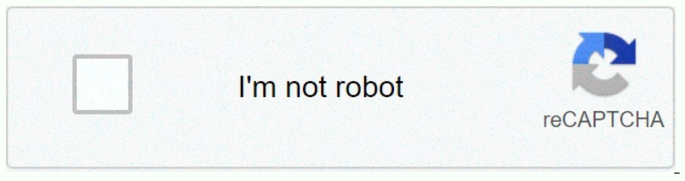


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# Machine gun kelly

Historians count the machine gun as one of the most important technologies of the last 100 years. As much as any other factor, it set a brutal, relentless tone in World War I and World War II, as well as most wars since then. Unlike previous weapons that had to be manually loaded and fired by this machine, one soldier could shoot hundreds of bullets every minute, niiing down the entire group with just a few passes. The gun continued to fire until the operator stopped pulling the trigger or the gun ran out of ammunition. The military had to develop heavy combat equipment, such as tanks, to withstand such fire. That lone weapon had a profound effect on how we fought. The machine gun gave a small number of soldiers the combat capabilities of the large battalions. It also increased the potential for mass casualties. Given their monumental role in history, it is somewhat surprising how simple machine guns really are. These weapons are notable feats of precision engineering, but they work with some very basic concepts. In this article, we look at the standard mechanisms machine guns use to spit out bullets at such a furious rate. Content To understand how machine guns work, it helps to know something about firearms in general. Almost every weapon is based on one simple concept: You apply explosive pressure behind a projectile to launch it down the barrel. The earliest and easiest application of this idea is a cannon. The cannon is just a metal pipe with a closed end and an open end. There's a little fuse hole at the closed end. To load the cannon, you pour into the gunpowder - a mixture of coal, sulfur and potassium nitrate - and then you drop a cannonball. Gunpowder and cannonball sit on breech, or the rear part of the bore, which is an open end cannon. To prepare a gun shot, you run the fuse (the length of the flammable material) through the hole, so that it extends down to the gunpowder. All you have to do is fire the cannon. The flame moves along the fuse and eventually reaches the gunpowder. Advertising Gunpowder burns quickly when it ignites, producing a lot of hot gas in the process. Hot gas applies to a much higher pressure powder side¬cannonball than the air in the atmosphere applies on the other side. It's going to eject a cannonball at high speed. For more information about the earliest applications in this technology, see the next page. The first handheld weapons were mainly miniature cannons; You loaded a gunpowder and a steel bullet, then you made a fuse. Finally, this technology gave way to launch activated weapons, such as flintlock and percussion cap guns. Flintlock guns ignited gunpowder, generating a small spark, while percussion caps use mercuric fulminate, an explosive compound you could light up with a sharp blow. Impact cap gas, Pour the gunpowder into the ashes, stuff the projectile on top, and place the mercuric fulminate cap on top of the small nipple. To shoot, you're going to pull the hammer all the way back and pull the trigger. The trigger releases a hammer that swings forward at the explosive device. The cap lights up, firing a small flame down the pipe with gunpowder. The gunpowder then explodes, launching the projectile out of the barrel. (Take a look at How Flintlock Guns Work to learn more about these weapons.) Advertising The next big innovation in the history of firearms was a bullet cartridge. Simply put, cartridges are a combination of projectile (bullet), propellant (gunpowder, for example) and primer (explosive cap), all contained in a single metal pack. The cartridges are the basis for the most modern firearms. The back movement of the weapon bolt also activates its ejection system, which removes the spent kes from the extractor and drives it out of the ejector port. We will discuss this later in more detail. But first, let's see how it all works - in the revolver. This content is not compatible with this device. Pull the trigger to see how the revolver fires. In the last part we saw that the cartridge consists of a primer, propellant and projectile, all in one metal package. This simple device is the basis of the most modern firearms. To see how it works, let's look at the standard double-action revolver. Advertising This weapon is a rotating cylinder, six breeches with six rounds. When you pull the trigger on the revolver, several things happen: initially, the trigger lever pushes the hammer back. When it moves back, the hammer pushes the metal spring weapon into the warehouse (handle). At the same time, the trigger rotates the cylinder so that the next breech chamber is placed in front of the gun barrel. If you pull the trigger all the way back, the lever will release the hammer. The compressed spring pushes the hammer forward. The hammer slams into the plot behind the tape, igniting the plot. The plot launches propellant. Exploding propellant drives the bullet out of the weapon at high speed. Inside the barrel is a spiral groove cut that helps spin the bullet when it comes out of the gun. This gives the bullet better stability as it flies through the air and increases its accuracy. When the propellant explodes, the cartridge expands. The case temporarily seals the ash, so that all the expanding gases push forward rather than backwards. It's probably easier to use a weapon like that than a flintlock or a blow capsule gun. You can load six shots at a time and you only need to press the trigger to fire. But you're still quite limited: You have to pull the trigger on each shot, and you have to reload after six shots (although some modern revolvers can hold 10 rounds Empty shells must also be ejected manually from the cylinders. Now let's see how the gun manufacturers handled the revolvers. This content is not compatible with this device. In the 1800s, weapons manufacturers designed a number of mechanisms to address the problems associated with limited firing capacity. Many of these early machine guns combined multiple barrels and firing hammers into one unit. Among the most popular designs was the Gatling gun, named after its inventor Richard Jordan

