

## #1027 "WIZARD"

## INSTALLATION AND GENERAL GAME OPERATION INSTRUCTIONS

INSTALLATION

On all games there are certain items that should be checked after shipment. These are visual inspections which may avoid time consuming service work later. Minor troubles caused by abusive handling in shipment are unavoidable. Cable plugs and sockets may be loosened, switches (especially tilt switches) may go out of adjustment. Plumb bob tilt switches should always be adjusted after game is set on location and leg levelers are adjusted.

Visual inspections before plugging in line cord:

1. Check that all cable plugs are firmly seated in proper sockets.
2. Check that cables are clear of all moving parts and relays.
3. Check for any wires that may have become disconnected.
4. Check switches for loose solder or other foreign material that may have come loose in shipment and could cause shorting of contacts.
5. Check wires on relay coils for proper soldering, especially the bare (common) wire connecting a row of relay coils. Cold solder connections may not show up in factory inspection, but vibration in shipment may break contact.
6. Check that fuses are firmly seated and making good contact.
7. Check (manually) the stepping and resetting of all step up units. The wiper action should not be sluggish.
8. Check transformer for any foreign material shorting across wiring lugs.
9. Check wiring of transformer to correspond to location voltage. (Transformer wiring card in front cabinet.)

Before line cord is plugged in: -

Check all plugs and sockets and dress cables:

- A. Plugs in correct sockets.
- B. Plugs in securely seated in sockets.
- C. Dress cables away from relays.

Check adjustment of the three (normally open) tilt switches:

- (A) Panel tilt on bottom of playfield panel.
- (B) Plumb-bob tilt on left side of cabinet near front door.
- (C) Ball tilt above plumb-bob tilt.  
Insert the smaller ball (15/16" dia.) into the ball tilt assembly, and adjust the bracket so the ball will roll free to contact the switch blade, if front of cabinet is raised.

Plug in line cord:

Check adjustment of the (normally open) kick-off switch at rear of cabinet mounting board, near cable plugs. Check adjustment of the (normally open) anti-slam switch, or front door. If either of these switches is closed, the delay relay is energized momentarily.

#### GENERAL GAME OPERATION:

Place ball into playfield by out hole.

Coin game:

If coin should be rejected, move on-off master switch at bottom right front corner of cabinet to "on" position, then coin game. Coin lock out device rejects all coins when power (master switch) is off. Also check the delay relay. If this relay is energized, the game will not accept coins.

- 1A. If coin is inserted in 1st (nickel) coin chute and game is conditioned for 1 play-5¢, it will energize the coin relay. If game is conditioned for 1 play-10¢, the first coin inserted will advance the 2 coin unit, then second coin inserted will energize the coin relay thru the 2 coin unit switch. (See 1st coin chute adjustment plug positions on game adjustment sheet).
- 1B. If coin is inserted in 2nd (dime) coin chute and game is conditioned for 1 play-10¢, it will energize the coin relay. If game is conditioned for 2 play-10¢, it will energize the 2nd coin chute relay and 2nd coin chute relay will advance the credit unit (2 steps) thru the credit circuit. (See 2nd coin chute adjustment plug positions on game adjustments sheet).
- 1C. If coin is inserted in 3rd (quarter) coin chute and game is conditioned for 2-3-4-5 or 6 plays-25¢, it will energize the 3rd coin chute relay and the 3rd coin chute relay will advance the credit unit (2-3-4-5-6 steps) thru the credit circuit. (See 3rd coin chute adjustment plug positions on game adjustment sheet.)

