SLOT MACHINE PRESENTATION

During the late 1890's in San Francisco, Charles Fey perfected the first slot machine by adding three wheels that flashed symbols of playing cards through a window. Next, using more springs, cams and levers, Fey contrived a mechanism that allowed the reels to stop in succession, creating an atmosphere of suspense. With over a thousand different possible combinations and a 75.6% payout of money played (meaning the owner kept 24.4%), Fey's contraption known as the "Bell" (because of the Bell Symbols) became the standard archetype for slot machines.

Slot innovation continued in the twentieth century. During the 1920s, slots were revamped to accept quarters and even silver dollars. Sometimes skill elements were added, such as buttons that allowed the player to attempt to stop each specific reel at a moment of his or her choosing. Most importantly, the concept of the jackpot was incorporated. Windows showing a buildup of coins (Escalator) proved to be effective bait for many players.

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The traditional slot machines which were in use in casinos until the mid 1980's, (and still some today, but rare) were mechanical in operation. The typical slot machine had three reels that spun to determine the outcome of any handle pull.

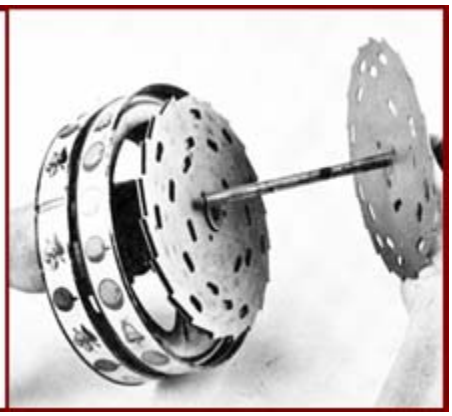
Slot Machine "Fruit" Reels AKA…Pay Strips

Each reel had 20 or 22 symbols. (Cherries, Bars, 7s, Stars…etc) Each symbol on the visible reel face corresponded to a stop or notch on the reel on the inside of the machine.

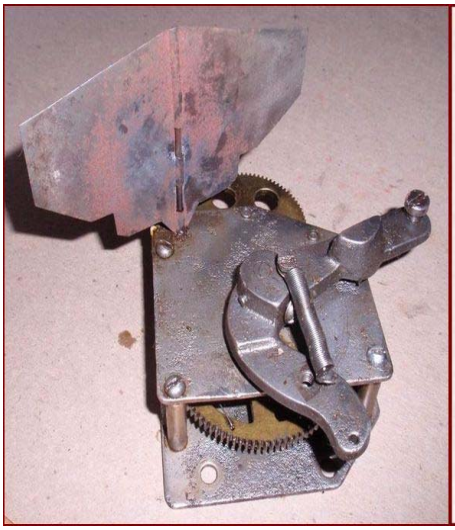
When a customer inserted a coin it released a ratchet which allowed the handle to be pulled which stretched a spring. (A strong guy could push the handle in towards the machine and slap or "Pop" the handle free of the ratchet and in effect play free as if he had inserted one coin… "Handle Popping" or "Popper".)

Pay Discs & Fruit Reels

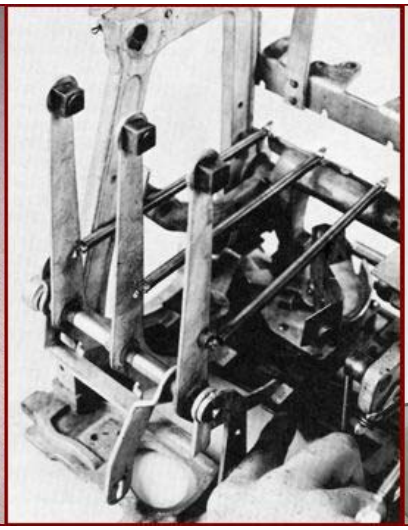
Star Wheel



Slot Reels & Pay Discs



"Clock" or Timing Fan



Index Fingers "Feet"

Coin Reel Assembly

When the spring released, a flywheel known as a "Clock" began to rotate and springs were engaged for each reel. As it unwound it permitted each part of the operating process to occur in sequence. First, it released the Feet, which are rods that slammed forward into one of the 20 or 22 holes in each reel, stopping the reel.

