

**EDITED LIST OF PATENT APPROVALS TO LEE CARLSON OVER THE
LAST 40 + YEARS.**

Patent No.	Title	Description	Inventors
5,126,056	Continuous moving bed ion exchange unit	Mono resin, continuous moving bed,for removing high concentrations of ions to a lower level. Does not, necessarily, go down to ppm levels.	Carlson
3,492,092	Ion exchange apparatus	Moving bed single ion exchange resin.	Higgins; Carlson
	Ion exchange apparatus	Moving bed single ion exchange resin.	Higgins; Carlson
	Ion exchange apparatus	Moving bed single ion exchange resin.	Higgins; Carlson
	Ion exchange apparatus	Moving bed single ion exchange resin.	Higgins; Carlson
	Ion exchange apparatus	Moving bed single ion exchange resin.	Higgins; Carlson
Re 31,456	Ion exchange apparatus. Foreign patents also.	Ref 4,208,904 As a cation moving bed removes cations such as calcium, magnesium, iron from the acid solution As a anion moving bed removes uranium, thorium complexes et al from from the acid solution	Carlson
4,670,154	Ion exchange apparatus		Carlson
4,693,818	Ion exchange apparatus	Moving bed ion exchange apparatus that had all liquid inletsto flow in a downward fashion, this to keep the resin bed always compacted during sorption cycles. Terrien cheated morally on this by having his name placed as the inventor by telling the lawyer to put his name first. He was not the inventor but did contribute to some ideas to make it better.	Carlson, Terrien
2,708,315	Ion exchange apparatus, Germany		Carlson
3,972,810	Ion exchange apparatus		Carlson, Chopra
4,461,710	Ion exchange apparatus	Extension of the phosphoric acid project.	Carlson, Erickson

My idea to Gene Whitney and Bill Erickson who made the apparatus according to my drawings and took out the patents, giving no mention to my role in the concept.

3,965,000				Carlson, Mikul
968,889	Chemical process for processing animal wastes	Canadian patent	Took liquid cattle manure, separated the solids from the liquid, refined the liquid to potable water, returned the semi dried solids to be reused as feed supplement and bedding for the cows	Carlson
173,996	Ion exchange	Declare	non pressurized ion exchange unit as opposed to pressured units	Carlson
174,036	Ion exchange	Declare	Removal of radioactive sodium from contaminated waters prior to sewerage.	Carlson
187,247		Declare		
197,366	Ion-exchange	Declare	Ion exchange to remove iron and Hydrochloric acid from pickle liquors. Iron as ferrous chloride	Carlson
197,365	Ion exchange		Moving bed 2 valve apparatus as compared to the usual 4 valve moving bed	Carlson
187,247	Chemical process		Aprecipitation, settling, filtration centrifugation, ion-exchange process for recovering copper EDTA, from plating wastes and compliance with water discharge to the sewers.	Carlson
In public domain	Chemical process		Aprecipitation, settling, filtration centrifugation, ion-exchange process for recovering copper EDTA, from plating wastes and compliance with water discharge to the sewers.	Carlson
???	Chemical process		Methods from removing sulfur from heavy oils.	Dr. Krause al
???	Chemical process		Apparatus from removing sulfur from heavy oils.	Dr. Krause al
???	Chemical process		Methods for recovering organic sulfur substances from heavy oils	Dr. Krause al
???	Chemical process		Apparatus for recovering organic sulfur substances from heavy oils	Dr. Krause al
???	Chemical process		Methods for converting organic sulfur substances into sulfuric acid	Dr. Krause al

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In public
domain

Chemical process

Apparatus for converting organic sulfur substances into sulfuric acid

Dr. Krause
al