- 1D. When the credit unit has been advanced from 2nd or 3rd coin chute, (as described in section 1B and 1C) the front door credit button switch, (when actuated) will energize the credit relay and then the credit relay will energize coin relay.
- 2A. The coin relay, when energized by any of the ways described (in sections 1A thru 1D) will stay energized thru its own hold-in switch and (normally closed) #8 score motor switch.
- 2B. The coin relay will energize the lock relay which stays energized thru its own hold in switch and a delay relay switch.
- 2C. The coin relay will energize the reset relay thru a game over relay switch, operate the score motor and then thru normally open #2 and #11 score motor switches, energize the #1 and #2 score reset relays. The reset relay will operate the score motor. Both the reset and the score reset relays will be energized thru a normally closed #8 score motor switch, or until all score counter units are reset to zero position.
- 2D. The coin relay, thru a normally open #3 score motor switch will advance the total play meter, and thru the reset relay will reset the coin unit, ball count unit and the player up unit. The coin relay will also reset the credit unit, (1 step) when energized by the credit button. Thru a normally open #4 score motor switch, it will energize the game over relay latch coil, and thru a normally open #7 score motor switch, it will energize the four 100,000 relay latch coils.
- 3A. A ball on the outhole switch, at the start of game will energize the outhole relay thru a normally closed #1 score motor switch, and it will stay energized thru its own hold-in and a normally closed #10 score motor switch. For operations after the first ball, see under heading "Sequence of Operation".
- 3B. When the outhole relay is energized, it will operate the score motor and then energize the outhole kicker solenoid thru a normally open #7 score motor switch. The ball will be kicked thru the ball trough to the shooter alley. The game is ready for the first player to play.
- 3C. To condition the game for 2nd player, inserting coin(s) or use the credit button before the 1st ball is played, it will energize the coin relay again. This time, the coin relay will not energize the reset relay. It will operate the score motor, advance the total play meter, subtract a credit from credit unit, (if credit button was used) and advance the coin unit thru a normally open #3 score motor switch. The game is now set for 2 players; repeating this sequence will set game for 3rd player and 4th player.

## SEQUENCE OF OPERATION:

- 1A. When a ball is played, the ball index relay will be energized then the 10 point, 100 point or 1,000 point score relay and it will stay energized thru its own hold in switch and normally closed #6 score motor switch and a normally closed outhole relay switch.
- 1B. When the ball goes into the outhole:
- A. The bonus score relay is energized and operates the score motor to add the bonus score to the total score of the player. When the scoring is completed, this bonus score relay is de-energized and the outhole relay is energized. The outhole relay will remain energized thru its own lock in switch until the normally closed #8 score motor cam switch opens.
- B. The outhole relay will advance the player up unit thru #4 score motor cam switch, if more than one player is playing and no extra ball has been scored.
- C. The outhole relay will advance the ball count unit thru #3 score motor cam switch after the last eligible player has played if no extra ball was earned, the extra ball must be played off before the ball count unit will advance. When the ball count unit has advanced, the player up unit will reset thru #4 score motor cam switch.
- D. The outhole relay when energized will operate the score motor and thru #7 score motor cam switch it will energize the outhole kicker solenoid which will eject the ball from the outhole to the shooter alley. The outhole relay thru another #7 score motor cam switch will advance the bonus unit from zero to 1,000 position. The outhole relay when energized will de-energize the ball index relay, the extra ball relay and the tilt relay.

FEATURE OPERATION AND SCORING

## BONUS SCORE FEATURE:

A bonus score of 1,000 to 19,000 may be scored. The game starts with a bonus score of 1,000. The bonus score advances one step at a time thru the #1 and #4 flag top roll over buttons when lit; #1, #2, #3 and #4 flag targets when lit; the advance bonus targets and the center target, thru the left and right ball return lane roll-overs; and thru the right feature lane (one advance for each lit roll-over button). It also advances three steps when the ball goes into the top hole. When the ball goes into the outhole, the bonus score lit, is added to the player's total score. If the double bonus lite is lit, twice the bonus score lit is added to the player's total score. The double bonus lite is lit by the ball going thru the right feature lane when the 3rd flag is flipped. A tilt nullifies the bonus score. The double bonus lite goes out at the end of a game, when the ball goes into the outhole after the bonus score is collected and when the game is tilted.

**EXTRA BALL FEATURE:**

The game will award an extra ball when the extra ball roll-over is collected when lit. The roll-over lite is lit when a bonus score of 19,000 is registered. Only one extra ball is awarded at any one time; (the extra ball earned must be played off before another extra ball can be scored). The game is adjustable to award an extra ball when a pre-adjusted hi-score is registered or thru the special feature (see below).

**SPECIAL FEATURE:**

The "Special" award is scored when the ball hits the lower right target when the special lite is lit. The "special" lite is lit when a pre-set bonus score of 19,000 is registered. The special award is adjustable to score a credit or an extra ball.

**SPINNER FEATURE:**

The spinner is located at the entrance of the left alley. Each spin scores 10 or 100 when the spinner lite is lit. To lite the spinner lite, the ball must enter the right feature lane when the 4th flag is flipped. The spinner lite goes out at the end of a game, when the ball goes into the outhole and when the game is tilted.

