

Rebecca Altman. "The Toxic Waste-Drum is Everywhere: The 55-Gallon Barrel. An Object Lesson." *The Atlantic*. November 22, 2016.

Selected Sources

On **the life of Nellie Bly (the pen name used by Elizabeth Cochrane Seamen)**, I relied on Matthew Goodman's (2013) *Eighty Days: Nellie Bly and Elizabeth Bisland's History-Making Race Around the World* (Ballantine Books: New York.) *The Story of Nellie Bly*, published in 1951 by American Flange and Manufacturing, Co. And also the visuals supplied by Sue Macy (2009) in *Bylines: A Photobiography of Nellie Bly* (National Geographic: Washington D.C.) On her role at Iron Clad Manufacturing, see "Nellie Bly Saves One of Her Plants," which ran in the *New York Times* on July 13, 1911. (*The Times* carried numerous more articles about her, Iron Clad and its eventual bankruptcy filings as well, e.g., "Arrests for Forging 'Nellie Bly's' Name; Two Employees of Her Steel Barrel Company Charged with Thefts That May Reach \$200,000." *New York Times*, 17 March 1911.) Also, the *American Machinist* profiled the company in the July 26, 1906 issue ("The Iron-Clad Manufacturing Company," pages 114- 119, which includes wonderful photographs.). One additional source, which was the first one I came across, from which I tracked down supporting sources was: "Remarkable Nelly Bly's Oil Drum," an essay published by The American Oil & Gas Historical Society. Available at: <http://aoghs.org/transportation/nellie-bly-oil-drum/> (Last accessed for the purposes of typing up sources, 28 May, 2017).

For more on **the history of the industrial drum**, see Robert E. Hardwicke (1958) *The Oilman's Barrel* (University of Oklahoma Press: Norman, OK); Joseph Hanlon, Robert Kelsey and Hallie Forcinio (1998) *The Handbook of Package Engineering*, 3rd edition (CRC Press: New York.) **On the history, modern meaning of the 55-gallon drum**, I relied on the scholarship of Andrew Szasz, e.g., see *Ecopopulism: Toxic Waste and the Movement for Environmental Justice*. (University of Minnesota Press, 1994). Specific to **non-industrial use of steel drums**, e.g., steelpan drums, I consulted the work of Derek Gay, including "Steel Drums to Steeplans." Proceedings of the 1st International Conference on the Science and Technology of the Steelpan, Trinidad, October 2000. For **statistics regarding the modern steel drum industry**, I relied on reports prepared by the Reusable Industrial Packaging Association, e.g., "US Packaging Reconditioning Industry 2015 Survey and Statistics." Available via www.reusablepackaging.org.

On **the rise of the US chemical industry, specifically the US organic chemical industry**, see Peter Spritz (1981) *Petrochemical: The Rise of an Industry*. (John Wiley and Sons, 1988); Martha Moore Trescott (1981) *The Rise of the American Electrochemicals Industry, Studies in the American Technological Environment* (Greenwood,); Ken Geiser (2001) *Materials Matter: Toward a Sustainable Materials Policy* (MIT Press, Cambridge, MA); Kathryn Steen's (2014) *The American Synthetic Organic Chemicals Industry, War and Politics, 1910-1930*. (University of North

Carolina Press); William Haynes *American Chemical Industry*, Volumes 1-6. (Van Nostrand, 1945-1954); Pap A. Ndiaye (2007). *Nylon and Bombs: DuPont and the March of Modern America*. (Johns Hopkins University Press).

On the sociology/history of pollution, pollution policy, hazardous waste, and political economic and justice dimensions of its distribution, useful resources include: Robert Bullard (1994) *Dumping in Dixie: Race, Class and Environmental Quality*. (Westview Press); Andrew Szasz (1994) *Ecopopulism: Toxic Waste and the Movement for Environmental Justice*. (University of Minnesota Press); Robert Gottlieb (2002) *Environmentalism Unbound*. (MIT Press: Cambridge, MA), and also from Gottlieb (2005) *Forcing the Spring: The Transformation of the American Environmental Movement*. (Island Press: Washington); Ken Geiser (2001) *Materials Matter: Toward a Sustainable Materials Policy*; (MIT Press, Cambridge, MA); Phil Brown (2007) *Toxic Exposures: Contested Illnesses and the Environmental Health Movement*. (Columbia University Press); Craig Colten and Peter Skinner (1996) *The Road to Love Canal: Managing Industrial Waste Before EPA* (University of Texas Press: Austin, TX). Also see Michael Egan's forthcoming scholarship on the history of toxic fear in the United States. **On the global circulation of hazardous waste**, I consulted the work of David Pellow, especially *Resisting Global Toxics: Transnational Movements for Environmental Justice* (MIT Press, 2007).