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Next, the fingers moved into openings in the pay discs that spin in unison with the reels. (Imagine the circular blade of a power saw with 20 or 22 teeth cut to various depths.) The distance the fingers moved into the pay discs determined the amount of the payoff. In mechanical slots, the fingers released slides that stored the correct number of coins for the payoff.

In electro-mechanical slots, the fingers close an electric circuit that controls how many coins the payoff mechanism issues.

Index fingers brush a circuit board & index the pay disc

The reels would spin for a prescribed amount of time, all controlled by the flywheel fan or clock. This clock could be stopped by various cheating methods which would allow the reels to spin free. Some free spinning reels could be moved with a magnet against the Belly Glass. Drilling the machines and inserting piano wire or other devices were methods used to stop the clock. If the machine could be opened, an ice cube was sometimes used to jam the clock. ("Nuts") The reels spun free until the ice cube melted leaving no evidence.

Cheater's Old Slot Drill **Wire Used to Stop the Clock**

Sometimes wires were inserted through the door seams or drill holes to move the free spinning reels to winning jackpot combinations or to lock one reel in place.

It might be interesting to know that slot cheats would pre-drill holes for their accomplices. They used drilling devices sometimes powered by a Sears's sewing machine motor. They would use a chocolate bar or keno crayon after drilling to conceal the drill holes. (Matched the color of the slot cabinet)

Locking a reel symbol drastically changed the pay cycle of the machine.

As an Example: Consider a three reel slot machine with 7's as the Jackpot. A typical reel symbol configuration was;

Four 7's on the 1st Reel - Five 7's on the 2nd Reel – One 7 on the 3rd Reel

The Jackpot Probabilities Were:

$$\frac{20 \times 20 \times 20}{4 \times 5 \times 1} = \frac{8000}{20} = 400$$ **or on average One Jackpot in 400 Pulls**

Suppose the Jackpot 7 was Frozen on the 3rd Reel

$$\frac{20 \times 20 \times 1}{4 \times 5 \times 1} = \frac{400}{20} = 20$$ **or on average One Jackpot in 20 Pulls**

Along with "Stopping the Clock", "Locking or Freezing a reel" virtually all methods for cheating coin slot machines are in the history books as well…(Except for those few casinos in Nevada who still offer coin operated slot machines.)

NOTE: One constant in slot cheating from the old days to the new which surveillance should keep in mind is "JDLR". Something is happening at the machine which…"*Just Doesn't Look Right*".

FALSE or COUNTERFEIT COINS or TOKENS:

Called "SLUGGING", the simplest of all coin slot machine cheats was counterfeit tokens or slugs. Lead slugs, worthless foreign coins, electrical outlet box punch outs and a host of other objects were used to try and trick the machine into giving false spins. Some thieves even took the time to file down pennies to the size of a dime. ("Crazy") Some slots were manufactured with a Coin Escalator which displayed the last coins played. An empty escalator (or slugs) would of course alert slot personnel. Pictured Slot Coin Escalators:

Rhythm Play:

"Rhythm Play has nothing to do with dancing in front of a slot machine or the Old Catholic Birth Control method." ("*Neither of Which Work*"…"Sorry Ma".)

Mechanical slot reels and clocks spun at approximately the same speed and length of time each spin. The clock however continued to spin for a short time after the reels were locked in place. A rhythm player could alter the length of the reel spin by pulling the handle again before the clock completely unwound and stopped. A rhythm player used a combination of reel symbol positions and a metronome type count in his head to decide when to pull the handle and attempt to cause certain pay symbols to appear on the pay line on the next spin. ("*Rhythm Play Was A Reel Art*"…*Pun Intended*") Slot manufactures countered by installing one or more variator devices changing the length of time certain components spun.