**CENTER TARGET FEATURE:**

The center target advances the bonus once always and scores 300 or 3000 when lit. To lite the center target, the ball must enter the right feature lane when the 2nd flag is flipped. The center target lite goes out at the end of a game, when the ball goes into the outhole and when the game is tilted.

**THUMPER BUMPER LITE FEATURE:**

The top thumper bumper is always lit and scores 100. The lower left thumper bumper and right thumper bumper are lit by the ball entering the right feature lane when the 1st flag is flipped. The left and right lower thumper bumpers score 10 or 100 when lit. The lites go out at the end of a game, when the ball goes into the outhole and when the game is tilted.

**RIGHT FEATURE LANE:**

Each of the four (4) buttons score 100 points at all times. For each flag flipped towards the roll over button lane, the corresponding button lights up. A ball entering the right feature lane and going over the first roll over button will: 1) Score 100 point, 2) advance the bonus score once for each flipped flag, 3) lite-up the indicated playfield feature for each flag (printed on each flag), 4) return each flag to its start-of-ball position (away from roll over button lane). Roll over buttons for flags #2 and 3 and 4 score 100 points only. Flags return to starting position at the start of a game in the outhole after a tilt and at the start of a new ball-in-play and when the playfield ball collects the indicated features.

GAME ADJUSTMENTSPLAYFIELD PANEL POST ADJUSTMENTS:

Posts that control left and right outlane opening on panel (see panel sketch) can be moved to make access to outlanes easier or harder for ball to enter.

Easier entry will decrease playing time and scoring.

Harder entry will increase playing time and scoring.

HI SCORE ADJUSTMENT PLUG:

Located on back box lite insert. This plug provides a wide range of coverage at which hi score credits can be scored. (See the score adjustment card in back box for plug positions).

MATCH FEATURE ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to operate match feature on or off.

HI SCORE FEATURE ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to award hi score credit or extra ball.

BALLS PER GAME ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to operate game on 5 ball or 3 ball play.

1ST COIN CHUTE ADJUSTMENT PLUG:

Located on the 2 coin unit, on front cabinet mounting board. This plug provides positions to give 1 play for 1 coin or 1 play for 2 coins thru the 1st (nickel) coin chute.

2ND COIN CHUTE ADJUSTMENT PLUG:

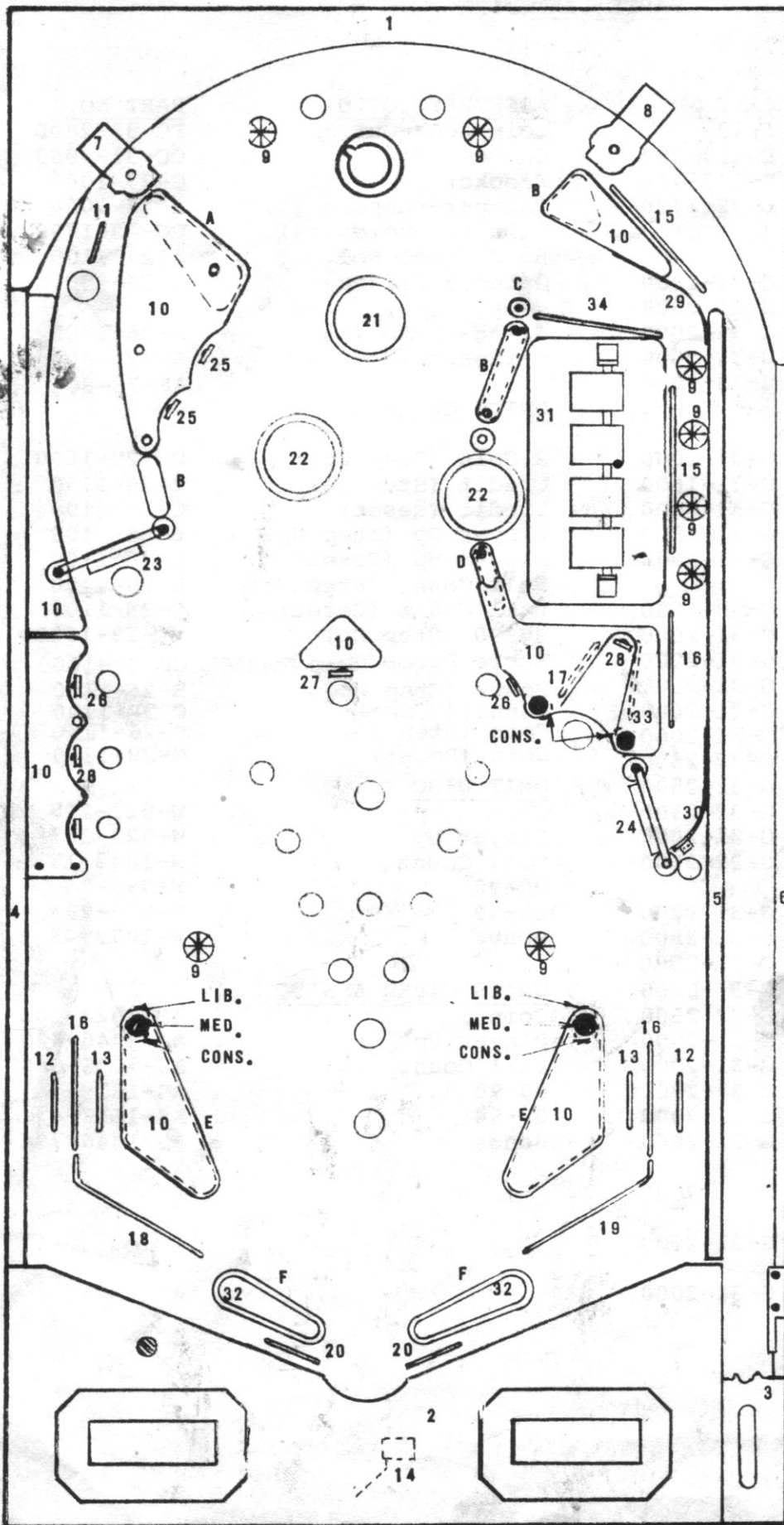
Located on front cabinet mounting board. This plug provides positions to give 1 play for 1 coin or 2 plays for 1 coin thru the 2nd (dime) coin chute. NOTE: When this plug is set for 2 plays-1 coin, brown-white (male plug) wire on 3rd coin chute adjustment must be in position 2.

