The Cattle Guard
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The automotive cattle guard first appeared on the Great Plains about 1905; today it is found in livestock country around the world. Although I have not been able to make a definitive survey of cattle guards worldwide, I have tried to determine whether or not cattle guards are found in the major stock-raising regions of the world. In addition to traveling, I have talked to students from other countries; I have talked to people who have traveled abroad and who might reasonably have been expected to notice cattle guards; and I have contacted the appropriate personnel in the embassies of the major agricultural nations. As a result, I have learned that cattle guards are especially common in English-speaking countries or in countries that formerly were British colonies—England, Scotland, Wales, Ireland, Australia, New Zealand, South Africa, Canada, and Zimbabwe—and that they are also used in Mexico, Brazil, Venezuela, Argentina, Spain, France, Norway, West Germany, and Switzerland. Probably they are also used in countries such as Paraguay, Uruguay, Portugal, and Pakistan. Railroad cattle guards were being used in parts of India at the turn of the century, and a few years ago the Smith Cattleguard Company of Midland, Virginia, which sells franchises for the manufacture of a precast concrete cattle guard, received an inquiry from S. R. Borawake of Kopargaon, India.

Even my limited survey of the use of cattle guards in Britain suggests that a complete history of the British cattle guard would be very interesting. Cattle grids, as they are called by the English, take many unusual forms in addition
to the standard pipe-bar grid. For instance, on a road in Exmoor some years ago, there was a cattle guard that had been made by setting a number of drainage tiles on end in a bed of concrete. This design and the unusual material may have been dictated by the exigencies of World War II, according to Richard Jemmett of Saffron Walden, Essex, who sent me a photograph he had taken of this guard. Jemmett thinks that this particular guard has now been replaced because of the inconvenience of cleaning the dirt and debris from the tiles.

The English tend to build unusual concrete cattle guards. During the summer of 1980, I saw numerous cattle guards all over Britain, including several made of various types of concrete building blocks set on end. I did not see, nor have I heard of, any painted-stripe cattle guards in any part of Great Britain. Cattle guards are used extensively at the entrances of stately homes and formal gardens in England, particularly those under the care of the National Trust. In Cornwall alone, cattle guards exist at such places as Lanhydrock (a Victorian manor house), Trerice (an Elizabethan manor house), and Trelissick (a landscape garden), all National Trust properties open to public view. Officials of the National Trust were not able to tell me how many cattle guards there are on properties under its control. They either lacked or did not have reasonable access to such data. In any case, all over the island, National Trust properties are well supplied with cattle guards. One of the more interesting is a seventeen-bar grid at the entrance to Charlcote Park in Warwickshire, the ancestral home of Sir Thomas Lucy. This unusually wide grid is used to keep within the park the deer, which are descendants of those allegedly poached by Shakespeare before he left Stratford-on-Avon for London. Private estates, as well as ones under the National Trust, use cattle guards extensively. An English estate was the setting for the movie *The Big Sleep*, based on a Raymond Chandler mystery and starring Robert Mitchum. Attentive watchers can observe Mitchum crossing at least one cattle guard as he drives to his client's mansion in the opening scene of the film.

Cattle guards can also be found on ordinary farms all over England, Scotland, and Wales. For example, Mr. and Mrs. Gerry Symons of Shillingford, St. George, just outside of Exeter, bought their farm at the end of World War II. They have always been progressive and innovative in their farming methods, having installed one of the first milking parlors in their section of England, for instance. Soon after buying the farm, they also installed a cattle guard which, Mrs. Symons says, has been one of their best investments. This farm is only a few miles from Dartmoor, a large open pasture area inhabited by sheep and wild ponies. The ponies are very clever, according to Symons, for they will lie down on one side of a cattle guard and roll over, then come up on the other side in order to get into a different pasture. When we crossed Dartmoor on our way to Cornwall, we saw many ponies and several
A cattle grid at the entrance to Charlcote Park, Warwickshire, England. (Courtesy of Harold Aston)

A cattle grid on Great Hewas Farm, owned by Mr. and Mrs. Frank Dymond, Grampound Road, Cornwall, England

A Combermere Ladder near Overton-on-Dee, Clwyd, Wales
cattle guards but, unfortunately, no ponies in the process of rolling across them. Some British sheep have learned to cross wingless cattle guards by lying on their sides and pushing with their feet on the fence at the side of the grid, according to B. Gallagher of the British Railways Board.