STRINGING "Yo Yo"

Another almost academic cheating method was to attach a string to a real coin and go "Fishing. Known as "Yo Yoing", (*"Yo Yo…You Talking to Me?")* many old coin slot machines were vulnerable to this method. Some slot manufacturers built razors into the coin pathway to cut the string as the cheat pulled it back up.

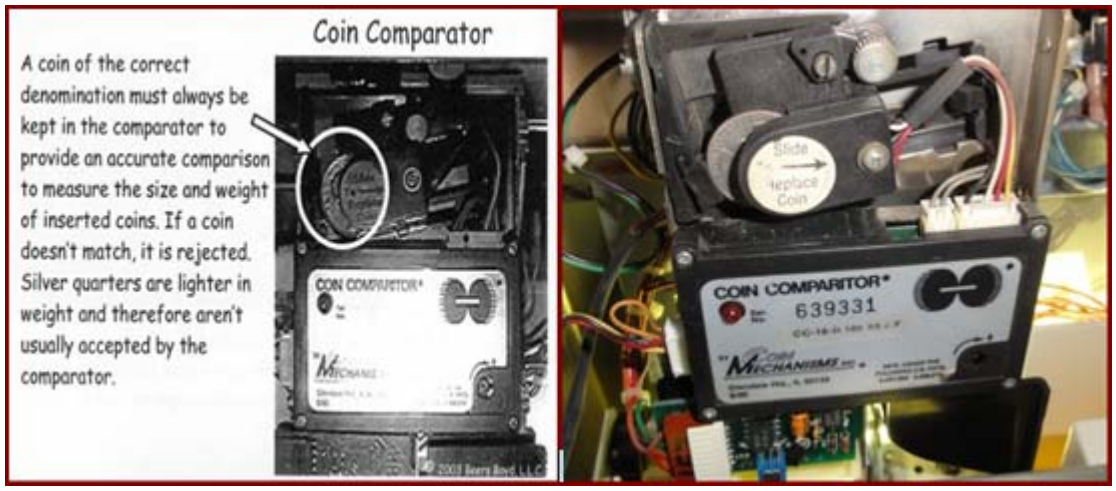
Pictured above is a slot cheat attaching a string to a coin in the casino.
("Pretty Stupid!"…"We Have a Camera Every Four Feet Dummy!")
Notice the simple but clever slot stringing device made from a paper clip and ball point pen spring. The paper clip is bent to the size of the coin acceptor slot. The cheat now just bounces his finger up and down to continually String Credits.

In the Old Days, slot cheats even tried spraying a liquid detergent into the coin acceptor to try and Freeze the microswitch in place and play free.

COIN RAKE:

Pictured below is a replica of an old coin rake which was used to trick certain slot machines.

Slot manufacturers also began installing zig/zag coin pathways to defeat Stringers and Coin Rakes.



The next technology used to defeat Sluggers & Stringers was electronic Coin Comparators. For high denomination slots, high tech slot tokens were also produced containing a proprietary alloy and resonating frequency.

Notice the concentric ridges on the high security tokens. As they spun down the coin pathway, it created a light pattern which had to be recognized by the coin comparator. A static coin on a string would be rejected. Other coin comparators had three optic readers which had to see a coin in one order only…A B C. If a Stringer pulled a coin back up, the coin comparator would see…C B A and reject the coin.

