

Garbage Can Music! Rube Goldberg's Three Careers

Matthew Axtell

NEW YORK, NY., May 11, 1914 — It was 11:30 p.m. and America's metropolis was an ashen mass of defeated men, helpless women, and murderous machines. Blood-spattered tragedy soaked the pages of the *New York Evening Mail*. On page sixteen, the *Mail* reported that railroad magnate Decatur Axtell "was struck by an automobile while crossing a street at noon to-day and is believed to have been fatally injured." On the same page, a politician died at the Waldorf after a failed blood transfusion. On page seven: Anna Ciriozwna of East 122nd was fatally burned when "her clothes caught fire as she lighted a gas range." The headline: "MAID'S CLOTHES BURN TO FLESH." On page twelve: a black-and-white shot of a stunned lady manicurist sitting in a chair, surrounded by five men seeking revenge. One of the men cuffed her hands in place. Others hammered a nail into her fingertips and directed a buzzsaw to her wrists. Beside vials of "sad oil" and "agony fluid," another man prepared to light a bomb. "Don't be scared," he leered. "If anything happens we'll mail your hands back to you in perfect condition" [Figure 1].

* * *

This last image was a cartoon drawn by Rueben Lucius Goldberg, age 30.¹ Since the 1930's, most writers have passed over Goldberg's early, nasty machine-based comic strips, preferring to characterize "Rube" Goldberg (1883-1970) as a merry machinist whose signature drawings of multi-step inventions were wacky, eccentric, and whimsical little nuggets of gentle escapism. His "inventions have added

Matthew A. Axtell is Assistant Counsel for Environmental Law in the Washington, D.C. Headquarters office of the U.S. Army Corps of Engineers. He has received degrees from the University of California at Berkeley (B.A. History, 1998) and the University of Virginia (J.D. Law, 2002). His essay on an unfinished canal in pre-Civil War Virginia was awarded the 2004 Levinson Prize by the Society for the History of Technology as the best unpublished debut work in the History of Technology field.

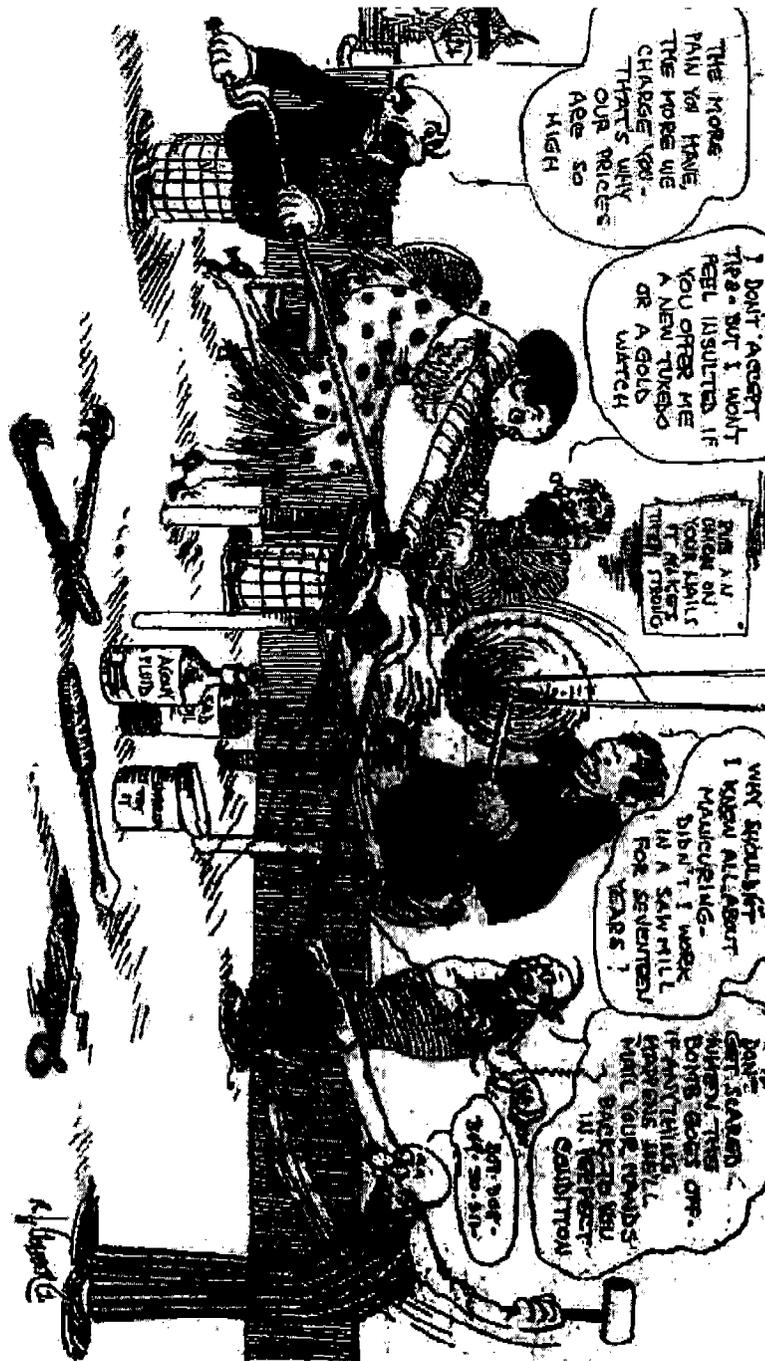


Figure 1: "Breaking Even." New York Evening Mail. May 11, 1914.

Courtesy of the New York Public Library.

to the joy of life for twenty years," critic William Murrell asserted in 1938 (162). In 1973, Smithsonian curator Peter Marzio wrote a full-length biography concluding that Goldberg "loved complex machinery" (177).

Over the years, writers have recycled the cartoons and conclusions anthologized in Marzio's book. Unfortunately, his soft interpretation doesn't accord with hard-boiled reality. Over the course of seven decades, Goldberg's career actually passed through three phases. The early cartoons of "Goldberg I" for the *San Francisco Chronicle and Bulletin* (1904-7) betrayed hidden apprehensions—first acquired as a young engineer—about mechanization. As a syndicated cartoonist for the *New York Evening Mail* (1907-1924) and Hearst's *New York American* (1918-34) and *Evening Journal* (1925-1934), these doubts came to the forefront: "Goldberg II" promoted the rejection of mass-produced material culture, ridiculing "labor-saving" contraptions and the people that bought them. By the 1930's, cartoons and comics had become a children's medium, and the old roughness fell out of favor. "Goldberg III" came into view, drawing cuter inventions and showing up in ads as a clownish inventor. By the time Marzio wrote his biography, evidence of Goldberg's darker early days was banished to microfilm.

Writing in 1954, Martin Heidegger proposed that "essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it" (340). For Heidegger, such "essential reflection" took place in the realm of art, said to direct the energy of technology towards creative ends. In newspaper comics that subverted images and taglines from machine ads and editorials, Goldberg I and II met Heidegger's challenge, creating mass-produced art that turned the trappings of America's technological society against themselves. Later, when readers and sponsors became eager for a less threatening take on the machine age, Goldberg III drew gentler cartoons, helping to erase the memory.

The Goldberg arc is a story of alarm, resistance, and resignation towards technological change. It is a story written in grease pencil and newsprint, in cartoon and comic strip, and one that the American masses have been living for centuries, with the same cyclical regularity that they have opened and read their evening mail. Written a century after Goldberg's first cartoon appeared in the *Chronicle*, this essay tells this story by revisiting Goldberg's original satire and by chronicling its later domestication.

Rube Goldberg I: San Francisco, 1883 to 1907

At first glance, the machine-based tortures of the manicurist scene and similar strips seem incongruous with Goldberg's background as a university-trained engineer. When he entered the University of California in 1900, his hometown of San Francisco was on the technological vanguard. South of Market Street, the iron district produced mining machinery for the Mother Lode and beyond (Brechin 1999). North of Market, the *Mining and Scientific Press* (MSP) published quartz mill patents for an international audience (Bailey 1996). Across the Bay, Samuel Christy, the Dean of U.C.'s College of Mining, prepared young men like Goldberg to become masters of machines. Christy collected advertisements for mining machines, scheduled field trips to local foundries, and stocked his laboratory with the latest devices. In 1902, Goldberg and Christy ascended to the corner of the campus to attend the groundbreaking for the new Hearst Memorial Mining Building, touted as a modern "Temple of Science and the Industrial Arts." When complete, massive redwood doors would open onto a three-story vestibule housing a permanent "Mining Museum of Ores and Machinery." While named after the father of William Randolph Hearst, its real idol of worship was the machine.²

Many mining practitioners did not share Christy's enthusiasm. Alongside patents and ads, the MSP published a running tally of machine-induced disasters. "Only those who have experienced it know the strain and worry of attempting to get regular results with inefficient and worn-out machinery," a British engineer wrote in 1906. "Pumps break down, boilers leak, and pipes burst at all hours of the night and day, while the rush of repair work is carried on by those too fully alive to the hopelessness of their task" (Tinney 1908, preface). Writing in 1909, mining engineer Herbert Hoover saw himself standing above machines: since the marketing of new devices was unrelenting, part of his job was to separate the genuine from the puff. New winding tools were "of an inherently wasteful character," mechanical haulage was "seldom applicable to metal mines," and hand drills were often more efficient than machine drills (124-52). Safety and cost overrode a convincing sales pitch.

Goldberg's brief engineering career furnished first-hand grounds for skepticism. In Berkeley, Christy immersed students in theory, rendering them ill-prepared for the field. In 1903, Goldberg participated in the college's "Summer School in Practical Mining" by working

in the Mother Lode, confronting Christy's machinery in a sinister light. On his first day, a rope-and-pulley transport cage shot him 2,000 feet below. He fainted. He reacted to his first blast by fainting again. "I had no appetite when I was whizzed upwards into the world of the living," he recalled (Marzio 1972, 19). The mine assigned him to a stamp mill. "The noise nearly burst my eardrums, but at least I was above ground" (Goldberg 1970, 409-16). Upon graduation, Goldberg was convinced "that of all of the hocus-pocus the world had to offer the outstanding bunk was mining engineering" (Goldberg 1928). A bit later, he came to the same conclusion about any engineering career while charting sewers for Thomas Woodward, San Francisco's City Engineer. Woodward's 1904 report to City Hall read like a lost chapter from *The Shame of the Cities*, with lurid descriptions of sewers "filled with debris and ooze" and surreptitious pipelines erected by private citizens. As a young engineer trained by Christy to be a master of people and materials, Goldberg was easily frustrated. "R.L. Goldberg, draughtsman, resigned," read a note at the end of the report (335-44).

