

THE ENGINEERING AND MINING JOURNAL

INDEX TO VOLUME 99

January 1 to June 30, 1915

Illustrated Articles are Designated by an Asterisk (*). Names of Books are Indicated by a Dagger (†).

Following is a list of the pages included in the several numbers of the volume, by date:

Date	Pages
Jan. 2	1-44
" 9	45-132
" 16	133-176
" 23	177-220
" 30	221-264
Feb. 6	265-308
" 13	309-350
" 20	351-392
" 27	393-432
Mar. 6	433-476
" 13	477-516
" 20	517-558
" 27	559-598
Apr. 3	599-640
" 10	641-680
" 17	681-722
" 24	723-762
May 1	763-804
" 8	805-846
" 15	847-888
" 22	889-930
" 29	931-972
June 5	973-1016
" 12	1017-1060
" 19	1061-1102
" 26	1103-1142

A

Article	Page
Abangarez Goldfields	124
Abbey mine, Calif.	13
Abstracts of Current Decisions	†704
Acacia—South Burns mine	511
Accident. See also "Safety," "First aid," "Rescue," "Compensation."	
Accident, Blasting—Quick thinking	962
Accident Commission, Calif., etc.	34, 342, 508, 964, 1006
—Tentative safety rules	1043, 1125
Accident decisions. See "Law."	
Accidents in Idaho, Two	547
Acid. See also "Sulphuric."	
Acid plant, Armor—Using asbestos	*951
Acid plant, New, Anaconda	*723
—Photo.	*620
Acid resistance, Calif. redwood	251
Acid-siphons	*947
Acids, Dealing with, in Park City	roasting *265, *315
Acids for etching purposes	1120
Acme mine, Ont.	217, 555
Addicks, L. Cop. metallurgy	91, 413
—His relation to nodulizing	272
Adjuncts to mining, Useful	*415, *578, *743, *951
Adventure Consol. report	825
Africa. See also "Transvaal," "Rand," "Rhodesia," "South Africa," "West Africa," "Madagascar," "Katanga," "Sudan."	
African gold mining, Ancient	1041
After-cooler, Novel air	*1117
Agitation, Mechanical, in flotation	939
Aguacate mines, Costa Rica	80, 124
Ahmeek, Mich. 469, 593, 674, 676, 758, 882, *1061, *1064, *1065, 1095, 1097, *1108, 1138	
—New mill	*621
—Report	993
Air blasts, Quincy mine	914
Air, Compressed, drill-column	*14
Air, Compressed, meter, New Jersey	*1077
Air, Compressed, Pumping by	†542
Air-compressor efficiency and the measurement of air flow	1118
Air compressor or steam engine, Can. Mg. & Finance Co.'s Nordberg	531
Air-compressor plant, Chapin	914
Air-compressor plant, Novel after-cooler for	*1117
Air compressor, Portable gasoline-driven, Ingersoll-Rand	*241
Air-compressor power curves	*988
Air-lift clogging, Preventing	*409
Air-lift efficiencies	1031
Air, Liquid, in industry	765
Ajax Gold Mfg. Co. 838, 882, 967, 1009, 1094	
Ajo ores, Leaching experiments on	55, 92, 326, 575
Akron mine, Nev.	883
Alabama gold and silver	47
Alabama gold deposits	548
Alaska. See also districts by name.	
Alaska coal	35, 1054
—Opening of lands	130
—Land leasing	850
—Alleged fraud cases ended	922
—Bering River field	1066
Alaska Consol. Cop. Co.; Alaska Cop. Corp.	426, 510, 675
Alaska copper	51, 116, 705
Alaska dredging 101, 118, *248, *644, *727	
—Flume-type elevator dredges	*1129
Alaska-Ebner	566, 708

Article	Page
—Notes	117, 922
Alaska Exploration	757
Alaska—Fairbanks prospecting methods	*805
—Fairbanks development methods	*1023
Alaska Garnet M. & M. Co.	468
Alaska Gastineau 97, 116, 119, *496, 500, 673, 709, 881, 901	
Alaska gold and silver	47, 116
Alaska Gold Belt—Nelson Lott mine	757, 1008
Alaska Gold Mines Co. 78, 216, 300, 462, 507, 592, 795, 840, 1008	
Alaska inspector, Change in	1054
Alaska-Juneau 117, 119, 673, 675, 709, 716, 757, 840, 859, 922, 924	
Alaska—Juneau district geology	901
Alaska—Juneau mines output	462, 506
Alaska—Juneau photo	*995
Alaska—Knik Arm chart	775
Alaska—Koyukuk placer dist.	1021
Alaska mines combination	1046
Alaska mining law	1049
—Notes	466, 631, 1007, 1054
Alaska, Mg. & Eng. Soc. of	29, 1049
Alaska mining in 1914	116
Alaska—New gold creek	1054
Alaska—Nome and Fairbanks	*517
Alaska quicksilver, Kuskokwin region	730
Alaska railway *497, *520, 548, 551, *705, 793, 859, 1130	
Alaska—Revival in mining	709
Alaska shaft-accident story	383
Alaska ship-loading cableway	*230, *249
Alaska, S. E., Electric smelting for	287
Alaska, S. E., liquor question	880
Alaska supply transportation—Photo.	*417
Alaska surveys and investigations for 1915	834
Alaska tin mining	118, 169, 674, 880
Alaska-Treadwell	78, 117, 287, 1055
Alaska wall map	*943
Alaska—Wrangell harbor photo	*456, 548
Alaska—Yakataga Beach placers	*763
Albert Lake, Ore., salts	466, 509, 594
Alberta petroleum	591, 674, 1007, 1098
Albrecht, C. F., Death of	1005
Alby United Carbide	270
Alcohol and inefficiency	461, 787
Alexander, H. H. Bag filtration	90
Algeria mineral production	140
Algoma Steel Co.	594
Alice property, Mont.	879
Alkali, Pipe-line protection against	367
All-Northwest smoker	291
Allen, G. L. Precipitating plant, Cop. Queen	*17
Allen, R. H. Operating costs at small Mexican mine	1122
Allie and Gilmore, Ida.	109
Allis-Chalmers Co.	877
Allouez Mfg. Co. report	967, 1095
—Report	936
Alloy analysis, Copper-tin silicon	286
Alloy—United Lead Co.'s new bearing metal	1093
Alloys, Determining zinc in	701
Alloys, Gaseous, Stability of	896
Almeda Mfg. Co.	389
Alotepaque mines, Guatemala	*703
Alta activities, Some	*689
Alta Consol.	470, *690, 1057
Alta-Cottonwood	759
Alta Tunnel & Trans. Co. 217, 927, 1057	
Alum Mtn., N. M.	1050
Alumina, Phosphate method for	536
Aluminum Co. of Am.	79, 80
Aluminum, France	80, 140
Aluminum, Germany	775, 829
Aluminum, Italy	80, 157, 690
Aluminum precipitation, Nipissing	568, 1124
Aluminum prices	*49, 80
Aluminum, U. S.	45, 80
—Foreign trade	596
Aluminum, world's production and consumption, by countries	80
Alunite, Utah, development	1135
Alvarez, Cayetano, Death of	166
Amalgamated Cop. Co.'s position	625
—Dissolution	673, 750, 859, 962, 1053
Amalgamated Oil Co., Alaska	1008
Amalgamated Oil Co., Mont.	883
Amalgamation of rusty gold and platinum metals—Lyon's patent	657
Amalgamator, Farmer	*818
Amazon Dixie, Mont.	172
American Chemical Society	1051
American Electrochemical Society	256, 369
American-Foreign Refugees Club	1001
American Inst. Chemical Engineers	963
American Inst. of Metals	701
American Inst. Mining Engineers:	

Article	Page
—Cottrell dinner	*199
—May Inst. indorse opinions?	205, 208
—Annual-meeting program	335
—Annual meeting	*377
—Vice-presidents elected	458
—Photo. of P. N. Moore	*539
—Letter by Bill McGinty	544
—Library Service Bureau	1075
—Chicago section	921
—Colo. section	256, 384
—Minnesota branch	1134
—Mont. section	256, 384
—N. Y. section	33, 283, 464, 921
—N. Y. Constitutional recommendations	958, 961
—Penn. Anthracite section	1005
—Puget Sound section	167
—Southern Calif. section	629
—Utah section	550, 963
—Metallurgical papers of 1914—Reviews	89, 91
—Various papers, etc. 254, 287, 326, *329, 367, 369, 379, 409, 412, 413, 446, 450, 455, 492, *495, 533, 568, 573, 575, *615, *698, 863, 864, 948, 991, 1034, 1120	
American Iron & Steel Inst. 836, 921, 1051	
American iron mine, Mich.	260, 345
American Manganese Mfg. Co.	842
American Meerscham mines	*941
American Mg. Congress—Address	164
—Revision of laws	157
—Journal	160, 963, 1093
—Notes	160, 963, 1093
—Utah chapter	714
American Oil Flotation Co. 879, 967, 1056	
American Placer Mfg. Co.	216, 298, 511
American Reduction Co.	884
American Rutile Co.	191
American Smelters Securities. See "Garfield."	
American Smelting & Ref. Co.:	
—Report	582, 586
—Testimony on labor conditions	*245, 382, 583, 587
—East Helena plant	89, 110
—Cart for rock quarries	*365
—Tin smelting in U. S.	1003, 1131
—Recovery of cobalt	1049
—Notes 57, 63, 115, 119, 340, 596, 842, 1053, 1092	
—In Mexico 122, 130, 595, 632, 923, 1139	
American Tin Can Co.	169, 880
American Tin Plate Co.	169
American Trona Co. (see also "Potash, Searles Lake")	107, 171
American Zinc Co.	554
American Zinc & Chem. Co. 62, 420, 453	
American Zinc, Lead & Smg. Co. 504, 719, 895, 1141	
Ammonium sulphate, foreign trade	431
Anaconda Cop. Mfg. Co.:	
—Changes; Laist's appointment	163
—Leaching and acid plants	*723, *1086
—Leaching notes	31, 92, 511, 698
—"Anode," safety-first magazine	209
—Safety first; negligence discharges, etc.	542, 546, 658
—Washoe output in 1914	213
—Laist roasting patents	*282
—Reverberatory furnaces; coal-dust firing	*616, *620, *621, *698, 832
—Feeding reverberatories along side walls	413, 462, 546
—Oxyacetylene welding	*393, *534, *741
—Reduction-works improvements	418
—Brick from flotation tailings	455
—Ash in dust firing	450
—Alcohol and accidents	461, 787
—Tapping shield	*494
—Flotation adopted	506, 546
—Acid-plant photo	*620
—Reverberatory-furnace temperatures	*658
—Improvements—Flotation; leaching	1047
—Prizes for accident records	1053
—Amalgamated affairs; stock changes planned	625, 673, 750, 859, 962, 1053
—Alice property decision	879
—Awards at San Francisco	1139
—Enters Chile	1116, 1131
—Notes, etc. 46, 54, 79, 93, 172, 301, 302, 345, 386, 388, 424, 508, 511, 512, 554, 590, 673, 717, 755, 758, 838, 882, 922, 967, 969, 1009, 1044, 1097, 1139	
Anchor boards for dump bottom	*150
Anderson, L. D. Lead metallurgy	90
Andes Exploration Co.	1116
Andreasfisk fields gold strike	839
Angle-shave frame design	*359, *403
Anglo-Colombian Devel. Co.	142
Annealing cups, Tray for	*328
"Anode"—Safety-first magazine	209
Anthracite case, Lackawanna	1132
Antimonial compounds, General Appraisers considering	959

	Page		Page		Page
Antimony exports, Hankow, China.	1100	Baja California mining.	188	Bismuth-tin-wolfram ore separation,	
Antimony in 1914.	*49, 77, 596	Baker, M. B.	920	Magnetic	
Antimony, Mexico	902	Balaklala Consol.	89, 427, 1053, 1138	Bituminous shales of Colo.	287
Antimony Silver, Ida.	841	Balkan mine, Mich.	*865	Black Bear mine, Idaho	*773
Antimony situation	960	Ball "Erie" revolving shovel.	469, 633, 1138	Black Friday mine, Mont.	1097
Apex litigation (see also "Tonopah,"		Ball-mill practice tendencies.	692	Black Hills. See also "South Dak."	
"Goldfield")	671	Ball-Norton type separators.	*975	Black Hills Tungsten Co.	1098
Appalachian copper mines, Old.	*746	Bell, S. H. Economic geology, Bel-		Black Mtn. Mg. Co.	358
Applebaum, M. E.	549	gian Congo		Black Oak, Soulsbyville, Calif.	314, 427, 716
Appraisal. See "Tax," "Tariff."		Balls, Steel, vs. flint pebbles.	*608	Black sand, Calif., Platinum recovery	
Arabia dist., Nev.	677	Banks, John H.	251	from	1137
Aramayo, Francke & Co.	459	Bannack Consol., Mont.	464, 507	Black sand, Ore.	261, 428
Arcadian mine, Mich.	301, 796	Barber Asphalt Co.	717, 758, 882	—Novel mixer for assay work.	612
Arentz, S. S. Leasers' milling plant.	*535	Barbour, P. E. Steel vs. timber ore	*483	Blacksmith's fire, Coke.	759
Argentina, America's opportunity in	766	bins		Blacksmith's use of borax and cyan-	988
Argentina—Rivadavia oil field.	290	—Slag and matte granulating.	*195	ide	
Argo Mg. & Tunnel Co.	173	—Cost of steel headframe.	*239	Blake, Lucien I.	1076
Argonaut Mg. Co. 34, 78, 107, 171,		—Blast-furnace gate valve.	*449	Blast furnace. See "Furnace," "Smelt-	878
716, 881, 966		—Home-made traveling crane.	*903	ery," "Roasting."	
Arizona alien law.	163	—Miners' dwellings, Candor, N. C.	*904	Blast, Mother Lode, Brit. Col. Cop.	
Ariz. Commercial.	757, 924, 1055	—Efficiencies of mine pumps.	1031	Co.'s	
—Report	825	—The porphyry coppers.	1111	Blasting. See also "Drill," "Explo-	*931
Ariz. Consol. G. M. Co.	78	Bardwell, Carlos	878	sive.	
Ariz. copper	51, 54, *105, 705	Bare Hills copper mine.	*746	Blasting—Comparative strength of	
Ariz. Cop. Co.	93, 468, 693, 881, 1096	Barite mining, Southern Appalachians	895	detonators	818
—Unit construction costs.	*329, *495	Barium-compound mfg. plants.	1072	Blasting—Making primers.	1084
—Metcalf mine	*1038	Barnard, R. C. Gold deposits, Ala.	548	Blasting—Safety rules, Wis.	25
Ariz. gold and silver	47	Barndt, V., and patent protest. See		Blasting—Spitting fuses.	744, *874
Ariz. in 1914.	105	"Potash, Seearles Lake."		Blasting—Tamping and stemming.	905
—Map	*106	Barneby, O. L. Silver-plated elec-		Blatchley, R. S. Ill. oil.	136
Ariz. miners' lien law.	923	trode in zinc assay.	701	Blende, Pyritiferous, Preparing, for	
Ariz. mining legislation.	611	Barnes, J. P., Death of	920	magnetic separation	284
—Allen-labor law.	163, 611	Barnes-King, Mont. 79, 110, 345, 593,		Blende-roasting furnaces, Zinc.	420
Ariz. Power Co.	1008	717, 841, 879, 926, 967, 1009, 1097		Block, Steam-shovel	*236
Ariz. S. W. Cop. Co.	1128	Barnett, Walter W.	963	Block system on haulageways.	574
Ariz. University's new plan.	148	Barrows Mg. Co. 38, 554, 1056, 1136, 1139		Blue Bird mine, Colo.	171, 387, 511, 967
Arminius Chemical Co.	470, 1006	Barstow-San Antonio Oil Co.	426	Blue Bull, Nev.	968
Armour & Co. in Utah.	*951	Bartlesville Zinc Co.	95	Blueprint-frame carriage	*989
—Chrome, N. J., acid plant.	*951	Barytes, Kings Creek, S. C.	*1074	Boericke, W. F. Cleaning carbonate	
Armstrong, F. H. Fleetling device for		Bat guano composition	442	ores, Highland, Wis.	*906
hoist with conical drums.	*945	Bateman, G. C. Fond du Lac silver		—Blueprint-frame carriage.	*989
—Sliding chain gates on cage.	*1033	strike	787	Bohemia mine, Mich.	300, 796
—Novel air after-cooler.	*1117	Bates, L. W., Jr., Loss of.	877	Boiler furnaces for wood	*645
Armstrong, Theodore, Death of.	167	Batopilas Mg. Co.	124	Boilers, Reverberatory waste-heat,	
Arndt, K. The Colloids.	542	Battery-screen area, Increasing.	196	Steptoe Wks.	*152
Arnold, Ralph.	189, 384	Battlefield Mg. Co.	345	Boilers, Waste-heat	94, 95
Arsenic in 1914.	45, 189, 597	Bauxite deposits, Dutch Guiana.	*583	—Chrome, N. J., plant described.	*892
Arthur Mg. Co. (see also "Great		Bawdwin Mines, Burma Corp. *177,		Boilers, Waste-heat, Handfiring in.	*368
Northern")	74, 75, 343, 469, 593	*202, 502, 884		Bolivia copper	51, 683, 875
Asbestos, Canada.	488, 489	Baxter, C. H. Mich. iron mines	439	Bolivia, Corocoro cop. dist.	189
Asbestos lumber	314	appraisal	422	Bolivia gold mining	*351
Asbestos production, U. S.	1116	Bayliss, R. T. Mexican situation.	439	Bolivia in 1914; map.	*127
Asbestos-protected metal.	950	Beach, Yakataga, placers.	*763	Bolivia mineral exports	683
Asbestos, Shasta Co., Calif.	925	Beale, J. G., Death of.	1005	Bolivia mines, Ownership of.	459
Ash Creek Mg. Co.	26, 757	Beatson, A. K., Death of.	1047	Bolivia, Mining in.	662
Ash troubles in dust firing.	450	Beatty, A. Chester.	712, 754	Bolivia tin	67, 683
Asphalt, Philippines, deposits.	859	—Wins decision	1044	Bolivia tin-mine hydro-elec. plant *	7, 619
Asphalt, Trinidad, mining.	*483	Beaver Consol., Ont. 617, 718, 797, 884, 1057		Bolivia tin mining.	143, 605
Assay furnace, Oil-burning, Mine &		Bedell, A. W. Surveying errors.	14	Bolivia tin notes	36, 627
Smelter Supply Co.'s.	743	Beer, Sondheimer & Co.	339	Bolivia to build railroads.	898
Assay laboratory, Homestake.	*1039	Belcher mine, Nev.	111, 155, 594, 673	Bolivia—Prospecting for tin.	295
Assay, Matte, by furnace foremen.	863	Belgium—Metal statistics 47, 56, 57, 62, 67		Bolsinger, Henry D.	210
Assay of precious-metal bullion.	355	Bell asbestos mines, Que.	217	Bond prices in 1914	157
Assay Office, old U. S., in N. Y. *501, 1133		Bell, R. N. Idaho in 1914.	109, 547	Bonded smelters—New rules.	622
Assayers, Cripple Creek, enjoined		—Copper, Idaho, in 1914.	270	Bonnie Mg. Co., N. M.	1005
from purchasing ore.	793	—Mineral lumber	314	Book notices.	376, 542, 704, 870, 1085,
Assaying, Practical, Text-Book of.	1870	Bell, Warning, for topman.	314	—Correction	
Aston, James.	589, 672	Bell-wire arrangement in sinking.	*655	Book, Old Spanish metallurgical.	1111
Asten's new sulphur allotrope.	245	Belmont-Canadian Mines, Ltd.	*323	Book varnish for tropics.	1004
Athabaska Lake silver discovery	552, 245	Belt scrapers—Discharging retorts.	121	Books, Important, of 1914.	151
Atkinson, Utah, tailings mill.	*624, 787	Ben Franklin mine, Calif.	300, 426	Booth, Reorganized, Mg. Co. 512, 551,	69
Atlanta, Goldfield, Nev. 388, 593, 633,		Bender, L. V. Copper smelting	413, 450, *698	552, 591, 631, 671, 793, 832, 883	
Atlanta, Nev., developments.	926, 968	Benedict's leaching process.	450, *698	Borax and borates in 1914.	130, 849
Atlas M. & M. Co.	*541	Bennetts, Capt. Arthur.	*821	Borax, Blacksmith's use of.	1076
Aurora Consol. 79, 97, 99, 111, 388,	796	Bent, L. S., Death of.	878	Borax Consol., Ltd.	711
554, 594, 797, 968		Benzol, etc., mfr. See also "Gasoline."	754	Borealis Consol., Calif.	925
Australasia copper	51, 130, 875	Benzol and toluol mfr., Can.	1010, 1095	Borie, A. E.	210
—Review of production and mining		Benzol plants, U. S.	1130	Boss Gold Mg. Co.	79, 112, 388, 796
in 1914.	191	Benzol-toluol-gasoline madness.	546, 787	—Photo. of mine vicinity.	*784
Australasia gold.	585, 644	Beresford, Chas. P. C.	836	Boston gone zinc-crazy.	710
—Fragmentary statistics, etc. 47, 408,		Bergh, S. V. Pneumatic drill-column *	14	Boston & Mont.	172, 554, 1009
130, 694, 765, 850, 856, 857, 1089		—Failure and heat treatment of drill		Boulder County, Colo., production.	1008
Australasia—N. Z. production.	408	steel	*612, 946	Bovion, E. B., Death of.	836
Australia, Northern Ter. production	857	Bering River. See "Alaska."		Bowden, Richard	1134
Australia—Queensland production,		Bernard, C. P. Shaft-door hinge.	*280	Bowen, H. P. Churn-drilling costs,	
Australia silver	585, 765	—Bell-wire arrangement in sinking.	*323	Miami	21
Australia, South, production	585, 850,	Berquist's tube-mill lining.	*239	Boyd, A. D. What is the matter with	
856, 1089		Berrien, C. L. "Safety first"	542, 546	mining?	744, 873
Australia spelter	62	Berry Dredging operations.	118, 594, 924	Boyd & Bro.'s fire-engine.	*820
Australia—Tasmania production	585, 694	Berry, C. W., on refractories.	382, 571	Braden Cop. Co. 80, 93, *129, 277, 968,	
Australia tin	67	Beryllium compounds, Preparation of	741	1098, 1111	
Australia—Victoria placer mining.	188	Bessemmer oil engine.	578	Bradley, C. S., and sulphur-sand	1093, 1116
Australia, Western, production	130, 585	Bethlehem-Chile Iron Mines.	*145, 277	cement	
Australian zinc situation (see also		—Notes.	40, 70, *129, 865, 1098	Bradley, G. O.	1071
"Broken Hill")	190, 505, 704, 857	Bethlehem Steel Corp.		—Report	859
Austria—Galician oil fields.	*90, 1022	Big Blue mine, Calif.	510	Bradshaw, F. Tonopah in 1914.	154
Austria or Austria-Hungary—Min-		Big Cottonwood Coalition.	842	Brainerd-Cuyuna 38, 75, 217, 552, 796, 1056	
eral and metal production.	278	Big Four, Colo.	300, 345, 553, 882, 1056	Brainerd Mg. Co.	217
—Statistics for various metals	47, 56,	Big Four, Nev.	217, 594	Brainerd, Minn., iron lands.	301
57, 62, 68		Big Pine, Nev.	217, 346, 717	Brakpan Mines, Transvaal.	131
—Steel	694	Big Pine Consol., Ariz.	623, 840, 1096	Braley, B. Poems 209, 255, 383, 498,	
—Copper discovery in Tyrol.	923	Bilharz, O. M.	507, 754, 920	*566, 834	
Azimuth estimation from incorrect		Bin with compromise bottom.	*366	Braunger, C. A. Employment for	464
plumbing	*695	Bin, 800-ton, Mt. Hope.	562	idle engineers	996
Azimuth observations on Polaris by		Bingham Mines, Utah.	594	Brazil, mining in 1914.	129
daylight	776	—Report	781	Brazilian history—Mining war.	340
		Bins, Ore, Steel vs. timber.	*195	Breitung iron-mining interests.	75, 76
		Birch Creek, Nev., strike.	797	Bremer, William	712
		Birkinbine, John, Death of.	920	Brewer Creek strike.	509
		Birmingham, Mark, Death of.	33	Brick from flotation tailings, Ana-	
		Birmingham water line.	1003	conda	455
		Bishop Creek mill, Calif.	1044	Brick, Insulating, Armstrong "Non-	
		Bismuth production	119, 274	pareil"	741
				Brick, Refractory. See "Refractory."	