Before meeting with Symons, I had visited John V. Berryman, who operates a dairy farm on several hundred acres just outside Datchet, which is close to Windsor, which, in turn, is near London. Here, in one of the most heavily populated areas of England and one of the most cosmopolitan regions of the world, are several cattle guards on a road that runs through some small pastures where cattle and sheep roam freely in an open-range setting that exists almost literally in the shadows of Windsor Castle.

The farm that we stayed on while I was doing research on the origins and nature of the Cornish flat-stone stile was located a few miles northeast of Truro. It was equipped with two cattle guards, one at the entrance to the main road, the other protecting the yard of the farmhouse from wandering cattle, horses, and sheep. Mr. and Mrs. Frank Dymond, who have owned the farm since the late 1940s, installed the cattle guards a few years ago. Their daughter, Margaret Reed, told me that cattle guards are sometimes called "cow filters," because they let cars pass but filter out cows.

Two of the most unusual cattle guards I saw in Britain were located in Wales. One of these, on the outskirts of Monmouth, was a pitless guard that flattened out when driven over; then, after the car had passed, it was pulled back into an arch by springs housed on either side of the grid. This guard was sitting on a concrete base, and the firm footing of the concrete may well have encouraged cattle to attempt to step between the rather widely spaced bars. In any case, an extra pipe had been placed across the opening above the grid to serve as an added barrier.

Near Overtop-on-Dee in northeastern Wales I was able to see perhaps the last extant Combermere Ladder (see chapter 3). In response to a query published in an English journal, Lady Ruth Lowther of Lightwood-on-Green had written to me about this unusual type of early-day cattle grid. It had been invented, patented, and sold by Sir Kenneth Crossley, son of the founder of Crossley Brothers Ltd. and himself founder of Crossley Motors Ltd. He lived at Combermere Abbey, a large rural estate near Whitchurch, in Shropshire. There, shortly after World War I, he tired of the gates on the long drive to the manor house, so he dug pits four feet deep beside the gates dividing the fields, and over each of these pits he placed two one-foot-wide iron ladders—one for each set of car wheels. Crossley was born in 1877, and he traveled widely, including hunting trips to America. Later he married a woman from Chicago. Although I do not know if these American connections had anything to do with his inventing a cattle guard, I find it intriguing that his Combermere Ladder was built on exactly the same principle as cattle guards built in the
Nebraska Sandhills and used extensively there just before Crossley built his. These Nebraska ladder guards continued to be used for decades, and even nowadays an analogous cattle guard with an open pit in the middle is used in Llano County, Texas.

When I visited Lady Lowther in June 1980, she took me to the one remaining Combermere Ladder. This old, original cattle guard is placed at the entrance to the house of an estate a few miles outside Overton-on-Dee. Modern cattle guards have been installed along the perimeter of this estate, but the Combermere Ladder has not been replaced, because the owner of the property wants to discourage motorists from driving fast as they approach his house. The sight of a gaping pit with two narrow tracks for automobile wheels is enough, Lady Lowther told me, to slow down even those callers who are used to the Combermere Ladder. First-time callers usually come to nearly a complete stop before driving over it. So this particular Combermere Ladder serves its purpose today just as well as did the first one built by Sir Kenneth Crossley about 1920.

Cattle guards are also found in most of the former Commonwealth nations. It is not surprising to find guards in Canada (from Vancouver Island to the Maritime Provinces), for the idea probably went north with American cattlemen and oilmen. (Thus, cattle guards are called “Texas gates” in western Canada.) Just how cattle guards got to South Africa or to Australia and New Zealand is not so easily determined, but get there they did—and in large numbers after World War II. Perhaps soldiers returning home, or immigrants from Britain or the States, encouraged their use.