Goldberg's technological misgivings were affirmed when he leapt into newspaper cartooning in October 1904. San Francisco was home to a unique brand of "anti-machine" journalism, and there was little difference between actual and metaphorical machines: the Southern Pacific ("SP") monopoly, owner of actual machines, also controlled the political "machinery" of City Hall and Sacramento. Reporters and editors crusaded like Luddites against the SP and its subsidiaries. While Ambrose Bierce wrote gory rhapsodies of SP train wrecks and trolley disasters, Hearst's *Examiner* published companion pieces on San Francisco's "Silurian Sewers," "Horrible Roads," and dangerous cable car fleet. Failing infrastructure was a metaphor for failed political leadership, and political reform began with technological reform. When engineers blamed much of the destruction of the 1906 earthquake on "faulty design, poor workmanship, and bad materials" (Jordan, ed. 1907, 101), SP-backed politicians refused to fund their research. By the time Lincoln Steffens returned home to California to write about political corruption associated with the construction of San Francisco's trolley system (1909), the popular image of the city as an industrial dystopia was widespread.

Muckraking cartoonists like "Goldberg I" illustrated San

Francisco's anti-machine screeds. Beginning in the 1880s, Hearst peppered *Examiner* exposés with small cartoons. When Hearst launched his streetcar safety campaign, he hired Thomas Nast to draw a skeleton conductor ramming a trolley into a crowd of kids (Ethington 1994, 342). Goldberg, meanwhile, found space in the *Bulletin* to scribble little cartoon people dashing after streetcars that never stopped, and other little people booted off by rude brakemen and passengers. With most of his cartoons appearing at the top of the sports page, he also hectored cartoon athletes with gears, pulleys, wires, and ropes—the equipment of the early twentieth-century mining camp and construction site. Boxers hung from pulleys and hooks or bored screws into their opponents. Varsity footballers hammered freshmen with mallets, squeezed them through giant rollers, and sandwiched heads into vices.³

During the first awkward years of urban automobile use, when newspapers began covering auto shows, car races, and traffic fatalities, Goldberg also turned his muckraking attention to transportation nightmares. In his second *Chronicle* cartoon (Oct. 7, 1904), he produced a manifesto of sorts, drawing an old-timer thrashed about the street by a cable car and an automobile. “Things ain’t like they used to be,” the geezer croaked in the last panel. The 21-year old Goldberg concurred, titling the strip “THINGS AIN’T WHAT THEY USED TO BE.” Goldberg viewed “odor cars” as the spoilers of an arcadian past, reiterating his position with the same conservative spirit that other Californians would later oppose the influx of Asians, Oklahomans, and Blacks into the Golden State. “Where once the boulevard was covered with brightly enameled, twenty five pound, odorless, engineless bikes,” he wrote in 1906, “now we cut our way through the odiferous atmosphere and gaze upon the gasoline dragons leaving death and desolation in their tracks.” At the *Bulletin*, Goldberg introduced his standard image of the early twentieth-century auto: goggled chauffer shrouded in smoke and dust, wheels careening down the road, shredded pedestrian limbs swirling in his wake. Goldberg’s automobilists (collecting arms and legs as trophies, commiserating when they didn’t kill sidewalk victims on their first try...) were as appealing as serial murderers [Figure 2].⁴

Goldberg’s anti-auto mood grew in pre-traffic light New York. In the pages of the *Mail*, autos crashed and burned and pedestrians like Decatur Axtell continued to die. For Goldberg, joyriding was “a good

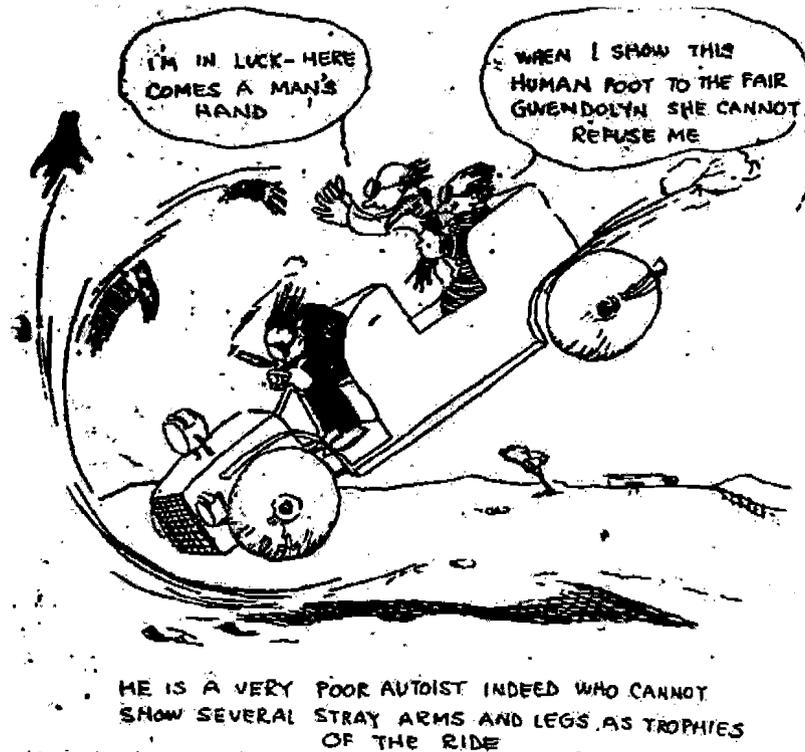


Figure 2: "The Chug-Chug Wagon is the Big It in the Sporting World." San Francisco Bulletin. February 7, 1907. Courtesy of the San Francisco Public Library.

substitute for suicide" and crossing the street was more dangerous than taking up high-elevation steelwork or shipping off to Verdun. In 1915, he claimed to be a traffic victim himself, publishing a fractured cartoon tasking readers to cut along dotted lines and to rearrange, "to bring out the idea as it was originally drawn." When autos became more widespread among the middle class, Goldberg drew cars refusing to start, or losing their parts or passengers mid-journey. The auto craze was dangerous in even more insidious ways: in 1909, Goldberg warned that parents would soon rear their children on gasoline. In 1912, he drew a parody of Longfellow's stolid "Village Blacksmith." Goldberg's smithy was an auto-repairman "with tender hands," standing under a tree "waiting for busted cars" like an industrial whore.⁵ The automobile, the signature machine of the twentieth-century, was polluting Goldberg's nineteenth-century American garden.

Engineering and cartooning apprenticeships in the San Francisco Bay Area had taught Goldberg to associate mechanization

with danger and waste. As an engineer trained to be an artist of humans and materials, and as a newspaper cartoonist immersed in San Francisco's political culture of anti-machine reform, he had arrived in New York ready to spark a movement against technological "progress" from the top of the *Evening Mail*.

Rube Goldberg II: Manhattan, 1907 to 1934

Fresh from San Francisco's earthquake ruins, Goldberg traveled east in early 1907, drawing cartoons like he had already witnessed technological Armageddon. He now encountered machine madness in a more intense form. New York provided the "inverted minescape" on an unprecedented scale: California's underground mining innovations (electrical wiring, high-speed vertical transport) were the necessary ingredients for the skyscraper metropolis (Brechin 1999, 66-70). The offices of the *Mail* were on 203 Broadway, and "Goldberg II" worked in the heart of the mine, embracing pre-zoning Lower Manhattan as an endless supply of source material. In 1912, he drew little Gothamites crawling over piles of construction material, likening attempts to cross downtown streets with mountain climbing [Figure 3]. When fully built, Goldberg's cartoon skyscrapers rocked like ocean liners and left their occupants seasick. "You might as well take the Tortures of Civilization Gracefully," a 1916 cartoon advised. Below ground, cartoon subway riders strapped on chairs, pillows, and baskets to accommodate riders unable to find a place to sit or lean. On street level, citizens dodged autos, potholes, falling bricks and each other,⁶ residing within what Rem Koolhaas (1978) would later identify as New York's "culture of congestion."

Goldberg's Manhattan debunkery made him a star. At the *Mail*, a second-rate scandal sheet selling for a penny, his cartoons were the unofficial masthead, consisting of multiple gags spinning around a unifying theme, usually "ripped from the headlines." By the next morning, with the *Mail* scattered to the winds like common debris, his cartoons became part of New York's culture of congestion. But Goldberg maintained creative control: he copyrighted the strips, and beginning in the 1920's an independent syndicate unaffiliated with any specific editorial policy distributed them. He even entered into a surreal shouting match with the *Mail*'s advertisers and editors. When the *Mail* ran special sections promoting Manhattan's industrial growth, Goldberg drew cartoons complaining about noise and construction detours. When the *Mail* pub-

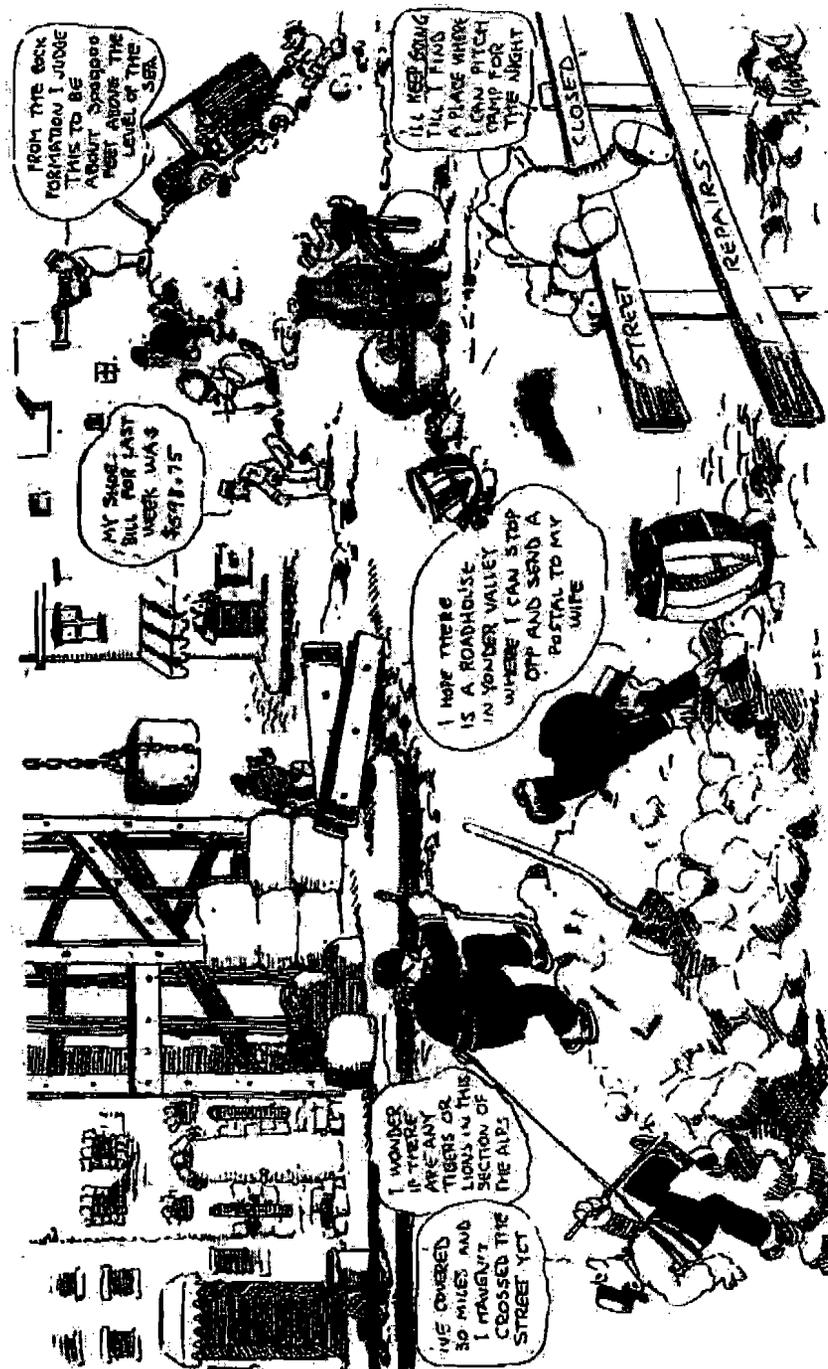


Figure 3: "You Can Get all the Mountain-Climbing You Want Right Here..."
New York Evening Mail, Aug 5, 1912. Courtesy of the New York Public Library.

