

Claw crane

"Claw game" redirects here. For the computer game, see [Claw \(computer game\)](#).

A **claw crane** (also called a variety of other names, such as "claw machine") is a type of [arcade game](#) known as a [merchandiser](#), commonly found in [video arcades](#), [supermarkets](#), [restaurants](#), [movie theaters](#), [shopping malls](#), and [bowling alleys](#).

§Machine components/structure

A claw crane consists of many parts, but the basic components are a [PCB](#), [power supply](#), [currency detector](#), [credit/timer display](#), [joystick](#), [wiring harness](#), [bridge assembly](#), and [claw](#). The claw has two or more fingers, although most claws have three.

The cabinet is usually constructed of [medium-density fiberboard](#) (MDF). Some cabinets are made of [aluminum alloy](#), which makes it easier to relocate as well as cheaper to produce.^[*citation needed*]

The window at the front of the machine is normally made of glass or a cheaper-to-manufacture substitute, such as [acrylic](#). The marquee is a branded graphic (sometimes created specifically for restaurants or an operator's business name) behind a Plexiglas front.

§Game play

A claw vending machine consists of prizes, usually [plush toys](#) or alternatives such as [jewelry](#), [capsuled toys](#), [hats](#), [balls](#), [dolls](#), [shirts](#), [candy](#) and [electronics](#). More expensive prizes are sometimes placed in a plastic bag so the toy is harder to pick up. The player inserts coins into the machine, which then allows the player to manipulate a [joystick](#) that controls the claw for a variable time (controlled by the operator) usually 15 to 30 seconds (in some cases, a claw vending machine might offer one minute of time). The player is able to move the claw back, forth and sideways, although some machines allow the user to move the claw after it has partially descended.

At the end of the play time (or earlier if the player presses a [trigger](#) button on the joystick), the claw descends and makes an attempt to grip. After making the gripping attempt, the claw then moves over an opening in the corner of the case and releases its contents. If the player is successful, then the prize the claw is holding is dropped into the opening and dispensed through a chute into a hatch for collection.

An alternative version of the machine, popular in arcades, is the two button version: one marked with a

forward arrow, one with a right arrow. The crane starts near the front, left side of the machine and the user presses first the forward button to move the crane towards the back of the cabinet. Once the button is released the crane stops moving and the button cannot be used again, thus requiring the user to judge depth accurately in one attempt. After this, the right button becomes active in a similar way and as soon as it is released, the crane drops to a certain depth and then raises, closing its claw on the way and returning to the drop hatch in the front left corner. These versions are generally considered to be more difficult. The button type machines typically do not feature the timers which are commonly found on joystick type machines.

§Machine configuration and chances of winning

The success rate winning a prize is dependent on several factors, including operator settings, player skill, type of machine, and prizes available (size, density, and distribution). A prize may be lost due to player inexperience, player error in manipulating the claw, the weakness of the claw, or the specific crane configuration. Many modern cranes use a computer to determine an expected payout percentage based on the operator's settings. All modern claw machines incorporate some means for the owner to adjust at least the strength of the claw's grip and how closely the claw's fingers pull together, usually with screws on the mechanism or [potentiometers](#) on the [PCB](#). Even on older machines, the grip strength can be adjusted by adding circuit components or additional hardware.^[1] Some machines incorporate a feature called two-level claw power, which, when enabled, causes the claw to at first grip at full strength, but then gradually weaken its grip to the normal level after a brief delay. This can cause the crane to initially pick up the prize, but then drop it.^[2]

Modern, higher-end claw machines are fully computerized and are remotely programmable by the owner (via a hand-held device). Settings and features commonly available include:^[3]

- Claw strength and aperture
- Motion speed, in any direction (that is, the claw can be made to drop slowly but come up quickly, or move right faster than it moves forward)
- Pick-up strength and retain strength can be specified separately, as well as the delay between pick-up and return.
- Payout percentage: Cranes equipped with this setting have onboard programming which cause the claw's grip parameters to be continually adjusted to achieve a pre-set payout percentage, usually specified with respect to the value of the prizes inside
- Fail limit: If the machine dispenses too many prizes in a given time period, it stops accepting coins

and is out of order

- Free replay can be granted on a certain percentage of plays
- **Instant replay**: the user can opt to touch a certain button and have the claw automatically move to where it was last dropped, in order to try again for a prize that was just missed on the previous try.

Some cranes are also able to display the number and value of prizes won in a given time period,^[3] enabling the owner to keep track of how profitable the machine is for them.

Most machines are only programed to give one try per quarter, but there are some machines (that mostly contain candy) that let players play until they win.