Gatling. This weapon - the first machine gun to gain widespread popularity - consists of six to 10 weapons placed in cylinders. Each barrel has its own ashes and an incendiary needle. To use the weapon, you turn the crank around the barrels inside the cylinder. Each barrel passes under an ammunition bunker, or carousel magazine, as it reaches the top of the cylinder. The new cartridge falls on the ash and the barrel is loaded. Advertising Each firing pin has a small cam head that catches hold the bevelled groove of the weapon's body. As every barrel spins around the cylinder, the groove pulls the pin back, pushing into a dense spring. Immediately after loading the new cartridge into the ashes, the guilt-pin doll slips out of the groove and spring propels it forward. The draw hits the bullet, shooting the bullet down the barrel. If each barrel spins towards the bottom of the cylinder, the used cartridge falls out of the exit port. Gatling weapon played an important role in several 19th century battles, but it wasn't until the 20th century. Gatling weapon is often considered a machine gun because it shoots a large number of bullets in a short period of time. But unlike modern machine guns, it's not fully automatic: You have to keep cranking if you want to keep shooting. The first fully automatic machine gun machine gun is actually credited to an American named Hiram Maxim. Maxim's remarkable weapon can fire more than 500 shots per minute, giving him firepower of about 100 rifles. The basic idea behind Maxim's gun, as well as the hundreds of machine gun designs that followed, was to use the power cartridge explosion to reload and re-cock the gun after each shot. There are three main mechanisms to implement this power: Recoil systemsBlowback systemsGas mechanisms for the next few sections, we will discuss all of these systems. This content is not compatible with this device. Click and hold the trigger to see how recoil-action gun fires. For simplicity, this animation does not show the loading, extraction and ejection mechanisms of the cartridge. The first automatic machine guns were recoil-based systems. If you throw a bullet down a barrel, the ball will have the opposite effect. rejects the weapon. In a gun built like a revolver, that backlash just pushes the shooter back. But recoil-based machine gun, moving mechanisms inside the weapon absorb some of its recoil forces. Advertising Here's the process: Prepare this weapon to fire, then pull the breech bolt (1) back so that it pushes the back of spring (2). The trigger ear (3) catches onto the bolt and holds it in place. The feed system runs an ammunition belt through the weapon, loading the cartridge into a breech (more on it later). When you press the trigger, it releases the bolt and the spring points the bolt forward. The bolt pushes the cartridge from the ash out into the chamber. The effect of bolt firing pin cartridge ignites the primer, which explodes propellant, which drives the bullet down the barrel. The barrel and bolt have a locking mechanism that confirms them on impact. In this weapon, both bolt and barrel can freely move the gun casing. The force of the moving ball applies the opposite force to the barrel, pushing it and bolting back. As the bolt and barrel slip back, they move along the metal piece that opens them. When the pieces separate, the barrel of spring (4) pushes the barrel forward, while the bolt keeps moving back. The bolt is a connected extractor that removes the used kest barrel. In a typical system, the extractor has a small lip that grabs the narrow rim at the bottom of the bark. When the bolt betrays, the extractor slides with it, pulling the empty shell backwards. The back-movement bolt also activates the ejection system. The ejector's job is to remove the spent kes from the extraction and steer it out of the ejection sport. If the used case is extracted, the feeding system may load the ash. If you keep the trigger open, the rear spring will drive the bolt against the new cartridge, starting the whole cycle again. When you release the trigger, the ear catches hold the bolt and keep it swinging forward. This content is not compatible with this device. Click and hold the trigger to see how blowback-action gun fires. For simplicity, this animation does not show the loading, extraction and ejection mechanisms of the cartridge. See Machine Gun Feeding: A belt system to find out how these components work. The setback system is something of a recoil system, except that the barrel has a fixed gun case, and the barrel and bolt don't lock together. You can see how this mechanism works in the chart below. Advertising This weapon is a sliding bolt (3) kept in place for a spring-driven cassette magazine (5) and trigger mechanism (1). When you slide the bolt back, the trigger's ear (2) holds it in place. Pressing the trigger releases the ear bolt and the spring drives it forward. bolt into the chamber, firing the pin off the plot that ignites the propellant. An explosive gas from the tape is going to put a bullet in the barrel. At the same time, the gas pressure is pushing in the opposite direction, forcing the bolt back. As a recoil system, the extractor pulls the kes out of the barrel, and the ejector forces it out of the gun. The new cartridge lines up in front of the bolt just before spring pushes the bolt forward, starting the process all over again. It's going to continue as long as you