lished ads and articles announcing the wonders of touring cars, Goldberg responded with absurd images of jalopies and dangerous “gasoline nuts.” The drawings eased the tension between front page auto deaths and industrial accidents (“the tragedies of Decatur Axtell and Anna Ciriozwna”) and backpage promotional fluff, and also stood on their own, appearing under the name “R.L. Goldberg” near articles from H.L. Mencken.

At the conservative *Mail*, Goldberg took troglodytic stances on Blacks in boxing (*keep them out of the ring*), the length of ladies’ skirts (*keep the hem below the ankle*), and modern art (*keep it away*).⁷ When questioning mechanization, he directed his energies away from a vague system of elites, and towards an idiotic consumer class. In 1924, Goldberg described the actors of his “private cartoon zoo” as “club-footed, putty-nosed, cauliflower-eared, wire-haired, oatmeal-brained galoots” (1924, 36). In general, they were identified, Menckenesque, as “boobs.” The machine-made was *always* dangerous, *always* useless, and *always* unreliable, and Goldberg’s boobs were *always* too suckered to notice. He codified these rules in 1915, when the *Mail* sent him back to San Francisco to cover the Panama-Pacific Exposition. While civic leaders saw the Expo as confirming the city’s rise from the ashes, Goldberg’s “Boobs at the Fair” series mocked the fair’s phoniness, supporting an increasingly overt Goldbergian thesis that new technology sent human development in reverse. In one of Goldberg’s final “Fair” cartoons, he depicted a gigantic battery of pulleys, belts, and gears producing a tiny pair of Levi’s [Figure 4]. Years later, the official history of the Exposition

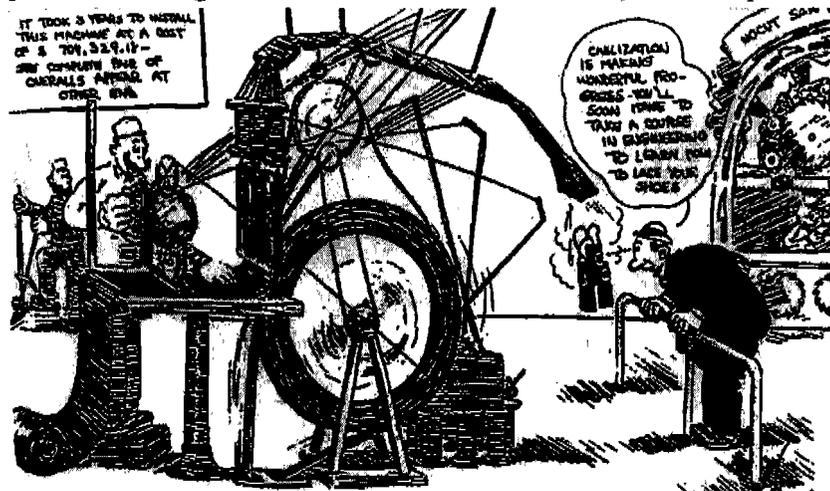


Figure 4: “Boobs at the Fair.” *New York Evening Mail*. August 28, 1915. Courtesy of the New York Public Library.

noted that the unnecessarily "large operations" of this Levi's machine created "much unavoidable waste." In 1915, a boobish bystander in Goldberg's Levi's cartoon disagreed, shouting "civilization is making wonderful progress!"⁸

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Like the Levi's fan from 1915, Goldberg's boobs sought out new "labor saving devices" that failed to live up to their billing. They often assumed the personas of slightly cracked inventors, scouring drawers to construct novel solutions to long-standing problems. Goldberg's boobs attached wire transmitters, periscopes, and "portable-movie-talkie cameras" to their foreheads to find their glasses, cross the street, and record loan transactions. With a few pulleys and gears, a boob could transfer the motion from a long-winded handshake to a cocktail shaker, and the motion from a used cocktail shaker into enough energy to wash the dog.⁹ From a Freudian perspective, they were constructing elaborate "stimulus shields" to guard against the traumas of industrial life. From a boobish perspective, they were just trying to keep up.

While Goldberg mocked the boobs for using dubious contraptions, he marketed similar devices to his readers. In 1912, the *Mail* ran a cartoon of a bald man with a board strapped to his belly. Bits of meat and a sponge dangled from the board, and according to an explanation at the bottom, these items combined with a miniature telescope, a garbage can, and a mirror to kill mosquitos one by one.¹⁰ By the time Goldberg concluded his daily strip run, he had drawn over 120 similar cartoons, which became known as Goldberg's "inventions" or "machines." Titles appeared at the top, over a single angle view of the device, and mechanical processes moved left to right, each indicated by a letter. A verbal "specification" for the devices was also included, with a "key" corresponding to each lettered step. The inventions seemed to originate from the same anonymous research and development laboratory year after year, drawn with the same spare mechanical style as patent illustrations and manufacturing catalogs.

Ads typically equate the purchase of a new gadget with improvements in efficiency, social status, or sex appeal. Goldberg's fake invention ads suggested the reverse. According to a 1908 guide on patent law, patent specifications were to "be framed in good faith," excluding "false statements or misleading suggestions," and identifying better methods to accomplish the same task.¹¹ Judged against this stan-

dard, the ridiculous patents for Goldberg's "simple labor-saving" contraptions would be considered invalid, perhaps illegal. Instead of identifying a problem and providing a new solution, the inventions seized upon non-problems, added mechanization, and made them complex, turning nominal actions like cigar lighting, back scratching, and hiding gravy stains into ten-step chain reactions requiring crabs to laugh, lima beans to jump, and blocks of cheese to grow restless.¹² Appearing somewhere between the editorial page and classified section, and popping up near real advertisements for can openers, electric belts, and x-ray treatments, Goldberg's ugly consumers, hard-sell rhetoric, and convoluted machines defeated technological boosterism in any form.

Goldberg's ersatz inventions were the most elegant summary of his ideology of technology, best described as a "Progressive ideology of technological retrogression." Like other Californians of the Progressive era, he promoted a conservative brand of reform seeking a return to an earlier time. In his twenties, he drew himself as a wrinkled codger, a nineteenth-century "Rube" in the twentieth-century. He explained that early on he'd sworn to devote his "talents to lampooning the mechanical blight and (to) perhaps start people back on the road to original simplicity." For Goldberg, new gadgetry only brought more instability and clutter to the world's already inefficient state. The only way to stanch the waste was through less, not more. But people kept buying "labor-saving" machines. As he explained in 1916, his inventions were his response, a "burlesque" of "the roundabout way some people have of doing very simple things."¹³

Others shared Goldberg's perspective. In 1931, Mencken (339-42) dismissed "progress" as the exchange of one nuisance for another. Ortega y Gasset concurrently observed that "technology" in part involved "the production of superfluities" (2002, 87-161). In 1934, Mumford described a similar "purposeless materialism" of "superfluous power." According to Mumford, no one captured this condition better than a few cynical cartoonists:

Many of the most extravagant advances of the machine have proved to rest on the invention of intricate means of doing things which can be performed at a minor cost by very simple ones. Those complicated processes of apparatus, first devised by American cartoonists ... in which a whole series of mechanisms and involved motions are created in order to burst a paper bag or lick a postage stamp are not wild products of the American imagination: they are merely transpositions into the

realm of the comic of processes which can be witnessed at a hundred different points in actual life.

For Mumford, Goldberg's cartoon critique was purely non-fiction, based on experience. While Americans had increased the ability of machines to accomplish unnecessary work, they had forgotten "that such devices are not by themselves marks of efficiency or of intelligent social effort" (273-8).

Goldberg the polemicist was also an engineer in exile. "In the designing of new machines and mechanical constructions, the draughtsman must draw from his knowledge of well-known forms and parts, and combine them," a manual counseled in 1896 (Worthen, 229). In the mining world, turn-of-the-century inventors devised new arrangements for old combinations of pulleys, ropes, and pipes. Goldberg used similar objects to transport strange ephemera vertically and horizontally. In 1915, he linked a dog, a cat, a chicken and a fish to a saw by rope, pulleys, and string to create the "Only Successful Way of Hailing a Streetcar." Later, he connected another fish to a pair of scissors, a hose, a toy submarine, and more pulleys to devise a "Simple Way To Catch a Fish."¹⁴ Combining the old with the new, the mechanical with the organic, and order with chaos hinted at an awkward negotiation between a pre-industrial past and a mechanized future. By quoting from the rope-and-pulley world of mining machinery, the machines cut across time, offering a pastiche that engineers from Archimedes to Hoover would find vaguely familiar.