B

Babilona Mines, Ltd.	215
Bag filtration—Review	90
Bag for carrying dynamite.	*574
Bagley road-making scraper.	*325
Bags, Method of cleaning	328
Bain, H. Foster	754

	Page		Page		Page
Briquette binder, Cactus as.....	576	Butte labor notes 35, 53, 110, 168, 297,		Canadian Mg. Inst. 160, 211, 341, 985, 1005	
Briquettes, Brooks' zinc-retort.....	896, 917	388, 424, 508, 673, 714, 838, 876, 1094, 1135		—Report of meeting.....	499
Bristol Mg. Co. 36, 76, 345, 500, 633,		Butte lawsuit, British-Butte, revives		Canadian Mining Manual.....	1376
717, 882		memories of romantic enterprise.....	1030	Canadian molybdenite deposits.....	271
—Photos.....	254	Butte mines' sanitation.....	168	Canadian Natl. Clay Products Asso.....	296
—Fatal snowslide.....	*1126	Butte-New York.....	926	Canadian Venezuelan Ore Co.....	962
Britannia tube-mill lining.....	*628	Butte, "Safety first" at.....	542, 546	Cananea Consol. (see also "Greene-	
British. See also "United Kingdom,"		Butte & Superior 53, 88, 100, 110, 260,		Cananea").....	122
"Guiana."		385, 504, 551, 717, 882, 926, 1009, 1141		Candle Creek strike, Alaska.....	35
British-Butte lawsuit.....	1030	—Reports.....	454, 1022, 1081	Candor Mines Co.—Iola mill.....	97
British Col. Cop. Co.....	121, 470, 718, 927	Butte, Underground haulage photos.....	*496	Cantley, Charles.....	549
—The Mother Lode blast.....	*931	Butte & Zenith.....	260	Capital and labor.....	372
British Col. in 1914.....	121, 156, 213, 488, 489	Butters, Charles.....	836	Capital and labor.....	372
Broad Pass section, Alaska.....	213, 344	—In Chile nitrate.....	252	Capital mine steel ladders.....	*944
Broderick, C. T., Death of.....	877	Butters Divisadero Co.....	124, 125, 842	Capscrews, Replacing broken.....	*238
Broken Hill Asso. Smelters.....	1045	Byler, E. A. Goldfield geology.....	*222	Car costs, Ariz. Cop. Co.....	*495
Broken Hill, Economic geology.....	1039			Car dump for tailings, Suspended.....	*864
Broken Hill, German relations to.....	339	C		Car, Safety hand grip for.....	*531
Broken Hill lode mine model.....	*1076	Cable, "Duplex," as copper wire.....	1092	Car continued after "Carroll".....	
Broken Hill Proprietary.....	1045, 1075	Cactus as a binder.....	576	Caracote prospect, Bolivia.....	*354
Broken Hill South report, etc.....	198, 1045	Cactus Consol. Mg. Co.....	510	Carbon as precipitant of metal from	
Broken Hill—Zinc determination.....	285	Cadmium removal from zinc ores.....	659	cyanide solutions.....	947
Broken Hill—Zinc situation 190, 505,		Cadmium, U. S.....	77	Carbon Limestone Co.....	797
704, 798, 857		Cage, Shaft-repair, Four-deck.....	*614	Carbon-monoxide poisoning.....	989
Broken Hills dist., Nev., Strike near		Cage, Sliding chain gates on.....	*1033	Carbonate ores, Cleaning, Highland,	
Brooklyn mine, Mont.....	1056	Cairnes, D. D.....	1134	Wis.....	*906
Brooks, G. F., use of salt in zinc		Calaveras Cop. Co.....	592, 840	Carbonate, Petersen's determination	
smelting.....	896, 917	Calcite phosphorescent on heating.....	817	of, in presence of sulphites.....	867
Brothers-in-law, Uses of.....	373	Caledonia, Comstock, Nev.....	155	Cardiff, Utah.....	173, 470, 512, 634, 927
Brower, C. L. Waste-heat boilers,		Caledonia Mg. Co., Ida.....	59	Carlman M. & M. Co.....	344
Chrome.....	*892	Calgary petroleum.....	591, 674, 1007, 1098	Carless, N. Waihi Grand Junction	
Brown Bear mine, Calif.....	*1053	Calhoun, Allan B.....	384	mill.....	907
Brown, R. G. Irtysh photos.....	*599	California borax in 1914.....	130	Carlton, A. E.....	964
Browne, D. H., on copper smelting		Calif. copper.....	51, 107, 705	Carnegie Lead & Zinc Co.....	555
254, 412, 450		Calif. dredging in 1914.....	100	Carnotite. See "Radium."	
—Things we ought not to have done		Calif. exhibit at Exposition 245, 257,		Carpenter Co.'s circular charts.....	655
Browne, J. H. Calif. redwood.....	251	297, *580		Carrier, Overhead, Fairbanks.....	*1023
Bruce, E. L.....	1134	Calif. Exploration Co.....	78	Carroll, Fred.....	792
Brulé, Frederick.....	549	Calif. gold and silver.....	47	Cars, Dumping hopper, Stephens-	
Brulé Iron Mg. Co.....	260	Calif. Industrial Accident Comm.,		Adamson wrench for.....	*1033
Brunswick Consol., Calif. 78, 553, 592,		etc.....	34, 342, 508, 964, 1006	Cars, Handling dump, with derricks 411	
925, 1008, 1055		—Tentative mine-safety rules.....	1043, 1125	Carson Cy., Nev., Strike near.....	1010
—Report.....	617, 630	Calif. Metal Producers' Asso. 34, 342,		Carson, W. E., on Mexico.....	463
Buck, C. A. Tofo iron mines.....	*145	508, 755		Cart for rock quarries.....	*365
Buck Eye mine, Kan.....	922	Calif. non-English speaking and col-		Carter Mining Co., Colo.....	300
Bucket-dumping device.....	*944	lar-to-collar bills.....	755	Cartwright Gold Fields.....	428
Bucket hoisting, Crossheads for.....	*1078	Calif. petroleum:		Cary, Webster P.....	920
Buckhorn mill, Ariz.....	97	—Production, review, of 1914, 69, 139, 219		Casa Diablo mine, Calif.....	1055
Buena dist. strike, Nev.....	758	—Protection from water 213, 257, 465, 673		Casapalca district, Peru.....	355
Buffalo Consol., Utah.....	261	—Pipe lines as common carriers.....	213	Cascade Co.'s Isabella mine.....	172
Buffalo mill, Ont.....	97	—Wells on Summerland beach.....	*663	—Steel headframe.....	
Buffalo-Montana.....	967	—Petroleum industry of Calif.....	*870	Casey Cobalt, Ont.....	512, 884
Buffalo-New Mex. Mines Co.....	512	—So. Pac. land cases decision.....	1050, 1135	Castings, X-ray inspection of.....	284
Buffalo Peak, Nev., placers.....	633	—Various notes.....	879, 900, 1008, 1135	Castle Rock, Ida.....	427
Buissen, J. A.....	878	Calif. mining in 1914.....	107	Caucasus Cop. Co.....	*650, *681
Bulkley, J. N.....	836	Calif. platinum.....	1045	Caucasus, Copper smelting in.....	*650
Bullfinch precipitation practice.....	821	Calif.—Quartz veins in lamprophyre		Caucasus in war time.....	*477
Bullfrog Mg. Syndicate.....	38	intrusions.....	*11	Cave Springs L. & Z. Co.....	882
Bullion assay, Precious-metal.....	355	Calif. quicksilver.....	68	Cedar Extension, Utah.....	634
Bullion, Base, Refining.....	535	Calif.—Seneca mining dist.....	*1072	Cedar-Talisman, Utah.....	634, 759
Bullion Beck, Utah.....	217, 718, 797, 842	Calif. ski travel.....	*521	Celluloid-sheet mine models.....	*737, 957
Bullion Coalition, Utah.....	115	Calif. smeltery smoke. See "Smeltery."		Cement, Canada.....	488, 489, 916
—Leasers' milling plant.....	*535	Calif. Trona Co. (see also "Potash,		Cement-gun shaft coating.....	*409, 421
Bullwhacker, Mont.....	38, 968, 1097	searles Lake.").....	334, 463, 1096, 1138	—Furnace repairs.....	866
Bunker Hill Consol., Calif.....	553, 1096	Callaghan, V. D.....	1005	Cement in 1914.....	69, 1030
Bunker Hill Mines Co., Ariz.....	567, 675	Called back.....	547	Cement, Stopping porosity of.....	733
Bunker Hill & Sullivan, Ida. 59, 96,		Calumet & Ariz.; New Cornelia, Ajo		Cement, Sulphur-sand.....	1071
916, 1136		ores, etc. 55, 92, 105, 326, 387, 509,		Cementation, Wallaroo & Moonta.....	*438
—Storage-battery locomotives.....	367, 533	575, 592, 675, 966, 1008, 1096, 1111, 1137		Centennial Cop. Co.....	1095
—Block system on haulageways.....	574	—Report.....	823	—Report.....	1082
Burch, Albert.....	166	Calumet & Hecla—Leaching tailings.....	*821	Centennial-Eureka.....	261, 757, 823
		—Notes on leaching.....	32, 92, 882	Central Am. in 1914.....	47, 124
		—Shares prosperity with employees,		Central Coal & Coke Co.....	411, 553
		917, 967		Central Creek strike, Alaska.....	169, 426
		—White Pine mine 38, 56, 79, 260, 299,		Central Eureka, Calif.....	592, 1008, 1096
		388, 676, 758, 967, 1009, 1044, 1095		Central Zinc Co.....	339
		—White Pine operations starting.....	623	Cerro de Pasco.....	*126
		—Notes, etc. 56, 170, 172, 216, 299, 343,		Cerro Gordo mine, Calif.....	924
		425, 500, 632, 676, 758, 796, 1009, *1109		Chain gates, Sliding, on cage.....	*1033
		1095, 1097		Chains, Steam-shovel hoisting, Pro-	
		Calumet mine, N. M.....	759	longing life of.....	1117
		Calumet & Sonora.....	428, 555	Chambers-Ferland.....	1010, 1044, 1098
		Cameron, F. Progress in flotation,		Champion, Nev. Cy., Calif. (see also	
		937, 1084		"North Star").....	37
		Cameron-Johnson, Alaska.....	840	Channing, J. P. Miami Cop. Co.....	55, 135
		Camp Bird, Colo.....	108, 967	Chapin mine, Mich.....	967
		—Reports.....	371, 511	—Multistage centrifugal and Cornish	
		Campbell & Deane quarry.....	*903	pumps.....	*857, 1032
		Campbell process, Electro-magnetic		—Hydro-elec. and compressor plants 914	
		zinc-ore treatment by.....	*979	Chart, Knik Arm, Alaska.....	775
		Camsell, Charles.....	878	Chart, Tailings-value.....	*575
		Camshaft pulley, Turning.....	449	Charts, Carpenter Co.'s circular.....	655
		Camshaft vibration, Reducing.....	616	Chase, C. A.—"Safety-first" dinner. 810	
		Canada aluminum.....	80	Chemical Analysis, Quantitative,	
		Canada copper 51, 120, 121, 488, 705, 875		Notes.....	*376
		—New refinery proposed.....	965	Chemical Analysis, Technical Methods.....	*704
		Canada gold.....	47, 120, 488	Chemical industry possibilities, Rus-	
		Canada, Gypsum in.....	*376	sian.....	290
		Canada iron.....	488, 489, 565	Chemical industry's forced advance. 918	
		Canada lead.....	57, 488	Chemical industries, Germany.....	774, 829
		Canada mineral production.....	488	Chemicals, U. S. foreign trade.....	597
		Canada nickel-export trouble 30, 214,		—Fertilizing chemicals.....	431
		343, 386, 503, 509, 715		Chemicals used in shop processes re-	
		Canada silver.....	47, 120, 488	quiring heat.....	1076
		Canada zinc.....	451	Chemistry, Industrial.....	*542
		Canadian Conservation Commission.....	256	Chemung Iron Co.....	214
		Canadian Consol.....	213	Cheney, C. A., Jr. Structure of Cuyuna	
		Canadian Cop. Co. See "International		district.....	*1113
		Nickel Co.".....		Cherokee Chemical Co.....	*1074
		Canadian-Cuyuna.....	75	Chewelah Cop. King, Wash.....	80
		Canadian Klondyke Mg. Co. 136, *702, 842		Chicago, Middle West's metallurgical	
		Canadian Mines & Finance Co.....	215	center; map.....	*119
		Canadian Mg. Corp.....	301	Chicago, Mil. & St. Paul electrifica-	
		Canadian Mg. & Explo.....	718, 884	tion.....	1054
		Canadian Mg. & Finance Co.'s com-		Chicago Mines Co., Mo.....	922
		pressor or engine.....	531	Chicago Island.....	839
				Chief Consol., Utah 38, 301, 512, 718,	
				842, 968, 1098	

BUREAU OF MINES

—Abstracts of Current Decisions.....	*704
—Electric furnace, Bulletin.....	*542
—First-aid work, Platteville.....	*142
—Dust, Rock, sampler.....	*238
—Flotation, Recent progress in.....	937, 1084
—Gasoline from Natural Gas.....	*1085
—Layland rescue work.....	666, 670
—Metal-mine explosions.....	*946
—Metallurgical Smoke—Bulletin 380, *704	
—Panama-Pac. Expo. exhibits (see	
also "Panama-Pac.") 26, 418, 590, 750, 943	
—Publicity methods.....	787
—Radium cost, Reducing.....	26
—Rescue stations and cars.....	380
—Tuberculosis, Joplin dist.....	331
—U. S. Mining Statutes Annotated.....	*1066
Burma Corp.'s Bawdwin mines *177,	
*202, 502, 884	
Burma, Lower, Wolframite.....	684
Burma ruby mining—Photos.....	*288, *289
Burr, F. L. Angle-sheave frame de-	
sign.....	*359, *403
Burriss, Allen L.....	256
Burro Mtn. Cop. Co. 92, 112, 346, 413,	
552, 567, 759	
Burrows, A. G.....	1134
Bush-Baxter mine, Ariz.....	105
Bush, F. V. New Mex. meerschaum.....	*941
Butte. See also "Montana."	
Butte-Alex Scott.....	677
Butte, Anaconda & Pac. electrifica-	
tion results.....	529
Butte & Bacorn.....	1097
Butte-Ballaklava 260, 301, 470, 511,	
882, 1097	
Butte Central.....	968
Butte Cop. & Zinc Co.....	386
Butte Creek Consol.....	426
Butte-Duluth 79, 512, 554, 590, 633,	
677, 758, 841, 879	
—Leaching.....	31, 53, 79, 92, 110
Butte first-aid contest.....	915
Butte in 1914.....	53

	Page		Page		Page
—Four-deck shaft-repair cage.....	*614	Coal, etc., Spitzbergen.....	521, 794, 986	Conner, Jacob Eton.....	423
Chile, Anaconda enters.....	1116, 1131	Coal, United Kingdom, trade.....	442	Connor Creek mine, Ore.....	759
Chile copper...51, 52, *127, *129, 705, 875		Coal, U. S.....	45, 175	Conquest mine, Ariz.....	37, 426
—Gatico output.....	619	—Foreign trade.....	431	Conrey Placer Mg. Co.....	110, 396, 1139
—Mining at Collahuasi.....	142	Coats, C. M. Precipitating plant,		Consol. Ariz. Smelting.....	757
—Smelting at Calama.....	*849	Cop. Queen.....	*17	Consol. Coppermines, Nev.....	717, 1111
—Various photos.....	*868	Cobalt-arsenide reduction, Fink's... 699		—Drilling campaign.....	*1069
Chile Cop. Co.; Chile Exploration Co.;		Cobalt dist. in 1914.....	120, 214, 1054	Consol. Gold Fields of So. Af.....	142, 157
Chuquicamata *127, *129, 634, 692,		Cobalt Lake drainage 120, 718, 842, 1054		—Rapid discharge, tube mills.....	251
791, 1044, 1092, 1111, 1112, 1139		Cobalt, Mining royalties at.....	1128	—Stamp-milling statistics.....	328
—Photos.....	*952, *954, *955	Cobalt Reduction Co.....	927	Consol. Interstate-Callahan 59, 109,	
—Leaching notes.....	31, 92, 93	Cobalt-silver ore-treatment process,		169, 259, 345, 467, 469, 593, 631, 716,	
Chile in 1914; maps.....	*127, *128	Phillips'.....	1120	841, 1009, 1097	
Chile—Iron mines, Tofó.....	*145, 277	Cobalt to be produced in U. S.....	1049	Consol. M. & S. Co., Can. 96, 121, 156,	
—Notes.....	40, 70, *129, 865, 1098	Cobalt Townsite.....	634, 1128	1010, 1098	
Chile mineral-industry, photos.....	*868	Coeur d'Alene dist. photos.....	*538	—Improvements at Trail, B. C.....	290
Chile nitrate.....	*127, 721, 927, 1141	Coeur d'Alene mine, Colo.....	553	—Report.....	371
—Butters in the field.....	252	Coeur d'Alenes in 1914 (see also		Consol. Nev.-Utah.....	112
Chile short-line railway.....	398	"Idaho").....	59, 213	Consol. Ores Co.....	116
Chile tin-smelting plant.....	859	Coghill, Will H.....	878	Consol. Virginia.....	630, 677, 717
Chile, That farm in.....	275	Cohen, Samuel W.....	1134	Construction, New mine and metal-	
Chilean nitrate industry.....	*811	Coke blacksmith's fire.....	988	lurgical.....	26, 78
—Gold and silver.....	*847	Coke, U. S.....	45, 431	Contact Cop. Co.....	1138
Chimney, Straightening tall, Bklyn. *822		Colburn interests. See "Ajax."		—Report.....	825
China coal.....	800	Cole, L. H. Gypsum in Can.....	†376	Contraband of war. See "War."	
China, etc., gold.....	47	Cole, W. H., Death of.....	549	Converter slag, Pouring, over ore	
China, Gold shipment to.....	175	Coleman, A. P.....	384	beds, Cop. Queen.....	*3, 4
China, iron and coal mines.....	442	Coleman Development, Ont.....	1057	Converting lead ore—Review.....	89
China, New weights and measures.. 895		Collahuasi copper mining.....	129, 142	Conveying system, United Verde... *1127	
China, North, iron situation.....	786	Collins, E. J. Drying iron ore.....	696	Conveyor, Concentrates, Mt. Hope... *560	
China tin.....	67, 429	Collins, G. E. Colo. in 1914.....	108	Conveyor—Drag for concentrates... *698	
Chino Cop. Co. 112, 261, 346, 470, 594,		—Errata.....	291, 373	Conveyor, Push, Ohio Cop. Co.....	*749
759, 1045, 1111, 1112		Collins, W. H.....	1134	Conveyors, Cost of, at Ariz. Cop.	
—Reports.....	397, 859	Colloids and ore genesis.....	104	Co.'s smeltery.....	*329
Chip collector, Trethewey.....	*493	Colloids in Industrial Arts.....	†542	Conveyors, Housing inclined belt... *699	
Chipman, J. C. W., Death of.....	920	Colombia dredging.....	101, 125, 142, 191	Conzetti mine, Calif.....	26
Chisana dist., Alaska...118, 298, 551, 591		—Prichard's Pato report.....	231, 253, 874	Cook, J. Heat by crushing.....	976
—The Shushana mining district... *731		—Nechi Mines report.....	244	Cooney, Michael.....	33
Chittenden's precipitation patent... 239		Colombia in 1914.....	125	—His death.....	549
Chloridizing, blast roasting and		Colombia taxation.....	874, 234	Copeland, C. E., Death of.....	629, 672
leaching, Park City... *265, 293, *315		Colorado accident compensation 424, 1053		Copeland, Durward.....	754, 836
—Notes.....	32, 93, 116	Colo. bituminous shales.....	*773	Copper, Alaska.....	51, 116, 705
Chloridizing, blast roasting and		Colo.—Boulder Co. production.....	1008	Copper, Ariz.....	51, 54, *105, 705
Christensen, C. C. Designing small		Colo. conditions, R. D. George on... 385		Copper, Australasia.....	51, 130, 875
copper-smelting plants.....	*225	Colo. copper.....	51, 705	—Review of production and mining	
Chrome, N. J. See "U. S. Metals."		Colo. dredging.....	101, 108	in 1914.....	191
Chrome ore, New Caledonia.....	596	Colo. Fuel & Iron Co.....	213, 676	Copper Basin, N. M.....	759, 1057
Chrome ore, U. S. foreign trade.....	597	Colo. gold and silver.....	47	Copper, Bolivia.....	51, *127, 683, 875
Chronology of mining for 1914.....	86	Colo. Metal Mg. Asso...168, 210, 247, 296		—Corocoro dist.....	189
—For 1915, monthly 422, 500, 694,		Colo. mining in 1914.....	108	Copper, Calif.....	51, 107, 705
859, 1044		—Errata.....	291, 373	Copper, Canada 51, 120, 121, 488, 705, 875	
Chuquicamata. See "Chile."		Colo. petroleum.....	69	—New refinery proposed.....	965
Church-Mabon Mg. Co.....	79	Colo. production in 1914.....	880	Copper Chief, Ariz.....	881, 966
Church-Union mine, Calif.....	342	Colo. School of Mines 210, 297, 384,		Copper, Chile (see also "Chile") 51,	
Churchill mine, Calif.....	925	*414, 550, 676, 837, 921, 963		52, *127, *129, 705, 875	
Chute, Ore., Substantial.....	*861	Colo.—Smelting as public utility... 752		—Gatico output.....	619
Chute, Simple, strong.....	*1032	Colo. St. Bureau of Mines.....	168	—Mining at Collahuasi.....	142
Chutes and gates, Creighton mine... *738		Colo. taxation.....	964	—Smelting at Calama.....	*849
Chutes, Draining watercourses in... *573		Colo. zinc.....	62, 162, 451, 452	—Various Chilean photos *868, *952,	
Cienega mine, Mex.....	634	Columbia mine, Ariz.....	*1095	*954, *955	
Circle dist., Alaska...118, 924		Columbia School of Mines.....	*998	—Anaconda enters country...1116, 1131	
City Deep mine, Transvaal.....	547	Columbia Univ.—Emmons fellowship,		Copper, Colo.....	51, 705
Claims in Ont., Staking out.....	*324	27, 754		Copper Country, Shaft-rockhouse	
Clancy patent for cyanide from		Columbus Consol. See "Wasatch		practice.....	*1061
cyanamide.....	272	Mines."		Copper, Cuba.....	51, 125, 204, 705, 875
Clapp, Frederick G.....	1093	Columbus Extension, Utah 512, 555,		Copper, Cyprus.....	604
Clark, A. J. Slimes settlement.....	*412	677, *689, 842, 968, 1139		Copper discovery in Tyrol.....	923
Clark, I. C. Electromagnetic ore		Columbus mine, Ariz.....	553	Copper-export controversy and seiz-	
separation.....	*523	Combination Keating, Mont.....	1056	ures...31, 51, 53, 228, 252, 270, 379, 923	
Clark Mont. Realty Co. case.....	172, 736	Comer, J. A., & Co.....	255	Copper flotation. See "Flotation,"	
Clark, Patrick, Death of.....	1951	Commerce, Seaborne—Map.....	*141	"Anaconda."	
Clark, T. S. Straightening chimney *822		Commercial M. & M. Co.....	79	Copper, France.....	56, 140
Clark, W. A., zinc concentrator. 53, 110		Commercial movement, gold and		Copper furnace. See also "Furnace,"	
Classification. See also "Concentra-		silver.....	48, 263	"Smeltery."	
tion" and cross-references from it.		Commonwealth, Ariz.....	97, 105	Copper furnaces, Reverberatory, Fet-	
Classification of technical literature 851		—Solution-pump automatic stop... *535		tling.....	206, 369
—Engineers' committee.....	1132	—Mill photo.....	*783	Copper, Germany.....	51, 56, 875
Classification on Rand.....	772	Compensation, Accident:		—Reviews of situation.....	228, 252, 829
Classifier in closed circuit.....	*284	—Ariz.....	611	—War demand (see also "War") 458,	
Clay—Vitrification defined.....	441	—Calif.....	34	462, 521	
Clennell, J. E. Cyanide Handbook. †542		—Colo.....	424, 1053	Copper Giant mine, Ariz.....	35
Clerc, F. L., Death of.....	629	—Mo.....	169	Copper, Idaho.....	51, 59, 109, 705
Cleveland-Cliffs Iron Co. 75, 79, 170,		—Mont.....	1069	—Deposit discovered in 1914.....	270
511, 676, 717, 882		—Nev. Consol.—Industrial-insurance		Copper, Italy.....	56, 157, 690
—Steel diamond-drill derrick.....	*1117	figures.....	208	Copper, Japan.....	51, 830, 875
Cleveland mine, Calif. 593, 881, 925, 1138		—N. J.—"Skylarking" covered by the		Copper, Katanga.....	230
Cleveland Mg. Co., Wis.....	169	law.....	463	Copper, Kennecott.....	*608
Clevenger, G. H., on aluminum pre-		—Wis.....	66	—Operations described.....	936
cipitation—Discussion.....	568	Compressed air. See "Air."		Copper King, Colo.....	387
—Patent on zinc-sodium alloy as		Comstock in 1914.....	111, 155	Copper King, Ida.....	427
precipitant.....	948	Comstock merger. See "Jacket."		Copper leaching:	
Cliff mine, Utah.....	634	Comstock North End chart.....	385	—Acid resistance, Calif. redwood... 251	
Clingerman, Walter Hicks.....	256	Comstock tailings, Working.....	1057	—Anaconda.....	31, 92, 511, 698, 1047
Coal, Alaska.....	35, 130, 1054	Concentration. See also "Separation,"		The new plant.....	*723, *1086
—Discovery at Ruby.....	344	"Flotation," "Classification," "Wil-		—Ajo ores—New Cornelia—Calumet	
—Land leasing.....	850	fleay," "Rifle."		& Ariz.....	55, 92
—Alleged fraud cases ended.....	922	Concentrates, Handling, South Utah *698		Manufacture of iron sponge as	
—Bering River field.....	1066	Concentrating plant, Moose Mtn... *973		precipitant.....	326
Coal Anthracite, Rhode Island.....	728	Concentrating sluiceway, Fry's... *1035		Considerations which govern leach-	
Coal—Ash-fusion conditions.....	1080	Concentration Tests on Cuyuna Ores,		plant location.....	575
Coal, British, embargo.....	919	Preliminary.....	†870	—Ariz. Cop. Co.....	93
Coal, Canada, and coke.....	488, 489	Concentration, Tin, attempt, S. D... *816		—Burro Mtn.; leaching concentrates	
Coal case, Lackawanna.....	1132	Concentrator, Kennecott—Photo... *249		before smelting.....	32, 93, 116
Coal, China.....	800	Concrete and steel houses, Kahn... *987		—Butte Duluth.....	31, 53, 79, 92, 110
Coal Creek C. & C. Co.....	512	Concrete-block houses, Mineville... 446		—Calumet & Hecla.....	*821
Coal-dump anchor boards.....	*150	Concrete—Cement-gun work *409,		Notes.....	31, 92, 882
Coal-dust fring 93, 95, 110, 254, 413,		421, 866		—Chile—Chuquicamata 31, 92, 93,	
462, 546		Concrete failures, Causes of.....	739	*952, *954, *955, 1092	
—Ash troubles.....	450	Concrete porosity, Stopping.....	733	—Chile—Various photos.....	*868
—New furnace, Anaconda.....	*621, *698	Concrete shaft sets, Oliver.....	*447	—Chloridizing, blast roasting and	
Coal, Germany, scarce.....	940	Congo, Belgian. See also "Katanga."		leaching, Park City... *265, 293, *315	
Coal-gold mine prospectus.....	1133	Congo, Belgian, Economic geology,		Notes.....	32, 93, 116
Coal, Lake tonnages.....	431	441, *608		—Copper Queen.....	*17, 31, 31
Coal mines, Carbon Co., Utah.....	838	Congo copper.....	230, 936	—Hydrometallurgy, Status of.....	239
Coal, Origin of.....	102	Congress, 53d, Work of.....	501	—Line water as precipitant.....	239
Coal, Russia.....	733	—Notes.....	213, 567, 694	—Nevada Douglas...31, 79, 389, 841, 883	
Coal, Siberia—Ekibastus field...26, *603		Coniagas, Ont.....	173, 1010	—Review of 1914 practice... 91	
Coal, South Africa.....	800	—Report; costs.....	197, 330	—Royal Basin—Field process.....	470