In South Africa, cattle guards are commonly called “grid gates,” “motor grids,” or (as in England) “cattle grids.” Leonard Thompson, currently a professor of history at Yale University, lived in South Africa from 1926 until 1937, when he turned twenty-one, then again from 1946 to 1961. He does not recall having seen any cattle guards during his earlier residency, although he admits that there may have been some. What he does remember is the “infinite tedium of opening and closing concertina barbed wire gates” while traveling secondary roads. On the more heavily traveled routes, young African boys would sometimes open and close gates in exchange for tips, but usually, as in the United States, the youngest member of the family who was capable of handling gates got the job. When Thompson returned to South Africa in 1946, he found that many cattle guards had already been or were being installed on public roads and at entrances to cattle farms.

P. Serton of the Department of Transport in Pretoria has told me that during the 1930s, grid gates began to replace public gates that had been installed for the use of motorized vehicles on public roads. These original cattle guards consisted of a concrete-lined pit some five by ten feet (depth unspecified) with two internal walls running with the road to help support the grid
rails, which were usually spaced about four inches apart. These cattle guards had no approach slabs of concrete; therefore, just as in sandy regions of the United States, deep chuckholes usually formed next to the pit walls, often causing broken car springs.

G. Orczy of the Transvaal Roads Department has informed me that today's cattle guards in South Africa are often made of concrete, either precast or cast on the spot. In either case, the concrete bars are constructed so as to minimize the possibility of an animal's getting a hoof caught between the bars. Orczy also furnished me with a copy of the section of the 1933 Roads Ordinances of Transvaal that deals with fences and gates. Section 79 of chapter 8 delimits the regulations concerning by-passes for motor vehicles on public roads. These by-passes are defined in subhead 11:

For the purposes of this section a by-pass means a track through an opening in or over a fence along or adjacent to the line of a public road designed or constructed with the object of allowing free passage for self-propelled vehicles while preventing the passage of animals. A by-pass may be constructed either by building a ramp to enable motor vehicles to be driven over the top of the fence or by way of a pit dug in or alongside the road and covered with an open grille so as to enable motor vehicles to pass over it, but to be an obstacle to the passage of animals.

Thus, cattle guards, apparently both of the arched-crossover and of the pit-and-pole types, seem to have been in use in Transvaal prior to 1933. As of 1965, when a survey was taken there, 132 cattle guards were in use on public roads, 128 of them to the side of a gate, only 4 in the middle of the road (as nearly all American cattle guards would be). Orczy estimated that this number was essentially unchanged as of 1980, but it should be noted that this survey did not include all roads in South Africa or any of the cattle guards that would be found there on privately owned farms. Orczy also pointed out that increased fencing of right of ways has lessened the need for cattle guards in some regions. Finally, Serton told me that at least one painted-stripe cattle guard was being used in his district. When the paint was well maintained, it worked as well as an ordinary grid gate.

New Zealand's sixty million sheep and eight million cattle are well guarded by what its citizens call "cattlestops." Boyd Wilson, editor of New Zealand Farmer, estimates that at least two-thirds of the farms in both New Zealand and Australia have at least one cattle guard. If so, then probably a greater percentage of farms use cattle guards in these two countries than anywhere else in the world.

New Zealand cattle guards, for the most part, are very much like those in the United States. They are made with bars of railroad rail or two-inch pipe spaced four or five inches apart over a pit two feet deep. Jennifer Nicol of
Christchurch told me of an amusing encounter between twenty-five or so weaned lambs and their first cattle guard. The lambs were racing down a road, and a sheep dog was vainly trying to get in front of them to turn them. The lambs did not see the barrier, and "within seconds we had a cattlestop full of very surprised woolly lambs, legs dangling between the railway irons. . . . The last of the mob had an easy getaway over the backs of those trapped! None of those stuck lambs had any injuries but I am sure they never forgot that cattlestop."