According to Goldberg, the inventions were "a subconscious offspring" of his engineering career. Starting in 1928, he claimed specific inspiration from his physics professor, who supposedly developed an earth-weighing machine called the "Barodik," "a complicated system of ... little odds and ends."¹⁵ No records of this machine exist, but Goldberg was certainly exposed to complex lab machinery during college. In Goldberg's freshman catalog, Christy offered this detailed description of the mining college's "dry-crushing and sampling plant":

Crushed ore passes through the floor by shoots and a horizontal screw conveyor either to the right to a pair of sixteen inch Krom swinging-pillow-block steel rolls or to the left to a six inch centrifugal mill. From either of these machines the ore passes to the elevator pit where it is elevated by a bucket conveyor to the top of the second story, whence it is delivered to a revolving Krom trammel, where it is separated into four sizes,

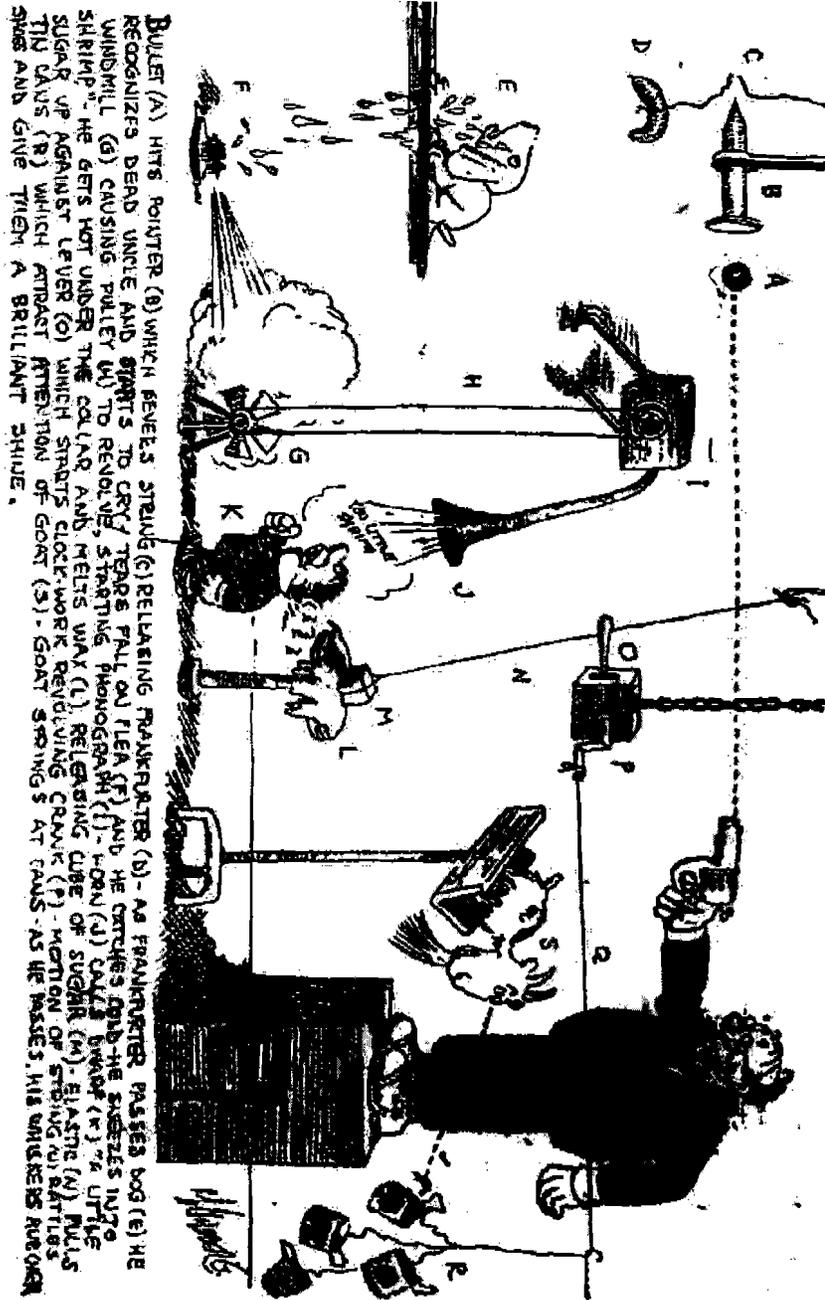


Figure 5: "Simple Way to Shine Your Shoes Without Going Near a Bootblack Stand." New York Evening Mail. March 18, 1914. Courtesy of the New York Public Library.

the course particles being automatically returned to the crushing machine....¹⁶

A physics student might have interrupted Christy by noting that such a process could only make tasks easier from a physiological standpoint; it couldn't lessen the amount of actual mechanical work done. For a practicing engineer like Hoover, Christy's device might actually turn out to be colossal waste. Goldberg's sarcastic machines ensured this result. In 1914, he recited the steps to a "Simple Way to Shine Your Shoes Without Going Near a Bootblack Stand" with Christy-like detail:

Bullet (A) hits pointer (B) which severs string (C) releasing frankfurter (D)—as frankfurter passes dog (E) he recognizes dead uncle and starts to cry—tears fall on flea (F) and he catches cold—he sneezes into windmill (G) causing pulley (H) to revolve, starting phonograph (I)—horn (J) calls dwarf (K) "a little shrimp"—he gets hot under the collar and melts wax (L), releasing cube of sugar (M)—elastic (N) pulls sugar up against lever (O) which starts clock-work revolving crank (P)—motion of string (Q) rattles tin cans (R) which attract attention of goat (S)—goat springs at cans—as he passes, his whiskers rub over shoes and give them a brilliant shine.¹⁷ [Figure 5]

Regardless of whether this process worked (and certainly it didn't), Goldberg's claim that it was a "simple way" was pure flim-flam. After one look at the image accompanying this description, half-asleep *Mail* readers could contrast words with pictures, apply a little common sense, and conclude that at least one gadget in that day's paper was a hoax.

* * *

The invention ads were allegories, but other cartoons applied Goldberg's ideology to genuine artifacts. When newspapers began publishing radio programming schedules and do-it-yourself guides, Goldberg launched an anti-radio campaign. In 1924, a grim boob marched through a "modern" home, unable to withstand the racket. In separate panels, he encountered a player piano, a radio, a phonograph, a ringing telephone, and a thumping radiator. He stuck his head out of the window, only to hear a sanitation worker collecting the family trash with a "BANG," "KLANK," and a "CRASH." "Garbage can music!" he exclaimed. He found solace in the last panel by escaping to a graveyard, reclining on a tombstone dated 1654.¹⁸

For the protagonist in the "Garbage Can Music" cartoon, life in the past—associated with death (or a close approximation)—was preferable to life in modern times. Time and again, Goldberg inferred linkages between technological dependence, violent disfigurement, and death. At a time when blood transfusion fatalities were front-page news, Goldberg's quack cartoon doctors would appear on page six or seven, strapping boobs into patients' chairs and subjecting them to a barrage of invasive tests. His doctors hammered and electrocuted patients—pulling apart arms and legs and turning them upside down—pronouncing bogus diagnoses like "foolish-itis," "banana fever," and "sorosis of the transom," and demanding steep consultation fees.¹⁹

The boobs participated in the ordeals of this perverse medicine show with the obedience of S&M devotees. Many of their jerry-built devices—like the manicurist's rough treatment on May 11, 1914—in fact appeared to be reverse-engineered from actual torture devices. In 1916 Goldberg drew a boob with a noose around his neck being raised and lowered from a chandelier in a bid to become acclimated to elevators. The installation resembled the medieval *strappado*, used to dislocate limbs and restrict the blood supplies of torture victims. In 1926, Goldberg required another boob to balance a series of pipes from his waist and a lever from his skull. Advertised as a "portable cigar lighter," this device resembled a "portable rack," with ropes and counter-weights pushing upon the boob's back.²⁰ In his *Discipline and Punish*, Foucault observed that torture is meant to reveal truth and display power, sometimes by reproducing a victim's alleged crime on their own body (1995, 32-69). In his cartoons, Goldberg disciplined and punished boobs who trusted their well-being to labor-saving devices; theirs was the wasteful, self-destructive "crime" of blind technological enthusiasm. Frozen into grotesque super-systems at the top of the sportspage, their crime was repeated from a type of public stockade, a morality lesson for readers that might have shared boobish inclinations.

Stripped to their essentials, Goldberg's inventions were not "machines" in the literal sense. Rather, they were rickety systems of human control: humans assigned machinelike responsibilities on unlucky animals and one another. In 1920, Goldberg linked a block of cheese to a duck, a balloon, a spiked ball, a policeman, a pipe, a motor, and a bird to create a "simple little labor-saving potato masher." The invention connected organic and inorganic parts by pulleys and string. Others, like a 1933 arrangement composed of two men and dog, were almost completely organic.²¹ Such inventions recall Heidegger's "fren-

ziedness of ordering,” with the entire world transformed into a giant “standing-reserve” of raw materials (322-38), impressed into the same repetitive dance. At the *Mail*, Goldberg ridiculed “efficiency experts” and belittled efforts to “standardize the human race” using Taylor’s “scientific management” methods.²² Thirteen blocks away, Italians and Jews toiled in Lower East Side sweatshops, humans incorporated into the “section system” of manufactures. Goldberg’s inventions were allegories of their immigrant’s curse. Whether or not he read Marx, his drawings were little Marxist dramas, “automatons” with worker dwarves and animals “cast merely as ... conscious linkages” (1993, 692, 709).

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While the inventions imposed a sweatshop mechanical order on the organic world, this order still reverberated with organic unruliness. Writing in the 1930’s, Gramsci posited that the history of industrialism comprised “a continuing struggle against animality”—“an often bloody process subjecting natural instincts to new, more complex and rigid norms and habits of order” (2003, 298-301). In the Goldberg universe, a Jekyll and Hyde realm where humans and animals transformed into machines, and machines came suddenly to life, Gramsci’s “animality” ran neck-and-neck with “mechanicity.” In the early 1920’s, Goldberg drew a series of panels titled “Mike & Ike, They Look Alike,” featuring a pair of twins using each other as stand-ins for items like lawnmowers, dumbbells, and wheelbarrows. In a 1921 panel, a twin stretched parallel to the ground, grasping wheels with his hands and feet. His brother pedaled gears attached to his stomach and rode him like a bicycle. Because they “looked alike,” it was as if the user of the “bicycle” had become a machine, and was using himself. Goldberg reintroduced the twins in *Boob McNutt* a bit later, where they encountered exotic animal/machine hybrids like the “Wrench-Faced Nut Wolf” (“*must be fed nuts and bolts every five minutes*”), “the Brush-Tailed Tar Slinging Yapdap,” and the “Dunkle-wimp” (“*drinks nothing but gasoline*”).²³ These weird animals were walking symbols of autonomous technology, reminders that the systems enframing Mike, Ike, and the boobs could not tame the uncertainty of the natural world.