	Page
—Sand-leaching expts., Mich.....	299
—Shannon	92
—Slater process	284
—Wallaroo & Moonta cementation..*	438
Copper, Mackay deposits, Genesis of	102
Copper metallurgy in 1914.....	91, 413
Copper metallurgy, Nodulizing in..	272
Copper, Mexico.....	51, 122, 705, 875
Copper, Mich.....	51, 705
—Lake dist. mining in 1914.....	56
—Photos. of properties.....	*336
—Monthly production of mines.....	343
—Trend of exploration	467
Copper miners' wages.....	545
Copper mines, Sand filling.....	206
Copper mines, Two old Appalachian..*	746
Copper mining in 1914.....	51
Copper, Mont.....	51, 110, 705
Copper, Mr. Ryan on—Combination needed in selling abroad, etc. 1088,	1130
Copper, Nev.....	51, 111, 705
Copper, New Mex.....	51, 112, 705
Copper, Newfoundland	36
Copper, Norway and Sweden 521, 923,	1111
Copper, Norway, discovery.....	322
—Grong mines	*889
—Reopening old mine	1007
Copper, Ont.....	120, 489, 916, 958
Copper ore, Mining low-grade, Ray Consol.	*767
Copper-ore roasting, Laist.....	*282
Copper, Peru.....	51, 52, *126, 705, 875
—Photos. of native mining.....	*375
—Casapalca district.....	355
Copper Producers' Asso. statistics..	140
—Dissolution	209
Copper Queen, Ariz.—Smelting works *1 —Report	567
—Leaching	31, 55
—Precipitating plant; leaching.....	*17, 31
—Solution sampler without siphon.....	*863
—Various notes 55, 78, 93, 94, 300, 396, 675, 924, 966, 1137	926
Copper Queen, Nev.....	926
Copper Range Consol. (Champion, Trimountain, Baltic) 39, 56, 216, 299, 343, 509, 593, 676, 882, 1062, 1097, *1107	926
Copper refineries, Electrolytic— Table of capacities.....	55
Copper, Russia.....	51, 56, 333, 875
—Pyrites deposits found	858
—Smelting in Caucasus	*650
—Mining in Caucasus	*681
Copper, Santo Domingo.....	*642, 831
Copper shipments, Gt. Lakes.....	36
Copper smelters of North Am.— Table of data	54
Copper smelting, Canadian Cop. Co.'s, at Copper Cliff 93, 120, 254, 386, 412, 450	287
Copper smelting, Electric, for S. E. Alaska	287
Copper-smelting plants, Designing small	*225
Copper, Spain, etc.....	51, 585, 596, 875
Copper—Statistical review	161
Copper statistics, situation, etc., cur- rent	207, 382, 625, 750, 791, 960
—Market and prices, former years *49, *50, 52, 201	201
—London market	*49, *50, 52
Copper sulphate, U. S.	45
Copper-tin silicon alloy analysis.....	286
Copper titrations, Economy and rap- idity in—Iodine recovery, etc.....	285
Copper, Transvaal.....	132
Copper, United Kingdom.....	56, 442, 830
Copper, U. S.	45, 140, 875
—By states	51
—Smelters' production, by states..	705
—Consumption	56
—Foreign trade	596, 834
Copper, Uruguay, mining	484
Copper, Utah.....	51, 115, 116, 705
Copper, Wash.....	51, 705
Copper, What of, after war?.....	709
Copper, World	45
—By countries	51, 705, 875
—Consumption, by countries	56
Coppers, The porphyry—Ore re- serves and milling results	1111
Corbin Cop. Co.	301, 968
Cordova M. & D.	259
Cornell, Russell T.	836
Cornfield Mg. Co.	66
Cornucopia, Ore.	98
Corocoro cop. dist., Bolivia	189
Corona de Ore, Calif.	924
Corrigan, McKinney & Co. 76, 345, 511, 634	672
Cosgro, John Palmer	672
Cossak Mg. Co., N. M.	79, 759, 1057
Cost. See also company reports by name. Cost of cyaniding	485
Cost of doing things—Churn-drilling, Pac. Mines Corp. and Miami; test pitting	20
—Conveyors at Ariz. Cop. Co.'s smeltery; steel headframe, Bisbee; Coniagas mining and milling.....	*329
—Development costs per foot. Mont- gomery mine, Candor, N. C.; cars, elec. locomotives, etc., Ariz. Cop. Co.	*495
—Hollinger mining and milling; West Rand Consol.; Salt Lake Cop. stopping; Goldfield Consol. mining; MasNamara milling	908

	Page
—Milling, Goldfield Consol.; surface prospecting, Nipissing; regrinding, Winona; constructing short trans- mission line, Cape Cod; Monarch Pittsburg report	1036
—Operating costs at small Mexican mine, in detail; milling at Nipis- sing	1122
Cost of precipitation by aluminum and zinc compared, Nipissing.....	568
Costa Rica in 1914	124
Costs, Butte, Anaconda & Pac. elec- trification	530
Costs, centrifugal pumping, Rand *1115	874
Costs, Dredging, Colombia 231, 244, 874	317
Costs—Mines Operating Co. and Park City Mills,	*32, *269, *317
Costs, Mining, of World.....	*704
Costs, Moose Mtn., Ltd.	976
Costs, Obtaining, St. Lawrence Py- rites Co.	193
Costs of flumes, Calif.....	481
Costs, Rand, Reduction of	896
Cottrell, F. G., Dinner to.....	*199, 166
Cottrell process	90, 94, 115
—A modification	240
Coutts, J. Testing flotation oils.....	*1079
Crane, Home-made traveling.....	*658, *903
Crane trolley, Safe	*415
Cranemen, Rules for	779
Cranston, R. E. Gold dredging in 1914	100
Crawford, W. D.	878
Creighton mine, Ont., loading ar- rangements, etc.	*192, *738
Cresson, Colo., 35, 108, 213, 297, 300, 342, 424, 508, 676, 840	*1027
Cribbing shaft, Fairbanks	*170, 301, 842
Crimora Manganese Corp.....	964
Cripple Creek merger proposed	291, 108
Cripple Creek metallurgy	879
Cripple Creek ore grade	*981
Cripple Creek pressure ventilation.....	298, 425
Crites & Feldman	32
Crosdale, Stuart	250, 543, 744, 912, 1040
—The patent mania	912, 1040
—Manufacture of sponge iron as copper precipitant	326
—Leaching-plant operation	575
Cropper, Cecil H.	166
Crossheads for bucket hoisting.....	*1078
Crouch's drill-pulling method.....	695
Crowfoot, Arthur	464
Crown Mines, Ltd.....	131, *150, 655, 772
Crown Point, Nev.....	38, 111, 594, 673
Crown Reserve, Ont. 173, 261, 301, 428, 1129	782
—Report	555
Crow's Nest Coal	210
Crumbie, W. D., Death of.....	33
Cruse, Thomas, Death of	33
Crusher. See also "Grinding," "Mill" and cross-references from it.	399
Crusher, Largest rock—Rockland Lake Tran Rock Co.'s Traylor 577, *743	865
Crushers, Blake-type, Effect of in- creased reduction upon	811
Crushers, Large, Demand for	485
Crushing Chilean nitrate ore.....	976
Crushing cost in cyaniding.....	*1061, *1107
Crushing in shaft rockhouses, cop. country	*973
Crushing iron ore, Moose Mtn.....	*577
Crushing machine, Smith Intercon.....	691
Crushing-machinery tendencies	*748
Crushing plant, Ohio Cop. Co.	615
Crushing-roll operation, Traylor ..	*192
Crushing, Underground, Creighton mine	736
Cryolite production	*376
Crystal Falls Dist. map	51, 125, 204, 705, 875
Cuba copper	125
Cuba in 1914	79
Cumberland M. & M. Co.	187
Cunningham Mesa Placer, N. M.	*1039
Cupel furnace Homestake	355
Cupellation, Silver, U. S. Mint.....	873
Curran, T. F. V. Protect mine owner	867
Curtman, L. J. Qualitative analysis of H ₂ S group	742
Curved ruler, Adjustable arc	692
Cushman, N.	634
Cusi Mg. Co.	*221
Cutler, H. C. Goldfield boom.....	*1113
Cuyuna district, Structure of	75, 349, 565
Cuyuna in 1914	75
Cuyuna-Mille Lacs	*870
Cuyuna Ores, Preliminary Concen- tration Tests on	1136
Cuyuna railroad developments	345, 1056
Cuyuna-Sultana	160
Cyanamide factories, World's	1076
Cyanide, Blacksmith's use of	*542
Cyanide Handbook, The	272
Cyanide, Making, from cyanamide.....	*653
Cyanide mill, Pittsburg-Dolores.....	*1103
Cyanide mill, Rainbow, Ore.....	170
Cyanide, Ont., supply	*1086
Cyanide-plant photos, Delarof.....	98
Cyanide practice—Analysis in 1914.....	312
—Labor and power in mills	485
—Cost of cyaniding; table of costs at different mills	771
Cyanide practice, etc., Rand	947
Cyanide solutions, Carbon as pre- cipitant of metal from	568, 1124

	Page
Cyaniding—Aluminum precepitation, Nipissing	568, 1124
Cyaniding—Effect of air in zinc- dust precipitation; automatic stop- ping device for solution pump ..*	534
Cyaniding precipitant—Influence of impurities on zinc	990
Cyaniding, Precipitating apparatus for, Merrill Met. Co.'s "Mills" *1079	821
Cyaniding—Precipitation on zinc shavings, Bullfinch	*412
Cyaniding—Slimes-settlement note ..*	1085
Cyaniding, Stamp Milling and	*575
Cyaniding—Tailings-value chart.....	907
Cyaniding, Waihi Grand Junction.....	699
Cyaniding—Zinc-box care	948
Cyaniding, Zinc-sodium alloy as pre- cipitant in	632
Cyclone mine, Old, Kan.	604
Cyprus, Copper in	604

D	
Daggafontein G. M. Co.	131, 277
Dake, W. M., Jr. Rainbow mill.....	*1103
Daly-Judge, Utah	116, 261, 342
—Report	782
Daly-West, Utah.....	115, 173, 512, 677
Dam, Llallaqua mine, Bolivia.....	*7, 619
Danforth's carnotite-ore treatment.	864
Dangerous-ground detector	15
Daniels, Capt. A. M.	878
Darnell, Joseph J.	1093
Data, world's principal mines	84
Davenport, L. D. Concrete shaft sets	*447
—Inclined shaft for timber.....	*776
David, L. C. Caucasus in war time.....	*477
—Mining in Caucasus Mtns.....	*681
Davis-Daly, Mont.....	758, 882, 1139
—Reports	371, 825
Davis, R. S., precipitation of rare- metal oxides	149
Davis, W. F.	712
Dawson, Nome and Fairbanks.....	*517
Day-Bristol mine, Nev.....	346, 1057
DeBeque, G. R. Bituminous shales, Colo.	*773
DeBoer & Gukossov, Caucasus.....	*652
DeCamp, W. V.	712
DeForest, R. W., Gift to	501
DeLamar Co. report	753
DeLamar, J. R.	694
Deaths in 1914, Distinguished.....	88
Débris transportation by water.....	459
Dedolph, Ed.	963
Defender mine, Calif.....	510
Deficiency engineering.....	831
Del Monte mine, Calif.....	*1074
Del Norte Claim Holders' Asso.....	797
Delarof Devel. Co.	78
—Cyanide-plant photos.....	*1086
Delaware, Lack. & West. coal case.....	1132
Demwolf on roasting lead ore.....	89
Denver, Boulder & Western R.R.....	714
Denver headquarters for prospectors	964
Denver tunnel-commission bills.....	465
Derrick dangers	904
Derrick, Steel diamond-drill	*1117
Derry Mg. & Land Co.	551
Des Moines Oil Co.	715
Desloge Consol. Lead Co.....	61, *396
Detonators, Comparative strength of	818
Detroit Cop. Mg. Co. 94, 468, 567, 833, 840	*1023
Development methods, Fairbanks.....	1125
Devereux, W. C. Finnegan Mines.....	851
Dewey decimal system	33, 208
Dewey, Frederic P.	355
—Assay, precious-metal bullion.....	*12
Dewey mine, Calif.....	111, 217, 301, 346
Dexter-White Caps, Nev.	*375
Diamond mine, Wesselson.....	428
Diamondfield Black Butte.....	129, 276, 1022
Diamonds, British Guiana.....	132
Diamonds, Transvaal	1055
Diatomaceous-earth quarries, Lom- poc	423
Dick, William, Death of.....	874
Dierolf, T. F. V. Taxes, Colombia.....	1041
Diodorus on gold mining.....	45
Dividends—In 1914.....	27
—Month of Dec.	81
—Tables for 1914.....	830, 1004
—In 1915, by months 295, 454, 627, 830, 1004	515, 845
—Latest and totals (page tables),	91
Divine's lead treatment.....	511
Dixon, Mont., copper discovery.....	830
Dock, Largest iron-ore.....	469, 554, 882, 925, 964
Doctor-Jack Pot.	*1086
Doe Run See "St. Joseph"	874
Dolbear, C. E., and patent protest. See "Potash, Seales Lake."	301, 346, 389, 470, 884, 927
Dome Lake mine, Ont.	97, 98, 99, 173, 346, 389, 555, 591, 594, 715, 842, 884, 1010
Dome Mines Co. 79, 97, 98, 99, 173, 346, 389, 555, 591, 594, 715, 842, 884, 1010	*641, 831
Dominican Republic, Minerals of ..*	842
Dominion Silver Lead, Wash.....	1095, 1136
Dominion Steel Corp.: Dominion I. & S. Co. 36, 173, 1010, 1095, 1136	656
Don'ts, First-aid corps.....	1005
Doorley, T. H.	78
Dorit Co., Colo.....	*603
Dos Estrellas steam turbine.....	507
Douglas, C. E. B.....	423
Douglas, James	54
—Copper in Arizona.....	54

	Page
Douglas, Ore rates to.....	750
Dow Jones & Co. on New Street quotations.....	199
Dowling, D. B.....	1093
Downey, J. H.....	*1088
Downs, Fletcher G.....	792
Downtown Mines Pumping Co.....	793
Drafting. See "Drawing."	
Drag, Inclined, for concentrates....	*698
Dragon Consol., Utah 261, 301, 346, 512, 759	
Drainage. See also "Pump."	
Draining watercourses in chutes....	*573
Drawing—Adjustable arc ruler....	742
Drawing-board copyholder.....	*492
Drawing ellipses, Simple method....	*1080
Drawings, Smoothing old.....	15
Dredge, British-Butte.....	1030
Dredges, Canadian-Klondyke.....	136, 702
Dredging, Alaska.....	101, 118, 880
—Ruby dredge photos.....	*248
—Semi-Diesel engines and locomobiles.....	*644
—High field, Iditarod.....	*727
—Flume-type elevator dredges....	*1129
Dredging, Calif—Ruby Val.....	714
Dredging, Colombia.....	101, 125, 142, 191
—Orville reports.....	231, 244, 253, 874
Dredging—Débris transportation by running water.....	459
Dredging gold in 1914.....	100
Dredging ground in Yukon, Requirements of prospecting.....	828
Dredging, Idaho—Pierce region.....	298
Dredging, Philippines.....	*228, *685, 709
—Mambulao steam-elec. dredge; one-piece bucket, etc.....	*898
Dresser, J. A.....	1093
Drier. See also "Drying."	
Drier, Rowland-type tower, Mt. Hope	*560
Drifting with a stoper.....	*860
Drill. See also "Air, Compressed," "Dust."	
Drill-column, Pneumatic.....	*14
Drill, Diamond—Steel derrick.....	*1117
Drill, Ingersoll-Rand mounted Jack-hammer, for flat holes.....	*743
Drill, Rock, nicknames.....	860
Drill sharpener, Proske's "Imperial"	*414
Drill sharpener, New Sullivan.....	*949
Drill steel, Failure and heat treatment of.....	*612, 946
Drill-steel failure, Hollow.....	579
Drill-steel handling, Quincy mine; sharpening shop.....	*16
Drill-steel length and cutting speed	409
—How the bit breaks the rock.....	573
Drill steel, Tripod for long.....	*490
Drill, Stoper, Drifting with.....	*860
Drill, Union portable gasoline churn	*491
Drilling campaign, Consol. Copper-mines Co.....	*1069
Drilling, Churn, costs, Miami.....	21
Drilling, Churn, costs, Pac. Mines Corp.....	20
Drilling, Eiderlinsky mines, Russia—Machine and hand; sharpening; results.....	*1019
Drilling experiments, Lake cop. dist.	299
Drilling—Five-hole-cut raising.....	*572, *956, 1083
Drilling for Judson orebody.....	*443
Drilling, Jackhammer, in Caucasus.....	*682
Drilling-practice changes, Rand.....	943
Drilling record by boys.....	1092
Drills, Pulling stuck.....	695
Drills, Quarrying with air-hammer on scaffold.....	*903
Drink and inefficiency.....	461, 787
Drippan, Robert G.....	712
Drop-shaft sinking, Germany.....	*988
Dry-placer machine, Stebbins.....	*783
Dryer. See "Drier."	
Drying iron ore, Mesabi.....	696
Drysdale, C. W.....	963
Ducktown Co. decision.....	1047, 926
Duluth, Missabe & Nor. dock.....	830
Dump bottom, Anchor boards for.....	*150
Dump, Suspended, for tailings.....	*864
Dumping device, Bucket.....	*944
Dumping hopper cars, Stephens-Adamson wrench for.....	*1033
Duncan, L. Reverberatory waste-heat boilers.....	*152
Duplex mine, Nev.....	1057
Durant, H. T. Packing for export.....	205
Dust. See also "Flue."	
Dust, Allaying Rand tailings.....	132, 779
Dust, Drill, and phthisis, Rand.....	28, 132
—Methods for laying dust.....	861
Dust, Rock, sampler, Higgins.....	*238
—Tuberculosis, Joplin dist.....	331
Dutch. See also "Gulana," "Netherlands."	
Dutch East Indies minerals.....	140
Dutch Hill mine, Calif.....	*1074
Duty. See "Tariff."	
Dwellings, Miners', Candor, N. C.....	*904
Dwight-Lloyd process—Review.....	89
Dyer, Charles E.....	549
Dynamite." See also "Blasting," "Explosives."	
Dynamite, Sensitiveness of.....	820

E

Eagle & Blue Bell, Utah 346, 389, 718, 759, 797, 1057, 1098	
—Report.....	825

	Page
Eakins, Lincoln G.....	1005
Easch, V. C.....	792
East Af. gold mining, Ancient.....	1041
East Butte, Mont. 345, 590, 859, 882, 968	
Easton, S. A. Coeur d'Alenes during 1914.....	59
Ebner. See "Alaska-Ebner."	
Eccles, S. W. A. S. & R. Co. in Mex.	130
Eckel, E. C. Iron Ores.....	*69, 103
Economic geology. See "Geology."	
Ecuador in 1914.....	126
Eddy, L. H. Quicksilver in Calif.....	68
—Mining in Calif. in 1914.....	107
—Comparative hydraulic-mining methods.....	481
—Tentative safety rules, Calif. 1043, 1125	
—Flume-type dredge, Alaska.....	*1129
Edgar, Selwyn C., Jr.....	836
Edgar Zinc Co.....	798, 1131
—Practice, Cherryvale, Kan.....	95
Edison's benzol plant.....	546, 675
Education, Mining, New era in—Univ. of Ariz.'s plan.....	1128
Edwards type mechanical furnaces.....	*181
Egan, J. J.....	464
Eiderlinsky gold mines.....	*1017
Eight-hour law, Alaska.....	1054
Eight-Five Mg. Co.....	512, 631
Eikibastus coal field.....	26, *601, 603
El Cobre mine unwatered.....	204
—Note.....	125
El Oro, Mex., mines in 1914.....	123
El Oro M. & R. Co., Mex.....	694
El Oro M. & M. Co., Colo. (see also "Queen").....	78
El Paso Consol. 300, 387, 465, 551, 554, 793, 882, 1009, 1097	
El Tigre.....	122
Eldorado Dredging Co.....	168
Electric. See also "Water power."	
Electric Activity in Ore Deposits.....	*104
Electric-arc welding.....	*947, *951
Electric-fault localizer, Portable.....	*656
Electric-fume precipitation. See "Cottrell," "Smeltery."	
Electric Furnace, Bulletin on.....	*542
Electric Furnace Co., Snyder.....	713
Electric furnace, Rennerfelt.....	*400
Electric hoists, Nordberg, at Wakefield, Mich.....	*742
Electric, Hydro-, plant, Chapin.....	914
Electric insulator, Automatic section	866
Electric-lamp filaments, Tungsten.....	295
Electric-lighting set, Steam-shovel.....	*15
Electric-lighting unit, Moon compact.....	*415
Electric-locomotive costs, Ariz. Cop. Co.....	*495
Electric signal box, Gravity-reelase	*614
Electric smelting, Scandnavia.....	270
Electric smelting, S. E. Alaska.....	287
Electric smelting, zinc.....	96
Electric steel making, Canada.....	880
Electric storage-battery locomotives, 367, 533	
Electric switch, Safety knife.....	*578
Electric-transmission line, Short, construction costs, Cape Cod.....	1037
Electrical developments in 1914—Railway, Tofó, Chile; locomotives, Braden, etc.; hoist, Lehigh Coal & Nav. Co.; furnaces for annealing, etc.....	*277
Electrical inventions, Weston's.....	234
Electrification, Butte, Anaconda & Pac., Results of.....	529
Electricity—Telling negative wire.....	1031
Electrochemistry, Laboratory Course	*376
Electrode, Silver-plated, in zinc assay	701
Electrolysis. See also "Copper leaching."	
Electromagnet for hospitals.....	*578
Electromagnetic separation. See "Separation."	
Elk Creek, Alaska, discovery.....	966
Elko Mg. Co.....	112
Elkton Consol.....	465, 840, 882, 922, 967
Ellamar Mg. Co.....	117
—Aerial ship-loading system.....	*230, *249
—Ore bin.....	*366
Elliott, Mark.....	33
Ellipses, Drawing. Simple method	*1080
Ellis, H. I. Dawson, Nome, Fairbanks—Shushana mining district.....	*731
—Prospecting methods, Fairbanks.....	*805
—Development methods, Fairbanks.....	*1023
Elm Orlu, Mont.....	53, 110, 551, 991
Elmore process, Molybdenum recovery by.....	907
Emory, L. T. Kaolin mining.....	*945
Emma Cop. Co., Utah 555, 677, 927, 1057	
Emmons, S. F., fellowship.....	27, 754
Empire Cop. Co.....	109, 554, 925
—Operating Shay locomotives.....	*729
Empire Gold Dredging Co.....	633
Empire Iron & Steel Co.'s Mt. Hope mine model.....	*446
—Erratum.....	533
—Magnetic separation.....	*559, *526
Empire Mines, Calif. 37, 78, 216, 396, 510, 881, 1096	
Empire Zinc Co. 105, 112, 113, 134, 173, 261, 677, 842, 1057	
Employers' liability. See "Compensation."	
Engels Cop. Mg. Co. 78, 925, 1055, 1138	

	Page
Engels', M., use of zirconia in zinc smelting.....	896
Engine, Oil, Bessemer.....	*578
Engine, Steam, or air compressor, Can. Mg. & Finance Co.'s Nordberg	531
Engine continued after "Engineers'"	
Engineer, Am. mining, and his field	626
Engineering Congress, International,	423, 1093
Engineering Foundation, The 200, 245, 958	
Engineering, Mechanical, in mining,	918
Engineers, Am. Inst. Mg. See "American."	
Engineers, Employment for idle 789, 996	
Engineers, Mining, What becomes of?.....	275
Engineers' Library Service Bureau	1075
Engines, Semi-Diesel, for Alaskan dredges	*644
England. See "United Kingdom."	
Englebright, W. F., Death of.....	464
Ensign-Bickford Co. Spitting fuses	*874
"Erie" revolving shovel.....	*865
Ernestine, N. M.....	112, 214, 261
—Tailings disposal.....	788, 631, 923
Esperanza, Mex., report.....	753
Etching reagents for particular metals and alloys.....	1120
Eureka Hill, Utah.....	512
Eureka Mtn., Calif., photo.....	*1087
Excelsior Consol., Calif.....	592
Excelsior G. M. Co., Calif.....	78
Expansion joint, Ross.....	*697
Exploration Co., Ltd.....	422, 463
Explosion—Layland rescue work 666, 670	
Explosions, Metal-mine—Bulletin.....	*946
Explosive. See also "Blasting."	
Explosive—Test of dynamite sensitiveness.....	820
Explosives, Bag for carrying.....	*574
Explosives cases, Burning empty.....	323
Explosives—Powder magazines.....	697
Explosives—Thawing dynamite.....	834
Export. See "Trade," "War," metals and countries by name, etc.	
Expositions. See "Panama-Pacific," "San Diego."	
Eyde exploitation, Norway.....	*889

F

Fagan, R. H., Death of.....	878
Fairbanks dist., Alaska.....	37, 118, 793
Fairbanks, Dawson and Nome.....	*517
Fairbanks, Development methods.....	*1023
Fairbanks prospecting methods.....	*805
Fairbault, E. R.....	1093
Falkowicz, J. R. Galician oil fields.....	690
Fans, Concrete-covered blade *267, *318	
Farish, Fred G.....	464
Farm, That.....	275
Farmer amalgamator.....	*818
Farnham, F. C. Electric smelting for S. E. Alaska.....	287
Fault localizer, Westinghouse portable.....	*656
Federal Lead Co.....	60, 61, *703
Federal M. & S. Co. 171, *838, 593, 676, 1092	
—Last Chance and Morning photos.....	*994
—Report.....	992
Feed-water heater, Boiler as.....	*604
Feldtmann, W. R. Carbon as precipitant of metal from cyanide solutions.....	947
Felver, H. C.....	341
Ferguson, George Howard.....	33, 341
Ferrier, W. F.....	878
Ferrocyanide determination of zinc Ferromanganese. See "Manganese."	285
Ferrosilicon production rate.....	240
Fertilizers. See "Potash," "Phosphate," "Nitrate," "Bat guano," "Chemicals."	
Fettling reverberatories.....	206, 369
Fichtel, C. L. C. Lake Sup. copper dist. in 1914.....	56
Field M. & M. Co.....	26, 65
Field Process Co.....	1008
Fields, J. D.....	470, 714
Filing technical literature.....	851, 1132
Filling, Sand, of copper mines.....	206
Filling, Sand, on Rand.....	862
Filteau, C. A.....	256
Filter, Robacher, General Filtration Co.'s.....	*740
Finlay, J. R.....	440, 589
Finnegan Extension Mines.....	1125
Fire engine, Boyd's mine.....	*820
Firebrick cut out, Why does?.....	381
Fireproofing shafts with gunite *409, 421	
First aid. See also "Accident," "Rescue," "Safety."	
First-aid contest, Butte.....	915
First-aid-corps don'ts.....	656
First-aid instructions.....	*366
First-aid jar and kit.....	236, 490
First aid, Old Dominion.....	859
First-aid teams, McGinty on.....	579
First-aid work, Platteville.....	*142
First move, The.....	164
Fitch, T. W., Death of.....	712
Fitting and flange standards.....	*1121
Five-hole cut, Hodgkinson *572, Morrison *956, B. F. T.....	1083
Fixation hypothesis, The.....	102
Flanged fittings—Standard schedule	*1121
Fleeting device for hoist with conical drums.....	*945

