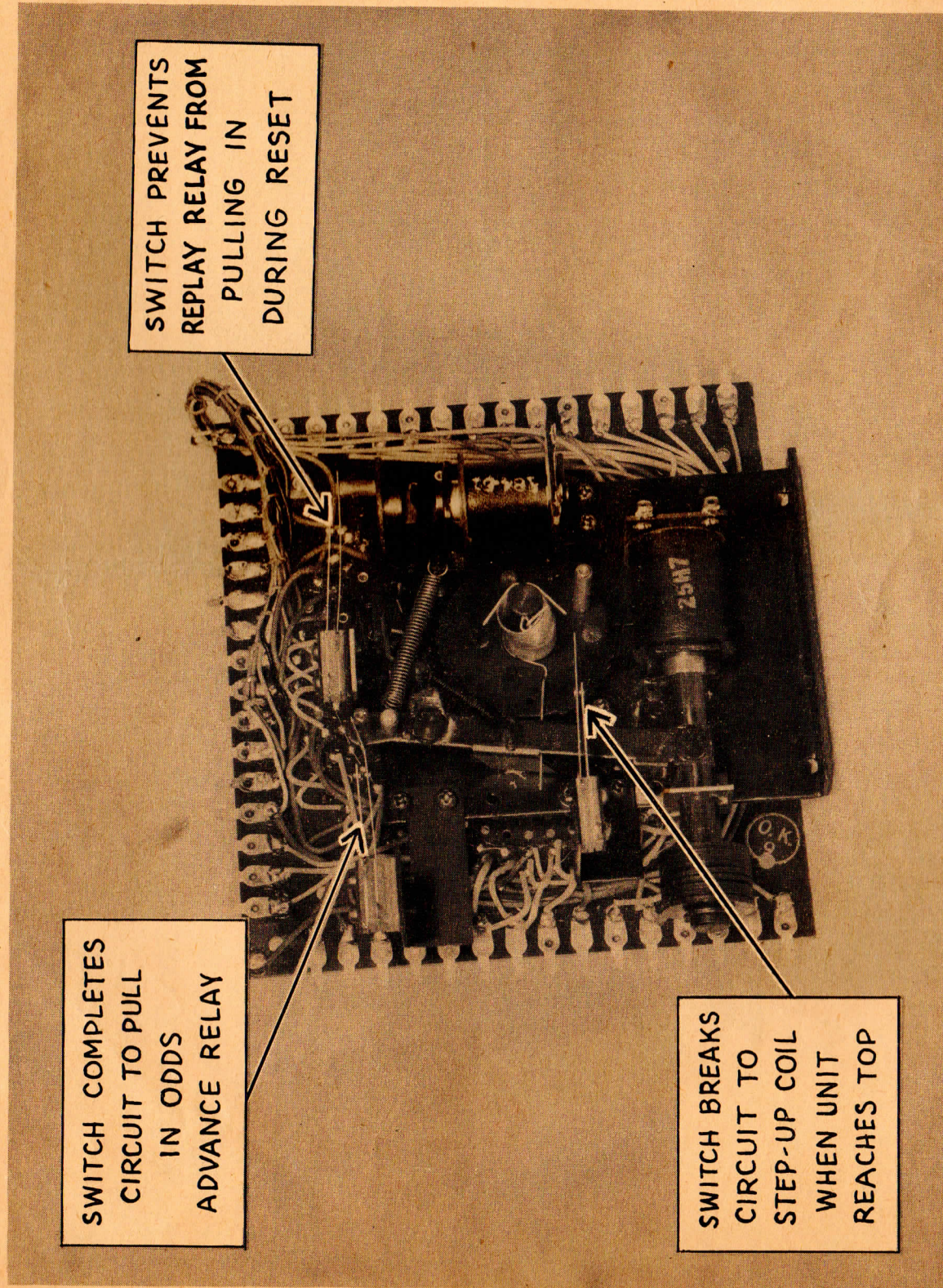
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REPLAY COUNTER



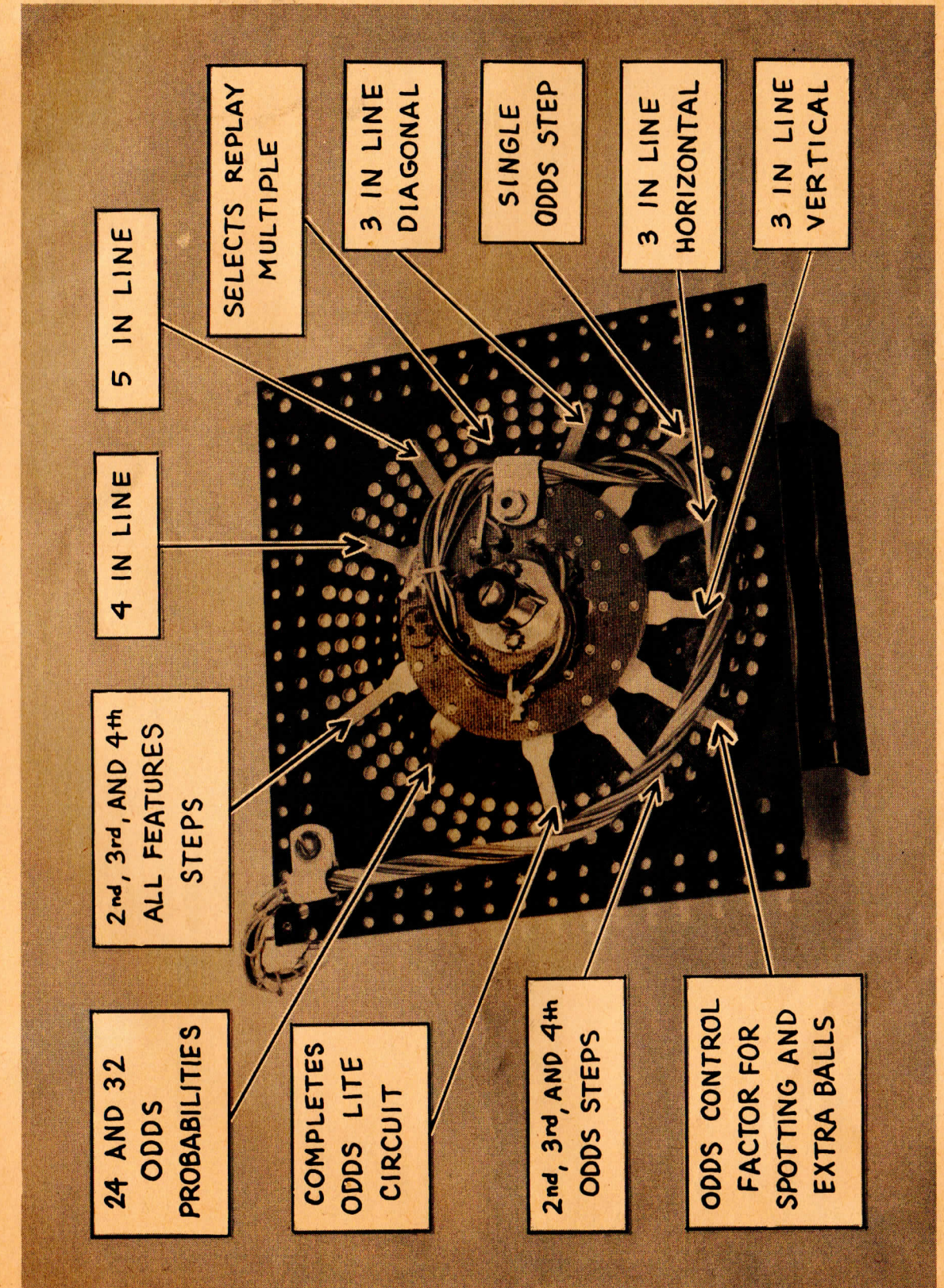
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ODDS UNIT — SWITCH SIDE