In 1954, Heidegger warned of the moment where the entire world—from the mechanical to the organic—became part of the same reserve of raw materials, and “man comes to the point where he himself



Figure 6: "Boob McNutt." New York American. January 22, 1919. Courtesy of the Library of Congress.

will have to be taken as standing reserve" (332). Goldberg explored the darkest implications of Heidegger's hypothetical in *Boob McNutt*, his Sunday strip. The first years of *McNutt* adhered to a strict formula: in the first panel, Boob would trigger a Goldberg-type chain reaction device, specifically designed to end his life. A bystander would rescue Boob and offer him a job, but Boob would later fail. In the last panel, the benefactor would assume the role of Foucault's disciplinarian, stringing Boob up to a similar device, now designed to take Boob's life without consent. *McNutt* rode a cycle of failed suicide, fleeting hope, and machine-based murder for more than two years [Figure 6].²⁴ From 1918 to 1921, the only demonstrated skill of *McNutt*, a quintessential Goldbergian gadgeteer, was the construction of Goldbergian guillotines.

A comprehensive review of early *McNutt* strips is difficult to stomach. This is by design. In 1973, Erich Fromm identified "the exclusive interest in all that is purely mechanical" as a subset of necrophilia, "the attraction to all that is dead." Necrophiles aimed to "transform all that is alive into dead matter ... often even themselves." Fromm witnessed latent symptoms of necrophilia in the "gadgeteer," "the person who is intent on replacing every application of human effort with a 'handy', 'worksaving' contraption," and who was equally fond of creating "impractical, often absurd Rube Goldberg contrivances" (342-58). In *McNutt*, with Boob both the inventor of suicide machines and an integral part in their operation, Goldberg depicted the technophilic urges of gadgeteer boobs reaching a necrophilic crescendo.

From 1907 to 1934, Goldberg II had portrayed "labor-saving" devices as useless and destructive, as newer models of older torture devices and suicide machines. His cartoons promoted the rejection of technical "improvements" as a moral imperative. His retrogressive ideology had more in common with Kaczynski, another former Berkeley professor, than Samuel Christy.

Rube Goldberg III: The Midwest and Beyond, 1934-2004

Goldberg's darker images appealed to a small group of iconoclasts. In 1924, critic Gilbert Seldes briefly discussed the "wild grotesquerie" (227) of Goldberg's cartoons in his *Seven Lively Arts*. A year later in *The New Republic*, he listed Goldberg as one of cartooning's "sour commentators." For Seldes, comics were "all notations of ugly facts, without disguise." Goldberg was a master: his hideous lamps, tortured figures, and imbalanced furniture were "all observed phenomena, cor-

responding to the unhappier efforts of rustic America since simple manufacturing and good design gave way to suburban developments and manufactured atrocities." His work quite simply "caught something definite and real in the outward appearance of America" (74).

Marcel Duchamp and Man Ray seconded the *noir-ish* interpretation back in 1921. In the August 29, 1920 edition of *McNutt*, Goldberg assigned Boob the task of babysitting a grandfather clock. When Boob failed at this task (a child broke the pendulum, his efforts to fix the machine left it in ruins), McNutt's cousin (a) tied up Boob, (b) assembled some friends to hold up a series of curled pipes, (c) aimed the pipes at Boob's head, (d) pointed a gun into the end of one, and (e) pulled the trigger. As was the custom for McNutt strips of this era, a new family member appeared in the corner of the panel, pleading for Boob's life. Duchamp and Ray clipped the panel from the *American* and cut out the pleading family member, leaving only the pipe-and-gun execution device. Eight months later, they pasted the altered panel into a pamphlet they titled *New York Dada*.²⁵

In *New York Dada*, a new "American" art—full of absurdity and technological cruelty—had arrived, with Goldberg at its literal center. The work of Duchamp, after all, was an *avant garde* mirror of Goldberg's. Duchamp began as a cartoonist in Montmartre (Cabanne 1987, 15-27), and moved to an apartment three blocks away from the *Mail* in 1915 to escape World War I. That year, he began varnishing wire to panes of glass to build his unfinished masterpiece, *The Bride Stripped Bare by Her Bachelors, Even*. The piece included a specifications box organized by "alphabetic unit," explaining that *The Bride's* wire shapes were "desire magnetos," "feeble cylinders," "crude wooden pulleys," men, women, and "chariots," all performing a Sisyphean series of sex-based tasks.²⁶ Drawing upon New York's status as a giant construction site, Duchamp called himself a "cheap engineer" (Cabanne, 4), and joked that "the only works of art America has given are her plumbing and her bridges" (Wilson et al, 213). He later cited Goldberg as "an American humorist who did pipes" (Cabanne, 56). When he placed an edited Goldberg cartoon in *New York Dada*, Duchamp the quasi-engineer borrowed an image from the darkest phase of a real ex-engineer, purging it of any residual hope.

* * *

As the century progressed, earnest appreciation of Goldberg's

darker side became the exception, limited to foreign intellectuals (Duchamp and Fromm), literary outsiders (Mumford), and Jewish members of New York's cultural elite (Seldes, Ray). When newspapers began running strips that carried stories over from week to week, the gag-a-day anarchy of Goldberg's strips went out of style. While Goldberg still lobbed cartoon grenades at boobs and machines, upbeat newspaper ads hyped the "efficiency" and "workmanship" of the latest gadgets, making household technology seem less threatening. With the crash of 1929, Goldberg lost his easiest target—high-flying technological over-consumption. The *Mail* had long since folded, killed by newspaper tycoon Frank Munsey in 1924. Having escaped the Hearst Mining Building, Goldberg became an organization man within Citizen Hearst's empire: from 1925 to 1934, he drew daily strips for Hearst's *Evening Journal*, where his comics competed for reduced space. McNutt appeared in Hearst's *American* from 1918 to 1934, and in other papers through Hearst's syndicates, requiring him to generalize his subject matter for a national audience. In January 1934 Goldberg discontinued his daily strip. For ten months he drew a stiff continuity piece about a country doctor titled "Doc Wright." Far from Goldberg's boobish inventors, the Doc was a sober man of science, drawn with stiff literalism.²⁷

By November 1934, Hearst had replaced McNutt with *Flash Gordon*, and had cancelled *Doc Wright*. Goldberg was absent from the funny papers until 1938, when the Register and Tribune Syndicate of Des Moines and Minneapolis began running a Sunday grab-bag titled "*Rube Goldberg's Sideshow*." The page appeared alongside *Mickey Mouse* and appropriated Disney's cutified style. An abbreviated and mild "weekly invention" appeared at the bottom, hardly resembling the machine tortures of the *Mail* and McNutt days.²⁸ *Sideshow's* success was minimal. Goldberg's syndicate replaced it with *Superman* in 1941.

Comics were for kids by the 1930's, and the anti-technology *shtick* of Goldberg II was out of step. In 1929, a Chicago syndicate began running *Buck Rogers*, marketing the strip to children. *Buck Rogers* was a direct inverse to Goldberg's strips. In 1929, the *Rogers* myth went, Buck descended into an abandoned mine and fell into a state of suspended animation. Instead of "alighting in a daze" and vowing to rid the world of "mechanical blight," Buck awoke in the twenty-fifth century to a new world of spaceships, ray guns, and "anti-gravity" belts (A. Berger 1973, 93-101). While Goldberg's chaotic machines impaired and entrapped their users, *Buck's* creators supplied machines that never failed to set the good guys free, all in a bland pedagogical style.

In the age of *Buck Rogers*, to continue along Goldberg's anti-machine path was anachronistic and vaguely un-American; it threatened to make the Depression more depressing. With his darker images still fresh on people's minds, Goldberg briefly became a vaguely sinister "mad scientist" bit player in the nation's *Buck Rogers* melodrama. In 1929 Ring Lardner reimagined Goldberg as a dentist/industrialist "with warehouses all over New Jersey" who designed elaborate ways to pull the teeth of his patients as painfully as possible. A contemporary puff-piece depicted the Jewish cartoonist as a combination of Spinoza, Lord Kelvin, and Einstein—an architect "specializing in plans for mad houses, jails and boiler factories." Others insisted that he was an inventor of real contraptions. In a typical item from 1939, Goldberg appeared in a photo surveying a random group of gears and wheels, rubbing his chin pensively.²⁹

A new more innocuous Goldberg ("Goldberg III")—a Goldberg apparently desperate for new work and continued public approval—responded to shifting expectations like *Buck Rogers* adapting to the twenty-fifth century. In 1929, Goldberg drew a special series of inventions for *Collier's*, attributing them to a fictional inventor named "Professor Lucifer Gorgonzola Butts." Far from a villain, Butts was another iteration of the silly sidekick inventors that populated the *Buck* universe. "Professor Butts chokes on a fish bone and coughs up an idea for an awning that lowers itself when the sun comes out," the description to a typical invention began.³⁰ While Goldberg packaged his daily inventions as roughly-drawn patent illustrations or advertisements, and set them in blank industrial interiors or shabby apartments, he set *Butts* in penthouses or pastoral settings, far from the New York street. The "self-lowering awning" was a fine example: it occupied a nondescript countryside, and was drawn in a precise line with careful shading. To stay relevant and popular in an age of make-believe, Goldberg was prepared to fictionalize his images and place his inventions out to pasture. The strategy worked. By 1946, *Mechanix Illustrated* reported that Goldberg was America's "Wizard of Wacky Inventions." The article referenced Goldberg's early inventions, but did not address their original context.³¹ [Not surprising, given the source: *Mechanix Illustrated* was a hobby magazine published by Fawcett, creators of Captain Marvel (Shazam!), focused towards boys interested in self-improvement through erector set tinkering.] Goldberg was a *Buck Rogers* footnote, a Professor Butts clone offering comic relief.

* * *

Goldberg became the cartooning equivalent to an aging rock star, singing reworked versions of his biggest hit (*The Inventions*) to audiences at half price. While his early cartoons mocked the hard-sell approach of contemporary ads, he now aligned himself with a new generation of ad-men. In a 1940 mattress campaign, Goldberg surveyed a box of springs and motors with an appreciative smile. This ran below:

We snapped Mr. Goldberg in the Abraham and Straus testing laboratory having some quiet fun with our favorite invention. 'Some machine!' says Mr. Goldberg. Yes—and some mattress! Everything that went into the mattress was tested by this machine and others, and as a result our conservative laboratory geni say you can expect an optimism of comfort and wear!³²

Marveling at a “mattress tester,” Goldberg was in the same position as the boobs he ridiculed decades before. But Goldberg III was a credentialed technological enthusiast, unconcerned with hypocrisy. His endorsement lent credibility to Abraham & Straus’ promise of quality control.