Page	Page	Page
Fletcher, W. O., Death of..... 672	Furnaces, Rectangular mechanical, Edwards and Merton types.....*181	Gold, Bolivia, mining.....*351
Florence Goldfield.....111, 593, 1009	Furnaces, Reverberatory, Anaconda, etc.—Feeding along side walls 412, 462	Gold, British Guiana.....276, 1022
Florence Mfg. Co., of Pittsburg, in Utah..... 470	—Eliminating side door..... 546	Gold Bullion mine, Alaska..... 118
Florida-Giant, Mont.....217, 677	—Coal-dust firing, etc. *616, *620, *621, *698	Gold by parcel post..... 209
Florida phosphate, Hydraulicling.....*23	Furnaces, Reverberatory, Fettingling.. 206	Gold, Calif..... 47
Florida phosphate statistics.....480, 895	—At Steptoe works..... 369	Gold, Canada.....47, 488
Florida Soft Phosphate & Lime Co... 841	Furnaces, Waste-heat boiler, Hand-firing in.....*368	—Vancouver assay-office rectx..... 391
Floridin fuller's-earth plant..... 676	Furnaces—Why does firebrick cut out..... 381	Gold, Chile—Mines described.....*847
Flotation, Anaconda (see also "Anaconda")—Brick from tailings..... 455	Fuse holding in making primers.....*1084	Gold Cliff mine, Alaska.....*457
Flotation and patent mania..... 744, 1040	Fuses, Spitting..... 744	Gold Coin mine, Colo..... 171
Flotation-concentrates disposal, St. Jos..... 659	—Lead-spitter fuse lighter.....*874	Gold, Colombia..... 126
Flotation machine, Wood.....*455		Gold, Colorado..... 47
Flotation oils..... 462, 619		Gold, Commercial movement.....48, 263
Flotation oills, Testing.....1079		Gold Crown, N. M.....1057
Flotation process, Elmore, Molybdenum recovery by..... 907		Gold dredging. See "Dredging."
Flotation process in 1914..... 99		Gold, Dutch East Indies..... 140
—Various notes.....91, 96		Gold, Economic geology of, in 1914.. 102
Flotation process—Secrecy; oils used, etc..... 253		Gold, France..... 47, 140
—Minerals Separation vs. Miami 253, 881, 937, 962		Gold, Guiana, Dutch..... 445
Flotation, Recent progress in.....937, 1084		Gold Hill Consol., N. C.....1085
Flotation, S. E. Mo. dist..... 60		Gold Hill mine, Colo.....1056
Flotation, Timber Butte mill..... 991		Gold Hill mines, Nev.....111, 155, 470
Flue dust, Potassium from.....1088		Gold Hunter, Idaho..... 694
Flue, Dust, Welded, Anaconda.....*393		Gold, Idaho.....47, 59, 109
Flume-type dredges, Alaska.....*1129		Gold, Mexico..... 47
Flumes, Hydraulic-mining, Calif..... 481		Gold mining, Ancient, East Af.....1041
Fluorspar, U. S., production.....1075		Gold mining in Southeast..... 790
Flushing. See "Filling."		Gold, Ont.....120, 916, 958
Flynn, A. E. Azimuth estimation from incorrect plumbing.....*695		Gold, Oregon.....47, 114
Foldal Cop. Co., Norway..... 206		Gold Pan dist., Calif..... 216
Fond Du Lac silver discovery 552, *644, 787		Gold, Philippines.....47, 736
Foot, F. W. Timber carriers for aerial tram.....*1031		—Dredging.....228, *685, 709, *898
Forbes, C. R. Mining laboratory, Mo. School of Mines.....*309		Gold, platinum and palladium determination..... 700
Forfeiture of mining claims..... 402		Gold—Quartz veins in lamprophyre intrusions..... *11
Fortuna Gold Queen, Utah..... 797, 968		Gold Reed, Ariz..... 795
Foulk, C. W. Quantitative Chemical Analysis.....*376		Gold, Rhodesia.....40, 47
Fowler, S. S. Kootenay notes..... 156		Gold Road mine, Ariz.....592, 823
Franc, C. B., Death of..... 549		—Elderlinsky mines.....*1017
France, Algeria, production..... 140		Gold, South Dak.....47, 113
France, aluminum.....80, 140		Gold Standard Leasing Co.....1138
France, copper.....56, 140		Gold stealing in Siberia..... 421
France, gold and silver.....47, 140		Gold, Transvaal.....47, 131, 175, 261
France, lead.....57, 140		Gold, U. S..... 45
—Ore exports prohibited.....1071		—By states..... 47
France, spelter, zinc.....62, 140		—Amount held Jan. 2..... 219
France—Status of some metallurgical companies.....1030		—Exports and imports..... 263
—Affected by German invasion..... 649		Gold, Uruguay, mining..... 484
France, tin..... 67		Gold, Utah.....47, 116
Franccke, Herr..... 507		Gold, World..... 45
Franklin, Mich.....172, 758, 1138		—By countries..... 47
Frasch estate, Stocks in 254, Reappraisal..... 547		—For 20 years..... 48
Frederickson mine, Nev..... 796		Golden Center, Calif.....1137
"Free Mining Republic," The..... 383		Golden Cycle, Colo. see also "Vindicator Consol." 108, 508, 714, 716, 793, 840, 881, 879, 967
Freeman, C. C. Influence of impurities on zinc..... 990		Golden Gate Mg. Co. 26, 428, 555, 759, 884
Freeman, R. R., Jr., Death of..... 877		Golden Jubilee mine, Calif. *11, 12, 510, 592
Freezing method of sinking in thawed ground.....*807		Golden Reward, S. D.....113, 634
Freight, Ore, to Douglas..... 750		Golden Sceptre mine, Nev..... 388
Freight-rate complaint, Colo.....1094		Goldfield apex litigation 512, 551, 552, 591, 631, 671, 793, 832
Freight rates, Iron-ore, railroad 832, 839, 844, 971		Goldfield-Candelaria..... 594
French. See "France," "Guianas."		Goldfield Commonwealth..... 717
Fresenius & Beck's analysis of crude sulphur..... 867		Goldfield Consol. (see also "Aurora"), 111, 301, 345, 388, 512, 1004, 1009
Fresno Cop. Co..... 675, 924		—Report.....633, 751, 789, 962
Friend placer property, Ariz..... 757		—Mining costs..... 909
Frisco mine, Ida.....*417, 593, 631, 1138		—Milling costs.....1036
Frontino & Bolivia Co..... 125		—Hoist and compressor power.....*988
Fry's concentrating sluice box.....*1035		Goldfield district map revision..... 550
Fuller, John T..... 549		Goldfield, its present boom.....221
Fuller's earth, San Bernardino Co., Calif..... 426		Goldfield Merger Mines Co. 345, 388, 512, 926, 968, 1057, 1097
Fulton, C. H. Metallurgical Smoke 380, *704		Goldstream mine, Alaska..... 426
Fume, Smeltery. See "Smeltery"		Goldstrike district, Utah 880, 1006, 1098
Furnace. See also "Smeltery," "Converter," "Roaster," "Electric."		Good Hope Mg. Co..... 26
Furnace, Blast, stoves, Pfoser-Strack-Stumm process for heating *240		Goodwin, L. H. Handling drill steel, Quincy mine.....*16
Furnace, Blast, vanquished, Anaconda..... 462		—Skip-rope holding device.....*279
Furnace, Blast, vs. reverberatory... 832		—Shaft-rockhouse practice, cop. country.....*1061, *1107
Furnace firing, Zinc—Review..... 95		Goodwin, R. J., experiments.....*320
Furnace foremen, Matte assay by... 863		Gordon-Tiger mine, Colo..... 300
Furnace, Oil-burning assay, Mine & Smelter Supply Co.'s..... 743		Gorgas, Col., in Transvaal..... 132
Furnace operation, Mt. Lyell.....1034		Government publicity methods..... 787
—Briefer mention 833, 863, 864, 948, 1045		Gowland, W. Metallurgy of Non-Ferrous Metals.....*376
Furnace repairs, Cement gun in..... 866		Grade-board, Steam-shovel.....*572
Furnace, Reverberatory, temperatures, Anaconda and Steptoe.....*658		Granby Consol. 117, 121, 213, 594, 718, 741, 797, 924, 1137
Furnace, Reverberatory, waste-heat, Steptoe Wks.....*152		—Water-power plant..... 833
Furnace, Steptoe, oil burners.....*615		—Higher furnace..... 922
Furnace-tapping shield, Anaconda..*494		Granby Mg. & Smg. Co.....62, 420, 922
Furnace waste-heat boilers, Chrome *892		—Leonard Worcester, Jr., case 667, 670, 753, 876
Furnaces, Anaconda—Oxyacetylene welding.....*393, *534, *741		Grand Central, Utah..... 346
Furnaces, Blast, Tenn. Cop. Co.'s gate valve for.....*449		Grand Trunk Pac. Ry..... 880
Furnaces, Copper Queen..... *1		Granite; Gold Con., Colo..... 171, 345, 387
Furnaces—Design of small copper-smelting plants.....*225		Granite Hill mine, N. C..... 173
Furnaces, Higher, in pyrite smelting 833		Granite mine, Alaska..... 673
		Granulating, Slag and matte.....*239
		Grasselli Chem. Co.....77, 96, 594
		Grasselli zinc plant, Park Cy. See "Park Cy. Mills."
		Grate bars, Emergency, for small boiler..... 820
		Gray, John, Death of..... 423
		Gray, Thomas T..... 502
		—Synthetic crude oil..... 815
		Great Britain. See "United Kingdom."
		Great Cobar, Ltd.....1138
		Great Falls mines, Md..... 676
		Great Northern Exploration..... 24, 36, 74, 301, 342, 427, 554, 565, 587, 593, 758
		—Present operations described..... 540

	Page
—Arthur Mg. Co.	74, 75, 343, 469, 593
—Hill Annex.	38, 75, 541
Greece, lead.	57
Green, W. C., Death of.	629
Green water-tank controller.	*905
Greenawalt, W. E. Patent mania, 543, 744, 912, 1040	
Greene-Cananea (see also "Cananea Consol.")	1098
Greenland cryolite.	736
Grier, T. J., memorial.	423
Grinding. See also "Crusher," "Mill" and cross-references from it.	
Grinding costs, Re., Winona.	1037
Grinding in closed circuit.	*284
Grinding-machinery tendencies.	691
Grizzlies, Disk-type and traveling-belt, Stephens-Adamson.	*241
Grong mines, Norway.	*889
Guanajuato in 1914.	123
Guanajuato, Trouble at.	833
Guano, Bat, Composition of.	442
Guatemala—Alotheque mines.	*703
Guggenheim, D., Testimony of, before U. S. Industrial Relations Commission; his portrait *245, 382, 583, 587	
Guggenheim dredging ground, Calif. 216	
Guggenheim Exploration Co.	691, 1044
—Report.	364
Guggenheim, S. R.	210
Guiana, Brit., gold, diamonds, etc., 129, 276, 1022	
Guiana, Dutch—Influence of war on mining.	445
—Bauxite deposits.	*583
Guianan, Mining in.	129
Guillaume, Charles E.	256
Guterman, Franklin, Death of.	872
Gulishambaroff, S., Death of.	1134
Gumaos Placer Co., Philippines 228, *685, 709	
Gunite work.	*409, 421, 866
Guy, A. E.	878
Gwynn, J. W. Storage-battery locomotives.	367, 533
Gypsum, Baker Co., Ore.	114
Gypsum in Canada.	†376

H

H. E. M., Idaho.	300
H. L. & S. Mg. Co.	925, 1044
Haanel, Eugene.	210
Hackberry mine, Ariz.	35, 105
Halberstadt, Baird.	712
Halby underground shoveling machine.	280, *950
Hale, Samuel.	210
Halifax Tonopah.	154, 594, 634
Hall, A. E. Underground crushing and loading, Creighton mine.	*192
—Sinking and spillage pocket.	*612
—Types of chutes and gates.	*738
Hall, C. M., Death of.	33, 210
Hall desulphurizing process.	89, 94
Hall, E. J. Sulphur-sand cement.	1071
Hall, John H.	878
Hamilton, E. H.	672
Hamilton, E. M. Aluminum precipitation, Nipissing.	568
Hammond, John Hays.	792, 1044
—Proposes Pan-American court.	32
Hammond Mg. Co., Wash.	26, 718
Hammond River dist., Alaska.	1021
Hamor, W. A. Dedication of new building, Mellon Inst.	480
Hancock Consol., Mich. 427, 554, 676, 796, 1007, 1064, *1065, 1066, 1138	
—Report.	6
Harcocck, R. T. Débris transportation by running water.	459
Harcocck, J. H., Death of.	33
Hand grip, Safety, for car.	*531
Hanna, M. A., & Co.	36, 76
—Elec. hoists, Wakefield Mich.	*742
Hanyehing Iron & Coal Co.	442
Happy Camp dist., Calif.	510
Harbison-Walker Refractories Co.	196
Hardenburg mine, Calif.	1137
Hardening salts and pastes, Nehls.	242
Hardening steel, Cyanide for.	1076
Hardinge Co.'s Britannia lining.	*239
Harney Peak, S. D. (see also "Parhasa")	*23, 467
Harris, F. W. Mountain roads *237, *325, 365	
Harris, R.	1134
Hart, P. E.	210
Hartley, C. Placer mining opportunity.	185, 208
Hartley, W. B. Oregon mining.	114
Hartman, W. E.	1093
Hasbrouck, J. J.	384
Haulage equipment costs, Ariz. Cop. Co.	*329, *495
Haulage—Substitute for rollers in incline.	*149
Haulage, Underground, Butte, photos.	*496
Haulageways, Block system on.	574
Favre, Mont., gas.	*648, 677, 714, 926
Hawkeye mine, Mont.	260
Hawley, F. G. Phosphate method for alumina.	536
Haynes, Elwood.	1049
Hazlett, A. J. Petroleum in Tex. and La.	137
Headframe, Fairbanks type of.	*1026
Headframe, Mt. Hope, N. J.	*565
Headframe, Steel, cost, Bisbee.	330

	Page
Headframes—Angle-sheave frames, *359, *403	
Headframes on Mesabi.	*1119
Headframes, Steel, Mich., S. D.	*910
Hearst, W. H.	33
Heat developed in crushing.	976
Heat-treatment chemicals, Shop.	1076
Heat treatment, drill steel.	*612, 946
Heath, H. L.	549
Hedley Gold Mg. Co.	594
—Report.	993
Heidelberg, S. D.	114, 389, 555
Heinbach, August, Death of.	296
Helena district, Mont.	879
Hellena mine, Colo.	1053
Heller, E. S.	*200
Heller, M. W. Effect of increased reduction upon Blake-type crushers.	399
Helsingborg Refinery, Sweden.	794
Henahan, Thomas R.	192
Henry, E. A. Layland rescue work, 666, 670	
Henshaw, Park, Death of.	1134
Herald mine, Colo.	925, 1056
Herb Lake, Man., gold discovery.	509
Herculeum. See "St. Joseph."	
Hercules Consol., Colo.	469
Mercurus Mg. Co., Ida. 213, *241, *539, 1097, 1136	
Hercules Powder Co.	342, 715
Heulandite in Oregon.	957
Hiawatha mine, Colo.	967
Hice, R. H. Penn. Report.	†870
Hidden Lake mine, Mont.	717
Higgins, E. Tuberculosis, Joplin dist.	331
—His dust sampler.	*238
Higgins Land Co.	554
Highgrading, Colo.	465, 551, 793
Highland Mary, Colo.	37
Highland-Surprise, Ida.	593
Highland, Wis., Cleaning carbonate ores.	*906
Hill iron-ore lands. See "Great Northern."	
Hill, J. M.	423
Hill Mines Co.	214
Hilltop, Nev., ore strike.	346
Hinge, Shaft-door, Bernard.	*280
Hirsch, Aron, & Sohn.	339
Hirst, F. W. Cost of the war.	398
Hobart, F. Gold and silver.	47
—Iron and steel.	70
Hodge, W. R. Dynamite bag.	*574
—Gravity-release elec. signal box.	*614
—Hillside pipe-line anchor.	*656
Hodgkinson, H. H. Substitute for rollers in incline.	*149
—Safety hand grip for car.	*531
—Five-hole-cut raising method *572, *956, 1083	
—Removing ore under timbered drift.	*657
—Locked signal system.	*777
—Timbering stopes for safety.	*818, 936
—Substantial ore chute.	*861
—Simple, strong chute.	*1032
Hodson, J. T. Death of.	1005
Hofman, H. O. La Sirena jamesonite.	†69, 91
—Lead metallurgy in 1914.	89
Hoisting. See also "Shaft," "Incline," "Rope," "Headframe," etc.	
Hoist and compressor power curves.	*988
Hoist, Electric, Lehigh Coal & Nav. Co.	278
Hoist rope, Reversing.	655
Hoist, Trolley, Link-Belt.	*578
Hoisting—Angle-sheave frames *359, *403	
—Fleeting device for hoist with conical drums.	*945
Hoisting, Bucket, Crossheads for.	*1078
Hoisting methods, Fairbanks.	*1023
Hoisting safety rules, Wis.	24
Hoisting—Shaft-rockhouses, Mich. copper country.	*1061, *1107
Hoisting—Warning bell for topman.	*655
Hoists, Nordberg elec., Wakefield, Mich.	*742
Holbrook, F. A. Wood as fuel.	*645
Holbrook, F. H.	792
Holland. See "Netherlands," "Guiana," "Dutch East Indies."	
Hollinger, One, 79, 98, 99, 120, 214, 217, 261, 346, 470, 555, 594, 634, 884, 927, 1010, 1139	
—Report.	343, 781
—Grinding in closed circuit.	*284
—Mining and milling costs.	908
Holt-Dern roasters.	*265, 293, *315
—Notes.	32, 93, 116, 594, 838, 927, 1006
Homestake Mg. Co.:	
—Report.	618, 512
—Open-cut; recreation building.	*826
—Steel headframe.	*911
—Laboratory and cupel furnace.	*1039
—Notes, etc.	79, 113, 313, *412, 469
Honduras in 1914.	124
Honey Bee mine, Nev. 796, 841, 1009, 1097	
Hood, B. E. Concentrating plant, Moose Mtn., Ltd.	*973
Hoover, Herbert Clark.	243, 503, *935
Hopkins' copper discovery, Norway.	322
Hore, R. E. Can. Mining Manual.	†376
Horn Silver, Utah.	634, 927, 968
Horner, P. K.	920
—Copper operations at Katanga.	936
Horseshoe mill, Kan.	922
Horwood, C. B. Rand deposits.	102
Hosea, R. M.	423
Hospital for Tyrone, N. M.	173

	Page
Houghton, Douglas, monument.	467
Houghton National Bank.	1051
Houseman & Co. on war.	209
Houses, Concrete-block, Mineville.	446
Houses, Miners', Candor, N. C.	*904
Houses, Steel and concrete mine, Trussed Concrete Steel Co.'s "Kahn"	*987
Hoyt, Milton.	792
Huanuni mine, Bolivia.	143
Huaro-chiri Co., Peru.	355
Hull, M. R.	1093
Hull-Rust mine, Minn.	565, 1056
Human nature does not change.	1091
Humes, F. N., Death of.	166
Humes, J. Stopping at Park City.	492
—Roll operation.	615
Huntington-Heberlein process—Review.	89
Hunter, Idaho.	171
Huntley, L. G.	210
Huronian, Ont.	173, 217
Hutchin's tin-ore assay.	286
Hutchinson, J. W.	166
Hyder, F. B. Juneau geology.	901
Hydraulic mining, Dawson—Photo.	*581
Hydraulic mining in Florida.	*23
Hydraulic Mining, Manual of.	†376
Hydraulic-mining methods, Comparative, at Lorenz and Union Hill mines, Calif.	481
Hydraulicking in Caucasus.	*681
Hydro-electric. See "Water power," "Electric."	
Hydrogen-sulphide group, Qualitative analysis of.	867
Hydrometallurgy. See "Flotation," "Cyanide," "Copper leaching," "Zinc," "Quicksilver," etc.	
Hypotheek mine, Ida.	35, 259, 633

I

Idaho—Continental.	109
Idaho copper.	51, 59, 109, 270, 705
Idaho Gold & Radium Co.	109
Idaho gold and silver.	47, 59, 109
Idaho in 1914 (see also "Coeur d'Alene")	109
Idaho lead.	59, 109, 162
Idaho-Nevada.	300
Idaho zinc.	59, 109, 451
Idatarod dist. in 1914.	509
Iditarod dredge, High yield.	*727
Idianna volcano, Alaska.	964
Illinois Lead & Zinc Co.	674
Illinois petroleum.	69, 136
Illinois, University of.	211
Illinois zinc.	62, 451
Imperial Cop. Co.	757
Imperial drill sharpener.	*414
Incaoro camp, Bolivia.	*351, *353
Incline. See also "Shaft."	
Incline, Shannon, Metcalf, Ariz. *663, 1030	
Incline, Substitute for rollers in.	*149
Income tax—Gross value at mine.	445
Index, Mining 42, 305, 474, 638, 802, 1014	
Indexing and filing technical literature—Dewey system; suggested topical classification.	851
—Engineers' committee.	1132
India gold.	47
Indiana mine, Mich.	758
Industrial Chemistry.	†542
Industrial insurance. See "Insurance," "Compensation."	
Ingalls, W. R.	160
—Zinc metallurgy in 1914.	95
—Spelter statistics for 1914.	451
Ingersoll-Rand portable compressor *241, Jackhammer drills.	*682, *743
Inland Steel Co.	258, 511, 717, 989
Insecticides, Metallurgical residues as.	579
Inspection rules, Calif. mines.	508
Inspectors, etc., State.	104, 270
Inspiration Consol. 55, 259, 344, 692, 716, 1008, 1096, 1111, 1112	
—New Keystone affair.	199, 750
—Treasury Dept. and the stock.	751
Institute of Metals.	629
Institution of Mg. & Met.	163, 254, 341
Insulating brick, Armstrong "Nonparell"	741
Insulator, Schaeke automatic section, Westinghouse Co.'s.	866
Insurance, Accident, Calif. See "Compensation."	
Insurance figures, Industrial, Nev. Consol.	208
International Engineering Congress, 423, 1093	
International Nickel Co.:	
—Canadian Cop. Co., Cop. Cliff Smeltery, etc. 93, 120, 254, 386, 412, 450, 512, 546, 634, 677, 832, 927	
—Canadian nickel export trouble 30, 214, 343, 386	
—Development of company's plants 294	
International S. & R. Co. 55, 78, 79, 90, 115, 173, 675, 795, 842, 884, 924, 966, 1044	
Interstate-Callahan. See "Consol."	
Inter-State Iron Co.—Draining water-courses in chutes.	*573
Iodine recovery in copper assay.	285
Iola mine—Candor Mines Co.	97
Ione Coal & Iron Co.	881
Iridium in 1914.	77
Iron and steel in 1914.	70

	Page
—European	71, 269
Iron and steel industries act, N. Z.	165
Iron, Austria-Hungary—Steel	694
Iron Blossom, Utah	346, 759, 927, 1098, 1139
Iron, Canada	488, 489, 565, 916
Iron, Chile—Tofó mines	*145, 277
—Notes	40, 70, *129, 865, 1098
Iron, Electrolytic, to coat steel	696
Iron furnace, Broken Hill Prop.	1075
"Iron house," Trenton, N. J.	791
Iron, Germany, and steel	71, 269, 431, 597, 688
Iron industry in Europe	833
Iron-industry location	502, 505
Iron, Italy	157, 690
Iron, Lake Mich. ports, ore refts.	40, 70
Iron, Lake Sup. ranges, in 1914	73
—Shipments	24, 70, 71, 349, 565
Iron markets and prices	*49, *50, *72
Iron—Marquette range 60 years ago	201
Iron, mercury and arsenic in sulphuric acid, Determining	285
Iron, Mich., mines appraisal	439
—Notes	965, 967, 1138
Iron Mtn. mine, Minn.	1044, 1139
Iron, Newfoundland, mining	36, 1136
Iron, North China, situation	786
Iron, Norway	270
—Stavanger discovery	10
Iron ore. See also states, ranges, companies, etc., by name.	
Iron-ore concentrating plant, Moose Mtn., Ltd.	*973
Iron-ore district, Cuyuna, Minn., Structure of	*1113
Iron-ore dock, Largest	830
Iron-ore drying, Mesabi	696
Iron-ore lands, Great Northern. See "Great Northern."	
Iron ore—Magnetic separation	*523, *559
Iron ore, Motor-trucking	*242
Iron-ore prices	790
Iron-ore railroad rates, Lake	832, 839, 844, 971
Iron orebody, Finding Judson	*443
Iron ores, Lake, contents	915
Iron Ores—Their Occurrence, Valuation and Control	†69, 103, 121
Iron, Ont.	736
Iron, Philippines, and gold	979
Iron ranges, New, Northern Wis.	76
Iron River dist.	733
Iron, Russia, and steel	108, 796
Iron-Silver, Colo.	326
Iron, Sponge, as copper precipitant, Manufacture of	250
—Granulation process patented	270, 965
Iron, Sweden, and steel and ore	270, 965
Iron, Swedish, trade and war	364, 923
Iron, United Kingdom, and steel	71, 270, 442, 830, 844, 902, 1066
Iron, U. S.	45, 70, 71
—Ore	45, 70
—Steel	71
—Pig, 2d half of 1914	472
—Pig in 1914, full statement	540
—Foreign trade, iron, steel, ore	431
—Steel rails	683, 636, 752
—Steel structural shapes; wire rods; nails	1072
Iron, Virginia, mining	214
Irtysk Corp.	26, 63
—Ridder mine described	*599
Irwin, W., on H. C. Hoover	243, 503
Isabella Mines Co., Colo.	216, 469, 882, 982, 1009
Isabella, Mich.	172
—Steel headframe	*910
Island Creek Coal Co.	554
Iste Royale, Mich.	38, 88, 169, 170, 172, 216, 343, 388, 427, 674, 676, 758, 796, 882, 967, 1095
—Report	631, 992
—Photos of mill wreck	*203
Italy, aluminum	80, 157, 690
Italy, copper	56, 157, 690
Italy, iron	157, 690
Italy, lead	57, 157, 690
Italy, mineral output	690
Italy, quicksilver	68, 157, 690, 810
Italy, silver	47, 690
Italy, spelter	62, 690
Italy, tin	67
Ivanhoe Furnace Co., Va.	214
Ives, L. E. Finding Judson orebody	*443
—Chapin mine equipment	*857, 914
—Electromagnetic zinc-ore treatment by Campbell process	*979
Izod, E. G. Centrifugal pumps	*1115