3RD COIN CHUTE ADJUSTMENT PLUG:

Located on front cabinet mounting board. This plug provides positions to give 2 to 6 plays for 1 coin thru the 3rd (quarter) coin chute. Use orange-white (male plug) wire to set number of credits.

PARTS LIST

<u>MISCELLANEOUS</u>	<u>PART NO.</u>	<u>ASSEMBLY COILS</u>	<u>PART NO.</u>
Transformer	E-122-95	Coin Lock-Out	FC-33-2600
Score Motor (Domestic)	E-119-354	Chimes (3)	CC-31-2000
Score Motor (Export)	E-119-460	Knocker	C-27-1000
Total Play Meter	E-32-1700	Thumper-Bumpers (3)	A-25-1000
		Flip Solenoids (4)	CC-30-1700
		Hold Eject Sol.	A-27-1100
		Outhole Kicker	A-25-950
<u>RELAY COILS</u>			
Coin	G-31-2000		
2nd Coin Chute	G-31-2000		
3rd Coin Chute	G-31-2000	Sling-Shots (2)	A-26-1200
Credit	G-31-2000	Flippers (2)	AF-25-600
Lock	G-33-2800		AF-28-800
100,000 Relays		<u>UNITS COILS</u>	
(trip) (4)		2 Coin (Step Up)	CD-29-1600
(latch) (4)	G-31-2000	Credit (Step Up)	B-26-1100
Delay	G-31-1600	Credit (Reset)	C-28-1100
Hole	G-31-2000	Player Up (Step Up)	B-26-1100
Reset	G-31-2000	Player Up (Reset)	C-28-1100
Game Over (Latch)	G-31-2000	Ball Count (Step Up)	B-26-1100
#1 & #2 score reset		Ball Count (Reset)	C-28-1100
(2)	G-30-1500	00-90 (Step Up)	CD-29-1600
Game Over (Trip)	G-31-2000	Score Drums (Step Up) (16)	CD-29-1600
Player Reset	G-31-2000	Bonus (Step Up)	B-26-1100
Bonus Zero	G-32-2500	Bonus (Reset)	C-28-1100
Bonus Score	G-31-2000	Coin (Step Up)	B-26-1100
Outhole	G-31-2000	Coin (Reset)	C-28-1100
Ball Index	G-32-2500		
Tilt	G-32-2500	<u>UNIT DISC</u>	
Extra Ball	G-32-2500	Coin	W-923-260
Advance Bonus	G-31-2000	Player Up	W-923-207
Double Bonus	G-32-2500	Ball Count	W-1043-17
1,000, 100 & 10		00-90	W-999-28
Point (3)	G-31-2000	00-90	W-999-29
Lite Thumper Bumpers	G-32-2500	Bonus	W-1072-45
Lite Center Target	G-32-2500		
Right Lane	G-31-2000	<u>UNITS WIPER ASS'Y.</u>	
Lite Spinner Lite	G-32-2500	Coin	AS-1024-108
Center Target	G-31-2000	Player Up	AS-1046-620
5000 Pt.	G-31-2000	Ball Count	AS-1046-648
500 Pt.	G-31-2000	00-90	AS-1618-3
Thumper Bumper (3)	G-31-2000	00-90	AS-1618-4
Flips Reset	G-31-2000	Bonus	AS-1046-784
#1, 2, 3, 4 Flip Trip			
(4)	G-31-2000		
#1, 2, 3, 4 Flip Latch			
(4)	G-31-2000		
#1 RE. 2RE, 3RE, 4RE			
(4)	G-31-2000		