hold the trigger down and the ammunition feeds on the system. This content is not compatible with this device. Click and hold the trigger to see how the gas-action weapon fires. For simplicity, this animation does not show the loading, extraction and ejection mechanisms of the cartridge. See Machine Gun Feeding: A belt system to find out how these components work. The gas system is similar to a rebound system, but it has some additional pieces. The main addition is a narrow piston attached to the bolt that slides back and forth into the cylinder placed above the gun barrel. You can see how this system works in the chart below. Advertising This weapon is basically the same as using a setback system, but the rear force of the explosion does not move the bolt backwards. Instead, the gas pressure pushes the bolt back and forth. When a bolt swings a pre-fire cartridge, it locks onto the barrel. When the ball reaches down the barrel, expanding gases can bleed the cylinder over the barrel. This gas pressure pushes the plunger backwards, moving it along the bottom of the bolt. The sliding piston first opens the bolt from the barrel and then pushes the bolt back so that the new cartridge can enter the ash. The diagrams provided describe only specific examples of how these systems work. There are hundreds of machine gun models available, each with its own specific firing mechanism. These weapons differ in many other ways as well. In the next two parts, let's look at some of the main differences between the different machine gun models. One of the main differences between different machine gun models is the charging mechanism. Early manual machine guns, like the Gatling gun, used a device called an ammunition bunker. Hoppers are just metal boxes that contain loose individual cartridges that fit on top of the machine gun mechanism. One by one, the bullets fall out of the bunker and the ash. Hoppers can hold a good amount of ammunition and they are easy to reload even when the weapon is firing, but they are quite cumbersome and only work when the gun is positioned on the right side up. The bunker system was replaced by a belt-powered system to help control the movement of ammunition into the weapon. The ammunition is on top of the long belt held by the operator, or in a bag or carton. After the round is fired, it moves out of the way, and the new round slips into place. Advertising The Second System is a spring-operated magazine. In this system, spring cartridges press the magazine casing until breech. The main advantages of this mechanism are that it is reliable, easy and easy to use. The main drawback is that it can only possess a relatively small amount of ammunition. For more information about the advantages of the belt system, see. This content is not compatible with this device. Drawing of the top view of the joint power mechanism. For the sheer volume of ammunition, the belt system is usually the best choice. Ammunition belts consist of long string cartridges attached with pieces of canvas or, more often, attached to small metal links. Weapons that use this type of ammo are a feed mechanism driven by recoil motion bolt. Advertising bolt (1) in this weapon has a small cam roll (5) on it. When the bolt moves, the doll roller slips back and forth into the long, grooved feed of the doll piece (2). When the doll roller slips forward, pushes the feed of the doll right against the back in spring (6). When the doll roller slides back, the spring pushes the camera back to the left. The feed camera lever is attached to a spring loaded pawl (8), a curved gripper that rests on top of an ammunition belt. When the doll and lever move, the paw moves out, grabs the cartridge and pulls the belt through the gun. If the bolt moves forward, it will push the next cartridge into the chamber. The feed system draws ammunition to belt out cartridge guides (2) just over breech. When the bolt slides forward, the top part of it presses on to the next cassette. It drives the cartridge out of the waist against the chamber inclination (3). The cell ramp forces the cartridge down in front of the bolt. The bolt is a small extractor that grabs the base cartridge's case when the cartridge slips into place. When the cartridge slides in front of the bolt, it pushes the spring-loaded ejector (6). When the ignition needle hits the primer, flinging the bullet into the barrel, the explosion forces drive the operating rod and the bolt back. When the chamber cleans the wall of the chamber, the ejector springs forward, popping the chamber out of the gun through the ejection opening. This system allows you to fire continuously without reloading. This content is not compatible with this device. Click and hold the trigger to see how the charging and ejection system works. The basic mechanism of the machine gun has remained the same for more than a hundred years, but gun manufacturers are constantly adding new changes. One modern design becomes a box i.e. a gun with one press button [source: Sofge]. In addition, the new light weapons technologies (LSAT) are made of lighter materials Reduce the weight of machine guns and their ammunition by 40 percent. Whether you've ever held a machine gun or even seen one, this powerful device has had a profound effect on your life. Machine guns have been on hand to desisolving nations, repressive revolutions, overthrowing governments and ending wars. Not for sure, a machine gun is one of the most important military developments in the history of the man. For more information about machine guns and related topics, see the links on the following page. Aai. Light small arms technologies. Mechanics. Top 5 High-Tech Guns for the Next Gen Infantry. Kori. Light small arms technologies. 20Science%20Conf%20_3A_.pdf. Technologies. 20Science%20Conf%20_3A_.pdf.