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Inspirations of War: Innovations in Prosthetics after the Civil War

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Inspirations of War: Innovations in Prosthetics after the Civil War

Abstract

In early 1861, a Confederate soldier named James Edward Hanger waited on the ground to die. Minutes before, his left leg had been shot off above the knee while he was sitting with his comrades in the loft of a barn in Philippi, Virginia. As soon as the cannonball burst through the barn, the rest of the men fled, leaving Hanger behind. He was found by enemy troops and brought to a doctor, who amputated his leg. Hanger became the first person to have a limb amputated during the Civil War. When one thinks of Civil War injuries, amputations often come to mind, and, to be sure, there was an unprecedented number of amputations performed during the Civil War. Surgeons on both sides performed at least 60,000 amputations during the war and 45,000 patients survived the surgery. [*excerpt*]

Keywords

Amputation, Innovation, Medical History, Pensions, Prosthetics, Technology

Disciplines

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Comments

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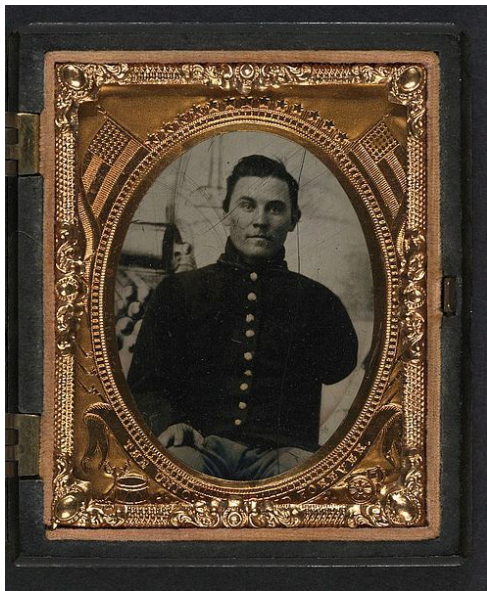
THE GETTYSBURG COMPILER

ON THE FRONT LINES OF HISTORY

Inspirations of War: Innovations in Prosthetics after the Civil War

By [Savannah Labbe '19](#)

In early 1861, a Confederate soldier named James Edward Hanger waited on the ground to die. Minutes before, his left leg had been shot off above the knee while he was sitting with his comrades in the loft of a barn in Philippi, Virginia. As soon as the cannonball burst through the barn, the rest of the men fled, leaving Hanger behind. He was found by enemy troops and brought to a doctor, who amputated his leg. Hanger became the first person to have a limb amputated during the Civil War. When one thinks of Civil War injuries, amputations often come to mind, and, to be sure, there was an unprecedented number of amputations performed during the Civil War. Surgeons on both sides performed at least 60,000 amputations during the war and 45,000 patients survived the surgery.



Soldier with an amputated arm. Photo via Wikimedia Commons.

This increasing number of amputees presented a new problem. Before the Civil War, peg legs and other prosthetics were not very common, but now there was a new demand for this kind of product. James Hanger, who had been sent to Camp Chase until he was exchanged two months later and sent home to Churchville, Virginia, was so frustrated

with his peg leg that he stayed in his room for months, trying to build a better one. He was aided in this endeavor by his engineering education from Washington College in Lexington, Virginia, which he attended for two years until he dropped out to join the Churchville Calvary at the start of the Civil War. When he emerged from his room at Camp Chase, he had created a comfortable leg that had a foot and hinged at both the ankle and knee. He wanted to share his creation with other veterans, so he set up Hanger Inc., which is still one of the largest prosthetic manufacturers today.

Many others took up the call to create prosthetic limbs, and the industry blossomed after the war, especially as the government paid for Union veterans to buy replacement limbs. Since Confederates had rebelled against the government and were not considered to be veterans, they were not eligible for this program, although some states such as North Carolina and Virginia set up programs similar to the federal one. By 1870, the federal government had paid \$500,000 for 7,000 veterans' limbs. Of course, some probably did not actually get a limb since the federal government just gave the stipends to the soldiers and allowed them to spend it how they pleased. However, most of them likely did buy a limb in order to walk better or to feel normal and whole again. In addition, ideas of manhood and masculinity during this time period stressed self-sufficiency, and especially for veterans who had lost a leg, amputations made it much easier for them to walk around and fulfill a normal masculine role. However, many veterans did view their amputated limbs with pride, as they served as an outward mark of their bravery and sacrifice for their country.

The Civil War created a change in government policy regarding veterans. In the Revolutionary War, Congress struggled to pay the Continental Army, both during and after the war, and many veterans did not get nearly as much payment as they were promised. In addition, pensions for Revolutionary War veterans were rejected by the public because they believed it would diminish the patriotic nature of veterans' service. The Civil War was the first time that the government really showed much concern for its veterans. The most vocal advocates for government recompense for veterans were the limb manufacturing companies themselves. Their campaign was so successful that they got the federal government to pay for research grants for innovations in prosthetics as well as limbs for any Union veteran that needed one. Civil War soldiers not only received limbs but also pensions and government hospital care, after much lobbying by the Grand Army of the Republic (GAR). The GAR was a political organization, which allowed it to accomplish so much in a way that veterans of the Revolutionary War could not, due to public fear that a strong military establishment would form an upper, aristocratic class and could possibly use force to radically change the government or impose their will on the people. The Civil War was when the government, at the behest of groups like the GAR, began to assume responsibility for their veterans and felt like they had a debt to repay them.

Many parallels can be drawn between the Civil War and the present. Since 2003, soldiers in Iraq and Afghanistan have been losing limbs at twice the rate of previous wars, including the Civil War. Like in the Civil War, this has provoked innovation in the

field of prosthetics. In the Civil War it was all about making the limb comfortable, but now the focus is on making the limb just like the one that was lost, making it realistic and able to move around and even grab things, in the case of prosthetic hands. Computer chips and wireless technology are being utilized to make “robot hands” that are mobile and able to pinch, grip, and flex. There have even been some limbs made with sensors that are able to pick up small signals from the brain and move in response. This research is again being funded by government grants in order to meet the need of veterans, just like in the Civil War.

Throughout history, conflict has been the driving force for change, with war being the ultimate conflict. While war causes immense suffering, it also has the ability to create, to inspire. As the author Stephen Cushman puts it, war can be a “belligerent muse.” Not only does it provoke innovations in science and technology like prosthetics, it inspires works of literature and art. War creates specific needs, and those needs are often met by advancements in science. It can be the driving force of not only inherently harmful technology, such as the atomic bomb, but it can also be used to help. War also has the ability to transform, as one can see in the example of the change in the relationship between the government and veterans. The Civil War really established a precedent for repaying the debt owed to veterans who sacrificed so much to preserve the ideals that the republic was founded upon.

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