The *New Zealand Farmer* has printed two articles about cattle guards. "Cattlestop Designs," which appeared in 1976, gave building plans for the two guards that the editors judged to be the most effective and practical from among those submitted by readers in response to an appeal for suggested designs. Both designs, which are quite similar to American models, recommend using eight-inch concrete walls for the pit and either pipe or rails for bars. Some of the commentary that accompanied the building plans bears repeating: A strong grid is necessary in order to resist buckling under heavy loads. Wider cattle guards (eight to twelve feet) are necessary in pastures or pens where stock is crowded, while narrower grids (only five feet) will suffice where only an occasional animal might wander. Proper drainage for the pit is essential, although one design advocated leaving a pit two-thirds full of water so that the water would function as a visual barrier. The other design advocated a shallow pit and a four- or five-inch gap so that a cow, should it step onto the grid, could put its foot through to the pit floor and extract it without injury. A third design was appended to this article; in it the bars of the grid are laid at a twenty-five-degree angle rather than straight across the roadway. This design would permit a vehicle to "ripple" rather than to bump across. I do not know how commonly this technique is used in New Zealand, but I have encountered only one cattle guard installed in this fashion. It was on a road in the middle of the Flint Hills of northwestern Greenwood County, Kansas. It was not noticeably smoother to cross than the other guards in the area, but perhaps the angle was not the correct one.

The second article, "Ingenious Portable Electric Cattlestop," was written by the journal's editor, Boyd Wilson, in 1979. It discussed the advantages and disadvantages of a cattle guard invented by Dick Pilbrow of Oxford, New Zealand. This cattle guard looks much like a metal hospital bed frame, with charged wires running across where the innersprings would rest. The main objection to this guard is its potential danger to humans, especially children who might fall into or become entangled with the wires. Its advantages, however, are many: it stops stock, it can be made in any farm shop, it is durable, and it is easily transported, even by hand. Because it does not have a pit, it is smooth to drive over. Wilson recommended that, instead of discarding this cattle guard because of its dangers, efforts should be made to minimize the
dangers. This guard, he suggested, should be used only in areas where there is no likelihood of children coming into contact with it. Also, warning signs should be erected, and, most importantly, a battery with moderate power should be used—not a high-potency energizer. The safety test that he recommended was for an adult to see if he could hold onto one of the live grid wires for thirty seconds while standing barefoot in damp grass.

I was not able to learn as much about Australian cattle guards as about those of New Zealand, although I did discover that they are called “cattle pits” if they are railroad guards, and “ramps” if they are automotive guards. Professor Russel Ward of the History Department of the University of New England in Armidale, New South Wales, said that in the 1920s, cattle pits were in use on level railroad crossings. Only after World War II did he recall having seen cattle guards on highways. At the present time in Australia, cattle guards are in common use on range roads and at entrances to farms. Ward concurred with my opinion that the automotive cattle guard developed directly from the concept of the railroad cattle guard and that both were undoubtedly American inventions. Although nothing on the subject has ever been published in Australia, he learned that railroad cattle guards, usually made by turning wooden beams on edge to make a diamond-shaped grid bar, were standard equipment on Australian railroads from the beginning of the twentieth century.

Cattle guards in Mexico, like those in Canada, can probably be considered as an extension of United States use. In some countries of Central and South America, however, fencing is at best rudimentary, and automobiles are scarce or absent, so there is little need for cattle guards. I have learned that cattle guards are being used in Argentina, Venezuela, and Brazil. According to the Reverend Carl J. Hahn, who spent nineteen years as a missionary in Brazil, the cattle guards in that country resulted, not from Brazil's Portuguese heritage, but from its economic ties with Great Britain throughout the first half of the twentieth century. Another American religious, Sister Irma Mary Grace Malaney, O.S.B., had an interesting experience with a cattle guard in Brazil. In 1972 Sister Irma wrote to Sister Anne Cawley at Mt. St. Scholastica in Atchison, Kansas, about a trip into the fuzendas (range country): “On our way back last week, I ran into a sort of ditch. It's really a device for containing cattle without having a fence across the road. Anyway I knocked the right front tire out of alignment, and took most of the shock out of the front shock absorber.” Sister Anne told me that her colleague was from an urban background and therefore had never before seen a cattle guard.