RUBBER PARTS

A	R-521-4	2-1/2°
B	R-521-2	1-1/2°
C	R-243-2	5/16
D	R-521-1	1°
E	R-521-5	3°
F	R-406-3	FLIPPER
G	R-243	5/16

PANEL TOP PARTS

1	TOP ARCH	P-5839
2	BOTTOM ARCH	P-5871
3	SHOOTER GAUGE	P-6359
4	SIDE RAIL (L)	CA-1208
5	INSIDE RAIL	CA-1208
6	SIDE RAIL (R)	CA-1208
7	BALL GATE (L)	A-1475
8	BALL GATE (R)	A-1475
9	ROLLOVER BUTTON (8)	C-900
10	PLASTIC SHIELDS (SET)	A-2890
11	ROLLOVER WIRE ASSY.	AS-2806
12	ROLLOVER WIRE ASSY.	AS-2806
13	ROLLOVER WIRE ASSY.	AS-2806
14	BALL RETURN WIRE ASSY.	AS-2806
15	BALL GUIDE WIRE (2)	M-121-2
16	BALL GUIDE WIRE (3)	M-121-1
17	BALL GUIDE WIRE (1)	M-121-5
18	BALL GUIDE WIRE (1)	M-121-2
19	BALL GUIDE WIRE (1)	M-121-4
20	BALL GUIDE WIRE (2)	M-121-5
21	BUMPER CAP (RED)	A-3713
22	BUMPER CAP (YELLOW)	A-3713
23	SPINNER GATE ASSY.	AS-2250
24	BALL GATE ASSY.	AS-2250
25	TARGET & SW. ASSEM. (WHITE)	AS-982-8
26	TARGET & SW. ASSEM. (RED)	AS-982-7
27	TARGET & SW. ASSEM. (YELLOW)	AS-982-7
28	TARGET & SW. ASSEM. (WHITE)	AS-982-8
29	GUIDE RAIL ASSY.	A-3032
30	GUIDE RAIL ASSY.	A-3032
31	FLIP UNIT ASSY.	AS-2807
32	FLIPPER & PIN ASSY.	AS-2214
33	BALL GUIDE WIRE (1)	M-121-2
34	BALL GUIDE WIRE	M-121-6