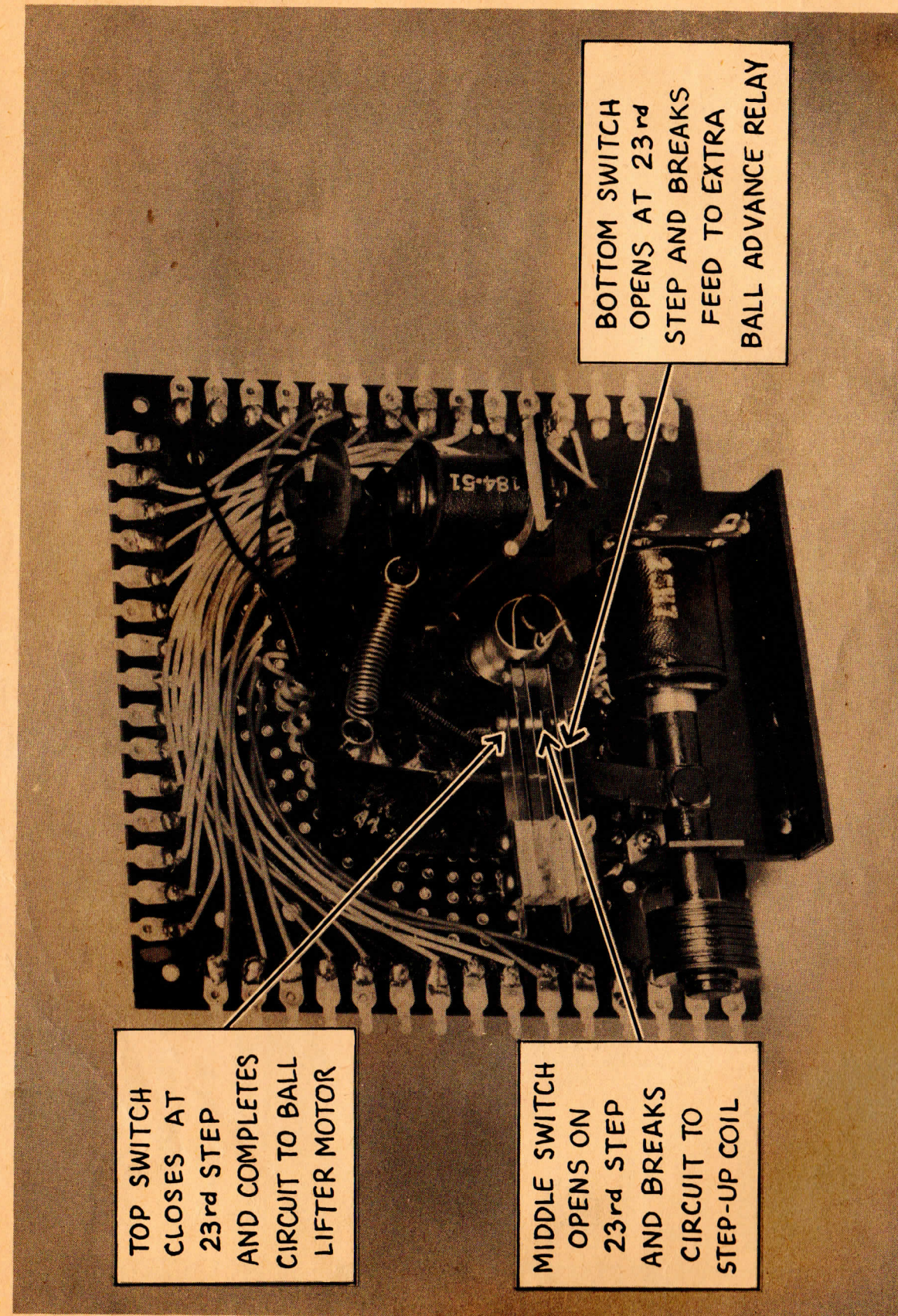
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ODDS UNIT — WIPER SIDE