Goldberg III did not disparage machines or their products. “The cartoons can be done a la Goldberg, in typical exaggerated style, but should not end up with pin tables being a despised or obnoxious thing,” a pinball manufacturer warned in 1947 when seeking illustrations. In 1939, another advertiser rejected a series of invention sketches because “there were too many people in the drawing . . . it was a little bit hard to follow.” The advertiser requested him to “work backwards from this and simplify the drawing using fewer steps,” and to “replace some of the people” with “technical devices.” A tire ad that year demonstrated the sought-after effect: underneath a photo of Goldberg and the title “Rube Goldberg says—Try Cooling Your Truck Tires This Way,” B.F. Goodrich presented a compact jumble of gears, girders, people, and animals protruding from an auto. The ad catalogued the attributes of Goodrich’s tires, contrasting their prim efficiency with Goldberg’s clunky offering.³³

In one of his last daily strips from 1934, Goldberg had mocked streamlining as another ill-advised fad. By the forties, he was streamlining his work and barnstorming with streamliner Raymond Loewy in a series of industry-sponsored talks. Goldberg would express his doubts

about the usefulness of industrial design, and Loewy would counter by noting that Goldberg's inventions "lack the two essentials of good design—efficiency and simplicity." Loewy would suggest a few streamlining measures: tidying up Goldberg's systems and condensing them into a single unit. Goldberg's post-*Sideshow* inventions already incorporated these changes.³⁴ In 1957, Vance Packard counted only three major types of commercial art. One "was like Rube Goldberg cartoons, flamboyant," obsessing over secondary gadgets without describing basic functions (50). According to Packard, this was a prime example of "depth manipulation," a cynical attempt by advertisers to invade "the privacy of our minds" (266). By 1957, Goldberg had been lending his name to this project for almost twenty years.

* * *

Goldberg's new status as a friend of industry earned the approval of America's engineering community. Engineers began using Goldberg's name to signify ingenious makeshift solutions to unexpected problems. "In Aeroplane Design Groups your name has actually become a 'technical' word in procedure," a war plant engineer wrote to Goldberg in 1943. "Any intricate design that works is called a Rube Goldberg." In 1944, a parts illustrator in a Detroit plant notified Goldberg that "in this great city of machines you are a great god of perplexity who is called upon more often for help than any other person in the world." As a tribute, he suggested that Detroit's factory workers build "a large building—the grandest of them all—as a temple to Rube Goldberg."³⁵

After World War II, with streamlined Goldberg inventions appearing in ads and research dollars pouring into engineering schools, Goldberg's image became even more benign. In 1952, the Dean of Berkeley's engineering school wrote to Goldberg requesting original cartoons to hang in the Hearst Mining Building. If the Dean had his way, Christy's old Temple of Machinery would contain a small 'Temple to Rube.' "Your name has become a technical term used frequently to describe a complicated 'haywire' rig, and our engineering students will be interested to know that its origin is associated with the old College of Mining." Goldberg was now a cult figure for young engineers seeking to reconcile their youthful creativity with the impending monotony of professional life. Goldberg enjoyed the attention. In 1944, he designed a float for a Berkeley parade. In 1951, he provided an illustra-

tion for the "Mad Engineer" issue of the *California Engineer* and sculpted a trophy for a Purdue engineering contest.³⁶

The "Goldberg III" that engineers embraced was not the "Goldberg I" that drew critical sketches at the back of Christy's classroom, or the "Goldberg II" that ridiculed inventors. This was a Goldberg made safe for generations of engineers taught to see mechanical expertise as a professional prerequisite. Goldberg still represented technological complexity, but no longer provided commentary or criticism. In the 1970's, science and engineering students learned to build "Rube Goldberg Machines" as graded object lessons in basic physics or practical problem-solving. In the early 1980's, Purdue refashioned its "Rube Goldberg Machine Contest" into a national competition where university teams battled to create the most inefficient and complex machine (Ansberry 1985). The Purdue contest is still covered in the popular press, and has been sponsored by corporations like Amoco and G.E. Event organizers have developed strict rules for what a "Rube Goldberg machine" is, ensuring that the event does not devolve into a rowdy student happening. To be eligible for an award, machines must successfully complete their chosen tasks within a set period of time. The defining attribute of Goldberg's inventions were their unworkability; even if they functioned (an unlikely prospect), their inefficiency rendered them worthless. By requiring contestants to create "workable Rube Goldberg machines," Purdue's contest actually requires its participants to build anti-Goldberg machines. Moreover, while Goldberg's inventions extended mechanization to absurd limits—well beyond the mechanical to the organic—the Purdue contest forbids the use of any animal parts or human involvement. The contest nourishes the "existential pleasure of engineering"—the celebration of engineers to "engineer" just about anything—by censoring Goldberg's original critique.

* * *

The softer interpretation eventually migrated from engineering schools to humanities departments. Like *Buck Rogers* (from Chicago), the *Sideshow* (from Des Moines and Minneapolis), the use of "Rube Goldberg" as an adjective (from Detroit factories), and the Purdue contest, humanities revisions traced their lineage to a conformist Midwestern sensibility. In the late 1960's, traditionalist historian Daniel Boorstin fled student unrest at the University of Chicago to become the director of the Smithsonian's American History museum. One of his first

exhibitions was a show titled "Do it the Hard Way: Rube Goldberg and Modern Times." According to a press release, the show was a comprehensive "light-hearted exhibit" of Goldberg's work, featuring drawings and a full-size working replica of an invention. In the show's catalog, Boorstin imagined Goldberg as a gentle jokester responding to public concerns about mechanization with reassuring little doodles. "While some less philosophic Americans were inclined to curse the Machine and Modern Man, and some romantic or utopian Americans beckoned us back into the primitive wilderness," Boorstin proclaimed, "Rube Goldberg told us to laugh—and showed us how ... Rube Goldberg cheers us on." A member of Boorstin's staff wrote to protest the glib approach—while the show was fun, it did little to explain Goldberg's commentary on the American technological scene. "The main effect ... is to equate Goldberg with quack inventions, making it all the more difficult to take him seriously." Another staffer dismissed such talk. Goldberg was a comedian cartoonist, nothing more: "Goldberg's role was to make us see how funny we really are!"³⁷

Boorstin's interpretation began to dominate analyses of Goldberg's work. In 1972, Peter Marzio, the curator of the "Do it the Hard Way" show, wrote an article assuring readers that Goldberg's "larger message was brimming with optimism" (315-24). Marzio followed this with a 1973 biography pronouncing that "Rube refrained from writing, or even drawing, a coherent philosophy of the machine" (149). After viewing Goldberg's later ads and a selection of Goldberg's original cartoons held at U.C. Berkeley's library, Marzio modified his assessment, determining that Goldberg must have "loved complex machinery. He marveled at its labor-saving potential, its rhythm, and even its beauty" (177). Writers with a passing interest in Goldberg's inventions continue to cite this assertion.

Conclusion: Goldberg Comes Alive

Years of revision have muddled attempts to understand Rube Goldberg's work. While some hear his name and imagine a gentle jokester, he also triggers darker connotations. Two weeks after "Do it the Hard Way" opened, Goldberg died. His *New York Times* obituary quoted Boorstin asserting that Rube poked fun at "those peculiar follies and hypocrisies of daily life from which spring the wonderful American standard of living and the American genius for technology." A day later, the *Times* editorial page offered a less sentimental gloss: "His message is

a lasting one: beware of the all-knowing computers, supersonic gadgets and the rest of the hardware. Beware, too, of their proponents who aim to dominate the human element in life."³⁸

These two readings, light and dark, continue to confuse writers who decide to throw a Goldberg reference into their work. The readings are also symptomatic of a larger split on the question of whether technological change advances or hinders social progress. Commentators now remove the inventions from their original context, cite them in support of whatever position they prefer, and avoid studying Goldberg's other cartoons. Goldberg becomes a Sphinx, drawing ambivalent cartoons to reflect larger cultural ambivalence. In an era interested in ambiguity, such an image may have some appeal. Goldberg's general career path—from muckraker to sellout—did indeed track a familiar twentieth-century path of alarm, resistance, and resignation towards technological change. But those who read ambivalence or hope back into Goldberg's career as a whole engage in what art historian John Berger has termed "mystification." For Berger, the art of the past is mystified when "a privileged minority is striving to invent a history which can retrospectively justify the rule of the ruling classes" (1972, 11). Today, those willing to mystify and cancel out the darker implications of Goldberg's work substitute Goldberg III for Goldbergs I and II. Like the young technicians at Purdue, many writers and readers follow along, devising Hollywood endings for old inventions originally drawn in protest, supporting a safe brand of institutionalized engineering literally sponsored by a ruling class of advertisers, manufacturers, and engineers—America's technological elite.

The image of Rube Goldberg existing between darkness and light is inaccurate. During his most prolific and creative period, Goldberg was not confused or ambivalent. At a time when practicing engineers stood above their machines, Goldbergs I and II reflected a hard-headed engineering skepticism towards knee-jerk mechanization. If a coolly functioning machine symbolized modernity, Goldberg's devices represented modernity gone amok. "Even within the area of mass culture there always exists a current of opposition, seeking to express by whatever means are available to it that sense of despair and inevitable failure which optimism helps to create," critic Robert Warshow wrote in 1948 (2001, 91). If Warshow had turned his attention to Goldberg's comic strips, he might have noted that they supported a new "current of opposition" to mechanization, introducing a new epithet-filled visual language of technological dissent. During the 1910's

and 1920's, Goldberg originated and refined clichés of technological frustration and pessimism, marketing new anti-technology stereotypes to millions of readers. In those days, to call a machine a “Rube Goldberg” was to announce that it was superfluous, unreliable, and possibly dangerous.

* * *

Though we still invoke Goldberg's name, and happen upon some of his inventions, few heirs remain. While machine contests reinterpret Goldberg's inventions as innocuous fun, the final result has little to do with Goldberg in his prime. To be sure, “fun” was present in Goldberg's early work. But the intellectual fun in cartoons depicting machine-based violence, torture, and death was that of the agent provocateur, not the straight-A student. Finding a true heir to the legacy of Goldberg I and II requires scrounging among technology's exiles. The genuine Goldberg invention was by definition nearly unbuildable, so any claimant must produce contraptions that are designed to fail. During the 1910's and 1920's, Duchamp and Ray created dangerous and unworkable real and theoretical machines, qualifying as contemporaries of Goldberg II. During the late 1950's and early 1960's, the art scene witnessed a neo-Dada revival, and Jean Tinguely attached tools and bones to wires and motors, creating moving sculptures that were purposefully dangerous, as difficult to operate as they were to build (Violandi-Hobi 1995). Tinguely was a rightful Goldberg heir.

On a drizzly evening in 1960, New York's MoMA invited patrons to see one of Tinguely's machines. Tinguely had rummaged through New Jersey junkyards for weeks, transporting loads of materials back to MoMA's sculpture garden. He painted everything white and constructed a giant machine wired to fill a trial balloon, smash a set of bottles, write and erase meaningless words on a revolving scroll, play a piano at five speeds, replay a looped recorded explanation, and then collapse—all in thirty minutes. He titled it *Homage to New York*. A museum director predicted that the machine would be an “apocalyptic far-out breakthrough.” That evening, after a false start, the machine began to do its thing. A saw sliced into its innards, and in a few minutes sparks flew from the piano. Suddenly the whole device was ablaze, and a flaming go-cart barreled towards the audience. Firemen attacked the *Homage* with extinguishers and smashed it apart. The crowd hissed—they wanted to see the machine burn itself to bits.