J

Jack, Boyd B.	589
Jacket-Crownpoint-Belcher	594, 673
Jackhamer drills	*682, *743
Jackson, G. T.	712
James, William, Alaska	169, 426
Jamesonite deposit, La Sirena, Mex.	9, 103
Janin, Charles	423
Japan, copper	51, 830, 875
Japan, gold and silver	51
Japan, lead	57
Japan, zinc	63, 872
Japanese exhibit, Panama-Pacific	295
Japanese, False notions concerning	871
Jaxthelmer, Henry	423
Jennings, S. J.—Portrait	*378

	Page
Jerry Johnson mine, Colo.	388, 716, 840, 1009
Jim Butler, Tonopah	154, 346, 470, 677
—Apex litigation, Tonopah	660, 671, *850, 897, 918
Johannesburg in war time	277
Johnnie M. & M. Co.	554
Johnson's, E., strike, Nome	298
Johnson, Roswell H.	210
Johnson, Woolsey Mca.	33
Johnston, William H.	507
Jones, A. Z. Rapid discharge for tube mills	251
Jones, January	878
Jones & Laughlin interests	38, 75, 76, 165, 593, 1097
Jones, Samuel, Death of	878
Joplin dist. in 1914	64, 162, 451, 452
Joplin dist. drainage	258, 591
Joplin dist. tuberculosis	331, 922
Joplin Ore & Spelter Co.	756
Joplin press bureau; zinc mines, prices, etc.	715, 752, 873, 1050, 1128, 1131
Joplin prospecting, new method	425
Joplin zinc-ore rise celebrated	1050
Jualin, Alaska	37, 117
Juanita M. & M. Co.	387
Judd, Edward K.	507
Judson orebody, Finding	*443
—Shoveling machine at mine	280, *950
—Notes	925, 1095
Jumbo Extension, Nev.	38, 111, 172, 217, *221, 345, 470, 512, 551, 552, 591, 593, 631, 671, 677, 758, 793, 832, 883, 1057
—For relations with "Goldfield Merger," see that name.	
Juneau, Alaska, View of	*995
Juneau district, Geology of	901
Juneau gold mines (see also "Alaska")	462, 506
—Harbor photo	*456

K

Kahn steel and concrete houses	*987
Kalmus, H. T.	549
Kane, W. Gold dredging, Philippines	*685, 709
Kansas, University of	963
Kansas zinc	62, 65, 207, 451, 452
Kaolin, Kern County, Calif.	468
Kaolin mining methods, Southern	*945
Kaolin reported in Mich.	509
Katanga copper	230, 441
—Geology	441, *608
—Operations described	936
Keane Wonder Mg. Co.	78
Kearnes-Keith Mg. Co.	257
Keating Gold Mg. Co.	110, 511, 1056
Kedabeg smelter, Caucasus	*652
Kee, Wm. J., Jr.	589
Keefe, T. C., Death of	167
Keen, Arthur, Death of	423
Keep, G. A. Chloridizing, blast roasting and leaching	*265, 293, *315
Keese, Frank E.	507
Keffer, Frederic	712
Kelly, C. F.	1051
Kelly, R. Marquette range	201
Kelvin-Sultana	78, 553, 881, 1008
Kenal Riv. navigable stream	966
Kendall, Messmore	1051
Kennecott Copper Corp.	1046, 1096
Kennecott Mines Co.	117, *249, 1095
Kennedy M. & M., Calif.	675
Kennedy Extension, Calif.	34, 107, 171
Kennedy, J. E. Wis. zinc	65
Kenner, A. R. Indexing and filing technical literature	851
Kensington mine, Alaska	117
Kern Placer Mg. Co.	37
Kerr Lake drainage	120
Kerr Lake Mg. Co.—Report	183
Ketchikan, Smelter wanted for	756
Keweenaw Cop. Co.	56, 260, 511, 758
Key, A. C. Phthisis, Rand.	28
Keystone mine, Calif.	426, 553, 824, 967
Keystone Mines Corp., Ida.	967
Keystone Mg. Co., Utah	257
Kidder, S. J. Tailings disposal, Moggollon	788, 923
King-posts, Stamp-battery	907
King Solomon mine, Calif.	553, 757, 1096
Kings Creek, S. C., barytes	*1074
Kings Quicksilver Mg. Co.	68, 881
Kirby, E. B. May Institute endorse opinions?	205
Kirgiz Mg. Co.	26, *599, 603
Kirk, R. C.	878
Kitson, H. W.	507
Kleinbans, Jacob, Death of	836
Klondyke, Nev., gold strike	470
Klneram mine, Nev.	172
Knight-Christensen mill	116, 261, 512, 718, 797, 1006
Knk Arm, Alaska, chart	775
Knoetzer, H. Union sulphur refineries, France	373
Knopf, A. Economic geology	102
Knox, H. H.	26
Kongsberg silver mines, Norway	520
Kootenay notes	156
Kopp, George, Death of	963
Koyukuk placer-mining district	1021
—Various notes	118, 966
Kruse, Charles T.	33
Kuchs, O. M.	166
Kuskokwin region, Alaska, quicksilver	730
Kuskokwin River opening	259
Kyle, Col. T., Death of	296

L

	Page
La Fayette claims, Mont.	470
La Grange "in borrasca"	157
—Note	469
La Rose, Ont.	261, 759
La Salle, Mich.	832
La Sirena jamesonite deposit, Mex.	9, 103
Labor, Ariz.—Allen law	163, 611
Labor, Ariz.—Globe-Miami strike	259, 422
Labor, Butte, notes	35, 53, 110, 168, 297, 388, 424, 508, 673, 714, 833, 1094, 1135
Labor, Calif.—Non-English-speaking and collar-to-collar bills	755
Labor, Capital and	372
Labor—Copper miners' wages	545
Labor—Daniel Guggenheim's and Ida Tarbell's testimony before U. S. Industrial Relations Commission	*245, 382, 583, 587
Labor in cyanide mills	312
Labor, Mich., notes	425, 552, 632, 880
Labor, Mo.—Flat Riv. wage scale	260
Labor, Oversupply of	876
Labor, Tonopah—L. W. W.'s	756
Laboratory, Mo. School of Mines	*309
Laboratory, New, Homestake	*1039
Lackawanna coal case	1132
Ladd, David H.	589
Ladder, Steel and wood	*574
Ladders, Steel, Capital mine	*944
Lady Belle mine, Colo.	300
Lafleur, O. E.	1134
Laharpe Spelter Co.	1141
Lalst, Frederick	163
—His roasting patents	*282
—Leaching-solution heating patent	698
—Anaconda reduction works improvements	418
Lake and rail lines	1003
Lake Angeline mine, Mich.	165, 260, 841
Lake bed, Right to mine under	269, 892
Lake Cy., Colo., strikes	298
Lake coal tonnages	431
Lake Co. (Colo.) Metal Miners' Asso.	37
Lake Cop. Co., Mich.	217, 427, 1097, 1138
Lake Creek Placer Mg. Co.	718
Lake George mine, N. B.	389
Lake iron-ore contents	915
Lake iron-ore railroad rates	832, 839, 844, 971
Lake, M. C. Celluloid mine models	*737, 957
Lake Mich. ports iron-ore refts.	40, 70
Lake salts development, Ore.	466, 509, 594
Lake Shore Engine Wks.' shovel	280, *950
Lake Superior. See also "Mich., Minn., Iron ore, etc."	
Lake Sup. cop. dist. in 1914	56
Lake Sup. Iron & Chem. Co.	965
Lake Sup. iron-ore prices	790
Lake Sup. iron ranges in 1914	78
—Shipments	24, 70, 71, 349, 565
Lake Sup. & Western. See "Big Pine Consol."	
Lamb, M. R. Hydro-elec. plant, Bolivian tin mine	*7, 619
—That farm	275
—West Coast business	*433
—Tin mining in Bolivia	605
—Chilean nitrate industry	*811
—Gold and silver, Chile	*847
Lamprophyre intrusions, Quartz veins in	11
Land cases, Southern Pacific	385, 1050, 1135
Lands, Utah, restored to entry	590
Lane, J. H.	1005
Lantern Hill Silex, Conn.	1138
Lanza, Dr. A. J.	168
—Tuberculosis, Joplin dist.	331
Larson, E. L.	792
Larkin mine, Calif.	*1137
Las Vacas mine, Chile	*847, 848
Lassen Peak, Calif.	964, 1006, 1053
Last Chance mine, Idaho	547
—Ore bins and sorting plant	*994
Latest Out mine, Ida.	109
Latrine septic tank, Underground	*149
Launders, Welded circular	*397
Law. See also "Congress," "Tax," "Compensation," etc.	
Law—Abstracts of Current Decisions	†704
Law, Alaska mining	1049
—Notes	466, 631, 1007, 1054
Law—Apex litigation (see also "Tonopah," "Goldfield")	671
Law decisions:	
—Accident, Legal cause of	786
—Accident to miner, Liability for	10
—Forfeiture of claims	402
—Lake bed, Mining under	269, 892
—Leases, Mich., Duration of	1047
—Nevada safety-cage requirements	585
—Ore, Damages for taking	661
—Patent, Mining, Conclusiveness of	522
—Placer mining—"Known lode"	480
—Placer patents and lode claims, Conflicts between	736
—Safe working place, Duty to provide	900
—Surface rights under leases	936
—Washington claims, Relocating	1078
Law—D., L. & W. coal case	1132
Law, Mexican mining	668, 670, 708, 965, 997
Law, Mineral—N. Y. Constitutional Convention	958, 961
Law, Miners' Men, Ariz.	923
Law, Minn.—Mining under lakes	269, 892
Law, Okla. petroleum	378

	Page		Page		Page
Law, Ont. claim-staking.....	*324	Little Jamison Mg. Co.....	216	Magnetic separation. See "Separa-	
Law—Yukon regulations.....	156, 828	Livengood creek, Alaska.....	716	tion.".....	
Laws, Anti-tuberculosis, suggested..	333	Ljungberg, E. J., Death of.....	963	Magnolia Petroleum Co.....	138
Laws, Arizona mining.....	611	Llallagua mine, Bolivia, hydro-elec.	662	Magnus, Benjamin.....	792
—Allen labor.....	163, 611	—Notes.....	*7, 619	Mahnomen Mg. Co.....	882, 1009
Laws, Calif., proposed.....	755	Llallagua tin smeltery, Chile.....	144, 662	Mahoney, Daniel, Death of.....	1051
Laws—Capital and labor.....	372	Loading. See also "Shovel.".....	859	Majestic, Utah.....	555, 797
Laws, Mining, Parody on.....	919	Loading concentrates, South Utah..	*698	Malay States tin.....	262, 678
Laws—N. W. Land Commissioner's		Loading, Underground, etc., Creigh-	*192, *738	Malm process.....	96
recommendations.....	169	Lobnitz dredges.....	101	Mambuloa Placer Co.'s dredge.....	*898
Laws, Ontario prospecting.....	*1067	Lobster Creek, Ore., strike.....	509	Mammoth Consol., Calif. See "Cac-	
Laws, U. S. mining, revision urged by		Lock No. 17 completed.....	1003	tus.".....	
Am. Mg. Congress.....	157	Locke, W. A.....	384	Mammoth Cop. Mg. Co., Calif. 96, 168,	
Laws—U. S. Mining Statutes Anno-		Locked signal system.....	*777	259, 300, 551, 694, 716, 823, 1053	
tated.....	*1066	Locomotives for Alaskan dredges....	644	Mammoth mine, Utah.....	346, 634, 884
Lawson, A. C., on economic geology..	102	Locomotive, Electric, costs, Ariz.	*495	Mammoth Mg. Co., Mont.....	967
Lawsuit, British-Butte, revives ro-		Locop. Co.....	211	Manganese, Calif., Mendocino Co.....	881
mantic memories.....	1030	Locomotives, Orenstein-Arthur-Kop-	277	Manganese ore not quotable.....	962
Layland mine-rescue work.....	666, 670	pel.....	211	Manganese reported in Mich.....	509
Le Fevre, H. E.....	712	Locomotives, Operating Shay, Empire	*729	Manganese scarcity, Alleged.....	32
Le Fevre, S.....	792, 963	Locomotives, Storage battery, at	367, 533	Manganese, Southern Appalachians,	
—Concrete-block mine houses.....	446	Bunker Hill & Sullivan and else-	1055	170, 895, 896, 1010	
Leaching. See also "Copper leach-		where.....	367, 533	Manganese, Ferro-, U. S.....	45
ing," "Chloridizing.".....		Lompoc diatomaceous quarries.....	1055	Manhattan M. & O. Co.....	111
Leaching, Series, Chilean nitrate....	*811	London markets. See "United King-		Mann, W. S. Refining base bullion..	535
Lead-antimony sulphide, La Sirena,		dom".....		Manzanita mine, Calif.....	840
Mex.....	9, 103	Lone Pine dist., Calif.....	1094	Map—Collapsible model.....	*532
Lead, Bawdwin mines, Burma.....	*177, *202, 502	Long Hike mine, Nev.....	841	Map of seaborne commerce.....	*141
Lead, Canada.....	57, 488	Long Tom mine, Calif.....	510, 1045	Marathon River placers.....	959, 1133
Lead, France.....	57, 140	Longyear iron-mining interests (see		Marble Cañon, Calif., discovery....	592
—Ore exports prohibited.....	1071	also "Judson").....	36, 76, 345	Mariner, F. E. Pine oil.....	619
Lead, Germany.....	57	—Collapsible geological model.....	532	Mariposa Com. & Mg. Co.....	344
Lead, Idaho.....	59, 109, 162	—Operation in Norway.....	1095	Marquette range in 1914.....	75, 349, 565
Lead, Italy.....	57, 157, 690	Longyear Lake decision.....	214	Marquette range 60 years ago.....	201
Lead market and prices (including		Lorenz mine, Calif., methods.....	481	Marriott, H. F. Transvaal mining,	
ore) in 1914, etc. *49, *50, *57, 58,		Lost mines.....	746	131, 943	
65, 67, 201		Louis, D. A., Death of.....	920	Marshall, Stewart M.....	1093
Lead market, London *50, *57, 58, 160,	201	Louisiana petroleum.....	69, 137	Marständer, R. Uruguay mining.....	484
Lead metallurgy in 1914.....	89	Lower Calif. mining.....	188	Martin, Pierre, Death of.....	963, 1005
Lead mining in 1914.....	*57	Lower Mammoth, Utah.....	512, 718, 1010	Mary Murphy mine, Colo.....	108, 510, 1094
Lead, Missouri.....	*57, 65, 162	Lubricating Oils, Examination of..	*376	Mascot Bench, Alaska.....	37
—S. E. dist. in 1914.....	60	Lucky Strike, Ariz.....	757	Mascot Cop. Co.....	881, 1137
Lead ore, Joplin dist.....	64, 65	Lucky Thought, B. C.....	121	Mason, J. W. Two old Appalachian	
Lead-pipe weight and thickness....	494	Lucky Tiger—El Tigre.....	122	copper mines.....	*746
Lead-PRICE suspension and Canadian		Lumber, Dressed.....	710, *696	Mason & Barry, Ltd., report.....	993
settlements.....	340	Lundell's zinc-determination method	701	Mason Val. Mines Co., 111, 217, 797, 1139	
Lead recovery, Herculaneum, Im-		Lunge, G. Chemical Analysis.....	*704	Mass Consol., Mich. 343, 345, 674, 676,	
proved.....	494	"Lusitania," Sinking of.....	875, 877	796, 1097	
Lead, Silver, smelteries in N. A.—		Luty, B. E. V. Pittsburgh iron and		—Report.....	825
Table of capacities.....	59	steel markets.....	*72	Master crook, The.....	498
Lead situation, current 338, 1048,		Lynch, Clay F.....	256	Matanuska, Alaska, coal.....	35
1090, 1091, 1132, 1133		Lynch, Thomas, Death of.....	166	Mathers, F. C. Tin deposition.....	369
Lead, Spain.....	57, 585, 596	Lyon and Keeny on elec. smelting... 287		Mathewson, E. P. 413, 455, 462, *494, 629	
Lead—Statistical review.....	162	Lyon Investment Co. No not buy		—Anaconda leaching and acid plants.*723	
Lead, United Kingdom.....	57, 442, 830	zinc mines now.....	873	Matte assay by furnace foremen.....	863
Lead, U. S.....	45, *57, 162	Lyster's water-disinfecting outfit... *533		Matte-granulating device.....	*239
—Foreign trade.....	548, 596			Matte, Lead, treatment—Review.....	90
Lead, Utah.....	116, 162			Matte, Molten, Effect of dry steam on	788
Lead, White, and oxides.....	58			Matte smelting for tin.....	864
Lead, World's production and con-				Maude, A. H. Utilizing tin scrap....	251
sumption, by countries.....	57			Mauch Chunk, Carnotite near.....	566
Leadville adit into Prospect Mtn.				Maxwell, H. V. Tenn. phosphate dis-	
proposed.....	34			covery.....	1110
Leadville dist., Colo., photos. *289,	*416			May Day mine, Utah 261, 718, 927,	
Leadville downtown pumping.....	793			1010, 1139	
Leases, Mich., Duration of.....	1047			Mayer, Lucius W.....	712
Leases, Surface rights under.....	936			Mayflower dist., Ariz.....	881
Leasing, New attitude toward.....	789			Maynard, T. Poole.....	210
Ledoux, August.....	549			Mayo silver discovery, Alaska.....	169
Leasers' milling plant, Honerine....	*535			Mead's, W. J., geological model.....	*532
Lee, H. S. Pump arrangement.....	*281			Meagher, P. H., Death of.....	1005
Lefroy, E. M. Wolframite, Lower				Mears-Willey tailings mill.....	*607
Burma.....	684			—Note.....	967
Legal. See "Law" and cross-refer-				Mechanical engineering in mining... 918	
ences from it, names of litigating				Meerschaum deposits, New Mex.....	*941
companies, etc.....				Megraw, H. A. Stamp milling in	
Lehigh Coal & Nav. hoist.....	278			1914.....	97
Leland, F. M. Operating Shay loco-				—Analysis of cyanide practice.....	98
motives.....	*729			—Labor and power in cyanide mills..	312
Lena Goldfields improvements 333,				—Cost of cyaniding.....	485
338, 421				Mehlhorn, William M.....	920
—Year's cleanup.....	21			Mellon Inst., Dedication of new build-	
Lennan L. & Z. Co.....	79			ing.....	480
Leonora M. & M. Co.....	634, 759, 884			Mellon's fume precipitation.....	240
Leonard iron-mine shipments.....	565			Melones Mg. Co.....	78, 592, 755, 1125
Leshner, C. E.....	920			Memphis mine, N. M.....	112, 261
Levi, M. G. Crude-sulphur analysis..	867			Mendoza Cop. Co.....	189
Lewis, R. S. Ohio crushing plant....	*748			Mentzel, Charles.....	629
Leyte Asphalt & Mineral Oil Co....	859			Meraker Smeltery Co.....	270, 521
Liang, Huan-Yi.....	1051			Mercer group, Nev.....	111
Libby & Urdike.....	754			Mercury. See "Quicksilver.".....	
Liberty Bell, Colo.....	108, 257			Merger Mines Co. See "Goldfield."	
—Report.....	198			Merrill Mills precipitation system..	*1079
—Safety-first dinner.....	810			Merry, F. Chas.....	712
Library Service Bureau.....	1075			—Correction.....	754
Lien law, Miners', Ariz.....	923			Merryweather, Hubert.....	210
Lighting set, Electric, Shovel.....	*15			Merton, H. R., & Co.....	51, 140, 380, 875
Lighting unit, Electric, Moon Co.'s..	*415			Merton ore-roasting furnaces.....	*181
Lightning fires blasting charges....	547			Mesabi, Drying iron ore.....	696
Limelight, Nev.....	1057			Mesabi in 1914.....	73, 349, 565
Lincoln, F. C. Bolivian gold mine....	*351			Mesabi shaft timbering and head-	
Lincoln Hill M. & M.....	926			gear.....	*1119
Lind, S. C., on carnotites.....	230			Metal, Asbestos-protected.....	950
Lindgren, W. La Sirena jamesonite				Metal Handbook, Quin's.....	*704
deposit, Mex.....	9, 103			Metal prices, last 20 years.....	*201
—Various studies.....	102, 104			Metal prices since 1879—Chart.....	*50
Lindley, Morton, Death of.....	836			Metal prices 1913 and 1914 (see also	
Lindsey, G. G. S.....	629			metals by name)—Charts.....	*49, *57
Link-Belt trolley hoist.....	*578			Metaline Oriole, Wash.....	80
Linke, H. A. Steel and wood ladder..	*574			Metallgesellschaft 56, 57, 62, 67, 68,	
—Warning bell for topman.....	*655			80, 201, 339	
—Light shaft timbering.....	*696, 710			Metallurgical Analysis, Methods....	*704
—Emergency grate bars.....	820			Metallurgical book, Old Spanish.....	1004
—Bucket dumping device.....	*944			Metallurgical practice, Recent Rand	771
Liquid air in industry.....	765			Metallurgical Smoke.....	*380, *704
Liquor and inefficiency.....	461, 787			See also "Smeltery.".....	
Liquor question, S. E. Alaska.....	880			Metallurgy, New enterprises.....	1131
Little Cottonwood Cañon.....	*689			Metallurgy of Non-Ferrous Metals..	*376
Little Dorrit mine, Colo.....	259			Metallurgy, Physical, Introduction to	*704

	Page
Metals, Minor, Situation in.....	960
Metals Recovery Co.....	79
Metacalf incline, Shannon Co.'s.....	*663, 1030
Metacalf mine, Ariz.....	*1038
Meter, Comp.-air, New Jersey.....	*1077
Mexican mine, A small, Operating costs at.....	1122
Mexican mine, Nev. 111, 155, 156, 555, 883, 968	
Mexican prospector, Bill McGinty 912, 956, 996, *1038, 1042	
Mexican situation:	
—Affairs in Mexico.....	875
—American-Foreign Refugees Club.....	1001
—Bayliss, R. T., Views of.....	422
—Business in Mex.—Consular report.....	900
—Do we want Mexico?.....	619
—Guanajuato, Trouble at.....	833
—Law, Villa's new mining 668, 670, 708, 965, 997	
—McManus' murder—Poetry.....	627
—Mining in 1914.....	122
—Money, Paper.....	*711
—Murders—Brit. subjects.....	839, 997
—New policy.....	1003
—Photos, from Mexico City.....	*23
—Taxation, More mine.....	913
—Worcester, L., Jr., Case of 667, 670, 753, 876	
—Notes 215, 346, 506, 546, 555, 627, 632, 753, 794, 839, (correction 997), 872, 923, 1133	
See also companies by name.	
Mexico, antimony.....	902
Mexico, A. S. & R. Co. in. See "American."	
Mexico—Baja Calif. mining.....	188
Mexico, Carson's book on.....	463
Mexico, copper.....	51, 122, 705, 875
Mexico, gold and silver.....	47
Mexico—La Sirena jamesonite deposit	9
Mexico, lead.....	57
Mexico, Lost mines in.....	746
Mexico, Steam-turbine installation.....	*603
Mexico, zinc.....	451
Meyer, F., patent—Cactus as binder	576
Meyers, Paul W.....	210
—Atlanta, Nev., developments.....	*541
Miami Cop. Co.:	
—Mining in 1914.....	55, 111, 567
—Report.....	766
—Technical changes.....	135
—Notes, etc. 253, 510, 716, 881, 937, 962, 1096, 1111, 1112	
Miami-Globe strike.....	259, 422
Miami, Okla., production.....	66
Mica production in 1914.....	1112
Mica, S. D.....	113
Michigan. See also "Lake Sup."	
Mich. College of Mines.....	210, 552, 712
Mich. copper.....	51, 56, 705
Mich. cop. country exploration.....	467
Mich. cop. country shaft-rockhouse practice.....	*1061, *1107
Mich. cop. mines' monthly outputs.....	343
Mich. cop. properties—Photos.....	*336
Mich.—Crystal Falls Dist. map.....	*376
Mich. iron mines' appraisal.....	439
—Notes.....	965, 967, 1138
Mich. labor notes 425, 552, 632, 876, 880	
Mich. leases, Duration of.....	1047
Mich. silver.....	47
Michigan mine, Mich.....	300, 1138
Michigan-Utah Consol.....	842, 927
Midas G. M. Co.....	78
Miles, Edwin, Death of.....	1005
Miles mine, Chile.....	*847
Mill. See also "Cyanide," "Stamp," "Tube," "Screen," "Crusher," "Cost," "Grizzlies," "Grinding," "Copper leaching," "Chloridizing," "Concentration" and cross-references from it, metals and companies by name, etc.	
Mill, Alaska-Gastineau, construction.....	*496
Mill, Magnetic-concentration, Mt. Hope, N. J.....	*559
Mill, Moose Mtn., Ltd.....	*973
Mill, Nipissing.....	568, 1124
Mill, Ohio Cop. Co.—Crushing.....	*748
Mill, Pittsburg-Dolores' Rockland.....	*653
Mill, Rainbow cyanide, Ore.....	*1103
Mill, Tailings, Mears-Wilfley.....	*607
Mill—United Verde conveyors.....	1127
Mill, Waihi Grand Junction.....	907
Mill, Wallower, Mo.....	*158
Miller, C. F. Bat guano.....	442
Miller, Charles S.....	959, 1133
Miller, H. E.....	*200
Miller, Willett G.....	464
Milling—machinery practice, Tendency of American.....	691
Milling plant, Honorine leasers'.....	*535
Milling practice, Recent Rand.....	771
Milling results, porphyry coppers.....	1112
Milling, Tonopah-Belmont—Report, 1082, 1092	
Mills, Mich. copper—Photos.....	*336
Mills precipitating system.....	*1079
Milne, F. A., Death of.....	1093
Mine and metallurgical construction. See "Construction."	
Milwaukee tunnel roof timbering.....	*862
Mine la Motte, Mo.....	61, 172, 1097
—Report.....	706
Mine models *236, *446, *532, *737, *850, *1038, *1076	
—Errata.....	533, 957
Mine owner, Protect the.....	873