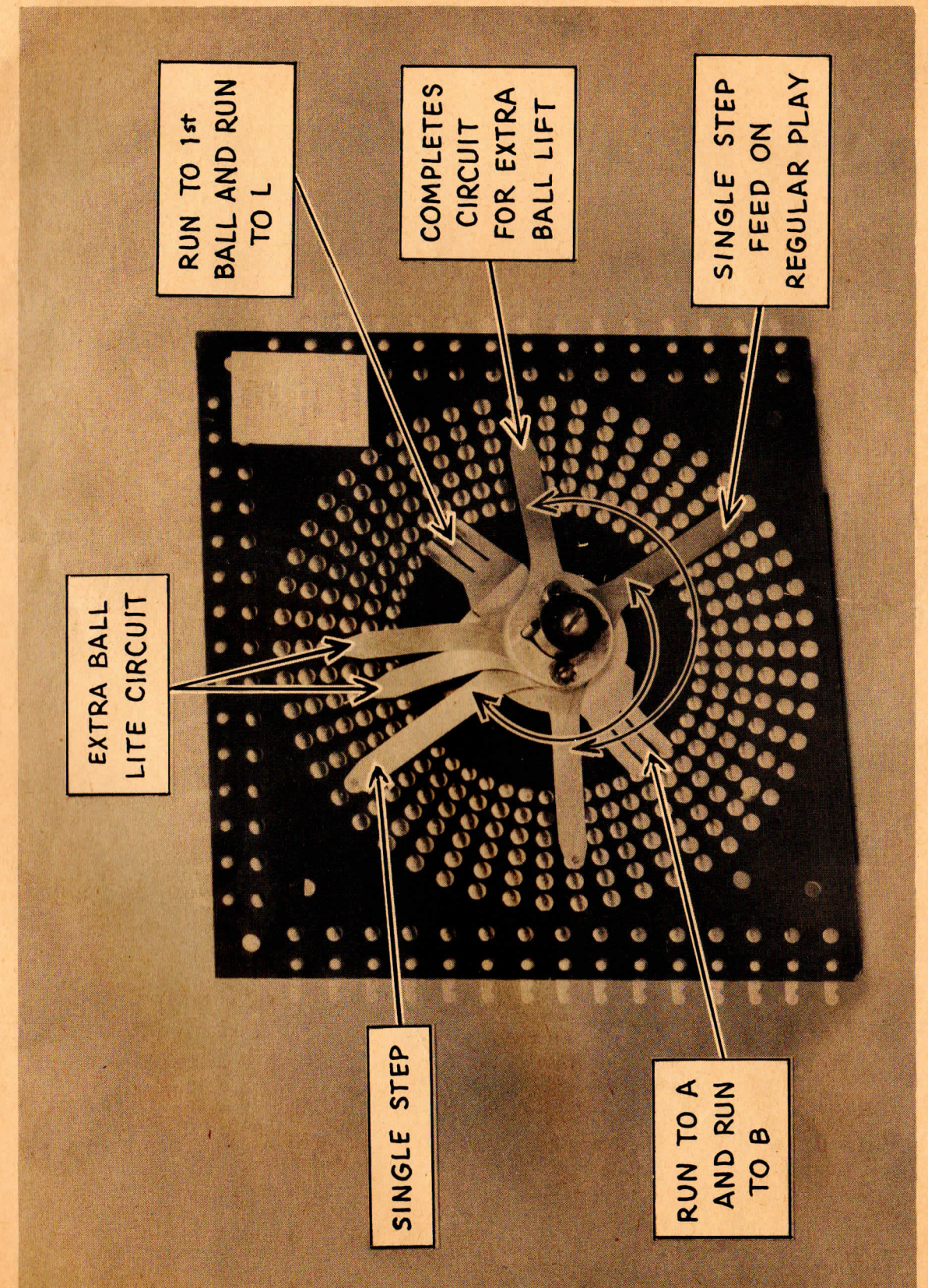
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EXTRA BALL UNIT — SWITCH SIDE



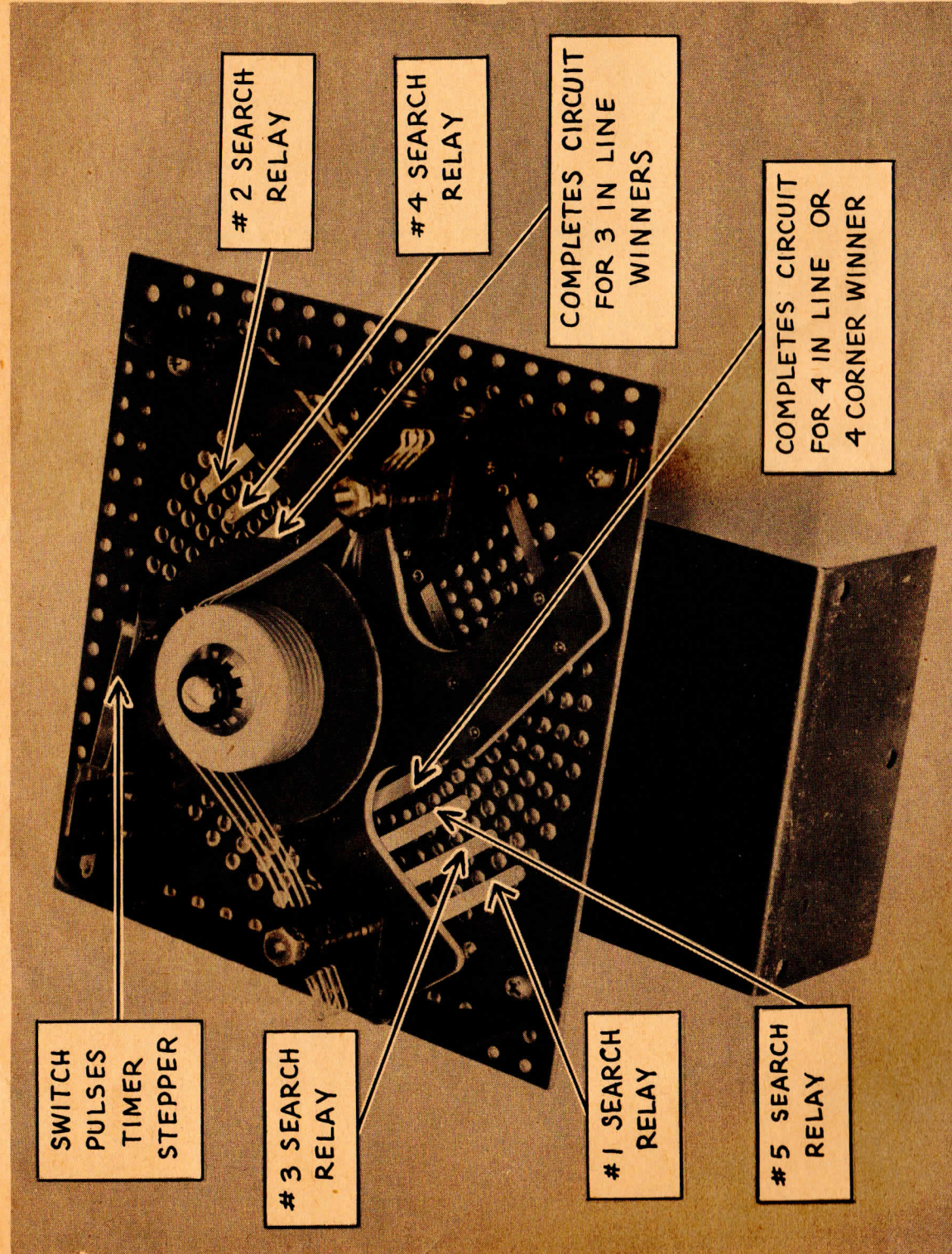
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EXTRA BALL UNIT — WIPER SIDE