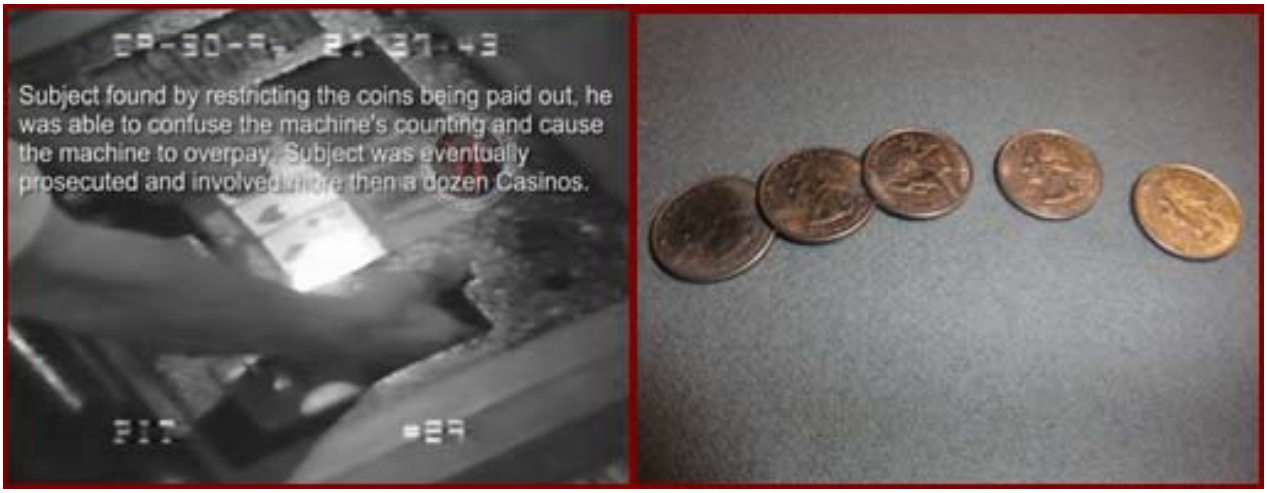
One casino installed $25.00 slot machines with pure silver $25.00 tokens as part of a promotion to commemorate their twenty-fifth year of operation. A clever slot cheat made pure silver counterfeit tokens of the same size and weight for $3.00 each which fooled the coin comparators.

COIN SPINNING:

Mechanical slot machines and their coin acceptors were sometimes susceptible to cheating devices and other scams. One example involved spinning a coin with a short length of plastic wire. The weight and size of the coin would be accepted by the machine and credits would be granted. However, the spin created by the plastic wire would cause the coin to exit through the reject chute into the payout tray.

BACKING UP THE CHUTE:

Backing Up the Chute was an old slot cheating technique attempted mainly on Slant Top machines. The cheat attempted to push coins slightly back up into the coin chute as the machine paid out.



If successful, the cheat would close the space between the coins and the machine would drop two or three coins, but count only one. Slot personnel would become suspicious if they had to continually clear coin jams.

HIGH TECH COUNTERFEIT TOKENS:

Using advanced machinery, a Rhode Island slot cheat, Louis "The Coin" Colavecchio pressed counterfeit slot machine coins out of hardened metal dies. These knock-offs were remarkable in their authenticity and passed for real at casinos all over Connecticut and New Jersey. He actually had high security slot tokens forensically analyzed to determine the exact percentages of alloys. His downfall was storage space. Colavecchio passed nearly seven thousand $5.00 tokens at one casino in Atlantic City. At a certain point, slot personnel noticed they had no space to store 70 extra racks of tokens.

SHAVED TOKENS:

Nevada Regulations for Token Size:

12.050 Specifications for tokens. 1. Unless the chairman approves otherwise, tokens must be disk-shaped and must measure as follows:

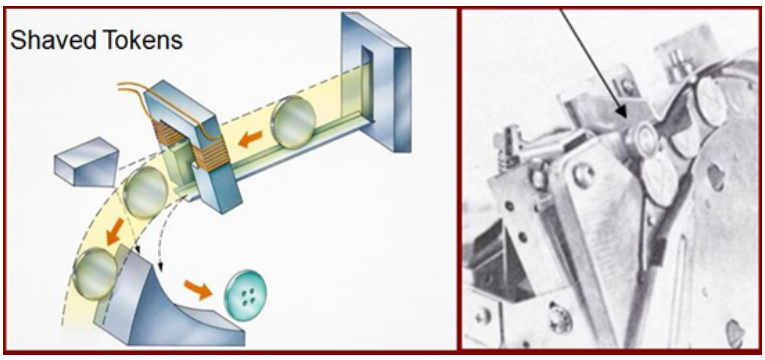
(a) No token may be smaller than 1.459 inches or larger than 1.95 inches in diameter, and no token may be from 1.475 through 1.525 inches in diameter;