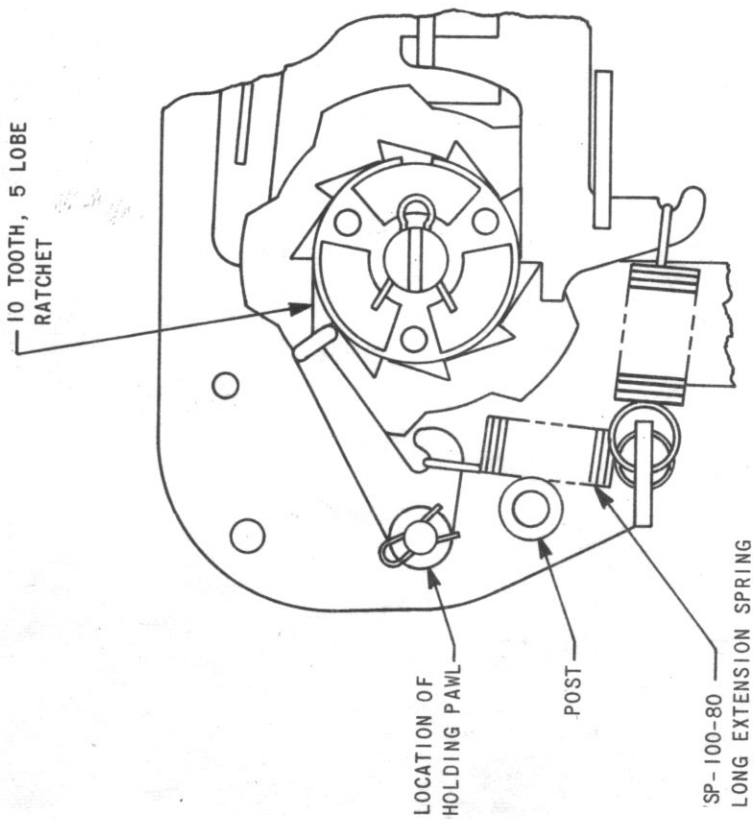
● INDICATES MOVABLE POSTS FOR PLAYFIELD ADJUSTMENTS  
 CONS. - CONSERVATIVE  
 MED. - MEDIUM  
 LIB. - LIBERAL



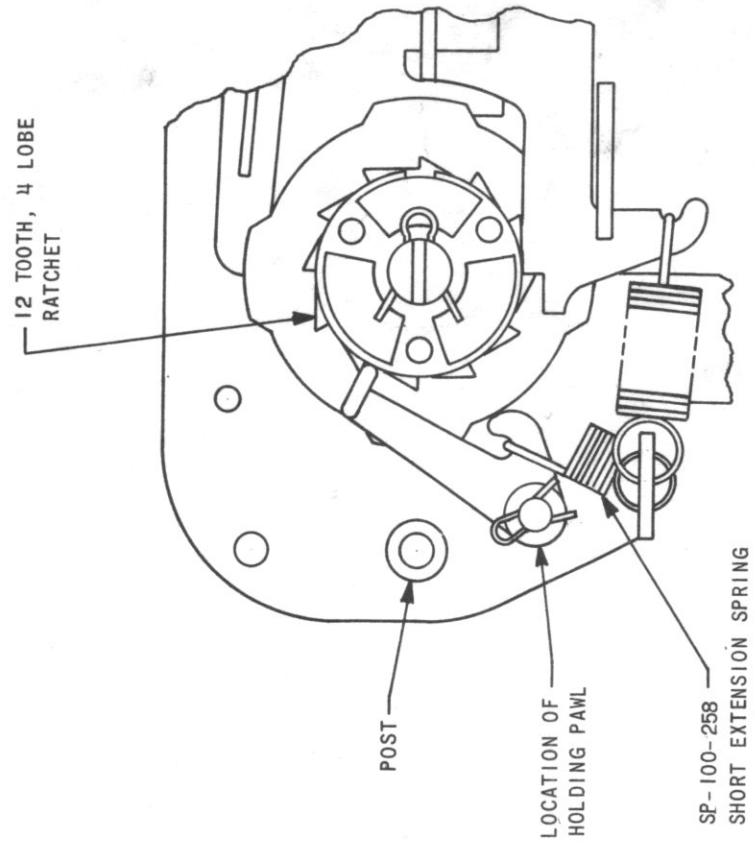
## TIME DELAY CIRCUIT

Purpose of the time delay circuit is to prevent unnecessary abuse of the machine it is installed in.

The time delay relay is energized anytime one of the slam switches are made to contact. There are two factory installed slam switches, one on the front door and one on the mechanism mounting board. (Any number of slam switches could be installed by the operator, to meet his individual requirement). The switches should be adjusted to have approximately 1/16" gap between the contacts. The weighted blade should be adjusted to attain the desired sensitivity. Decreasing the gap between contacts will make switch more sensitive. Opening the gap will reduce sensitivity. The total time the delay relay is energized can be varied by changing the #455 lite bulb mounted on the delay relay frame. If unable to get a short enough time of delay, get a Westinghouse #455 bulb; these units are considerably faster. If still unable to bring the time down, check the location voltage. It should not be under 49.5 V.A.C. on the transformer secondary.



2 COINS PER PLAY  
ALTERNATOR ASSEMBLY



3 COINS PER PLAY  
ALTERNATOR ASSEMBLY