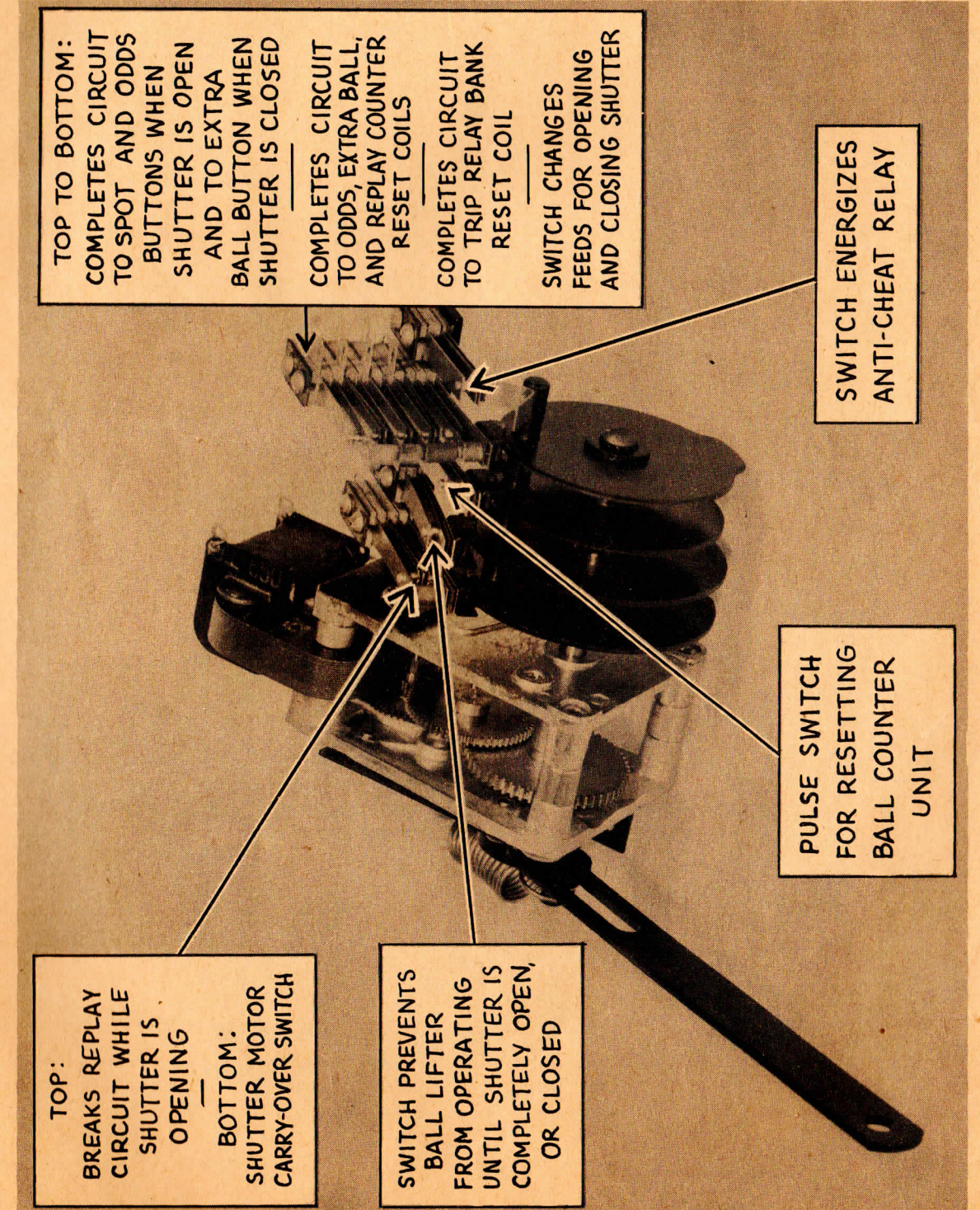
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SEARCH UNIT DISC



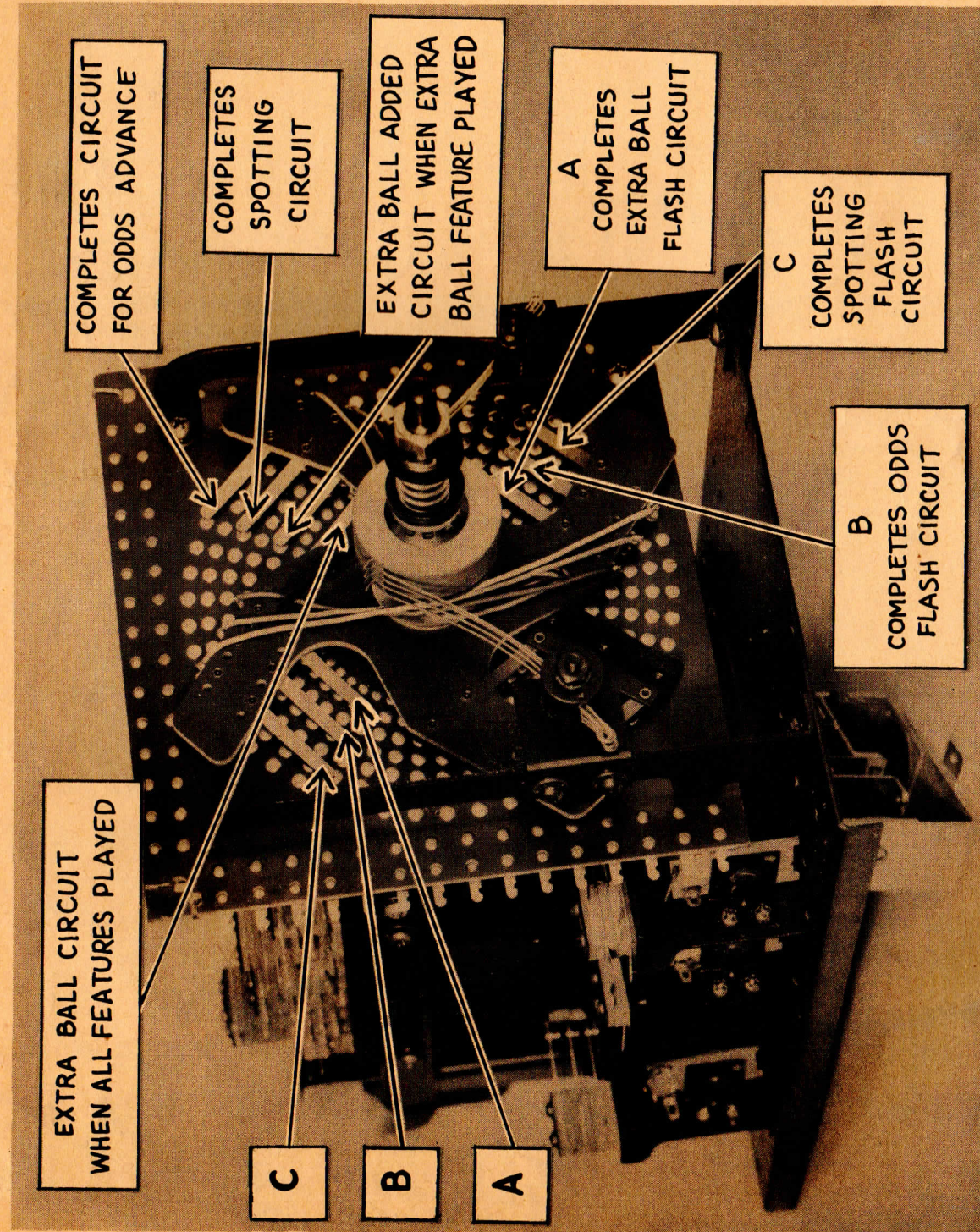
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SHUTTER MOTOR