(b) One dollar denomination tokens must be from 1.459 through 1.474 inches in diameter, from .095 through .115 inch thick, and, if the token has reeds or serrations on its edges, the number or reeds or serrations must not exceed 150;

(c) Five dollar denomination tokens must be 1.75 inches in diameter, from .115 through .135 inch thick, and, if the token has reeds or serrations on its edges, the number of reeds or serrations must not exceed 175;

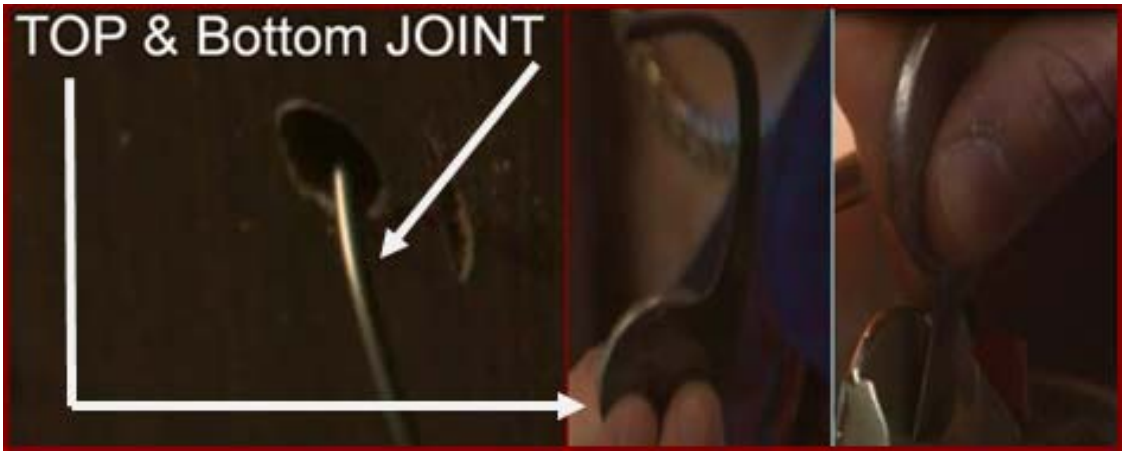
(d) Twenty-five dollar denomination tokens must be larger than 1.75 inches but no larger than 1.95 inches in diameter (except that such tokens may be 1.654 inches (42 millimeters) in diameter if made of 99.9 percent pure silver), must be .10 inch thick, and, if the token has reeds or serrations on its edges, the number of reeds or serrations must not exceed 200

As technology advanced, manufacturers turned to optic verification sensors to prevent coin slugs and false tokens. These mechanisms use a beam of light to register credits as tokens were inserted. Slot cheaters would take a casino's actual tokens and "Shave" them down, slightly reducing the tokens' diameter…in some cases as little as 0.04 inches. A slot machine's optic sensor would register it as a normal coin or token coming in… (Even the high security tokens.) However, once the shaved token got to the machine's comparator mechanism (going out)…(the piece of equipment that measures size and weight), it would be kicked out because of the minute size discrepancy. Also, Shaved Tokens would not raise the Rocker Arm high enough to be counted on mechanical coin out counters, and would fall uncounted. Shaved tokens counted coming in…but not going out.



TOP & BOTTOM JOINT

The top-bottom joint was an ingenious little tool used in the '70s and '80s to bilk slot machines. It consists of two parts: The "bottom," which is guitar string or similar wire, and the "top," which is a metal rod with one of its ends bent into a curly-q. When the wheels spun into a winning position in older machines, a lever behind each wheel would slide into place. Attached to these levers were metal contacts, and when they aligned, they activated a circuit that powered the motor that dispensed coins. With the top-bottom joint, cheaters threaded the guitar string in through the machine's coin chute until they hit one of the metal contacts. They would then jam the "top" in through the coin receptacle. This would complete the electrical current and activate the motor, which would then empty the coin hopper.



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