On hazardous waste, the Reich Farm Superfund site (Toms River, NJ) and the connection to Union Carbide, see Dan Fagin. *Toms River: A Story of Science and Salvation*. (Bantam Books, 2013); and also Rebecca Altman (2015) "American Petrotopia" published in *Aeon Magazine*, available at: <https://aeon.co/essays/plastics-run-in-my-family-but-their-inheritance-is-in-us-all>

On pollution prevention in law, policy, I relied on the work of Joel Tickner, including his research about the precautionary principle and primary prevention of contamination, e.g., "Primary Prevention of Chemical Contamination" with Sara Wright in *New Solutions: A Journal of Environmental and Occupational Health Policy* 12 (4): 425-433. And also Ken Geiser's (2001) *Materials Matter: Toward a Sustainable Materials Policy* (MIT Press, Cambridge, MA), and *Chemicals Without Harm* (MIT Press, 2015).

No Leakage
No Cooperage

"IRON CLAD"

No Evaporation
No Insurance Loss

STEEL SHIPPING and STORAGE BARRELS

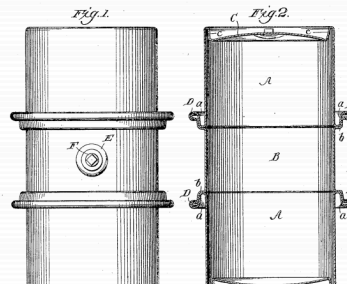


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Patented

No. 808,327. H. WEHRHAHN. PATENTED DEC. 26, 1905.
METAL BARREL.
APPLICATION FILED NOV. 11, 1904.



UNITED STATES PATENT OFFICE.

HENRY WEHRHAHN, OF NEW YORK, N. Y., ASSIGNOR TO ELIZABETH COCHRANE SEAMAN, OF NEW YORK, N. Y.

METAL BARREL.

No. 808,327.

Specification of Letters Patent.

Patented Dec. 26, 1905.

Application filed November 11, 1904. Serial No. 232,274.

To all whom it may concern:

Be it known that I, HENRY WEHRHAHN, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, State of New York, have invented new and useful Improvements in Metal Barrels, of which the following is a specification.

My invention has for its object to provide a metal barrel which shall be simple and strong in construction and effective and durable in operation.

In the accompanying drawings, Figure 1 is a side view of a barrel embodying my invention. Fig. 2 is a vertical cross-section of the same, and Fig. 3 is a plan view of the end of the barrel.

As illustrated in the drawings, A represents the end sections, and B the central section, of a barrel. The end sections are provided with an integral head C and a flange c between the head C and shell of the section which enables the head to be set in from the extremity of the shell portion or section A. The ends of the central section B are formed into a flange extending outward from the shell, then in line with the wall of said shell, thereby forming an annular recess. The adjacent ends of the end sections are turned outward from the shell, then in the direction of the wall of the shell, forming a flange having an annular shoulder engaging the corresponding adjacent recess formed in the ends of the central section. The outer portions of said flanges are rolled together to form an annular hoop D set off from the recess and shoulder of the said flanges.

By means of such construction rolling hoops adapted to support the shell and permit it to be rolled on its side without injury are provided and adapted to be arranged at the desired place on the shell irrespective of the length of the sections composing the shell of the barrel and need not necessarily be arranged at the meeting line of said sections.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a barrel, the combination of two adjacent tubular sections, one of which is provided with a flanged end forming an annular recess, the other provided with a flanged end forming an annular shoulder engaging said recess, the extremities of said flanges being rolled together to form an annular hoop, substantially as shown and described.

2. In a barrel, the combination of a central section having its ends provided with a flange forming an annular shoulder engaging the recesses of the central section A, and rolling hoops formed of the interlocking edges of the flanges of said central and end sections, substantially as shown and described.

In witness whereof I herewith subscribe my name in the presence of two witnesses.

HENRY WEHRHAHN.

Witnesses:

ROBERT W. HARDIE,
H. C. ROBERTS.