In *Pecos Tales* (1967), Texas folklorist Paul Patterson recalled when his father reluctantly gave up his horses and wagon for newfangled automotive power, about 1920:

Although the label on the radiator said “Ford,” it was of the mongrel breed. Like the team we had traded off, it was no thoroughbred but was kin to all of them—Buick rear, Chevrolet universal, etc., with strains of Hupmobile, Apperson Jack Rabbit, and Cole Eight blood in evidence here and there. In deference to Henry Ford, and since we’d gotten the majority of it from Dr. McDonald, we called it Mack.

So here we are rattling down the road. [Brother] Ralph had relinquished the steering wheel to Papa, because of the latter’s desperate need to become attuned to the machine age. What with Ralph in close attendance, and deep ruts to simplify steering, Papa ought to make it all right. Even so, Ralph had his misgivings. And rightly so, for when a big wooden gate loomed up it took all of Papa’s strength and Ralph’s ingenuity to get Old Mack to “whoa.”

[Brother] John jumped out, or rather off, to open the gate. Just as he had gotten it pointed directly at us, Old Mack cold-jawed, or something, on Papa and lunged into the one-by-four that served as a latch, gave a coughing, gurgling sound and died. But the gurgling sound continued. The gate latch had stabbed open Old Mack’s bladder.
“What's it look like?” Papa asked, his tone three-quarters in anger, one-quarter in shame, since he felt some blame for Old Mack's lurching. John's reply was one to bring joy to any Westerner that ever lived, if the inquiry pertained to a brand new well and windmill on his property. But on this occasion it fell on unappreciative ears.

“Oh, Papa, it's throwin' a fine stream.”

Had Patterson continued his story, he might have told how Papa soon thereafter installed a cattle guard to replace the obsolete gate, which had wounded Old Mack. Undoubtedly the West Texan had seen the devices on the Kokernot Ranch near Alpine or on Joseph Tweedy's spread at Knickerbocker or on the vast Noelke Ranch, which fanned out west of San Angelo, or on all three. Cattle guards were appearing in every place where barbed wire, roads, and automobiles converged, and each one of them was a bit different from the one before.

The cattle guard is a folk innovation, a bit of practical technology that literally traces its origins to antiquity. Unlike barbed wire, which also had many would-be inventors, the cattle guard ultimately saw no one design become standard in the way that Joseph Glidden’s double-twist barbed wire led its industry. Glidden’s 1874 patents on the wire—and on the machine that economically produced it—enabled the Washburn & Moen Manufacturing Co. of Massachusetts to monopolize the barbed-wire market. When John W. (“Bet-you-a-million”) Gates acquired the Washburn-Moen interest, he parlayed it into American Steel and Wire, an important component of the U.S. Steel merger in 1901, then the largest in history.

Though fence owners had to buy their wire from U.S. Steel because of its patent monopoly, they could (and did) construct their own cattle guards from logs, upturned two-by-fours, or pipes. Patterson's cattle guard probably was like his hybrid truck, Old Mack, a bit of every functioning device he had ever seen—Kokernot, Tweedy, and Noelke. Prettier versions were available in mail-order catalogs, but they were no more effective than homemade ones, which, for the most part, were cheaper. Because the cattle guard ultimately was an innovation rather than an invention, no one ever cornered the market on its manufacture and sale. No “cattle guard trust” emerged. Consequently, no systematic body of information about the cattle guard has ever existed, until now.

The highway cattle guard logically appeared first where it was most needed—on the Great Plains after the turn of the century as automobiles replaced slow, plodding draft animals. That fact inevitably will draw this work into the ongoing Webb-Shannon debate about the significance of geographical determinism. Walter Prescott Webb, in *The Great Plains* (1931), hypothesized that settlers modified tools and institutions to fit environmental neces-
sity, as in the adaptation of windmills on the plains, or, more pertinently to this story, as in Glidden's invention of barbed wire, which was so eagerly embraced by plainsmen. Fred A. Shannon's *Appraisal of Walter Prescott Webb's "The Great Plains"* (1940) refuted Webb's thesis by pointing to the origin of the Colt revolver, one of Webb's own examples, which was developed in Connecticut without any apparent reference to the possibility of its eventually being used on the Great Plains. Shannon, an easterner, said that Webb, a westerner, used selective documentation (which was true) to buttress an indefensible argument—namely, that environment modifies institutions, instead of the other way around. In reality, the debate is between unorthodox methodology (Webb's) and tradition (Shannon's). While there is merit in both positions, I side with Webb, perhaps in part because I studied with several of his disciples, but also because I see logic in his "institutional fault" view of human development. The highway cattle guard did appear first where it was most needed—where fences, open-range roads, and automobiles converged most frequently: namely, on the Great Plains.

If cattle guards were products of geographical determinism—and surely they were—they must therefore also have been manifestations of economic determinism, crass necessity. It is no mere coincidence that Hoy discovered the greatest concentration of cattle guards to be in the oil fields of the American Great Plains and the Southwest. Time is money. Cattle guards are infinitely more efficient than creaky gates, which in the words of Paul Patterson "loom up" at unwary traffic. Because the highway cattle guard has worked so well, use of it has spread worldwide, wherever fences, roads, automobiles, and economic necessity have come together.

The folk-device reality of the cattle guard has necessitated an unorthodox methodology in this book, a blending of traditional history and folklore that reveals much, I think, about the American character—our common quest for a better design, a more practical and cheaper way. Anyone who has driven over a cattle guard at any speed will vividly recall that teeth-chattering, pipe-clanging experience and no doubt will appreciate the evolutionary adaptation of painted stripes on western highways, which somehow deter livestock. Shannon no doubt would argue that those painted stripes are proof that mankind modifies the environment, while Webb would point to the location of those surrealistic caricatures of jarring reality—in the West, along paved roadways where people regularly drive fast. Somehow I am reminded of a roadrunner cartoon.

This book by James Hoy, fortunately for the reader, is largely devoid of historiographical posturing. When I first read the manuscript, I remembered J. Frank Dobie's treatment of *The Longhorns* (1941), a rough-hewn blend of folklore and history that simultaneously served both disciplines. Hoy's informal style suits William Curry Holden, who appears as a source in the text.
Warm, insightful, leathery Curry Holden is an unequaled raconteur, who, unfortunately, is known mostly as a scholarly historian, author of such works as *Alkali Trails* (1930), one of those works cited by Webb in *The Great Plains*. Hoy's Holden is the personal, informal version whom I enjoyed knowing one winter in Lubbock. He is but one of many interesting, vivid folk who are encountered on the pages that follow.

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