	Page
Mineral Creek, Alaska.....	37
Mineral Pt. Zinc Co.....	80, 917, 1131
Mineral Products Co.....	1135
Minerals Refining Co.....	895
Minerals Separation, Ltd. 91, 100, 253, 881, 937, 962	
Miners' lien law, Ariz.....	923
Miners' phthisis, Joplin district.....	331, 922
Miners' phthisis conditions, Rand 28, 132, 861	
Mines Co. of Am.....	105, 122
Mines, Lost.....	746
Mines Operating Co. practice *265, 293, *315	
—Explanation as to costs.....	32
—Note.....	116
Mines, World's principal, Data.....	84
Mineville, N. Y., magnetic separation.....	*525
Minier, D. W. Air in zinc-dust precipitation.....	*534
Mining Corp. of Can.....	217, 859, 884
Mining Costs of World.....	*704
Mining engineer, American, and his field.....	626
Mining Engineers. See also American Inst.....	
Mining engineers, What becomes of? 275	
Mining index.....	42, 305, 474, 638, 802, 1014
Mining Manual for 1915.....	*870
—Correction.....	1111
Mining & Met. Soc. 160, *199, 507, *539, *566, 586, 753, 958, 961	
Mining, What is the matter with? 744, 873	
Minnesota. See also "Lake Sup." ranges and companies by name, etc.	
Minn. mining-district maps.....	*1085
Minn., Mining under public waters, 269, 892	
Minn. Steel Co.....	169, 717
—Morgan Park photo.....	*784
Minn. taxation.....	632
Minnesota mine, S. D.....	1010
Mint, Directorship of.....	208
Missouri—Alleged zinc smelters' combination.....	1129, 1131
Missouri, Base map of.....	606
Missouri lead.....	*57, 65, 162
—S. E. dist. in 1914.....	60
Missouri School of Mines laboratory.....	*309
Missouri workmen's compensation.....	169
Missouri zinc.....	62, 451
—Joplin dist. ore.....	65, 162
Mitchell, George, Death of.....	712
Mitchell, Graham J. Heulandite, Ore.....	957
Mitchell-Roberts, J. F.....	712
Mixer, Novel, for assay work.....	659
Mixell, Austin D.....	1134
Moctezuma Cop. Co.....	567, 839
Modder Deep, Transvaal.....	277
Modderfontein B.....	132
Model, Collapsible geological, Mead's, of Longyear Co.....	*532
Model, Mine, Broken Hill lode.....	*1076
Model mine of glass.....	236
Model, Mt. Hope mine.....	*446
—Erratum.....	533
Model, Utah Cop. mine.....	*1038
Models, Mine, of celluloid.....	*737
—Erratum.....	957
Models, Tonopah apex litigation.....	*850
Modoc Mines, Calif.....	881, 1096
Mogollon dist. tailings disposal 788, 631, 923	
Mogollon Mtns. photo.....	*664
Mogollon-Silver Cy. road repair.....	591
Mogul Mg. Co.....	79, 113, 555, 634
Mohawk, Mich. 56, 172, 343, 425, 509, 554, 676, 758, 882, 925, *1065, 1097, 1138	
—Its present prospects.....	654
Molybdenite demand, Ontario.....	674
Molybdenite deposits, Canadian.....	271
Molybdenite discoveries, Calif.....	553, 757
Molybdenum in 1914.....	61
Molybdenum-mine prospectus.....	294
Molybdenum recovery, Elmore process.....	907
Molybdenum recovery, Robertson's.....	284
Monarch Pittsburg report.....	1037
Mond Nickel Co.....	120, 489, 1098
—Bond issue amount corrected.....	206
—Septic tank for latrine.....	*149
Mondamin mine, Mont.....	301
Monell, A., Statement by.....	30
Monnell, J. T., Death of.....	920
Mongolia, "Free Mining Republic" in.....	383
Monitor Belmont, Nev.....	797, 1098
Monnett, O. Handfiring in waste-heat boilers.....	*368
Montana. See also "Butte."	
Mont. copper.....	51, 110, 705
Mont. gold and silver.....	47
Mont. mining in 1914.....	110
Mont. oil and gas.....	*647
—Notes.....	677, 714
Mont. phosphate.....	470, 714
Mont. Soc. of Engineers.....	550, 672, 837
Mont. workmen's compensation law.....	1069
Mont. zinc.....	162, 451, 452
Montana-Bingham, Utah.....	1057
Montana-Ill. Mg. Co.....	841
Montana Tonopah.....	154, 717
Montgomery mine. See "Uwarra."	
Moon compact lighting unit.....	*415
Moore, Jason & Co.....	38
Moore, L. L.....	792
Moore, Philip N.—Portrait.....	*539
Moorhead-Liberty Bell case.....	257
Moose Mtn. concentrating plant.....	*973

	Page
Morenci Southern R.R.....	*375
Morgan-Guggenheim interests, Alaska.....	1046
Morgan Park, Minn.....	*784
Morning mine, Ida., surface plant.....	*994
Morony, J. G., Death of.....	963
Morris, H. G., Death of.....	256
Morison, H. A.....	836
—The five-hole cut.....	*956, 1083
Morse, C. H., Sr. and Jr.....	1093
Morse, Philip S.....	166
Morse, Willard S.....	1093
Moscow mine, Utah.....	555, 634, 968
Mother Lode blast, The.....	*931
Mother Lode Cop., Alaska 37, 216, 426, 468, 592, 675	
Motherwell, W. Mex. murders.....	997
Motor-trucking iron ore.....	*242
Mount Hope, N. J., magnetic-concentration mill.....	*559
—Brief mention.....	*526
—Mine model.....	*446
—Erratum.....	533
Mount Lassen, Calif.....	964, 1006, 1053
Mount Lyell, Tasmania.....	191
Mount Lyell furnace operation.....	1034
—Briefer mention 833, 863, 864, 948, 1120	
—Improvements.....	1045
Mount Morgan G. M. Co.....	80, 834
Mountain Cop. Co. 78, 426, 468, 551, 633, 694	
Mountain Key mine, N. M.....	135
Mountain King, Amador Co., Calif.....	171, 259, 840
Mountain King, Mariposa Co., Calif.....	26, 216
Mountain Meadows Dredging Co.....	468
Mountain-road making.....	*237, *325, 365
Mountain View, Mont.....	217
Moyer, G. H. Trethewey chip collector.....	*493
Muckraker and magnate.....	382
Mud Springs mine, Calif.....	*13
Mule-back transportation, Packing machinery for.....	*374
Munroe, Henry S.....	836
—Dinner to him.....	914, 998
Munro Iron Mg. Co.....	214, 633
Munroe, John A.....	1134
Murray, M. T. Recent Rand metallurgical practice.....	771
Myers-Whaley machines on Rand.....	*150

N

Nail production, U. S.....	1072
Nason, A. A. Working during high- and low-price conditions.....	1084
Nason, F. L. East Tenn. zinc.....	734
Nashville-Montezuma mines, Calif.....	342
National Lead Co.....	61, 119
—Report.....	617
National Mines Co.....	112
National Radium Inst.....	116
National Zinc Co.....	95, *326
Natomas Consol.....	34
Naumkeag Cop. report.....	825
Navy, Oil reserve for.....	830
Nechi dredge, Colombia.....	231
—Reports—Nechi, Pato.....	244, 253, 874
Necrology of 1914.....	88
Negative wire, Determining.....	1031
Nehls hardening salts, etc.....	242
Neidling, B. E.....	712
Nelson Lott. See "Alaska Gold Belt."	
Netherlands. See also "Dutch East Indies," "Guiana."	
Netherlands metal consumption 56, 57, 62, 67	
Neustaedter, Arthur.....	754
Nevada Cinnabar Co.....	554
Nevada Consol. 111, 173, 346, 717, 797, 883, 1045, 1111, 1112	
—Industrial-insurance figures.....	208
—Reports.....	408, 978
Nevada copper.....	51, 111, 705
Nevada Cop. M., M. & P. Co. 677, 841, 1097	
Nevada Douglas.....	111, 346, 634, 1057
—Leaching.....	31, 79, 389, 841, 883
Nevada gold and silver.....	47
Nevada Hills Mg. Co.....	677, *951
—Report.....	618
Nevada Industries Corp.—Limelight 1057	
Nevada mining in 1914.....	111, 154, 155
Nevada Packard 79, 111, 554, 758, 926, 1009	
Nevada Progressive Co.....	797, 926
Nevada safety-cage decision.....	585
Nevada stockholders' inspection bill 428	
Nevada Wonder report.....	370, 841
New Almaden.....	633
New Arcadian, Mich.....	633, 1009, 1138
New Blue Point Mg. Co.....	213
New Caledonia exports.....	596
New Cornelia. See "Calumet & Ariz."	
New Empire-Goldfield Mines.....	717, 1057
New Goldfield Simmerone.....	968
New Idria, Calif.....	68, 69, 81, 82, 344
New Jersey comp.-air meter.....	*1077
New Jersey employer's liability case 463	
New Jersey Zinc Co.—Five-hole-cut raising method.....	*572, *956, 1083
—Cadmium removal from ores.....	659
—Locked signal system.....	*777
—Timbering stopes for safety.....	*818, 996
—Brooks' smelting improvement 896, 917	
—Banquet for record production.....	919
—Notes, etc.....	634, *703, 895, 926, 1053
New Keystone-Inspiration.....	199, 750

	Page		Page		Page	
New Kleinfontein	131	Norway, Grong copper and pyrites mines	*889	Oxnam, T. H., Death of	464	
New Mex. copper	51, 112, 705	Norway, Longyear operation in	1095	Oxyacetylene welding in mining	*393, *534, *741	
New Mex. gold and silver	47	Norway, notes 270, 520, 794, 907, 923, 965, 1007		P		
New Mex. in 1914	112	Norway, Stavanger hematite discovery	10	Pachuca tanks, Rainbow mill	*1105	
New Mex. Land Commissioner's recommendations	169	Nova Scotia mineral production	765	Pacific Coast Borax Co.	130	
New Mex. meerscham deposits	*941	Nova Scotia Steel & Coal Co. 36, 173, 1136		Pacific Gold Dredging Co.	136, 168	
New Mex. taxation	674, 1007	O			Pacific Mineral Products Co.	592, 1137
New mine and metallurgical construction	26, 78	O'Brien, J. T., Death of	963	Pacific Mines churn-drilling costs	20	
New Mine Sapphire Syndicate	110	O'Brien, Thos., Death of	33	Packing machinery for export	205	
New Modderfontein	132	O'Brien, Cobalt, Ont.	555	—For mule-back transportation	*374	
New publications for 1914	69	O'Brien, George	549	Packing—Wicker cases rubbed	*436, 437	
—For 1915	376, 542, 704, 870, 1085	O'Driscoll, H. E., Death of	166	Pahasa Mg. Co.	114, 389, 467	
Correction	1111	O'Hara, Captain, Butte	1030	Palladium, platinum and gold determination	700	
New Reliance, Utah	797, 1010	O'Neil, E.	*200	—Determining silver	701	
New Reliance, S. D.	114, 634, *907	O'Neill, William, Death of	1051	Palmer, C. H., Jr. Churn-drilling costs	20	
New River & Pocahontas—Layland rescue work	666, 670	Obalski, Joseph, Death of	629	Palmilla mine, Mex.	463	
New Street quotations	199	Oceanic quicksilver mine, Calif.	68, 69	Pan-American court, Hammond proposals	32	
New World dist., Mont.	1136	Oddie lease, Willard, Nev. 968, 1009, *1089		Pan-American Reduction Co.	676	
New York Assay Office, Old	*501, 1133	Oglebay-Norton interests (see also "Bristol")	76, 676, 841	Pan-American Scientific Congress	622	
New York Constitutional Convention —Engineers' recommendations	958, 961	Oglesby mine, N. M.	*134	Panama Canal, Butte copper through	302	
New York & Honduras Rosario	124	Ohio Cop. Co. 261, 346, 842, 1057, 1094, 1112, 1139		Panama & Costa Rica Mg. Co.	124	
New York Metal Exchange	635, 877	—Crushing plant for mill	*748	Panama Mg. Co., Nicaragua	594	
New York mining stocks and bonds in 1914	88, 157	Ohio-Keating	260	Panama-Pacific Exposition: —Anaconda Co.'s awards	1139	
New York—New St. quotations	199	Oil. See also "Petroleum," "Gasoline," "Engine," etc.		—Broken Hill lode mine model	*1076	
New York, Reported in 750, 791, 872, 962		Oil burners, Low-pressure, Steptoe	*615	—Calif. mineral exhibits 245, 257, 297, *580		
New Zealand production	408, 644	Oil, Shale, Colo.	*773	—International Engineering Congress	423, 1093	
New Zealand iron and steel industries act	165	Oil, Synthetic, Gasoline from 378, 379, 502, 546, 787		—Japanese mining exhibit	295	
Newell, Frederick Haynes	920	Oils, Flotation	253, 462, 619, 939	—Mines and Metallurgy bldg.	385, *580	
Newfoundland notes	36, 1136	Oils, Lubricating, Examination of	1079	—Mines and Metallurgy exhibit	418	
Newhouse, Edgar L.	296	Oils, Petroleum, Testing	1079	—Nevada exhibit	470	
Newhouse, R. L. Lead smelting	89	Oils, Flotation, Testing	1079	—Oregon exhibit	754	
Newhouse, Samuel, Banquet to	590	Oils, Lubricating, Examination of	1079	—Petroleum exhibit	26	
Newport Mg. Co. 469, 511, 796, 967, 971, 1138		Okal. petroleum legislation	1095	—Safety meets	590, 750, 943	
Newsom placer machine	*990	Okl. zinc	62, 65, 66, 162, 207, 451, 452	—Utah Cop. mine model	*1038	
Newton, C. W.	166	Old Channel mine, Ore.	114	Pandora, Ida.	1138	
Nicaragua notes	125, 215, 594, 842	Old Colony, Mich., report	825	Panning at Fairbanks	*805	
Nichols, J. L.	549	Old Dominion, Ariz. 510, 633, 716, 881, 924, 1008, 1137		Parcel post, Gold by	209	
Nichols, John	1093	—First aid	859	Park Cy. Mills—Explanation	32	
Nicholson G. E., plant	1141	—Report	1081	—Notes	79, 116, 594, 838, 927	
Nickel, Canada	488, 489	Old Dominion, Wash.	718	Park Cy., Stopping at	492	
—Export trouble 30, 214, 343, 386, 503, 509, 715		Old Eureka, Calif.	924	Park, J. Practical Assaying	*870	
Nickel, Norway	923, 965	Old Town mine, Colo.	758, 796	Parker, Edward W.	878	
Nickel, Ont.	120, 916, 958	Olds, R. Iron-industry location 502, 505		Parker, J. C. Patent mania	912	
Nickel ore, New Caledonia	596	Oliver filter in Idaho	713	Parke process, Tooele, Utah	90	
Nickel-Tantalum alloy	815	Oliver Iron Mg. Co. (see also "U. S. Steel Corp.") 74, 214, 236, 260, 342, 554, 565, 593, 676, 717, 758, 841, 926, 1044		Parsons, A. R., Death of	672	
—Foreign trade	45	—Chapin mine equipment *857, 914, 1032		Pasquale Cop. Co.	78	
Niles-Chemung-Oliver affairs	214	—Reinforced-concrete shaft sets	*447	Patent mania	250, 543, 744, 912, 1040	
Ninness, W. J., Death of	672	—Inclined shaft for timber	*776	Patent, Mining, Conclusiveness of	522	
Nipissing Mg. Co. 98, 261, 389, 428, 512, 555, 594, 634, 797, 884, 927		Oliver, Roy O.	549	Patents, New 29, 167, 212, 291, 380, 419, 455, 585, 624, 708, 835, 916, 959, 1052		
—Aluminum precipitation	568	Olla de Oro mine, Bolivia	*352	Patiño's tin mines, Bolivia	144	
—Surface-precipitation costs	1037	Olsen, Otto, Death of	464	Pato dredge, Colombia	101, 125, 191	
—Milling costs	1124	Olson, C. R.	464	—Prichard's report	231, 244, 253, 874	
Niter plant, Anaconda	*726	Ontario Govt. mining receipts	880	Pattinson process, Tooele, Utah	91	
Nitrate, Chile	*127, 721, 927, 1141	Ont. mining in 1914	120	Payne, C. Q. Steel balls vs. flint pebbles	251	
—Butters in the field	252	—Production	488, 916	Payne, Henry M.	672, 1051	
Nitrate, Chilean, industry	*811	—First quarter of 1915	958	Payne, J. H. Nodulizing in copper metallurgy	272	
Nitrate, Oregon	114	Ont., Prospecting for Minerals	*1067	Peabody Gold Mg. Co.	1137	
Nitrate-position statistics	431	Ont.—Royalties at Cobalt	1128	Peacock's potassium recovery	1088	
Nitrates, foreign trade	431	Ont., Staking out claims in	*324	Pearl Lake, Ont.	759	
Nitrates, Germany, and war	774, 829	Ont. time extensions, No more	756	Pearl-Zenda, Calif.	37	
Nitrates, Norway, to Germany	923	Ontario Mg. Co., Ida.	216, 552, 840	Pearson, F. S., Death of	877	
Nitrogen fixation, Norway	923	Ontario mine, Utah	927, 1010	Pebbles, Steel balls vs. flint	251	
Nodulizing in copper metallurgy	272	Opencut, Homestake, S. D.	*826	Pedersen, A. B. Shaft-repair cage	*614	
Nome, Dawson and Fairbanks	*517	Orbanowski, Kurt	423	Pels, Alfred, Death of	963	
Nome, New strike at	674	Ore. See also "Geology," "Veins," "Crushers," "Loa di ng," "Bin," "Chute," "Mill," "Concentration" and cross-references from them, etc.		Penn Iron Mg. Co.	593, 758	
Non-Ferrous Metals, Metallurgy	*376	Ore bedding, Cop. Queen	*1	—Angle-sheave frames	*359, *403	
Nonferrous mine, Mich.	1009	Ore Concentration Co. (1905), Ltd.	907	—Fleeting device for hoist	*945	
Nonpareil insulating brick	741	Ore, Damages for wrongful taking of	661	Penn smeltery, Calif.	168, 424	
Norcross, F. S., Jr. Mother Lode blast	*931	Ore, genesis studies in 1914	102	Pennsylvania Consol., Calif.	1055	
Nordberg air compressor or steam engine	531	Ore, Offering, for sale	876	Pennsylvania Topographic and Geologic Survey Report	*870	
—Electric hoists, Wakefield, Mich.	*742	Ore rates to Douglas	750	Penny, A. N. Mining low-grade copper ore, Ray Consol.	*767	
Norske Spitzbergen Co.	794	Ore removal under timbered drift	*657	Pensacola Tar & Turpentine Co. Pine-oil supply	619	
North America. See countries, metals, etc., specifically.		Ore, Rich, Temiskaming mine	*1085	Percival, F. B. Dutch Guiana	445	
North Am. mine, Mo.	61	Ore, Rich, Temiskaming mine	*1085	—Bauxite deposits, Dutch Guiana	*583	
North Bay discovery, Ont.	170, 215	Ore, Rich, Temiskaming mine	*1085	Percy, W. R. Calif. safety rules	1125	
North Broken Hill Co.	1045	Ore, Rich, Temiskaming mine	*1085	Perkin medal presentation, Ninth	234	
North Butte, Mont. 110, 217, 260, 756, 841, 882, 926, 1056		Ore, Rich, Temiskaming mine	*1085	Perkiomen copper mine	*746	
North Carolina activities	895	Ore, Rich, Temiskaming mine	*1085	Peru Gold Placers, Inc.	959, 1133	
North Carolina gold, silver	47	Ore, Rich, Temiskaming mine	*1085	Perseverance mine, Alaska	426, 674	
North Dak. State Geologist	270	Ore, Rich, Temiskaming mine	*1085	Peru, Casapalca dist.	355	
North Dome, Ont.	1057	Ore, Rich, Temiskaming mine	*1085	Peru copper	51, 52, *126, 705, 875	
North Fork mine, Calif.	387, 716	Ore, Rich, Temiskaming mine	*1085	—Photos, of native mining	*375	
North Homestake, S. D.	1010	Ore, Rich, Temiskaming mine	*1085	Peru in 1914: map	*126	
North Lake iron mine, Mich.	1138	Ore, Rich, Temiskaming mine	*1085	Peruvian Corp., Ltd.	547	
North Sask. Riv. placer mining 346, 509, 591		Ore, Rich, Temiskaming mine	*1085	Peterman, John, Death of	166	
North Star Mines Co., Calif. (see also "Champion.")	426, 553	Ore, Rich, Temiskaming mine	*1085	Petersen's determination of carbonate in presence of sulphites	867	
—Report	992	Ore, Rich, Temiskaming mine	*1085	Peterson Lake, Ont.	470, 634	
North Thompson, Ont. 173, 555, 594, 884, 927		Ore, Rich, Temiskaming mine	*1085	Petroleum, Argentina — Rivadavia field	290	
Northern Ont. Power Co.	470	Ore, Rich, Temiskaming mine	*1085	Petroleum, Calgary	591, 674, 1007, 1098	
Northern Ore. Co., N. Y.	26, 512	Ore, Rich, Temiskaming mine	*1085	Petroleum, Calif.: —Production, review, of 1914 69, 130, 219		
Northern Pyrites Co., Ont.	148	Ore, Rich, Temiskaming mine	*1085	—Protection from water 213, 257, 465, 673		
Northwest Mining Convention 210, 298, 423		Ore, Rich, Temiskaming mine	*1085	—Pipe-line protection against alkali 367		
Northwestern Metals Co.	79	Ore, Rich, Temiskaming mine	*1085	—Pipe lines as common carriers	1135	
Norton, W. W. Roasting lead ore	89	Ore, Rich, Temiskaming mine	*1085	—So. Pac. land cases	1050, 1133	
Norway, aluminum	80	Ore, Rich, Temiskaming mine	*1085	—Wells on Summerland beach	*662	
Norway and Sweden, copper	923	Ore, Rich, Temiskaming mine	*1085	—Various notes	879, 900, 1008, 1135	
Norway and Sweden, lead	57	Ore, Rich, Temiskaming mine	*1085	—Petroleum industry of Calif.	*870	
Norway and Sweden, silver	47, 520	Ore, Rich, Temiskaming mine	*1085	Petroleum, Canada	488, 489	
Norway and Sweden, spelter	62	Ore, Rich, Temiskaming mine	*1085	Petroleum, Crude, in Black Mtn. Mg. Co. power house	358	
Norway copper and pyrites	1111	Ore, Rich, Temiskaming mine	*1085	Petroleum exhibit, S. F.	26	
Norway, Copper discovery in	322	Ore, Rich, Temiskaming mine	*1085	Petroleum, Galicia, war time	690	
		Ore, Rich, Temiskaming mine	*1085	—Wells fired by Russians	1022	
		Ore, Rich, Temiskaming mine	*1085	Petroleum, Germany, and war	829	

	Page
Petrouem, Ill.	69, 136
Petroleum, Montana, Probable	*647
—Note	714
Petroleum, Okla.—Legislation	378
—Sulphur in Cushing oil	1095
Petroleum, Ontario	916
Petroleum, Peru; Bolivia	*127
Petroleum, Synthetic	378, 379, 502, 546, 787
Petroleum, Tex. and La.	69, 137
—Strike near Thrall, Tex.	509
Petroleum, Trinidad	125
Petroleum, U. S., by states and fields	69
—Mineral-oil exports	303
—New wells	303
Petroleum, Utah—San Rafael	715
Petroleum, Wyoming	69
—Reserve for Navy	830
Phelps, C. C. Quarrying with air-hammer drills on scaffold	*903
Pheips, Dodge & Co. (see also "Copper Queen," "Burro Mtn.," etc.)—Report	567
—Notes	387, 926, 1096
Phillippines asphalt deposits	859
Phillippines gold and silver	47, 736
Phillippines gold dredging	228, *685, 709
—Mambuloa steam-elec. dredge	*898
Phillippines iron and gold	736
Phillips' cobalt-silver ore-treatment process	1120
Phenix Cyanide Co.	26
Phenix—Newtown, Bingham	714
Phoser-Strack-Stumm process for heating blast-furnace stoves	*240
Phosphate deposit discovered, Tenn.	1110
Phosphate locations validation	213
Phosphate method for alumina	536
Phosphate, Mont.	470, 714
Phosphate-rock statistics	480, 895
Phosphates, Florida	*23, 841
Phosphates, foreign trade	431
Phthisis conditions, Rand	28, 132, 861
Phthisis, Joplin dist.	331, 922
Physical Metallurgy, Introduction to	704
Picher Lead Co.	65, 66, 511, 922
Pickands, Mather & Co.	76
—Gunite casing on shaft lining	*409, 421
Pickard, H. G. Septic tank for underground latrine	*149
Pierce-Arrow motor trucks	*242
Pierce region, Ida., placer mining	298
Pillar caving, Ray Consol.	*767
Pilot-Butte, Mont.	260, 301, 508, 590, 677, 717, 758, 926, 1097
Pine Creek dist., Ida., lands	169
Pine-oil supply	462, 619
Pinos Altos dist., N. M.	*133
Pipe-bending device	*194
Pipe-fitting and flange standards	*1121
Pipe-joint paste, Chard & Howe	211
Pipe joint, Ross expansion	*697
Pipe, Lead, weight and thickness	494
Pipe-line anchor, Hillside	*656
Pipe-line protection against alkali	367
Pipe lines common carriers	213
Pipe, Wood, Bulletin on	611
Pirrie, Noble W.	963
Pisani, F. Calcite phosphorescent on heating	817
Piston rings, Wooden, pump	*153
Pittsburg-Dolores Mg. Co.	26, 594, 677
—Mill at Rockland, Nev.	*653
Pittsburg Liberty, Calif.	881
Pittsburg Mt. Shasta Gold	795
Pittsburg-Silver Peak	313, 554
Pittsburgh iron and steel markets	72
—Prices	*49, *50, 72
Pittsburgh iron-district map	*73
Placer, Dry, machine, Stebbins	*783
Placer machine, Newsom	*990
Placer mining, Alaska, Yukon	*517
Placer-mining district, Koyukuk	1021
Placer-mining law decision	480
Placer-mining methods, Lorenz and Union Hill mines	481
Placer mining, Opportunity in	185, 208
Placer-mining regulations, Yukon	156
Placer mining, Victoria	188
Placer patents and lode claims, Conflicts between	736
Platina townsite, Nev.	388
Platinum—Black sand, Ore	261, 428
Platinum, Calif.	1045
—Recovery from black sand	1137
Platinum, Colombia	126
Platinum-Gold Mg. Co. (see also "Boss")	388
Platinum in 1914	*49, 77, 596
Platinum market, The	670
Platinum, palladium and gold determination	700
—Determining silver	701
Platinum, Russia	77
Piatteville, First-aid work	*142
Playter's bag-cleaning method	328
Plumbing, Incorrect, Azimuth estimation, from	*695
Plymouth Consol., Calif.	37, 97, 259, 510, 592, 675, 840
Pneumatic. See "Air"	
Pocahontas mine, Joplin dist.	386
Pockets in Creighton mine	*192
Poderosa Mg. Co.	129, 142
Poetry	209, 255, 383, 498, 547, *566, 627, 834
Poland. Mines and smelteries of	*146
Polar Star mine, Calif.	881
Polaris, Azimuth observations on, by daylight	776