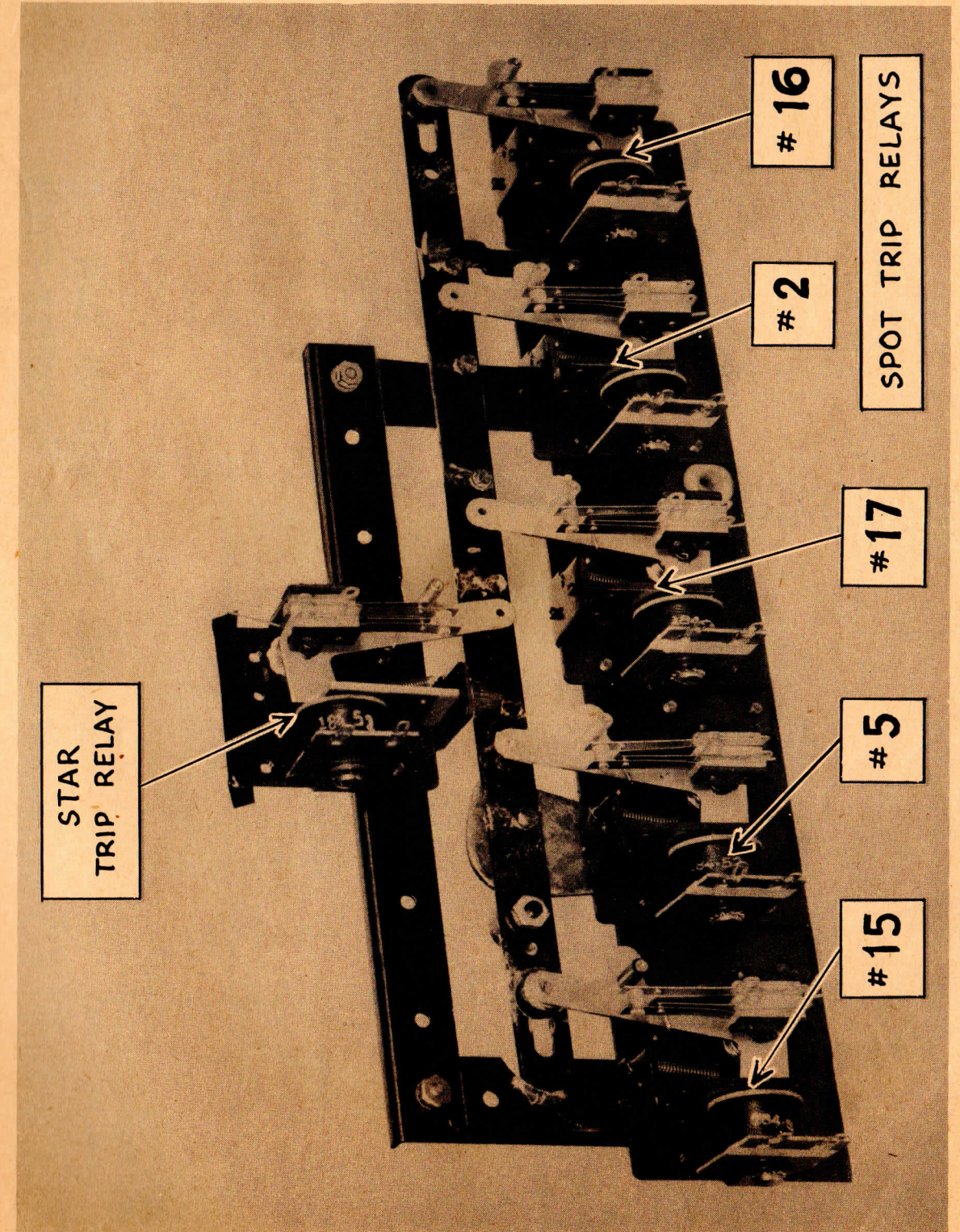
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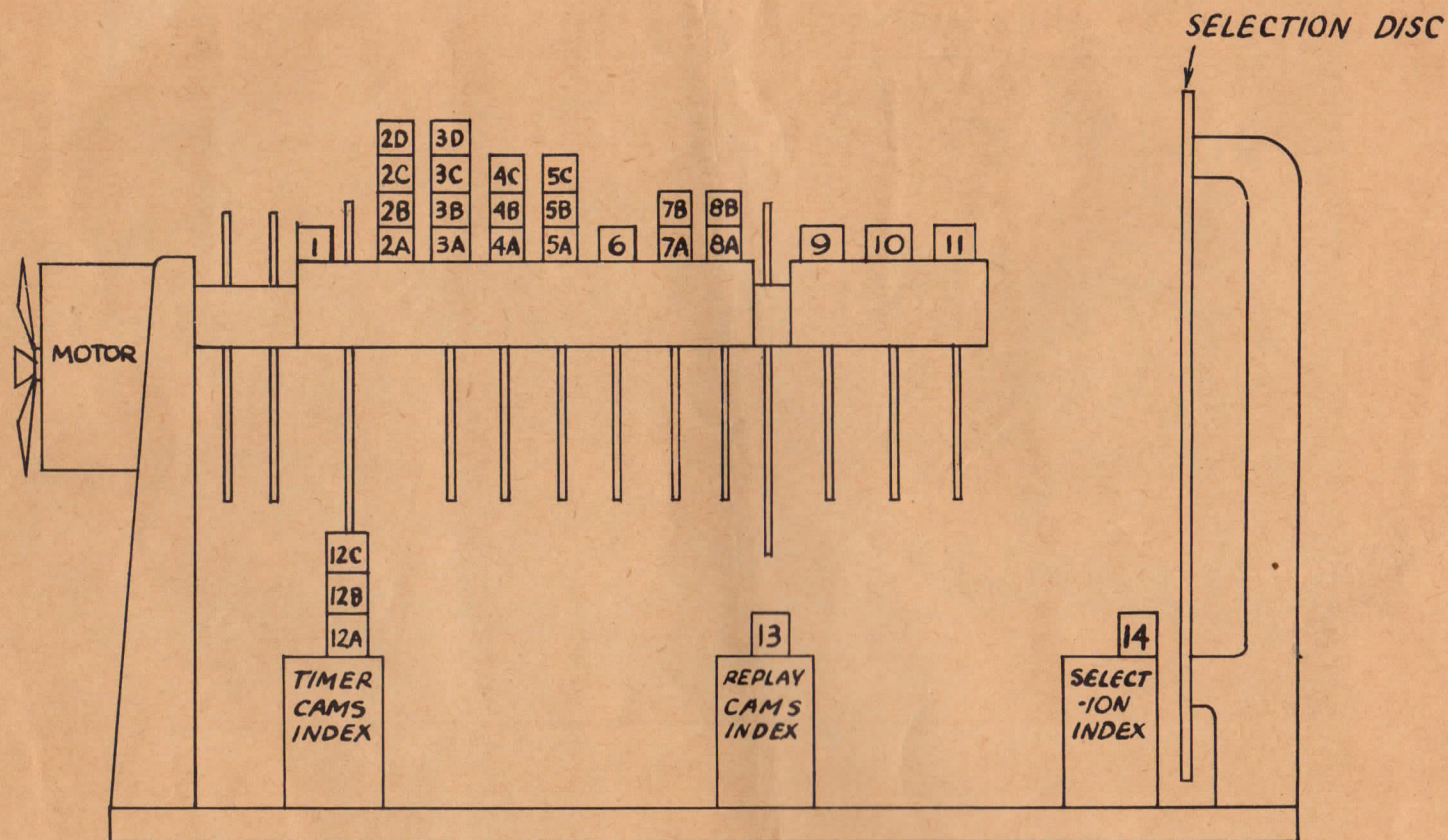
CONTROL UNIT SELECTION DISC