Tinguely later observed that the suicidal Homage had exhibited “good machine behavior.” Critical response was mixed—some dismissed the event as a stunt, others expressed mild respect. “Tinguely makes fools of machines, while the rest of mankind supinely permits machines to make fools of them,” remarked the front page of the *Times*. Across the river, an exhilarated reporter for the *Long Island Star-Journal* summoned the perfect image: “The result looked like a Rube Goldberg machine come true...”³⁹

Notes

1. *New York Evening Mail* (NYEM), May 11, 1914. This Goldberg cartoon (“Breaking Even”) was one of over 13,000 specific Goldberg cartoons consulted for this piece.
2. For groundbreaking of Hearst Mining Building, see *The Daily Californian*, November 12, 1902; November 14, 1902; November 18, 1902; November 19, 1902.
3. For “dashing after streetcars,” see *San Francisco Chronicle* (SFC), April 24, 1905. Other streetcar cartoons are from *San Francisco Bulletin* (SFB), June 7, 1905; August 25, 1905. Also see SFB, May 12, 1905; June 20, 1905 (boxing); September 26, 1905; NYEM, July 27, 1909 (football images).
4. Goldberg’s cartoon eulogy to bicycles is from SFB, February 6, 1906. For standard auto image, see SFB, September 23, 1905; SFB, November 22, 1905. For limbs as trophies and commiserating automobilists, see SFB, February 7, 1907 and SFB, October 21, 1905, respectively.
5. For street-crossing complaints, see NYEM, November 1, 1915; November 2, 1915. For jigsaw cartoon, see NYEM, April 1, 1915. For car troubles, see NYEM, December 5, 1912; April 26, 1915. Also see *New York American* (NYAm), November 12, 1922; March 11, 1923; March 18, 1923; May 27, 1923. For gasoline children, see NYEM, January 13, 1909. For blacksmith, see NYEM, February 10, 1912.
6. See NYEM, August 5, 1912 (mountain climbing); *Philadelphia Inquirer* (PHI), June 24, 1929 (ocean liners); NYEM, August 7, 1916 (subway’s “tortures of civilization”); PHI, February 20, 1926, November 4, 1927 (dodging cars, potholes, falling trunks, etc.).
7. Like other cartoonists of his time, Goldberg focused cartoon vitriol on Jack Johnson, the black heavyweight champion during the early 1900’s. See SFB, December 21, 1906; February 2, 1907; May 1, 1907; July 20, 1907; NYEM, July 20, 1910. Goldberg also exhibited an obsession with the covering

of women. See NYEM, February 27, 1917; June 18, 1918; September 2, 1921; October 22, 192; November 17, 1922. For examples of modern art criticism, see NYEM, February 26, 1913; June 11, 1913; April 23, 1913.

8. See NYEM, August 28, 1915. For the "wasteful" interpretation of this machine, see Frank Morton Todd, *The Story of the Exposition*, vol. 4 (New York: Knickerbocker, 1921), 138-9.

9. See NYEM, May 8, 1915 (wire transmitters); November 2, 1915 (periscopes); PHI, September 28, 1929; NYEM, November 3, 1922; PHI January 25, 1929 (cocktail shakers).

10. NYEM, July 18, 1912.

11. See Kenneth Swan, *The Law and Commercial Usage of Patents, Designs, and Trademarks* (New York: Van Nostrand, 1908), 16-17; 44-67.

12. See NYEM, May 13, 1914; October 15, 1915 (cigar lighting); January 10, 1921 (back scratching); March 14, 1916 (gravy stain).

13. "Mechanical blight" quote is from *Humor in Sculpture—Rube Goldberg Exhibition* (New York: Hammer Gallery, 1968), Box 1, Rube Goldberg Papers (RGP), Bancroft Library, University of California at Berkeley. Goldberg's "burlesque" explanation is from "Comic Artist Gets \$50,000 a Year Salary," *New York Times Magazine*, January 30, 1916, 19.

14. See NYEM, November 15, 1922 (hailing a streetcar); PHI, February 5, 1929 (catching a fish).

15. "Subconscious offspring" quote is from *The Hilltopper* [Jamaica, N.Y.], March 26, 1944, Box 3, RGP. For "Barodik" accounts, see Goldberg, "It Happened to a Rube," *Saturday Evening Post*, November 10, 1928, 153; Gerald Snyder, "Hey Rube!," *Stars and Stripes*, August 4, 1963, Box 3, RGP. The alleged creator of this object was Goldberg's Physics professor, Frederick Slate. After a review of the following sources, I was unable to find any evidence that a "Barodik" existed: Frederick Slate Papers, Bancroft Library; Slate, *Physics: A Textbook for Secondary Schools* (New York: Macmillan, 1902); Slate, *Principles of Mechanics* (New York: Macmillan, 1900); Joseph Nisbet LeConte, "Early Recollections of the Mechanical and Electrical Engineering Departments," MS, University of California at Berkeley Engineering Library, April 1939.

16. See Christy to President of the University of California, 16 June 1890, Box 7, Christy Papers; *University of California Register 1900-1* (Berkeley: California, 1901), 305.

17. NYEM, March 18, 1914.

18. NYEM, January 25, 1924.

19. For doctor and dentist nightmares, see NYEM, April 3, 1916; February 19, 1921; September 1, 1916; February 16, 1916; May 12, 1917; PHI, June 28, 1929.

20. See NYEM, March 9, 1916 (neo-strappado); PHI, February 10, 1926 (portable rack).

21. See NYEM, November 17, 1920 (potato masher); PHI, April 17, 1933 (two men and dog).

22. For criticism of efficiency experts, NYEM, March 16, 1917; July 15, 1920; Goldberg, "What Do You Do With Your Spare Time," *Hearst's International Cosmopolitan*, August 1931, 160, Box 3, RGP.

23. For Mike and Ike cartoons discussed here, see NYEM, July 9, 1920 (lawnmowers); February 4, 1921 (dumbbells); July 2, 1921 [wheelbarrows]; September 20, 1921 (bicycles). For hybrids discussed here, see *New York American* (NYAm), June 28, 1931 ["Nut Wolf"]; August 2, 1931["Yapdap"]; April 17, 1932 ["Dunkewimp"].

24. For the darkest period of the *Boob McNutt* strip following the suicide/temporary rescue/murder cycle, see Sunday issues of NYAm, June 9, 1918 [first McNutt strip] to September 12, 1920. I counted fifty-eight strips in this period where Boob either attempted to kill himself using a Goldberg apparatus and/or was threatened with a violent machine-based death.

25. For a reprint of *New York Dada*, see *The Dada Painters and Poets*, ed. Robert Motherwell (1951; Cambridge: Belknap, 1981), 214-8; *Making Mischievous: Dada Invades New York*, ed. Francis Naumann and Beth Venn (New York: Abrams, 1996), 149-150. Original McNutt strip appears in NYAM, August 29, 1920.

26. Specifications for the *Bride* appear in Duchamp, *The Bride Stripped Bare by Her Bachelors, Even (The Green Box)* (Stuttgart: Edition Hanjörg Mayer, 1960).

27. Dates for the *Doc Wright* strip in PHI are January 29, 1934 to November 3, 1934.

28. Sideshow comics reviewed for this article ran in the *Des Moines Register* from January 1, 1938 to September 22, 1940.

29. For puff-piece description, see Bob Davis, "Rube Goldberg, Mystic and Golf Instructor," *American Golfer*, October 1930, 16, 54, Box 3, RGP. For the chin-rubbing image, see "Rube Goldberg: Famed Cartoonist Turns from Crazy Inventions to Crazy Politics," *Click*, July 1939, 4, Box 3, RGP.

30. See *Collier's*, September 28, 1929, 24.

31. See Dan Romero, "Wizard of Wacky Inventions," *Mechanix Illustrated*, September 1946, 41-3, 79, Box 3, RGP. Also see Wilson Curry, "Meet Rube

Goldberg," *Mechanix Illustrated*, February 1959, 80-1, 182-5; John Pearson, "It's a Real Rube Goldberg," *Popular Mechanics*, July 1975, 66-7.

32. Abraham & Straus Mattress Company advertisement, *New York Sun*, September 30, 1940, Box 2, RGP.

33. Pin table request is from James Mangan to Rube Goldberg, April 25, 1947, Box 1, RGP. "Hard to Follow" is from Griswold Eshelman Company to Rube Goldberg, June 16, 1939, Box 1, RGP. The Silvertown ad was the final product of this latter correspondence. See Griswold Eshelman, advertising proof, Box 3, RGP.

34. For Goldberg/Loewy debates, see Raymond Loewy Associates to Rube Goldberg, June 16, 1948, Box 1, RGP; Loewy, *Never Leave Well Enough Alone* (New York: Simon & Schuster, 1951), 249-53.

35. "Any intricate design" fan letter is Gordon MacNichol to Rube Goldberg, January 24, 1943, Box 2, RGP. "God of perplexity" fan letter is John Hurt to Rube Goldberg, November 26, 1944, Box 2, RGP.

36. Dean's fanletters are Morrrough O'Brien to Rube Goldberg, December 24, 1954, Box 1, RGP; O'Brien to Goldberg, February 17, 1953, Box 1, RGP. For correspondence with student engineers, see Beta Sigma Tau Fraternity to Rube Goldberg, October 24, 1949, Box 1, RGP; Ray Dispasquale to Rube Goldberg, April 27, 1950, Box 2, RGP. For *California Engineer* illustrations, see Allen Vejar to Rube Goldberg, April 12, 1951, Box 1, RGP; *California Engineer*, May 1951.

37. For press release of "Do It the Hard Way" exhibition, see Carl Larsen, Draft Press Release, October 1, 1970, Record Unit 413, Box 4, Smithsonian Institution Archives. For Boorstin on Goldberg, see Boorstin, "Rube Goldberg: Wit and Prophet," *Do It the Hard Way: Rube Goldberg and Modern Times*, ed. Peter Marzio (Washington, D.C.: Smithsonian, 1970), unpaginated, Record Unit 413; Boorstin, *The Republic of Technology: Reflections On Our Future Community* (New York: Harper, 1978), 47. For exhibition debate, see B. Finn to Daniel Boorstin, December 10, 1970, Record Unit 413; Malcolm Watkins to Daniel Boorstin, December 18, 1970, Record Unit 413.

38. For *Times* obituary, see Alden Whitman, "Rube Goldberg, Cartoonist, Dies at 87," *New York Times*, December 8, 1970. For *Times* editorial, see "Cockeyed World," *New York Times*, December 9, 1970.