	Page
Pomeroy, R. E. H. Fettling reverberatories	369
—Steptoe oil burners	*615
Ponce de Leon	274
Porcupine, Mich.	38
Porcupine Crown, Ont.	97, 98, 99, 120, 173, 301, 428, 718, 927, 1139
—Report	782
Porcupine Premier	1098
Porjus Falls electrification	923
Porphyry coppers, The	1111
Porphyry Dike G. M. Co.	79
Port Pirie smelting plant	1045
Port Wells district	551
Portia Mg. Co.	470, 882
Portland G. M. Co.	171, 272, 300, 465, 755, 1009
—Report	781
—Buys Stratton's Independence	1004, 1049
Porto Rico and Ponce de Leon	274
Portugal prohibits tin exports	1116
Potash salts, foreign trade	431, 597
Potash, Germany—Embargo, etc.	303, 349, 774, 830
—Syndicate sales	472
Potash, Nev.—Notes	217, 759
Potash plant for Baltimore	1007
Potash sales, Oregon lakes	466
Potash, Searles Lake, Calif.	107, 171, 463, 704, 1096, 1138
—Patent protest	334
Potash, Utah, investigated by Armour & Co.	470, 1006
Potassium recovery from flue dust, Peacock's	1088
Potosi mine, Nev.	626, 883
Powder. See "Explosives," "Blasting,"	
Powder Riv. Gold Dredging	797, 884
Powell's Fort mine, Va.	1010
Power curves, Hoist and compressor	*988
Power & Mg. Machy. Co.'s crushers	865
Power in cyanide mills	312
Precipitation, Fume. See "Cottrell," "Smeltery,"	
Precipitation in hydrometallurgy. See also "Copper leaching," "Cyanide," "Chloridizing," etc.	
Precipitant in cyaniding, Zinc-sodium alloy as	948
Precipitant of metal from cyanide solutions, Carbon as	947
Precipitating apparatus for cyaniding, Merrill Met. Co.'s "Mills"	*1079
Precipitating plant, Cop. Queen	*17
Precipitation, Aluminum, Nipissing	568, 1124
Precipitation, Electrolytic copper	31
Precipitation—Influence of impurities on zinc	990
Precipitation on zinc shavings, Bullfinch	821
Precipitation, Rainbow mill, Ore	*1105
Precipitation systems, Zinc-dust, Air in	*534
Price, C. S., Death of	166
Price conditions, Working during high- and low-	1084
Price Mg. Co., Utah	927, 1139
Prices, Metal—Charts	*49, *50, *57
Prichard, W. A. Pat. report	231, 253, 874
—Nechi Mines report	244
Primers, Making—Holding fuse	*1084
Primos Chem. Co.	61, 108, 427, 511, 593
Prince Consol., Nev.	112, 428, 717, 883
Pringle, L. B. Steam-shovel devices	*236, *572
Prisoners' employment, War	204, 398, 940, 1041
Prize Mg. Co.	345, 427
Probert, Frank H.	1051
Progress mines, Bajo, Calif.	188
Promoter Co., Kan.	880, 1056
Prospecting by idle engineers	789, 996
Prospecting—Called back (poetry)	547
Prospecting Colombia dredging ground, etc.	232, 874
Prospecting costs, Surface, Nipissing	1037
Prospecting dredging ground in Yukon, Requirements of	828
Prospecting for minerals, Ontario	*1067
Prospecting for tin	295
Prospecting, Joplin, new method	425
Prospecting methods, Fairbanks	*805
Prospecting—The first move	164
Prospector, Bill McGinty	912, 956, 996, *1038, 1042
Prospector, The (poetry)	255
Prospectors, Denver headquarters for	964
Prospectuses, Mining	183
Prosser, W. C. Mears-Wildley tailings mill	*607
Pueblo mine, Yukon, glory hole	*702
Pulley, Turning camshaft	449
Pulp specific-gravity diagrams	*412
Pump arrangement, Rainbow mine	*281
Pump piston rings, Wooden	*153
Pump. Solution, stopping device	*534
Pumping by Compressed Air	*542
Pumping, Joplin dist.	258, 591
Pumping, Leadville downtown	793
Pumping—Preventing air-lift clogging	*409
Pumps, Centrifugal mine, on Rand-Roodeport Deep's	*1115
Pumps, Mine, Efficiencies of—Air lifts; Cornish; reciprocating; centrifugal	1031

	Page
Pumps, Multistage centrifugal and Cornish, Chapin mine	*857, 1032
Purington's Lena Goldfields report	333, 338, 421
Pyrite, Magnetic separation of	*526
Pyrites in 1914	148, 597, 1022
Pyrites mines, Grong, Norway	*889
Pyrites, Norway	1111
Pyrites, Spanish, Imports of	303
Pyritiferous blende, Preparing, for magnetic separation	284
"Pyrometers"—Hardening salts	242
Q	
Quantitative Chem. Analysis, Notes	†376
Quarrying with air-hammer drills on scaffold	*903
Quartz veins in lamprophyre intrusions	*11
Queen Gold Mg. Co.	171, 840
Queensland mineral production	585, 765
Queneau, A. L.	*235
—Notes	166, 963
Quicksilver, Alaska, Kuskokwim region	730
Quicksilver, Calif.	68
Quicksilver, Italy	68, 157, 690, 810
Quicksilver market	*49, 68, 960
Quicksilver, Spain	68, 596
Quicksilver, U. S.	45, 68, 596
Quicksilver, Wet extraction of	19
Quicksilver, World, by countries	68
Quin's Metal Handbook	†704
Quincy Mg. Co.	260, 343, 509, 511, 554, 633, 676, 694, 882, 1007
—Drill-sharpening shop	*16
—Skip-rope holding device	*279
—Air blasts	914
—Shaft-rockhouses	*1063, *1107
—Report	782
Quinn-Harrison mine, Minn.	511, 676, 796, 841, 1056
R	
Radium and Bureau of Mines	788
Radium — Carnotite near Mauch Chunk	566
Radium — Carnotite-ore treatment method of Danforth et al.	864
Radium, Colo., ore	108, 116
Radium Co. of Am.	116
Radium cost, Reducing	26
Radium factory, Scotch	816
Radium, Ont., discovery	170, 215
Radium trust alleged	257
Radium, uranium and vanadium ore, U. S.	548
Radium-uranium ratio in carnotites	230
Radium, Utah, and uranium	116, 301, 964
Rahilly, H. J.	836
Rail and lake lines	1003
Rail production in 1914	683, 636, 752
Railroads, Bolivia to build	898
Railway, Alaska. See "Alaska."	
Railways, Surface, Safety around	279
Rainbow Lode Devel. Co.	841, 1097
Rainbow mine, Ore	759
—Economic pump arrangement	*281
—The mill	1103
Raising method, Five-hole-cut	*572, *956, 1083
Rait, D. M.	33
Ralston, O. C. Progress in flotation	937, 1084
Rambler-Cariboo	718
Ramsay-Rutherford, Alaska	840
Ramsey, Robert	1005
Rand. See also "Transvaal," "South Af."	
Rand, Centrifugal pumps on	*1115
Rand costs, Reduction of—Table of companies	896
Rand gold deposits—Genesis	102
Rand metallurgical practice, Recent	771
Rand phthisis conditions	28, 132
—Methods for laying dust	861
Rand practice changes	943
Rand, Sand filling on	862
Rand tailings dust, Allaying	132, 779
Randfontein Cent. plant additions	980
Ransome, F. L.—Papers, etc.	104, *221
Rasmussen, C. M. Reversing rope	655
Rattlesnake Jack, S. D.	114
Ray Consol., Ariz.	592, 790, 1045, 1111, 1112
—Reports	418, 707, 916
—Mining low-grade copper ore	*767
Ray-Jefferson, Ida.	427, 467
Raymond, R. W. La Sirena Jamesonite deposit, Mex.	9
—May Institute endorse opinions	205, 208
—False notions concerning Japanese	871
Rea mine, Ont.	389, 428, 634, 718
Ready Bullion mine, Alaska	259
Real del Monte, Mex.	346, 1133
Recording and comparing mining data, St. Lawrence Pyrites Co.	193
Recreation building, Homestake	*827
Red Bird M. & S. Co.	109
Red Metal Co., Nev.	717, 797
Red Rock Cañon, Calif.	387
Redmayne, R. A. S. Drop-shaft sinking	*988
Redwood, Calif., for tanks	251
Reed, D. C., Death of	341
Reed's Peak, Utah	677
Refining base bullion	535
Refining practice, Copper—Review	94
Refractory brick by ton	196

Page		Page		Page	
	Refractory-brick conductivities.....	13			San Juan Basin ore sledding.....
	Refractories in glass industry.....	382, 571			San Luis power house.....
	Regrinding costs, Winona.....	1037			San Miguel Mica Co., N. M.....
	Reifsneider, Le B. Tripod for hand-				San Miguel mine, Mex.....
	dling long drill steel.....	*490			San Rafael oil field.....
	—Comparative strength of detonators	818			San Sebastian mine, Honduras.....
	Reilly, A. J., Jr., Death of.....	963			Sand, Bronze-casting, wanted.....
	Reindeer-Queen, Ida.....	1009			Sand filling. See "Filling."
	Reliance Mg. Co., Mont.....	428			Sand leaching, Lake Cop. dist.....
	Relocation case, Wash. claim.....	1078			Sanger, H. Volumetric determination
	Rennerfelt electric furnace.....	*400			of sulphurous acid.....
	Reno-Kaetker sawing outfit.....	743			Sandston-Kendall.....
	Reorganized Booth Mg. Co. 512, 551,				Santa Gertrudis, Mex.....
	552, 591, 631, 671, 793, 832,	883			Santo Domingo, Minerals of.....
	Reports. See companies by name,				Sapphires, Mont.....
	"Cost," etc.				Satar Peak, Nev.....
	Reports, Mining company — Their	751			Sault Ste. Marie canal traffic.....
	character.....	37			Saunders, W. L., Portrait of.....
	Republican mine, Calif.....	139			Savanna Cop. Co. 38, 112, *133, *134,
	Requa, M. L. Calif. oil.....	753			135
	—His land valuations, etc.....				Saw, Portable elec., Reno-Kaetker.....
	Rescue. See also "First aid," "Acci-				Scallon, E. P. Draining watercourses
	dent," "Safety."				in chutes.....
	Rescue stations and cars.....	380			Scandinavian notes (see also "Nor-
	Rescue work, Layland mine.....	666, 670			way," "Sweden") 270, 520, 794, 923,
	Residues, Metallurgical, as insecti-				965
	cides.....	579			Schaake automatic section insulator
	Retort-discharging machine, Sim-				Schley, Grant B.....
	monds.....	*96, *449			Schnabel, Carl, Death of.....
	Reverberatory. See "Furnace,"				Scholl, Guilford D.....
	"Smeltery."				Schrader, E. J. Pittsburg-Dolores
	Revival in mining.....	709			mill.....
	Rex Creek, Alaska.....	510			Schumacher, G. M., Ltd. 26, 346, 842,
	Reynolds, R. V. R. Azimuth observa-				1139
	tions on Polaris by daylight.....	776			Schwarz, A. Flotation progress.....
	Rhode Island anthracite.....	728			1084
	Rhodesia gold.....	40, 47			Science vs. Dreamland.....
	Rice, George Graham.....	714, 753			Science vs. technical gossip.....
	Richards, R. H.—Portrait.....	*539			Scotch radium factory.....
	—Medal awarded to him.....	160, 507, 586			Scotia mine, Wash.....
	—Dinner flow-sheet.....	*566			Scott mine, Calif.....
	—La Sirena jamesonite.....	9			Scraper, Bagley road-making.....
	Richards, W. B. Carnotite near				Screen area, Increasing battery.....
	Mauch Chunk.....	566			Screens, Size of products from
	Rickard, T. A.....	549			square and round hole.....
	Ricketts, L. D.....	210			Screens—Stephens-Adamson grizzlies,
	—Fettling reverberatories.....	206			*241
	Ricketts, Pierre de P.....	464, 507			Screws, Cap-, Replacing broken.....
	Riddell, G. C. Roasting lead ore.....	89			Searles Lake potash 107, 171, 463,
	Ridder mine, Irtysh Corp.'s.....	*599			*704, 1096, 1138
	—Brief mention.....	26, 63			—Patent protest.....
	Rider, J. H. Air-compressor efficiency,				Secret M. & M. Co.....
	etc.....	1118			Selby smeltery, Calif.....
	Ridge & Valley, Utah.....	927, 1010			Selenium in 1914.....
	Riffle, Natl., on Wilfley tables.....	55			Semi-pyritic smelting, Granby's.....
	Riffles, Channel iron for.....	483			Seneca Consol., Calif.....
	Rigg's, G., cadmium removal from				1055, *1073
	zinc ores.....	659			Seneca mining dist., Calif.....
	Riggs National Bank.....	751			*1072
	Right-of-Way mine, Ont. 555, 884,				Seneca Superior, Ont.....
	927, 1128				—Report.....
	Riley & Marston dredge.....	*644			Separation. See also "Concentration"
	Rio del Oro, Ltd.....	130			and cross-references from it.
	Rio Tinto affairs.....	752			Separation, Electromagnetic ore.....
	Rissmann-Ruebel roasting furnace.....	*326			*523
	Rittman's gasoline process.....	546, 787			Separation, Electromagnetic zinc-ore,
	Rivadavia oil field, Argentina.....	290			Campbell process.....
	Rivers, Matter carried by.....	778			*979
	Roach, Thomas, Death of.....	1093			Separation, Magnetic, Moose Mtn.....
	Road, Mountain, location "don'ts".....	*237			*973
	—Bagley scraper.....	*325			Separation, Magnetic, Mt. Hope, N. J.
	—Construction.....	365			—Empire Steel & Iron Co.'s.....
	Roaster, Wilfley rotary-hearth.....	*414			*559
	Roasting, Blast, at Park City; Holt-				Separation, Magnetic, of tin-wol-
	dero roasters.....	*265, 293, *315			fram-bismuth ores.....
	—Notes.....	32, 93, 116, 594, 838, 927, 1006			Separation, Magnetic, Preparing py-
	Roasting—Calcination of calamine.....	626			riticiferous blende for.....
	Roasting copper ores—Review.....	93			284
	Roasting furnace, Rissmann-Ruebel.....	*326			Septic tank, Underground-latrines.....
	Roasting furnaces, Rectangular me-				Seven Troughs Coalition.....
	chanical.....	*181			111, 1057
	Roasting furnaces, Zinc.....	96			Sewell, Barton, Death of.....
	Roasting furnaces, Zinc smelters—				165
	Table.....	420			Shaffer, Louis.....
	Roasting lead ores—Review.....	89			Shaft, Accident in icy.....
	Roasting—Making sponge iron.....	326			383
	Roasting—Nodulizing in copper met-				Shaft cribbing, Fairbanks.....
	allurgy.....	272			*1027
	Roasting plant, McDougall, Ana-				Shaft-door hinge, Bernard.....
	conda.....	*723			*280
	Roasting pyrite for magnetism.....	*527			Shaft gates, Williams' automatic
	Rob Roy mine, Utah.....	173, 797, 884			safety lock and indicator for.....
	Robacher filter.....	*740			*1118
	Roberts, Geo. D., Death of.....	1134			Shaft, Inclined, for timber.....
	Roberts, J. L., Death of.....	836			*776
	Robertson's molybdenum recovery.....	284			Shaft lining, Gunite casing on wood,
	Robinson mine, Transvaal.....	131			Cary mine.....
	Rocher de Boule Cop. Co. 258, 677,				*409
	842, 1098				—Fireproofing mine shafts.....
	Rochester Consol.....	79			421
	Rochester Mines Co. 111, 346, 633, 717,				Shaft plumbing, Incorrect, Azimuth
	883, 926, 1009, 1098				estimation from.....
	Rochester, Nev., photo.....	*1087			*695
	Rochester, Nev., Strike near.....	797			Shaft-repair cage, Four-deck.....
	Rochester Weaver Mg. Co.....	111, 1009			*614
	Rock crusher. See "Crusher."				Shaft-rookhouse practice, cop. coun-
	Rock drill. See "Drill."				try.....
	Rock quarries, Card for.....	*365			*1061, *1107
	Rookhouse practice, copper country.....	*1061, *1107			Shaft sets, Concrete, Oliver.....
	Rockland Lake quarry crusher.....	577, *743			*447
	Rockland mill, Pittsburg-Dolores.....	*653			Shaft sinking, Bell wire in.....
	Roesler, H. A. Size of products from				*323
	square and round hole screens.....	*493			Shaft sinking, Drop, Germany.....
	Roesler, Max.....	754			*988
	Rogers, A. Industrial Chemistry.....	*542			Shaft sinking in thawed ground by
	Rogers-Brown Ore Co., Munro Iron				freezing method.....
	Mg. Co., etc. 76, 214, 258, 345, 427,	511			*807
	Roll operation, Successful. Humes. 615				Shaft timbering and headgear, Mes-
					abi.....
					*1119
					Shaft timbering by rings, kaolin
					mines.....
					*945
					Shaft timbering, Light.....
					*696
					Shaftman, The (poetry).....
					383
					Shafts—Test-pitting cost.....
					21
					Shaler, M. K. Economic geology,
					Belgian Congo.....
					*441, *608
					Shales, Bituminous, of Colo.....
					*773
					Shannon Cop. Co. 92, 344, 468, 553,
					1096
					—Incline at Metcalf, Ariz.....
					*663, 1030
					Shapiro, S. Magnetic-concentration
					mill, Mt. Hope, N. J.....
					*559
					Shattuck-Ariz. Cop. Co.....
					552, 633
					—Report.....
					825
					Shaw, Quincy A.....
					33
					Shaw, S. F. Data, world's mines.....
					84
					Shay locomotives, Operating.....
					*729
					Sheave, Angle, frame design.....
					*359, *403
					Sheldon, C. F.—Fettling.....
					206
					Sheldon, G. L. Lost mines.....
					746
					Sheldon, T. H.....
					629
					Sheridan, N. C.....
					166
					Sherrerd, J. M., Death of.....
					754
					Sherwood, M. W. Traveling crane.....
					*903
					Shields, Irving J.....
					166
					Ship loading, Aerial, Ellamar.....
					*230, *249
					Shipment abroad, Packing for.....
					205

Page		Page		Page		
	Shipping routes, World's—Map.....	*141	Smelters, Bonded—New rules.....	622	Spelter, World's production and consumption, by countries.....	62
	Ships, The shortage of.....	626	Smelters' combination, Alleged zinc, 1129, 1131		Spillage and sinking pocket.....	*612
	Shoes and dies, Maximum use of.....	*907	Smelting. See also "Furnace," "Bag," "Roaster," "Electric," metals by name, etc.		Spirlet zinc-roasting furnace.....	96
	Shovel hoisting chains, Prolonging life of.....	1117	Smeltery, Ariz. Cop. Co.—Construction costs.....	*329, *495	Spitzbergen notes.....	521, 794, 986
	Shovel, Revolving steam, Ball "Erie".....	*865	Smeltery, Copper Queen.....	*1	Sponge-iron manufacture.....	326
	Shovel, Steam, block.....	*236	Smeltery-fume precipitation by electrostatic discharge.....	240	—Granulation-process patented.....	250
	—Grade-board.....	*572	Smeltery smoke, Calif. 89, 94, 107, 168, 424, 551, 694, 1053		Spring Val., Nev., cyanide plant.....	926
	Shovel, Steam, electric-lighting set.....	*15	Smeltery smoke, Nev.—Mason Val.....	217	Springs Mines, Transvaal.....	131, 277
	Shoveler, Elec., Federal mine, Mo.....	61	Smeltery-smoke problem, New publication on—"Metallurgical Smoke," 380, 704		Stack—Straightening a chimney.....	*822
	Shoveling machine, Halby's "Eureka," of Lake Shore Engine Wks., at Judson mine.....	280, *950	Smeltery smoke, Tenn., Ga.....	1047, 926	Staking out claims in Ont.....	*324
	Shoveling machines, Myers-Whaley, on Rand.....	*150	Smeltery smoke, Utah.....	90, 94, 115	Stamp-battery king-posts.....	907
	Shrinkage stoping, Ray Consol.....	*767	Smelting as public utility.....	752	Stamp-camshaft vibration, Reducing.....	616
	Shushana. See "Chisana."		Smelting copper in Caucasus.....	*650	Stamp mill, improvised, Calif.....	*991
	Siam tin output increases.....	850	Smelting copper—Review.....	93	Stamp-mill shoes and dies, Maximum use of.....	*907
	Siberia. See "Russia."		Smelting lead ore—Review.....	89	Stamp Milling and Cyaniding.....	*1085
	Sibley mine, Minn.....	301, 882	Smelting, Mt. Lyell 833, 863, 864, 948, 1034, 1045, 1120		Stamp milling, Consol. G. F. of So. Af.....	328
	Sicka, L. G.....	589	Smelting plants, Designing small copper.....	*225	Stamp milling in 1914.....	97
	Siemens mines, Caucasus.....	*652	Smelting process, Vacuum.....	1042	Stamp milling, Rand.....	771
	Siemens-Halske copper review.....	228, 252	Smelting, Pyrite, Higher furnaces in.....	833	Stamp-milling tendencies.....	693
	Signal arrangement in sinking.....	*323	Smelting, Semi-pyritic, Granby's.....	741	Standard Chemical Co.....	26, 116, 838
	Signal box, Gravity-release elec.....	*614	Smelting, Trail, B. C., impvts.....	290	Standard Consol., Calif.....	592
	Signal system, Block haulage.....	574	Smelting works, Poland.....	*146	Standard Oil Co.....	127, 139, 140, 1112
	Signal system, Locked, N. J. Zinc Co.....	*777	Smith, T. L., crushing machine.....	*577	Standard Silver-Lead, B. C.....	121, 156, 213
	Signal—Topman's warning bell.....	*655	Smith, W. H. Canadian molybdenite deposits.....	271	Stanford Mg. & Red. Co.....	553, 795
	Signaling installations, Elec. mine.....	*542	Smoke, Smeltery. See "Smeltery."		Stanford University Yearbook.....	*940
	Silesian mines and smelters.....	*146	Smoot, A. M. Kinds of spelter.....	460	Stanley mine, Colo.....	1138
	Silica, Amorphous, wanted.....	296	—Platinum, palladium and gold determination.....	700	Stanstey, N. A. Sand filling.....	206
	Silver, Alaska.....	47	Snake Creek Tunnel 512, 634, 718, 1098		Star of the Congo. See "Union Minière."	
	Silver assay—Cupellation errors; sulphocyanate method.....	355	Snelling, W. O. Synthetic oil 378, 379, 502, 546		Star Peak mine, Nev.....	111, 968
	Silver, Australasia.....	47, 408	—Govt. publicity methods.....	787	State geological and mining officials.....	104
	Silver, Bawdwin mines, Burma.....	*177, *202, 502	Snow shovel, "Butterfly".....	*729	—Erratum.....	270
	Silver Cable, Ida.....	1009	Snowshoes—Ski travel, Calif.....	*521	State Mines, Transvaal.....	277
	Silver, Canada.....	47, 488	Snowslide, Britannia mines.....	*628	Statistical review of 1914.....	161
	Silver, Can., discovery on Lake Athabasca.....	552, *644, 787	Snowstorm mine, Ida.....	213, 1009, 1138	Steam, Dry, Effect on molten matte.....	788
	Silver Cell M. & S. Co.....	1139	Snyder Electric Furnace Co.....	713	Steam, Exhaust, for turbine.....	616
	Silver Cy. dist., N. M., map.....	*942	Société Francaise des Mines de Cuivre.....	129, 142	Steam shovel. See "Shovel."	
	Silver-cobalt ore-treatment process, Phillips.....	1120	Society meeting programs, Changing.....	293	Stebbins, H. S.....	296
	Silver, Colo.....	47	Socorro, Honduras.....	124	—One-man dry-placer machine.....	*783
	Silver determination with platinum and palladium.....	701	Socorro, N. M.....	112, 173, 214, *249, 261	Steel. See also under "Iron," "Electric," "Drill," "U. S. Steel Corp."	
	Silver, Idaho.....	47, 59, 109	—Tailings disposal.....	788, 631, 923	Steel, Austria-Hungary.....	694
	Silver King Coalition, Utah 116, 173, 346, 492, 512, 842, 968, 1010		Söhnlein, M. G. F. Tin mining in Bolivia.....	143	Steel, Drill, Failure and heat treatment of.....	*612, 946
	—Successful roll operation.....	615	—Ownership of Bolivian mines.....	459	Steel-trade prospects.....	789
	—To install flotation plant.....	1094	Solution sampler without siphon.....	*863	Steel, United Kingdom (see also under "Iron.").....	1066
	Silver King Consol., Utah 116, 337, 346, 512, 555, 594, 677, 927, 1057		Solvay Process Co.....	463	Steel, U. S.....	71
	—Report.....	1112	Sonoita Cop. Co.....	37	—Foreign trade.....	431
	Silver King mine, Alaska.....	757	South Africa. See also "Transvaal," "Rand," "Rhodesia."		—Rails.....	683, 636, 752
	Silver Lake mine, Colo.....	171	South Af. coal.....	800	—Structural shapes; wire rods; nails.....	1072
	—Mears-Wilfley tailings mill.....	*607	South Af. tin.....	67	Steifer, P. B., Mg. Co.....	716
	Silver-lead deposits—Economic geology in 1914.....	103	South Am. Cop. Syndicate.....	129	Stephens-Adamson grizzlies.....	*241
	Silver-lead smelteries, North Am.—Table of capacities.....	59	—Report.....	371	—Car wrench.....	*1033
	Silver Leaf, Ont.....	173, 927	South Am. Development Co.....	126	Steppler, Jos., Death of.....	920
	Silver Ledge mine, Colo.....	37	South Am. in 1914.....	*47, *125, 619	Steptoe waste-heat boilers.....	*152
	Silver market, prices and movement, 48, *49		South Am. West Coast business.....	*433	—Fettling reverberatory furnaces.....	369
	Silver market, London.....	48	South Australia. See "Australasia," "Australia."		—Low-pressure oil burners.....	*615
	Silver, Mexico.....	47	South Crofty, Ltd.....	753	—Reverberatory-furnace temperatures.....	*658
	Silver, Mont.....	47	South Dak. gold, silver.....	47, 113	Stewart Mg. Co., Ltd. 171, 213, 216, 552, 840, 1138	
	Silver, Nev.....	47	South Dak. in 1914.....	113	Stewart River strike.....	509
	Silver, Norway and Sweden.....	47, 520	South Eureka mine, Calif.....	964	Steifer Mg. Co.....	675
	Silver, Ont.....	120, 488, 916, 958	South Hecla, Utah.....	*690, 927	Sticht, R. C. Furnace operation, Mt. Lyell.....	1034
	Silver ore, Rich, Temiskaming.....	*1085	South Lake, Mich. 217, 427, 554, 758, 796, 967		—Brief mention 833, 863, 864, 948, 1120	
	Silver, Spain.....	47, 585	—Report.....	825	Stillman, T. B. Examination of Lubricating Oils.....	*376
	Silver, U. S.....	45	South Utah M. & S.—Handling concentrates.....	*698	Stock quotations, New Street.....	199
	—By states.....	47	Southeast, Gold mining in.....	790	Stoddard, J. C. Mt. Hope mine model.....	*446
	—Coined silver, Jan. 2.....	219	Southern Aluminum Co.....	80	—Erratum.....	533
	—Imports and exports.....	263	Southern Appalachian activities.....	895	Stocks, Mining, in N. Y., in 1914, and bonds.....	88, 157
	Silver, Utah.....	47, 116	Southern Cross, Mont.....	110	Stoper, Drifting with a.....	*860
	Silver, World, by countries.....	47	Southern Pacific land cases.....	385	Stopes, Timbering, for safety.....	*818, 996
	Simmerone. See also "New Goldfield."		—Oil-land cases.....	1050, 1135	Stopping at Park City.....	492
	Simmerone, Nev.....	841	Southwestern Mines, Nev.....	1097	Stopping costs, Salt Lake Cop.....	908
	Simmonds retort-discharging machine.....	96	Spain, copper.....	51, 585, 596, 875	Stopping, Shrinkage, Ray Consol.....	*767
	—Ball-bearing turntable.....	*577	Spain, lead.....	57, 585, 596	Storage, Concentrates, Mt. Hope.....	*564
	Simmons, J. So. Dak. in 1914.....	113	Spain, mineral exports.....	596	Stoughton, Bradley.....	878
	—Attempt at tin concentration.....	*816	Spain, mineral production.....	585	Stowell M. & L. Co.....	346
	Simons, T. Mont. in 1914.....	110	Spain, pyrites imports.....	303	Strale, Allan.....	384
	—Flotation, Timber Butte mill.....	991	Spain, quicksilver.....	68, 596	Stratton's Independence, Ltd. 254, 314, 796, 1097	
	Simpson, K. M.....	166	Spain, silver.....	47, 585	—Report.....	370
	Simpson, W. T., Death of.....	712	Spain, spelter.....	62	—Bought by Portland.....	1004
	Sinking. See also "Shaft."		Spanish embargo on metals.....	1085	—The liquidation.....	1049
	Sinking and spillage pocket.....	*612	Spannagel, A. Heating blast-furnace stoves.....	240	Straub dredges.....	101
	Siphon, Solution sampler without.....	*863	Spearhead G. M. Co.....	217	Street, A. L. H. Legal notes 10, 269, 402, 480, 522, 585, 661, 736, 786, 892, 900, 936, 1047, 1078	
	Siphons, Acid.....	*947	Specialization overdone.....	961	Streich, G. F.....	1005
	Siren, "Denver," Hendrie & Bolthoff.....	*415	Speel River, Alaska, power.....	1008	Strike, Labor. See "Labor."	
	Sistermans, Frank H.....	549, 629	Spelter. See also "Zinc."		Strong and Nesbit fume precipitation.....	240
	Ski travel in Calif.....	*521	Spelter, German embargo on.....	429	Strontia trade, The.....	440
	Skidoo, Calif.....	675	Spelter imports and exports.....	453	Sturtevant, T. E. Failure of hollow drill-steel.....	579
	Skinner, E. N. Mining Costs.....	*704	Spelter market and prices in previous years *49, *50, 63, 64, 201—Current situation in 1915 293, 504, 545, 710, 961, 1002, 1090, 1091, 1132, 1133		Success mine, Ida.....	300, 593
	Skinner, Thos. M., Jr.....	549	Spelter price, how quoted.....	875	Sudan Gold Field, Ltd., report.....	810
	Skinner, W. R. Mining Manual.....	*870	Spelter production in 1914—Ed. review.....	207	Sultjelma notes.....	521, 794, 1111
	—Correction.....	1111	Spelter refining by distillation.....	671	Sullivan drill sharpener, New.....	*949
	Skip dumping, copper country.....	*1107	Spelter—Smelters' unsold stock.....	45	Sullivan, Matthew, Death of.....	33
	Skip-rope holding device, Quincy.....	*279	Spelter statistics for 1914, revised.....	*451	Sulphide Corp.—Statement.....	190
	Slag, Converter, Pouring over ore beds, Cop. Queen.....	*3, 4	Spelter, The kinds of.....	292, 460, 876	Sulphocyanate method, silver assay.....	357
	Slag dumps, Old, Bawdwin *180, *202, 502		Spelter, What may happen to.....	381	Sulphur, Crude, Analysis of.....	867
	Slag-granulating device.....	*239			Sulphur-dioxide plant, Liquid.....	918
	Slag settling, Mt. Lyell.....	864			Sulphur, Italy.....	690
	Slagle, E. A. Copper titrations.....	285			Sulphur, New allotrope of.....	245
	Slater process, Lake dist.....	284			Sulphur refineries safe, France.....	373
	Slave mining, ancient times.....	791			Sulphur-sand cement.....	1071
	Slide rule, Surveyor's duplex, Keuffel & Esser.....	904			Sulphur, U. S.....	76
	Slide rules, Carpenter circular.....	655			—Foreign trade.....	597
	Slimes settlement, Note on.....	*412			Sulphuric acid, Determination of iron, mercury and arsenic in.....	285
	Slogan, The proper.....	834			Sulphuric acid furnace, Merton.....	*181
	Sluiceway, Concentrating, Fry's.....	*1035			Sulphuric acid, Germany.....	829