Claw machines holding expensive prizes, such as a **video game console** or a **mobile phone** are typically programmed so that the grip strength of the claw is determined according to a payout percentage that is profitable to the operator.^[citation needed] Experienced skill crane players also say that box shaped prizes are among the most difficult kinds of objects to pick up with any claw, regardless of its settings.^[citation needed]

§Legality

The ability of the crane machine owner to set features such as a payout percentage raises the question of whether these machines should be considered gambling devices in a legal sense, alongside **slot machines**. In the **United States**, claw vending machines are typically specifically exempted from statutes which regulate gambling devices, contingent upon compliance with certain rules. In the state of **Michigan**, for example, this exemption applies only if the wholesale value of the prizes inside is below a certain threshold, and if these prizes are actually retrievable with the claw.^[4] Other states hardly regulate crane machines at all. In addition, some attorneys have advised claw machine owners to avoid using the word "skill" in the game description decal present on most machines.^[5]

In other jurisdictions, such as **Alberta, Canada**, skill cranes are illegal unless the player is allowed to make repeated attempts (on a single credit) until he or she succeeds in winning a prize.^[6] Skill cranes in single-play mode (where the player has only one chance per credit to try for a prize) were found by the **Ontario Court of Appeal** to be essentially games of chance, and therefore prohibited except at **fairs** or **exhibitions**, where they are covered by an exemption.^[7]

§History in the United States

In the early 20th century, popular photographs of the excavation of the [Panama Canal](#) made the [steam shovel](#) into an object of popular fascination. This trend inspired novelty candy dispensers made to look like steam shovels. Players would put a nickel into the slot of a glass-fronted cabinet and crank a wheel to engage a series of internal gears. The tiny bucket-jaws swung down, closed over a piece of candy, rose, and dropped the sweet into a chute where it could be retrieved. Early versions of these games include the Panama Digger, Erie Digger, and Iron Claw. Over the decades, the mechanics and aesthetics of these candy dispensers evolved into the modern claw games of today.^[8]

These machines became popular in the [United States](#) in the late 1980s, with a significant presence at [Pizza Hut](#) restaurants, although they were to be found much earlier. A claw machine labeled "Toy Steam Shovel" appears in a drugstore in the 1939 cartoon *Naughty but Mice*.

Later on, they spread to other venues, and by the early 1990s, the [NFL](#) began to advertise their teams with stuffed footballs of each team placed in some of the machines. Soon after, the [MLB](#), [NBA](#), and [NHL](#) also started doing this, although the NBA no longer uses these machines as a means of advertisement.

By the mid-1990s, the machines' popularity had made such establishments as [Safeway](#), [Fry's Supermarkets](#), [K-Mart](#), and [Wal-Mart](#) a staple of their locations. Some [hotels](#) also acquired them to satisfy their younger guests, as did sports venues that would stuff them with collectibles related to their home teams.

In the 1995 [Disney/Pixar computer-animated film](#) *Toy Story*, [Buzz Lightyear](#) and [Sheriff Woody](#) climb into a claw vending machine filled with [claw-worshipping aliens](#).

§Claw cranes in East Asia

In [East Asia](#), notably [Japan](#), [South Korea](#), and [Taiwan](#), claw vending machines are extremely popular. There are entire [video arcades](#) dedicated to hosting these machines.^[*citation needed*]

In [China](#), machines have been known to stock domestic and foreign cigarettes.^[*citation needed*]

In [East Asia](#), live animals are occasionally the prize in the claw game. In [Chinese](#) supermarkets, a live [crab](#) or [lobster](#) can be won, presumably to be eaten by the winner. In [Japan](#), pet [turtles](#) can be won, though this practice has come under scrutiny from animal rights groups.^[*citation needed*]

§References

How do the Claw crane 'arcade game' machines work? - Quora

Basically, **most crane games are designed so the claw is randomly (and only once in many games) strong enough to let players win.** Some even weaken in strength after a short time so players get close to victory only to see it slip from their grasp! Since the manuals for many skill games are available online, this is not hard to verify.

For example, this crane game:



...has its owner's manual here, where you can see the default setting is to only use the strong setting on the claw once every 18 games!

<http://www.okmfg.net/pdf/manuals...>

Here's an example of a crane with more elaborate settings:



(I don't mean to pick on these manufacturers specifically — this is simply the industry standard for any toy crane that looks like this.) Once more, its operator manual lays bare all the possible modes:

<http://www.pandavending.com/MANU...>

There are settings for making the claw use its strong setting on most games, one game in a few, or almost never. There are further controls for the claw to grab in strong mode and then switch to weak mode anywhere from 2-9 seconds after grabbing. Finally, it can even be set to switch to weak mode 10-25 seconds from the start of the game, to put slowpokes at a disadvantage!

This is also the case for games such as BarBerCut Lite, a string-cutting game:



Usually, the scissors are too weak to cut the string, but there is a small chance per play that it will use the "strong" mode which actually can snip right through the string holding up the prize. Again, the operator manual is quite matter-of-fact about this, but no indication at all is given to players that this is how it

operates. By the way, some thieves have been taking their revenge, using lasers through the glass to cut through the strings:

[http://forums.arcade-museum.com/...](http://forums.arcade-museum.com/)

The same mechanism is even at play in the non-mechanical Stacker game, whose high-value prizes are only available during randomly-selected games:



Again, just look at the operator manual to see that the settings can adjust the possibility of winning from 1 in 20 games all the way up to 1 in 800 games!

<http://web.archive.org/web/20060...>

Finally, some good news. The one notable exception is Sega's UFO Catcher, which has an operator-adjustable claw strength, but no option for variable claw strength. So although it can be set to be very weak, players at least have the same ability to win every time. However, it does not seem as inviting because the two-pronged claw is more intimidating — the difficulty of grabbing an item is quite clear, so it's not as tempting as a seemingly-easy variable-strength game.

<http://www.segaarcade.com/sites/...>

