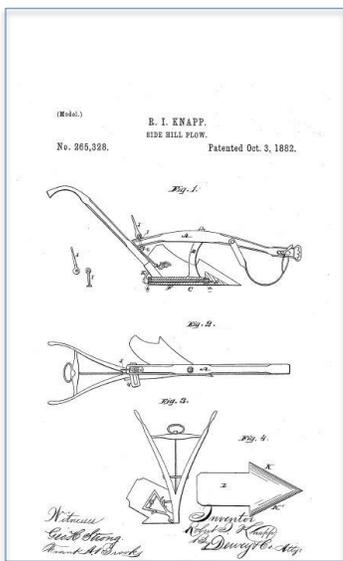


## Necessity Breeds Inventors and Innovators on the San Mateo Coast

—Marc Strohle

The San Mateo coast is known for its bucolic scenery and beauty—not generally for its inventors. Yet Half Moon Bay and the surrounding communities boast some interesting and colorful inventors and innovators. Given the importance of farming to the area, it’s not surprising that many of the inventions are rooted in agrarian applications. A common theme throughout the innovations is that “necessity is the mother of invention,” as all of the innovations described in this article are responses to significant “real world” problems and needs.

The most visible and colorful inventor was Robert I Knapp, a farmer, blacksmith, newspaper publisher, politician, and most notably inventor of the side hill plow. Knapp watched farmers struggling to plow their land on the coastal hills using Kilgore plows which were heavy, clumsy and difficult to reverse the blade after each row was plowed. The plows were also not durable and after having repaired many, Knapp decided to make his own plow in 1873.



1882 patent for Robert I. Knapp's Side Hill Plow

It was so successful that Knapp had three patents on it by 1875, as it was lighter, sturdier, and far easier to reverse the blade after each row without having to let go of the plow.

The plow won 14 awards at state and county fairs, and another award at the New Orleans World's Exposition.

The San Mateo Gazette visited Knapp's Half Moon Bay firm in 1878, noting that along with the innovative plow, Knapp had invented a “drop hammer” machine for cutting and grinding steel to speed up manufacturing, as demand for the plows was substantial. He also creatively used a horse-driven treadmill as a power source at his garage.

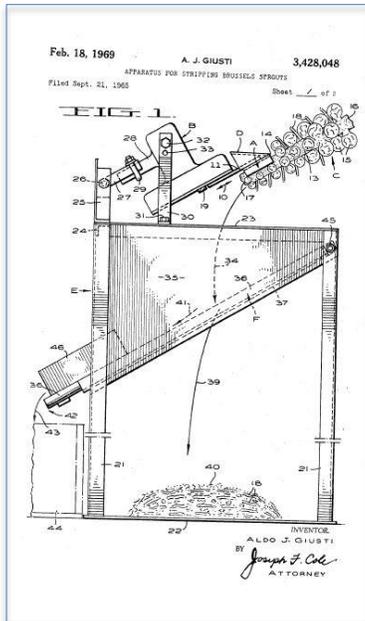
Knapp was the most visible of the Coastside inventors, but other lesser-known innovators made contributions as well. The boom in artichoke farming was the mother of necessity for another Coastside inventor, Ralph Woodman from Pescadero.

Artichokes were introduced to the United States in 1806, but the first commercial planting in California is said to have taken place in El Granada, by Dante Dianda in the 1860s.

The first coastal artichokes were sent to the East Coast as early as 1904, to be sold to Italian populations. Big artichokes that sold for a nickel in San Francisco often brought as much as a dollar in Italian neighborhoods in Eastern cities.

Artichokes are priced by their size and Woodman found that existing graders didn't work well for artichokes, so he invented and patented an artichoke grader.

Woodman's patent filing number 1,513,684 dated October 28, 1924 states that he “Invented certain new and useful Improvements in Artichoke Graders. This invention relates to grading devices, my main object being to provide a grader especially adapted for grading artichokes, which on account of the more or less long stems which practically form an integral part of the vegetable, are hard to grade in the ordinary type of grader.”



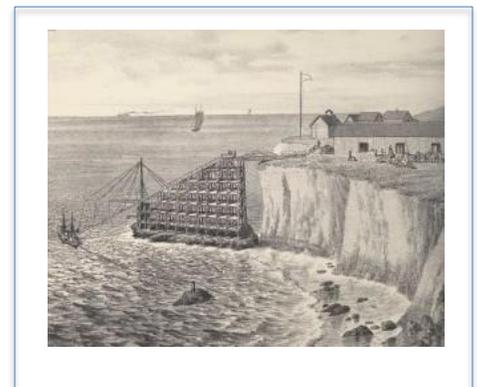
1969 patent for Aldo Giusti's Brussels Sprout Harvester

Yet another inventor on the coast was Aldo Giusti, whose family can still be found farming on the coast. Like many farmers today, he faced a labor shortage in the 1960s that made it difficult to find men to harvest his Brussels sprout crops. At first, he brought back homeless men from San Francisco to work in the fields, but then came up with the idea for a mechanical harvesting machine for his Brussels sprout crops and patented the idea on February 18, 1969, patent number 3,601,406.

Giusti's patent describes "An apparatus for stripping Brussels sprouts and being provided with a cutter having a guide surface disposed to have the main stalk of an unimpaled Brussels sprout plant advanced there along, the cutter having an edge disposed to strip sprouts from the plant, and this cutter being connected to a rapid-speed vibrator that is continuously reciprocated back and forth in short strokes." His creativity went far beyond farming implements as in the early 1970s Mr. Giusti, an avid golfer, filed patent 3,601,406 for a "Golf-Practicing Apparatus." Players used a "self-adhering golf ball" that could "be propelled from a tee on a matt" to a panel, to which the ball stuck, and the panel was marked to show the elevation and distance of a drive.

In addition to the successful inventors were a few misses, including Alexander Gordon's chute near Tunitas Creek. A big challenge facing Coastside farmers was that of getting produce and goods to their markets and customers, as roads at the time were poor to non-existent and the rocky, bluff-lined coast was not conducive to anchoring and loading of ships. And while there were wharves at Pillar Point and Amesport (now Miramar), farmers to the south faced lengthy and costly trips to get to them. Several Coastsiders rigged cables and hawsers to slide their goods from bluffs to waiting ships, but the most interesting approach was "Gordon's Chute," constructed for Gordon in 1872 by William Bell.

Gordon wasn't truly an inventor, as chutes date back thousands of years, but he gets points for the sheer audacity of his approach. The 100-foot-high chute was built on top of rocks and reached from the top of the bluffs to the open sea. Gordon had the chute built to solve his own problems in getting produce from his farm to market, but also hoped to generate income from other farmers. The structure was beset with problems from its inception. The bluff was high and windy, and more than one person was killed in accidents. Ten-to-twenty-foot waves broke over the base of the chute, and ships' captains had to brave ocean swells to anchor on the reef—many would not.



Worse, the steep 45% angle slide to ships created friction that reportedly sometimes ignited sacks of produce, which arrived in flames or burst on impact at the bottom of the chute. Gordon's Chute had some successes, most notably during a grain boom in the 1870s, but ultimately the enterprise went bankrupt. It was destroyed on November 17, 1885 during a Southeast gale.

While the San Mateo coast can't boast any inventors of the fame and notoriety of Thomas Edison or the Wright Brothers, it did spawn some important ideas and creations that solved pressing problems and helped the Coastside to become what it is today.

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