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TRIP RELAY BANK





CONTROL UNIT PICTORIAL VIEW
NUMBERS CORRESPOND TO SWITCH CHART

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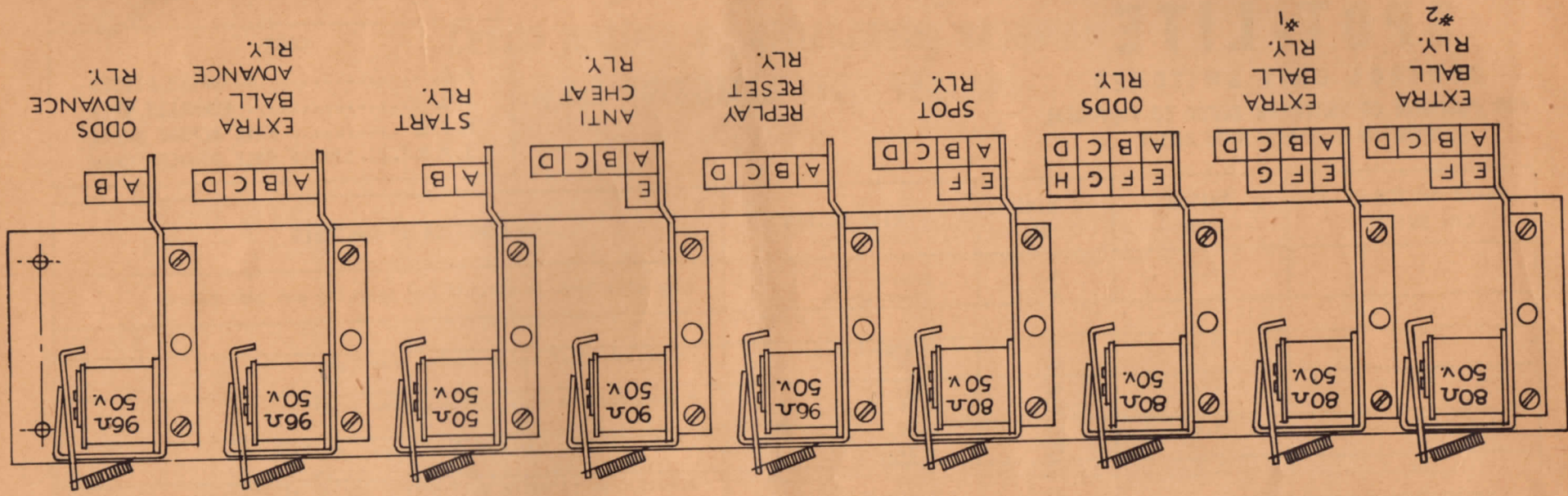
CONTROL UNIT SWITCHES

FOR POSITION OF SWITCHES REFER TO PICTORIAL
VIEW OF CONTROL UNIT ABOVE

CODE

N.C. NORMALLY CLOSED
N.O. NORMALLY OPEN
M.B.B. MAKE BEFORE BREAK
S.P.D.T.... SINGLE POLE DOUBLE THROW

RELAY SWITCH OR CAM SWITCH	SWITCH CODE	WIRE NO.	WIRE COLORS	FUNCTION OF SWITCHES
1	N.C.	60 45	Brown Green-White	Completes lock-in circuit for spotting and odds relays.
2A	N.C.	78-6 50	Orange-Black White	Drops out start relay during start spin.
2B	N.C.	91 57	Gray-Red White-Orange	Breaks feed to odds button during start spin.
2C	N.C.	57 75	White-Orange Orange-White	Breaks feed to spotting button during start spin.
2D	N.C.	20-4 83-3	Blue Black-Yellow	Breaks feed to extra ball button during start spin.
3A	N.O.	50 63	White Brown-Yellow	Energizes selection and odds extra step index coils.
3B	N.O.	90 71-2	Gray Orange-Red	Completes circuit for odds flash.
3C	N.O.	98-7 15-3	Gray-Black Red-White	Completes circuit for spotting flash.
3D	N.O.	93-6 41-8	Gray-Yellow Green-Red	Completes circuit for extra ball flash.
4A	N.O.	61-6 50	Brown-Red White	Completes circuits to reflex play magnet, replay register, odds, replay counter and extra ball unit reset coils.
4B	N.O.	10 P 50 P	Red (Plastic) White (Plastic)	Completes circuit for energizing trip relay reset coil.
4C	N.O.	50 98	White Gray-Black	Energizes timer unit reset coil.
5A	N.O.	81-3 83-1	Black-Red Black-Yellow	Completes circuit to spot trip relays.
5B	N.O.	23-3 38-3	Blue-Yellow Yellow-Black	Completes circuit for extra ball advantages.
5C	N.O.	21-6 51-3	Blue-Red White-Red	Pulse switch for giving odds guarantee steps.
6	N.C.	80 61-3	Black Brown-Red	Drops out extra ball relays.
7A	N.O.	51-6 38-1	White-Red Yellow-Black	Closes every third complete spin for increasing extra ball advantages.
7B	N.O.	48-2 13-2	Green-Black Red-Yellow	Closes every third complete spin for increasing extra ball advantages.
8A	N.O.	56-1 83-4	White-Brown Black-Yellow	Completes circuit for pulsing extra ball unit step-up coil.
8B	N.O.	27-1 36-6	Blue-Orange Yellow-Brown	Pulse switch for operating replay meter and replay register reset coil when replay reset relay is energized.
9	N.O.	14-2 75-1	Red-Green Orange-White	4 pulse switch for energizing replay counter step-up coil.
10	N.O.	14-2 25-1	Red-Green Blue-White	8 pulse switch for energizing replay counter step-up coil.
11	N.O.	14-2 38-2	Red-Green Yellow-Black	16 pulse switch for energizing replay register and replay counter step-up coils.
12A	N.O.	90 P 60 P	Gray (Plastic) Brown (Plastic)	Completes circuit to control unit motor.
12B	N.O.	63-6 61-3	Brown-Yellow Brown-Red	Prevents extra ball relays from dropping out by pushing play-all button.
13	N.O.	60 P 90 P	Brown (Plastic) Gray (Plastic)	Completes circuit to control unit motor.
14	N.O.	50 74-3	White Orange-Green	Completes circuit to operate shutter motor.



