1880's Inventions
THE FRESNO SCRAPER'S DEBUT
Digging Waterways to Thirsty Fields

by Sam Moore
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A letter written by Ivan L. Pfalser of Caney, Kan., appeared in the October issue of Farm Collector magazine, inquiring about how the Fresno scraper got its name. Here's some history on that scraper:

The city of Fresno lies about 200 miles north of Los Angeles in California's lush San Joaquin Valley. Pioneers in Fresno County during the 1870s realized they needed to irrigate in order to unlock the great fertility of the land. There was plenty of water in the San Joaquin River, but many ditches were needed to divert that water to the thirsty fields.

To dig the ditches, the pioneers first used a crude and inefficient wooden tool known as a buck scraper, which was pulled by mules.

By the early 1880s, a Fresno wagon shop owner named James Porteous improved on the original buck scraper design. Born in 1848 in Haddington, Scotland, Porteous was the son of a wheelwright and blacksmith. In 1873, he immigrated to the United States, moving to Fresno and establishing his shop. Originally named the Fresno Agricultural Works, it is now known as the Fresno Ag Hardware. It became the largest agricultural implement business in the valley and today is the oldest continuously operated business in Fresno.

Porteous, credited with more than 2,000 patents, received Patent No. 261,759 for his "Dirt Scraper" on July 25, 1882. The device had a front board that measured 8 feet wide by 2 feet high, with a steel cutting edge along the bottom and short end boards. There was a tailboard upon which the operator stood, which forced the cutting edge into the ground.

To haul the dirt, the front board was folded back flat by means of a lever, and the load was held in place by the end boards, although it looks as though a lot of the load would have fallen off.

A couple of years later, another Fresno blacksmith, Abijah McCall, invented a scoop-style, rollover scraper made of iron. McCall had experience as an earthmover on the irrigation ditches and, according to J.L. Allhands in his book Tools of the Earthmover, McCall's scraper "proved to be the earth-movingest mule-powered tool ever devised."

Frank Dusy reportedly loaned McCall the $150 needed to get a patent in return for half interest in the invention, and Patent No. 320,055 was issued to them on June 16, 1885.

The Dusy-McCall scraper had a metal bottom, sides and rear, with rounded rollover shoes at each end in the front. A tipping handle was attached at the rear and to two small wheels on a drawbar at the front. In use, the operator raised the handle enough to cause the front cutting edge to bite into the soil. After the scoop was filled, down pressure on the handle raised the cutting edge clear of the ground, which allowed the loaded scoop to be pulled to where it was dumped.

To unload, the handle was raised, the edge caught and the scoop rolled over on the rounded shoes, dumping the dirt. As the scoop was dragged over the load, it leveled the dirt to some extent. Originally made 8 feet wide, it was reduced to 6 feet when
the larger size proved too much for six mules to handle.

Dusy sold his half interest in the scraper to Porteous for $5,000, and when McCall died a year later, his son also sold his half to Porteous, for $1,000. Porteous also purchased the rights to another scraper patented by William Deidrick and combined the elements of it and the Dusy-McCall machine, along with his own improvements, to create the "Fresno" scraper.

The "Fresno," named after the town in which it first was built, came in 3-1/2-, 4- and 5-foot widths, with the 5-foot model being the most popular. A 5-foot Fresno was pulled by four good horses or mules, and used for leveling fields for irrigation as well as on dam and highway construction projects all over the world.

Allhands reported that a single Fresno had been known to move as much as 225 cubic yards of dirt in one long day.

In the 1994 book First Highways of America by John L. Butler, a South Dakota road foreman named Louis J. Jensen described using a Fresno.

Jensen was building a road in the fall of 1912 in South Dakota. He described how he started with a spade, shoveling out a trail along the side of the hill until it was wide enough for one horse, pulling a left-hand plow, to walk.

He wrote his equipment "consisted of walking plows pulled by two horses, Fresnos pulled by four horses and a road grader pulled by four horses." Jensen did not say how long the road was but noted it was completed in August 1913.

Another account, from an Internet piece by Fred Gibson, tells of Gibson's father's experience with a Fresno. He was working at a lime pit, driving a team of mules pulling one of the Fresno scrapers. They moved lime from the pit to a hopper, where it was loaded into Model T Ford dump trucks.

The Fresno had a long handle on it to control the loading and unloading, and if it hit a rock, the handle would swing sideways. The operator in this story reportedly got a couple of broken ribs when the swinging handle swatted him.

Several different manufacturers, including the Galion Iron works of Galion, Ohio, and J.D. Adams & Co. of Indianapolis, built Fresno scrapers, which were used on construction jobs well into the 1930s, when motorized graders and pans took over most earthmoving duties.

Many farmers continued to use the Fresno around the farm long after the contractors abandoned them, and many old Fresnos are probably still parked in fence rows and scrap piles, although one hardly ever appears at a show. FC

Sam Moore became interested in agricultural machinery while growing up on a farm in Western Pennsylvania. Today he lives in Salem, Ohio, and collects antique tractors, implements and related items.