39. "Far out breakthrough" quote is from Alfred Barr, "Tinguely Ex Machina" in *Homage to New York: A Self-Constructing and Self Destroying Work of Art Conceived and Built by Jean Tinguely*, (New York: Museum of Modern Art, 1960), Pamphlet File MoMA 661x, Museum of Modern Art Archives,

New York. For an overview of Tinguely's preparations for the *Homage*, see Press Release, March 18, 1960, Pamphlet File MoMA 661x. Pamphlet File MoMA 661x also contains American and foreign articles covering the event itself. For *Times* quote, see John Canady, "Machine Tries to Die for its Art," *New York Times*, March 18, 1960. For "Goldberg come true," see "Modern Art Museum's Experiment a Blazing Success But for Firemen," *Long Island Star-Journal*, March 18, 1960, Tinguely Artist File, Museum of Modern Art Archives, New York.

Selected Bibliography

Archival Materials

Samuel Christy Papers, Bancroft Library, University of California at Berkeley, Berkeley, California.

Do It the Hard Way: Rube Goldberg and Modern Times, Exhibition Files, Record Unit 413, Box 4, Smithsonian Institution Archives, Washington, D.C.

Rube Goldberg Papers, Bancroft Library, University of California at Berkeley, Berkeley, California.

Homage to New York: A Self-Constructing and Self Destroying Work of Art Conceived and Built by Jean Tinguely, Pamphlet File MoMA 661x, Museum of Modern Art Archives, New York, New York.

Jean Tinguely Artist File, Museum of Modern Art Archives, New York, NY.

Newspapers and Periodicals

Collier's (January 26, 1929 to December 26, 1931).

Daily Californian (November 12, 1902 - November 19, 1902).

Des Moines Register (January 1, 1938 to September 22, 1940).

New York American (June 9, 1918 to August 19, 1934).

New York Evening Journal (October 1, 1924 to December 17, 1924).

New York Evening Mail (March 13, 1907 to January 27, 1924).

New York Telegram and Evening Mail (January 28, 1924 to October 1, 1924).

Philadelphia Inquirer (December 18, 1924 to November 3, 1934).

San Francisco Bulletin (May 6, 1905 to February 11, 1907).

San Francisco Chronicle (October 5, 1904 to May 4, 1905).

San Francisco Daily Examiner (January 1, 1888-December 31, 1888).

Other Primary Sources

- Clare Ansberry, "The Inventor of Child-Proof Caps Should Sign Up for this Contest," *Wall Street Journal*, February 28, 1985.
- Ambrose Bierce, *The Ambrose Bierce Satanic Reader: Selections from the Invective Journalism of the Great Satirist*, ed. Ernest Hopkins (Garden City: Doubleday, 1968).
- Pierre Cabanne, *Dialogues With Marcel Duchamp* (1971; United States: Da Capo, 1987).
- "Cockeyed World," editorial, *New York Times*, December 9, 1970.
- Charles Derleth, "The Destructive Extent of the California Earthquake," *The California Earthquake of 1906*, ed. David Starr Jordan (San Francisco: A.M. Robertson, 1907).
- Robert Dille, ed. *The Collected Works of Buck Rogers in the 25th Century* (New York: Bonanza, 1969).
- Rube Goldberg, "And It Happened to a Rube," *Saturday Evening Post*, November 10, 1928.
- , "Rube Goldberg," *There Was Light*, ed. Irving Stone (New York: Doubleday, 1970).
- Herbert Hoover, *Principles of Mining* (London: Hill, 1909).
- Jeffrey Kluger, "Rubes in Training," *Discover*, August 1993.
- , "Rube Awakening," *Discover*, August 1995.
- Ring Lardner, "Reuben, or the Young Artist," *Collier's*, April 13, 1929.
- Raymond Loewy, *Never Leave Well Enough Alone* (New York: Simon & Schuster, 1951).
- H.L. Mencken, *A Mencken Chrestomathy* (1949; New York: Vintage, 1982).
- Lewis Mumford, *Technics and Civilization* (1934; Orlando: Harcourt Brace, 1963).
- Jose Ortega y Gasset, *Toward a Philosophy of History* (1941; Urbana: University of Illinois, 2002).
- Dan Romero, "Wizard of Wacky Inventions," *Mechanix Illustrated*, September 1946.
- San Francisco Municipal Reports: 1903-1904* (San Francisco: California, 1904).
- Bob Sexter, "Purdue Device Gets the Lead Out—Eventually," *New York Times*, March 19, 1984.
- Gilbert Seldes, *The Seven Lively Arts* (1924; Mineola: Dover, 2001).
- , "Some Sour Commentators," *The New Republic*, June 10, 1925.
- "Smithsonian Exhibition Resembles Goldberg Cartoon, Which it Is," *New York Times*, November 25, 1970.
- Lincoln Steffens, *Upbuilders* (1909; Seattle: University of Washington, 1968).
- Frederick W. Taylor, *Principles of Scientific Management* (1911; New York: Norton, 1967).
- Theta Tau Fraternity Rube Goldberg Machine Contest Homepage, at HYPER LINK "<http://www.rubemachine.com/>".

- W. H. Tinney, *Gold Mining Machinery* (New York: Van Nostrand, 1908).
- Alden Whitman, "Rube Goldberg, Cartoonist, Dies at 87," *New York Times*, December 8, 1970.
- W. Worthen, *Appleton's Cyclopedia of Technical Drawing* (New York: Appleton, 1896).

Secondary Sources

- Matthew Axtell, "A Machinist's Revolt: The Origins and 'Engineering Sense' of Rube Goldberg's First Cartoon 'Inventions,' 1900-1917," *Berkeley Undergraduate Journal*, 22 (1998): 225-96.
- Lynn Bailey, *Supplying the Mining World: The Mining Equipment Manufacturers of San Francisco, 1850-1900* (Tucson: Westernlore, 1996).
- Russell Baker, "And Rube Was Our Prophet," *New York Times*, July 22, 1997.
- George Basalla, *The Evolution of Technology* (Cambridge: Cambridge University, 1988).
- Arthur Asa Berger, *The Comic Stripped American* (New York: Walker, 1973).
- John Berger, *Ways of Seeing* (London: Penguin, 1972).
- Ian Berry, ed. *Chain Reaction: Rube Goldberg and Contemporary Art* (Williamstown: Williams College, 2001).
- Gary Brechin, *Imperial San Francisco: Urban Power, Earthly Ruin* (Berkeley: California, 1999).
- Brian Cotterell and Johan Kamminga, *Mechanics of Pre-industrial Technology* (Cambridge, 1992).
- Will Eisner, *Comics and Sequential Art* (1985; Tamarac: Poorhouse Press, 2001).
- Philip Ethington, *The Public City: The Political Construction of Urban Life in San Francisco: 1850-1900* (Berkeley: University of California, 1994).
- Michel Foucault, *Discipline & Punish: The Birth of the Prison* (1975; New York: Pantheon, 1995).
- Erich Fromm, *The Anatomy of Human Destructiveness* (New York: Holt, Rinehart and Winston, 1973).
- Ron Goulart, *The Adventurous Decade* (New Rochelle: Arlington, 1975).
- Antonio Gramsci, *Selections From the Prison Notebooks* (1971; New York: International, 2003).
- Tom Gunning, "Crazy Machines in the Garden of Forking Paths: Mischief Gags and the Origins of American Film Comedy," *Classical Hollywood Comedy*, ed. K. Karnick and H. Jenkins (New York: Routledge, 1995).
- Martin Heidegger, *Basic Writings* (San Francisco: Harper Collins, 1983).
- Rem Koolhaas, *Delirious New York: A Retroactive Manifesto for Manhattan* (1978; New York: Monacelli, 1994).
- Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy* (1857-8; London: Penguin, 1993).
- Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (1964; New York: Oxford, 2000).

- Peter C. Marzio, "Art, technology, and satire: The legacy of Rube Goldberg," *Leonardo* 5 (1972).
- , *Rube Goldberg: His Life and Work* (New York: Harper and Row, 1973).
- Marshall McLuhan, *Understanding Media: The Extensions of Man* (1964; New York: Signet, 1966).
- Clay McShane, *Down the Asphalt Path: The Automobile and the American City* (Columbia: New York, 1994).
- Janis Mink, *Marcel Duchamp: 1887-1968: Art as Anti-Art* (Koln: Taschen, 1995).
- Robert Motherwell, ed. *The Dada Painters and Poets* (1951; Cambridge: Belknap, 1981).
- William Murrell, *A History of American Graphic Humor (1865-1938)*, vol. 2 (New York: Macmillan, 1938).
- Francis Naumann and Beth Venn, eds. *Making Mischief: Dada Invades New York* (New York: Abrams, 1996).
- Henry Okun, *Rube Goldberg Memorial Exhibition* (Berkeley: University Art Museum, 1971).
- Vance Packard, *The Hidden Persuaders* (New York: McKay, 1957).
- Edward Peters, *Torture* (Expanded Edition) (Philadelphia: University of Pennsylvania, 1995).
- Chet Raymo, "Science Musings: Goldberg Had Answer," *Boston Globe*, January 2, 1989.
- Wolfgang Schivelbusch, *The Railway Journey: The Industrialization of Time and Space in the 19th Century* (1977; Berkeley: Univ. of California, 1986).
- Kevin Starr, *Americans and the California Dream, 1850-1915* (New York: Oxford, 1973).
- , *Inventing the Dream: California Through the Progressive Era* (New York: Oxford, 1985).
- Ted Steinberg, *Acts of God: The Unnatural History of Natural Disaster in America* (New York: Oxford, 2000).
- Susan Strasser, *Satisfaction Guaranteed: The Making of the American Mass Market* (Washington, D.C.: Smithsonian, 1989).
- Dickran Tashjian, *Skyscraper Primitives: Dada and the American Avant-Garde, 1910-1925* (Middletown: Wesleyan, 1975).
- Cecelia Tichi, *Shifting Gears: Technology, Literature, Culture in Modernist America* (Chapel Hill: North Carolina, 1987).
- Kirk Varnedoe and Adam Gopnik, *High & Low: Modern Art and Popular Culture* (New York: Museum of Modern Art, 1990).
- Heidi Violandi-Hobi, *Jean Tinguely: Life and Work* (Munich: Prestel, 1995).
- Robert Warshow, *The Immediate Experience: Movies, Comics, Theatre and Other Aspects of Popular Culture* (1962; Cambridge: Harvard, 2001).
- Maynard Frank Wolfe, *Rube Goldberg: Inventions* (New York: Simon and Schuster, 2000).
- Mark Wyman, *Hard Rock Epic: Western Miners and the Industrial Revolution, 1860-1910* (Berkeley: California, 1979).