Hahn, who married a Brazilian and has traveled extensively in the cattle regions of that country, has told me that there are many cattle guards there, most of them with grids made of wooden poles. These grids are often old, and the poles are weak and rotten. He was not surprised when I told him about
A cattle guard at the entrance to the thirteenth-century church at Santillana del Mar, Spain. (Courtesy of Connie Patton)

A *mato burro* (Brazilian cattle guard). (Courtesy of Sister Anne Cawley)

A *puerto ganado* (Mexican cattle guard). (Courtesy of William R. Thompson)
Sister Irma’s wreck, for one of his friends had been thrown from a car and killed when the wheels had broken through a grid, wrecking the car. When Hahn was driving in Brazil, he always opened the ox gate at the side of a cattle guard and drove through there instead of going over the grid. Nowadays, when many dairy farms have been established in what was once beef-cattle country, milk trucks also must avoid the weakened grids by passing through the gates, all at great inconvenience and loss of time. What, I asked, was the point of having cattle guards if their main function was negated? His response was that the Brazilians had learned from the British (and also from some American ranchers who had holdings in Brazil) that cattle guards are an integral part of cattle country. Thus, they have them on their roads, even though some of them are unusable. When I protested to Hahn that such a situation was not practical, to put it mildly, he reminded me that, as a student of folklore, I should surely be aware of cultural differences: America is the land of Yankee ingenuity and can-do; Brazil is in the land of mañana.

One of my students at Emporia State University in the fall of 1980 was Enrique Alvarez-Prendes, a Venezuelan. He told me that cattle guards in his country, as in Brazil, are called mato burros (burro killers). Apparently burros get caught and stranded in them, then they may have to be destroyed if they have broken their legs, they may starve to death if they have been caught in a remote region, or they may be killed by jaguars and other predators. He also told me that the Indians in some remote regions use log bridges, much like those used over dry moats described in chapter 6, in order to keep livestock out of their gardens.

Cattle guards of both the railroad and the highway varieties are used in Argentina. The railroad cattle guards, similar to the surface guards used in the United States, were described to me by Victor H. Pastor, an Argentinean who practices medicine in Emporia, Kansas. Norman Schlesener, the Kingman County (Kansas) agricultural extension agent, saw highway cattle guards when he was an exchange student in Argentina in 1953. They were pit-and-pole cattle guards whose bars were made of quebracho wood, a hard, rot-resistant wood used for railroad ties in South America. Argentineans called them guardas ganados.

Apparently, cattle guards are not needed in many European countries because the normal practice is to drive cattle out to pasture each day and back into a barn or pen at night. I have learned of only a half-dozen cattle guards in West Germany, for instance, all near the village of Sundern in Westphalia. These cattle guards can all be traced to one man, Professor Doctor Rudolf Kaiser of Hildesheim. Sometime in the early 1950s Kaiser visited England, where, for the first time, he saw cattle guards and was struck by their simplicity and practicality. When he returned to Germany, he told his brother, who was running the family farm, about what he had seen. His
brother then built three cattle guards, all of which are still in use. They measure five meters by one and two-tenths meters and have eight square wooden bars that are ten centimeters in width and are spaced ten centimeters apart. The pits are walled with concrete, and five support bars help the grid bear up under use by tractors. The reaction of his neighbors was negative at first. They were sure that either the cattle guards would fail to work or else the cattle would suffer broken legs. But none of the hundred-head herd he has maintained in the intervening years has ever escaped or been injured. Now there are three or four more guards in the village, all patterned after his.

There are cattle guards in Normandy, on the roads of the meadows of the Swiss Alps near Villars, and probably in other parts of Europe as well. From its obscure and literally pedestrian origins in moat bridges and fence stiles, through its manifestation as an essential part of railroad fencing, to the first experimental structures on the roads of the Great Plains about 1905, the cattle guard has undergone a long and interesting metamorphosis. Quietly and unassumingly it has become both a symbol of range country and a nearly indispensable tool of mechanized agrarian herding around the world.