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9-BANK RELAY CHART SEE DIAGRAM ABOVE

CODE

N.C. NORMALLY CLOSED
N.O. NORMALLY OPEN
M.B.B. MAKE BEFORE BREAK
S.P.D.T. SINGLE POLE DOUBLE THROW

RELAY SWITCH OR CAM SWITCH	SWITCH CODE	WIRE NO.	WIRE COLORS	FUNCTION OF SWITCHES
EXTRA BALL RELAY #2		70 23-2	Orange Blue-Yellow	Energized when extra ball button is played.
A	S.P.D.T.	93-6 74-1 71-1	Gray-Yellow Orange-Green Orange-Red	Normally completes circuit for odds flash lites. Completes circuit for extra ball flash lites when energized.
B	N.O.	61-3 23-2	Brown-Red Blue-Yellow	Completes lock-in circuit for extra ball relays.
C	N.O.	98-4 45-3	Gray-Black Green-White	Completes circuit to extra ball advance relay.
D	N.C.	98-3 54-6	Gray-Black White-Green	Breaks circuit to odds unit, extra ball unit, and replay counter reset coils when extra ball feature is played.
E	N.C.	40 P 30 P	Green (Plastic) Yellow (Plastic)	Breaks circuit to trip relay bank reset coil when extra ball feature is played.
F	N.C.	15-3 40-2	Red-White Green	Breaks circuit to corner lite flash when extra ball feature is played.
EXTRA BALL RELAY #1		70 23-2	Orange Blue-Yellow	Energized when extra ball button is played.
A	N.C.	27-3 74-3	Blue-Orange Orange-Green	Breaks circuit to shutter motor when extra ball feature is played.
B	N.C.	78-3 81-3	Orange-Black Black-Red	Breaks circuit to spot trip relays when extra ball feature is played.
C	N.C.	13-6 85	Red-Yellow Black-White	Breaks circuit to odds advance when extra ball feature is played.
D	N.O.	83-4 38-3	Black-Yellow Yellow-Black	Completes circuit to second wiper for increasing advantages of extra balls when that feature is played.
E	N.C.	40-1 21-6	Green Blue-Red	Break circuit to odds unit step-up coil when extra ball feature is played.
F	N.C.	41 51-1	Green-Red White-Red	Completes circuit to start relay when replay register is off zero position.
G	S.P.D.T.	36-3 45-3 93-3	Yellow-Brown Green-White Gray-Yellow	Normally completes circuit from reflex unit to spot trip relays and odds advance relay, when energized makes circuit through mixer discs for extra ball advance.
ODDS RELAY		70 56	Orange White-Brown	Energized when odds feature button is played.
A	N.C.	81-1 27-6	Black-Red Blue-Orange	Breaks circuit to spot relay when odds feature is played.
B	N.O.	56 61	White-Brown Brown-Red	Completes lock-in circuit of odds relay.
C	N.O.	43-2 85	Green-Yellow Black-White	Completes circuit to odds advance relay to increase probabilities when odds feature is played.
D	N.O.	41 51-1	Green-Red White-Red	Completes circuit to start relay when replay register is off zero position.
E	N.C.	98-4 48-3	Gray-Black Green-Black	Breaks circuit to odds advance and spot trip relays when odds feature is played.
F	N.C.	10 40-2	Red Green	Breaks circuit to corner lites flash when odds feature is played.
G	S.P.D.T.	78 15-7 57-1	Orange-Black Red-White White-Orange	Normally completes circuit to advance odds unit at least 2 steps when play-all button is played and completes circuit to advance odds at least 3 steps when odds feature is played.
SPOT RELAY		70 81-1	Orange Black-Red	Energized when spotting feature button is played.
A	S.P.D.T.	27-6 83 61	Blue-Orange Black-Yellow Brown-Red	Normally completes lock-in circuit for odds relay. Completes lock-in circuit to spot relay when energized.
B	N.O.	41 51-1	Green-Red White-Red	Completes circuit to start relay when replay register is off zero position.
C	N.O.	45-3 98-4	Green-White Gray-Black	Completes circuit for increasing spot probabilities when spotting feature is played.
D	N.C.	71-1 90	Orange-Red Gray	Breaks circuit to odds flash when spotting feature is played.
E	N.C.	40 15-7	Green Red-White	Breaks circuit for odds guarantee advance when spotting feature is played.
F	N.C.	36-3 13-6	Yellow-Brown Red-Yellow	Breaks circuit to odds advance when spotting feature is played.
REPLAY RESET RELAY		70 36-6	Orange Yellow-Brown	Energized when replay reset button is operated or when 110 plug is removed and plugged in again if replay register is off zero position.
A	N.C.	51-1 75-4	White-Red Orange-White	Prevents start relay from being energized while replays are being reset.
B	S.P.D.T.	27-1 25 61-6	Blue-Orange Blue-White Brown-Red	Normally completes circuit to replay register reset coil for taking off 1 replay at a time. When energized it places the replay register reset coil in parallel with the replay meter.
C	N.O.	41 36-6	Green-Red Yellow-Brown	Locks replay reset relay in until replay register is reset to zero.
D	N.O.	60-P 90-P	Brown (Plastic) Gray (Plastic)	Completes circuit to control unit motor while replays are re-setting.
ANTI-CHEAT RELAY		70 43-6	Orange Green-Yellow	Energized by pulse switch on shutter motor assembly.
A	N.C.	36-6 41	Yellow-Brown Green-Red	Completes circuit to replay reset relay when 110 is cut off and then turned on again.
B	N.O.	43-6 50	Green-Yellow White	Locks in anti-cheat relay and completes majority of 50 volt circuit.
C	N.O.	18 21	Gray-Black Blue-Red	Completes 17 volt circuit.
D	N.O.	14-6 80	Red-Green Brown-White	Completes 6 volt circuit.
E	N.C.	81 27-3	Black-Red Blue-Orange	Completes circuit to shutter motor if 110 is turned off while shutter is in latched position.
START RELAY		70 31-3	Orange Yellow-Red	Energized at beginning of every play.
A	N.O.	50 52	White White-Blue	Energizes timer cam index and mixer latch coils.
B	N.O.	51-1 78-6	White-Red Orange-Black	Lock-in switch for start relay.
EXTRA BALL ADVANCE RELAY		70 85-3	Orange Black-White	Energized when circuit completes through mixer, control unit and extra ball counter discs.
A	N.C.	83-4 56-7	Black-Yellow White-Brown	Breaks circuit for single step on extra ball unit during extra ball run.
B	N.O.	60-P 90-P	Brown (Plastic) Gray (Plastic)	Completes circuit to control unit motor.
C	N.O.	60	Brown	Locks extra ball advance relay in until extra ball unit ad-

A	S.P.D.T.	93-6 74-1 71-1	Gray-Yellow Orange-Green Orange-Red	Normally completes circuit for odds flash lites. Completes circuit for extra ball flash lites when energized.
B	N.O.	61-3 23-2	Brown-Red Blue-Yellow	Completes lock-in circuit for extra ball relays.
C	N.O.	98-4 45-3	Gray-Black Green-White	Completes circuit to extra ball advance relay.
D	N.C.	98-3 54-6	Gray-Black White-Green	Breaks circuit to odds unit, extra ball unit, and replay counter reset coils when extra ball feature is played.
E	N.C.	40 P 30 P	Green (Plastic) Yellow (Plastic)	Breaks circuit to trip relay bank reset coil when extra ball feature is played.
F	N.C.	15-3 40-2	Red-White Green	Breaks circuit to corner lite flash when extra ball feature is played.
EXTRA BALL RELAY #1		70 23-2	Orange Blue-Yellow	Energized when extra ball button is played.
A	N.C.	27-3 74-3	Blue-Orange Orange-Green	Breaks circuit to shutter motor when extra ball feature is played.
B	N.C.	78-3 81-3	Orange-Black Black-Red	Breaks circuit to spot trip relays when extra ball feature is played.
C	N.C.	13-6 85	Red-Yellow Black-White	Breaks circuit to odds advance when extra ball feature is played.
D	N.O.	83-4 38-3	Black-Yellow Yellow-Black	Completes circuit to second wiper for increasing advantages of extra balls when that feature is played.
E	N.C.	40-1 21-6	Green Blue-Red	Break circuit to odds unit step-up coil when extra ball feature is played.
F	N.C.	41 51-1	Green-Red White-Red	Completes circuit to start relay when replay register is off zero position.
G	S.P.D.T.	36-3 45-3 93-3	Yellow-Brown Green-White Gray-Yellow	Normally completes circuit from reflex unit to spot trip relays and odds advance relay, when energized makes circuit through mixer discs for extra ball advance.
ODDS RELAY		70 56	Orange White-Brown	Energized when odds feature button is played.
A	N.C.	81-1 27-6	Black-Red Blue-Orange	Breaks circuit to spot relay when odds feature is played.
B	N.O.	56 61	White-Brown Brown-Red	Completes lock-in circuit of odds relay.
C	N.O.	43-2 85	Green-Yellow Black-White	Completes circuit to odds advance relay to increase probabilities when odds feature is played.
D	N.O.	41 51-1	Green-Red White-Red	Completes circuit to start relay when replay register is off zero position.
E	N.C.	98-4 48-3	Gray-Black Green-Black	Breaks circuit to odds advance and spot trip relays when odds feature is played.
F	N.C.	10 40-2	Red Green	Breaks circuit to corner lites flash when odds feature is played.
G	S.P.D.T.	78 15-7 57-1	Orange-Black Red-White White-Orange	Normally completes circuit to advance odds unit at least 2 steps when play-all button is played and completes circuit to advance odds at least 3 steps when odds feature is played.
SPOT RELAY		70 81-1	Orange Black-Red	Energized when spotting feature button is played.
A	S.P.D.T.	27-6 83 61	Blue-Orange Black-Yellow Brown-Red	Normally completes lock-in circuit for odds relay. Completes lock-in circuit to spot relay when energized.
B	N.O.	41 51-1	Green-Red White-Red	Completes circuit to start relay when replay register is off zero position.
C	N.O.	45-3 98-4	Green-White Gray-Black	Completes circuit for increasing spot probabilities when spotting feature is played.
D	N.C.	71-1 90	Orange-Red Gray	Breaks circuit to odds flash when spotting feature is played.
E	N.C.	40 15-7	Green Red-White	Breaks circuit for odds guarantee advance when spotting feature is played.
F	N.C.	36-3 13-6	Yellow-Brown Red-Yellow	Breaks circuit to odds advance when spotting feature is played.
REPLAY RESET RELAY		70 36-6	Orange Yellow-Brown	Energized when replay reset button is operated or when 110 plug is removed and plugged in again if replay register is off zero position.
A	N.C.	51-1 75-4	White-Red Orange-White	Prevents start relay from being energized while replays are being reset.
B	S.P.D.T.	27-1 25 61-6	Blue-Orange Blue-White Brown-Red	Normally completes circuit to replay register reset coil for taking off 1 replay at a time. When energized it places the replay register reset coil in parallel with the replay meter.
C	N.O.	41 36-6	Green-Red Yellow-Brown	Locks replay reset relay in until replay register is reset to zero.
D	N.O.	60-P 90-P	Brown (Plastic) Gray (Plastic)	Completes circuit to control unit motor while replays are re-setting.
ANTI-CHEAT RELAY		70 43-6	Orange Green-Yellow	Energized by pulse switch on shutter motor assembly.
A	N.C.	36-6 41	Yellow-Brown Green-Red	Completes circuit to replay reset relay when 110 is cut off and then turned on again.
B	N.O.	43-6 50	Green-Yellow White	Locks in anti-cheat relay and completes majority of 50 volt circuit.
C	N.O.	18 21	Gray-Black Blue-Red	Completes 17 volt circuit.
D	N.O.	14-6 80	Red-Green Brown-White	Completes 6 volt circuit.
E	N.C.	81 27-3	Black-Red Blue-Orange	Completes circuit to shutter motor if 110 is turned off while shutter is in latched position.
START RELAY		70 31-3	Orange Yellow-Red	Energized at beginning of every play.
A	N.O.	50 52	White White-Blue	Energizes timer cam index and mixer latch coils.
B	N.O.	51-1 78-6	White-Red Orange-Black	Lock-in switch for start relay.
EXTRA BALL ADVANCE RELAY		70 85-3	Orange Black-White	Energized when circuit completes through mixer, control unit and extra ball counter discs.
A	N.C.	83-4 56-7	Black-Yellow White-Brown	Breaks circuit for single step on extra ball unit during extra ball run.
B	N.O.	60-P 90-P	Brown (Plastic) Gray (Plastic)	Completes circuit to control unit motor.
C	N.O.	60 38-3	Brown Yellow-Black	Locks extra ball advance relay in until extra ball unit advances to open position.
D	N.O.	60 83-4	Brown Black-Yellow	Completes circuit for energizing extra ball unit step-up coil.
ODDS ADVANCE RELAY		70 85-1	Orange Black-White	Energized when circuit completed through control, mixer, and odds unit discs.
A	N.O.	60-P 90-P	Brown (Plastic) Gray (Plastic)	Completes circuit for control unit motor.
B	N.O.	85-1 48-1	Black-White Green-Black	Locks odds advance relay in during odds run.