	Page		Page
Sulphuric-acid mfr., Gt. Brit.	438	—Blast-furnace gate valve	*449
Sulphuric-acid plant, Anaconda	*723	Tenn., Eastern, zinc deposits	734
—Photo	*620	Tenn. phosphate discovery	1110
Sulphuric-acid price rise	750	Tenn. railroad, New	258
Sulphuric-acid production	1063	Test pitting, Cost of	21
Sulphuric-acid works statistics		Testing oils for flotation	1079
Spelter	452, 1131	Tests, Chloridizing-leaching, at Utah	
Sulphurous acid, Volumetric determination of	867	School of Mines	*320
Summer Lake, Ore., salts	466, 509, 594	Texas gold and silver	47
Summerland, Calif., oil wells	*663	Texas petroleum	69, 137
Sundt, F. A. Corocoro dist.	189	—Strike near Thrall	509
Sunrise Dredging Co.	715	Texas quicksilver	68
Sunshine mine, Calif.	757, 925	Texas mine, Kan.	882
Superior & Boston	795, 881	Thawing dynamite	834
—Report	455	Thawing ground in Yukon	*581
Superior Cop. Co.	56, 1110	Thawing ground—Fairbanks prospecting	*806
Supplies, Cost of, Mex. mine	1122	Thayer, B. B.	1051
Surface rights under leases	936	—Butte mining in 1914	53
Suri prospect, Bolivia	*354	Things we ought not to have done	985
SURVEY, GEOLOGICAL			
For statistics of productions, see "U. S." metals by name, etc.		Thomas-Cuiross Mg. Co.	426
—Alaska work for 1915	834	Thomas', Henry, copper discovery	511
—Débris transportation by water	459	Thomas Iron Co.	834
—Funds appropriated	567	Thompson, A. G. Yakataga Beach placers	*763
Surveying—Azimuth estimation from incorrect plumbing	*695	Thompson, J. W. Abstracts of Current Decisions	*704
Surveying—Azimuth observations on Polaris by daylight	776	Thompson-Quincy, Utah	173, 512, 797
Surveying, Errors in	14	Thompson, Thomas G.	836
Surveyor's duplex slide rule, Keuffel & Esser	904	Thomson, F. A. Stamp Milling and Cyaniding	*1085
Surveys, State geological—Directors	270	Thomson, S. C.	166, 836
—Erratum	270	Thornhill's mercury extraction	19
Susitna district	839	Thrasher, L. C., Death of	672
Susquehanna Coal Co.'s rules	656	Threeman Mg. Co.	117
Swart, W. G. The first move	164	Thropp's iron house, Trenton	791
Swasey, A.—Engineering Foundation	200, 245, 958	Thum, E. E.	672
Sweden. See also "Norway and Sweden," "Scandinavian," "Sulitjelma."		Thum, F. A., Picture by	*147
Sweden, iron and steel	270, 528, 770, 965	Tie, Cambria Slick mine	*578
Sweden's iron and steel trade and war	364, 923	Tigre Mg. Co.	122
Swedish 1913 mineral output	770	—Situation in Mexico	839, 997
Switch, Cutler-Hammer safety knife	*578	Tillson, B. F. Hammer drills	409, 573
Symmes' Comstock chart	385	Timber Butte Milling Co. 79, 110, 551, 968	
Symons disk-crusher mfr.	242	—Flotation	991
T			
T. M. C. Mining prospectuses	183	Timber carriers for aerial tram	*1031
Tacoma Smelting Co.	718	Timber, Inclined shaft for	*776
Tailings disposal, Mogollon dist.	788, 631, 923	Timber shortage in England	572
Tailings-dump dust, Rand	132, 779	Timbered drift, Removing ore under	*657
Tailings mill, Mears-Willey	*607	Timbering—Concrete shaft sets	*447
Tailings pile, Federal Lead	*703	Timbering kaolin mine shafts by rings	*945
Tailings, Suspended dump for	*864	Timbering, Light shaft	*696, 710
Tailings-value chart	*575	Timbering methods, Fairbanks	*1027
Talc, N. C., deposits	173	Timbering, Ray Consol.	*770
Talca mines, Chile	847	Timbering roof, Milwaukee tunnel	*862
Tamarack Mg. Co. 56, 172, 260, 674, 676, 753, 882, 1061, 1064, 1095, 1138		Timbering, Shaft, and headgear, Mesabi	*1119
Tamping and stemming	905	Timbering stopes for safety	*818, 996
Tanallyk Corp. report	27	Time-study watch, Decimal	*866
Tanganyika Concessions, Ltd.	230, 383	Timiskaming. See "Temiskaming," "Temiskaming."	
Tank controlling device, Green	*905	Tin, Alaska, mining	118, 169, 674, 880
Tank indicating gage	*1033	Tin, Bolivia	67, 683
Tanks, Calif. redwood for	251	Tin, Bolivia, mine hydro-elec. plant	*7, 619
Tantalum apparatus out of market	935	Tin, Bolivia, mines ownership	459
Tantalum-nickel alloy	815	Tin, Bolivia, mining	143, 605, 662
Tantalus coal mine on Yukon	*457	Tin, Bolivia, notes	62, 627
Tapping shield, Anaconda	*494	Tin—British war rules	635, 885
Tarbell, Ida., Testimony of	382	Tin, Chile, smelting plant	859
Tariff on antimonial compounds	959	Tin, China	67, 429
Tariff on zinc in ores	1071	Tin-concentration attempt, S. D.	*816
Tasmania mineral production	585, 694	Tin deposition from mineral-acid solutions	369
Tax, Income—Gross value at mine	445	Tin, Dutch East Indies	140
Taxation, Colombia	874, 234	Tin exports, Portugal prohibits	1116
Taxation, Colorado	964	Tin, Malay States	262, 678
Taxation, Mex. See "Mexican situation."		Tin market and prices, *49, *50, 67, 201, 588	
Taxation, Mich. iron mines	439, 965, 967, 1138	Tin, Matte smelting for	864
Taxation, Minn.	632	Tin, Nev.—Lander Co. strike	261, 554
Taxation, New Mex.	674, 1007	Tin-ore assay—Hutchins' modification of Beringer's method	286
Taxation, Utah	386, 465, 880	Tin, Prospecting for	295
Taxation, Wis.	65	Tin scrap, Utilization of	251
Taylor, Alexander	672, 920	Tin, Siam—Output increases	850
Taylor, F. W., Death of	589	Tin smeltery, Puget Sound	169
Taylor, H. L.	792	Tin smelting in U. S.	1003, 1131
Taylor, J. Frater	296	Tin stocks, Visible, year end	46
Taylor, N. A., Death of	836	Tin, Transvaal	132
Tays, E. A. H. Taxation, Mexico	913	Tin, United Kingdom	67, 442, 830
Technical gossip, Science vs.	831, 1083	Tin, U. S.	66, 67
Technical literature, Indexing, filing	851	—Foreign trade	596
—Engineers' classification comm.	1132	Tin-wolfram-bismuth ore separation, Magnetic	287
Technical reference, Running down	294	Tin, World's production and consumption, by countries	67
Teck Hughes, Ont.	512	Tintic camp, Nev.	841
Teknik Club of Denver	384, 550	Tintic Milling Co.	1006
Temiskaming & H. B.	384	Tintic Standard, Utah	927, 1010
—Report	370	Tintic, Utah, drain tunnel	508
Temiskaming mine, Ont. 120, 217, 261, 594, 634, 884, 1057		Titanic, S. D.	79
—Photo. of rich ore	*1085	Tittman, O. H.	256
Temiskaming & N. O. Ry. Comm. report	1128	Tofé iron mines, Chile	*145, 277
Temperature in crushing	976	—Notes	40, 70, *129, 865, 1098
Temperatures, Reverberatory-furnace	*658	Tolman and Clark on ore genesis	104
Tenn. Coal, I. & R.R. Co.	795	Tolovana district, Alaska 168, 258, 466, 591, 630, 756, 794, 839, 1054, 1095	
Tenn. Cop. Co.	301, *574, 759, 1047	Toluol. See also under "Benzol."	1010, 1095
		Toluol mfr., Canada	592, 757, 794
		Tom Reed, Ariz. 216, *337, 553, 592, 794	
		Tomblin, M. B.	296
		Tomboy G. M. Co. 78, 108, 171, 554, 840, 1096	
		—Report	198
		Tonopah, Apex litigation	382, *660, 671, 897, 918
		—Mine model	*850
		Tonopah-Belmont (see also "Belmont-Canadian") 79, 154, 301, 677, 717, 759, 926, 1009	
		—Oro Belle transaction	386
		—Report—Milling	1082, 1092
		Tonopah Development	677
		Tonopah Extension 79, 154, 428, 554, 677, 926, 968, 1010, 1044	
		Tonopah, I. W. W. at	756
		Tonopah in 1914	154
		Tonopah Merger	154, 677, 1010, 1044
		Tonopah Midway	154, 594, 883
		Tonopah Mg. Co. 79, 154, 301, 346, 428, 554, 594, 926	
		Tonopah, Nev., photo	*664
		Tonopah North Star	154, 883
		Tonopah Placers Co., Colo.	101, 554, 840
		Tonopah School of Mines	968
		Tonopah Victor	1010, 1044
		Tools, Safe hand	531
		Toomey, M. J., Death of	1093
		Torossian, G. Tungstic-acid reduction test	537
		Tough-Oakes, Ont. 79, 120, 261, 428, 797, 1010	
		Townsend gold mine, Md.	172
		Tracks, Surface, Safety around	279
		Tractor truck, Allis-Chalmers	*415
		Trade, West Coast South Am.	*433
		Trail, B. C. See "Consol. M. & S."	
		Tram, Aerial, Timber carriers for	*1031
		Tramway, Aerial, Fairbanks	*1023
		Tramway, Ellamar ship-loading	*230, *249
		Transmission-line, Short, construction costs, Cape Cod	1037
		Transvaal. See also "Rand," "South Africa."	
		Transvaal diamonds	132
		Transvaal gold	47, 131, 175, 261
		Transvaal mining in 1914	131
		Transvaal notes	277
		Travers, W. H., Death of	754
		Tray for annealing cups	*328
		Traylor rock breaker, Large	577, *743
		—Successful crushing rolls	615
		Treasure Mg. & Red. Co.	346
		Treasure State Mineral, Mont.	882
		Treasury Dept. needs mining engineer	751
		Tregenza, James, Death of	589
		Trethewey chip collector	*493
		Trethewey, Ont.	173, 428
		Trewartha-James on Britannia mine	254
		Tri-Bullion S. & D.	968
		Trinidad asphalt mining	*483
		Trinidad petroleum	125
		Trinity Asbestos Mg. Co.	259
		Trinity Consol.'s hydraulic methods	481
		Trinity Copper, Calif.	490
		Tripod for long drill steel	*590
		Triunfo mines, Baja Calif.	188
		Trojan, S. D.	113, 512
		Trolley, Hand, Home-made	*658, *903
		Trolley hoist, Link-Belt	*578
		Truck, Tractor, Allis-Chalmers	*415
		Truschkoff, N. T. Eiderlinsky gold mines	*1017
		Trussed Concrete Steel Co.'s houses	*987
		Tube mill in closed circuit	*284
		Tube-mill lining, Britannia	*239
		Tube milling in 1914	98
		Tube milling, Rand	771
		Tube-milling tendencies	693
		Tube mills, Rapid discharge for	251
		Tube mills—Steel balls vs. flint pebbles	251
		Tuberculosis conditions, Rand 23, 132, 861	
		Tuberculosis, Joplin district	331, 922
		Tucson, Cornelia & Gila Bend R.R.	1096
		Tulare Mg. Co.	78, 925
		Tulloch, T. H. Handling concentrates, South Utah	*698
		Tulsa Spelter Co.	62, 420, 453, 596
		Tungsten, Colo.	964
		Tungsten in 1914	80, 108, 229
		Tungsten, Kern County, Calif.	468
		Tungsten, Lower Burma	684
		Tungsten-tin-bismuth ore separation, Magnetic	287
		Tungsten-wire filaments	295
		Tungstic-acid reduction test	537
		Tunky Mg. Co.	842
		Tunnel companies in U. S.	27
		Tunnel, Drain, for Tintic	508
		Tunnel, Milwaukee, Roof timbering	*862
		Tuolumne, Mont.	633, 1097
		Turbine, Low-pressure, St. Joseph's	613
		Turbine, Steam, Dos Estrellas	*606
		Turkey mineral production	47, 57
		Turnbull, Peter, Death of	920
		Turntable, Simmonds ball-bearing, with latch	*577
		Turpin, Dick, Mg. Co.	796
		Tuthill, R. J. Zinc, Okla.	66
		Tuttle, H. E.	507, 629
		Twin Bridges section, Mont.	879
		Twin Peaks	78, 942, 966
		Tyrol, Copper find in	923
		Tyrrell, J. B.	1051
U			
		Udhany, A. D. Copper discovery in Norway	322
		—Grong mines	*889
		Uglov, W. L.	65
		Umpleby, J. B. Mackay con. deposits	102

	Page
Unemployment, More	1042
Unexpected mine, Calif.	757
Union Basin Mg. Co. 794, 795, 1008, 1055	1055
Union, Comstock, Nev.	155, 156, 968
Union Hill mine, Nevada Co., Calif.	300, 881, 966, 1137
Union Hill mine, Trinity Co., Calif.	481
hydraulic methods.	481
Union Mines Co., Eureka Co., Nev.,	79, 758, 968
Union Minère du Haut Katanga	230, 936
—Geology	441, *608
Union Oil Co.	69, 139, 140
Union portable gasoline churn drill	*491
Union Sulphur Co.	76
—French refineries not endangered.	873
—Stock in Frasch estate.	254
—Frasch estate reappraisalment.	547
United Cop. & Gold Co., Ore.	884
United Cop. Mg. Co., Wash. 512, 884, 1010	1010
United Eastern mine, Ariz.	757, 794, 1137
United Engineering Soc.—Library	1075
Service Bureau	943
United Globe, Ariz., report.	171, 511
United G. M. Co., Colo.	171, 511

UNITED KINGDOM

See also "War."	80
—Aluminum	56, 442, 830
—Copper	49, *50, 52
—Copper market	442
—Foreign trade	902, 1066
—Iron and steel 71, 270, 442, 830, 844,	57, 442, 830
—Lead	50, *57, 58, 160, 201
—Lead market	830
—Metal production in 1913	816
—Radium factory, Scotch	47
—Silver	48
—Silver market	62, 442, 830
—Spelter, zinc	49, 64, 201
—Spelter market	438
—Sulphuric-acid manufacture	67, 442, 830
—Tin	67, 201
—Tin market	1093
United Lead Co.'s new alloy	78
United Lead & Zinc Co.	969
United Metals Selling Co.	969

UNITED STATES

Under this heading are chiefly pro-	
duction and other statistics.	
—Aluminum	45, 80, 596
—Antimony	77, 596
—Arsenic	45, 189, 597
—Asbestos	1116
—Bismuth	119, 274
—Borax and borates	130, 849
—Cadmium	77
—Cement	69, 1030
—Chemicals and raw material, for-	597
—Chemicals, Fertilizing, foreign trade	431
—Chrome ore, foreign trade.	597
—Coal and coke	45, 175
—Coal and coke, foreign trade	431
—Copper	45, 51, 140
By states	875
Smelters' production, by states.	705
Consumption	56
Foreign trade	596, 834
—Copper sulphate	45
—Ferromanganese	45
—Fluorspar	1075
—Fuller's earth	1029
—Gold	45, 47, 263
—Iron	45, 70, 71
Pig, 2d half of 1914.	472
Pig iron in 1914, full statement.	540
Steel rails	683, 636, 752
—Iron ore	45, 70
—Iron, steel and ore, foreign trade.	431
—Lead	45, *57, 162
—Lead, foreign trade	548, 596
—Magnesite, foreign trade	597
—Mica	1112
—Mining Statutes Annotated.	*1066
—Molybdenum	61
—Nickel	45, 596
—Petroleum	69
Exports; new wells	303
—Phosphate rock	895
—Platinum	77, 596
—Potash salts, foreign trade.	431, 597
—Pyrites	148, 303, 597, 1022
—Quicksilver	45, 68, 596
—Radium, uranium and vanadium.	548
—Rutile	191
—Selenium	61
—Silver	45, 47, 263
—Steel	71, 1072
—Strontia trade, The	440
—Sulphur	76, 597
—Sulphuric acid	1068
—Tin	65, 66, 596
—Tungsten	80, 229
—Zinc, spelter.	45, 62, 162, 207
Revised statistics in detail.	451
Foreign trade	596
U. S. Assay Office, Old N. Y.	*501
—Gold recovery from soot.	1133
U. S. Bureau of Mines. See "Bureau."	
U. S. Fuel Co.	590
U. S. Geol. Survey. See "Survey."	
U. S. Gold Corp.	344, 593
U. S. Industrial Relations Commis-	
sion. See "Labor."	

	Page
U. S. Metals Ref. Co.—Practice at	93, 94, 95
—Chrome	*892
—Waste-heat boilers.	1071
—Zinc-ore duty decision.	355
U. S. Mint bullion assays.	1007
U. S. Potash Co.	829
U. S. Red. & Ref. Co.	881
—Note	881
U. S. Smg., Ref. & Mg. Co. (see also	
"Mammoth Cop.," "Centennial-	
Eureka," "Alaska-Ebner," "Real del	
Monte," etc.) 115, 116, 119, 555, 634, 1141	1141
—Lead metallurgy	90
—Report	823
U. S. Steel Corp. (see also "Oliver,"	
"Minn.")	584, 587
—Report for 1914.	253, 263, 799
—Quarterly reports	175, 391, 557, 721,
—Monthly reports	887, 1100
—Pension-fund payments	298
—Decision in Govt. case.	1046, 1048
—Niles-Oliver-Chemung decision.	214
—To build zinc smeltery	1131, 1141
—Notes	36, 71, 422, 1130
U. S. Treasury Dept.'s idea of Inspira-	
tion Consol. stock	751
U. S. Zinc Co.	420, 453, 596
United Verde, Ariz.	55, 966, 1096
—Conveying system photos.	*1127
United Verde Extension.	105, 795, 1096
Universities. See state and other	
proper names.	
Uranium. See under "Radium."	
Uruguay mining industry	484
Utah—Alta activities	*689
Utah alumite development.	1135
Utah-Apex	116, 428, 555, 677, 1044
—Reports.	371, 825, 968, 1098
Utah Consol. report.	*993, 718
Utah copper.	51, 115, 116, 705
Utah Cop. Co. *15, 115, 173, 297, 346,	465, 512, 594, 692, 759, 880, 884, 968,
1003, 1045, 1111, 1112, 1135	1135
—Reports	408, 824, 902
—Mine model	*1038
Utah gold and silver.	47, 116
Utah Karns Tunneling Mach. Co.	797
Utah lead	116, 162
Utah Metal & Tunnel	964, 1139
Utah Minerals Concent. Co.	26
Utah mining in 1914.	115, 630
"Utah Mining News, The"	590
Utah petroleum—San Rafael.	715
Utah Power & Lt. Co.	428
Utah School of Mines, Chloridizing-	
leaching tests at	*320
Utah Soc. of Engineers.	836
Utah taxation.	386, 465, 880
Utah, Univ. of.	590, 630, 714, 792, 1054
Utah zinc ore	451, 630
Uwarra mill, N. C.	97, 99
—Ore bins	*195
—Mine development costs.	495
—Miners' dwellings	*904

V

Vacuum smelting process.	1042
Vail, R. H. Cop. Queen smeltery.	*1
Valdez Creek Placer Mines.	118, 259, 510
Valley Pipe Line	1008
Valparaiso, Alaska	37
Valve, Blast-furnace gate	*449
Van Ral, B. C.	121
Van Wagenen, T. F. Hydraulic Min-	
ing	*376
Vanadium in 1914	73, 548
Vanadium, Mich., deposit.	172, 258
Varnish, Book, for tropics.	151
Vaughan-Rhys, T. J.	549
Veins, Quartz, in lamprophyre intru-	
sions	*11
Venables, H. L. Mining in Bolivia.	662
Venezuela in 1914	129
Ventilation, Pressure, Cripple Creek	*981
Veravale mill, Calif.	1055
Vermilion in 1914.	75, 349, 565
Victor Land & Mineral, Calif.	1096
Victor Power, etc., Calif.	757, 925, 1055
Victoria, Australia, placer mining.	188
Victoria, Mich., report.	825
Vilgnaes mine, Norway.	322
Villa's mining regulations 668, 670,	708, 965, 997
Village Deep, Transvaal	131
Village Main Reef	132
Vindicator Consol. (see also "Golden	
Cycle") 26, 78, 108, 300, 387, 469,	508, 714, 793, 796, 840, 922, 967
Vindicator Mines & Tunnel.	1138
Vinegar Hill Mg. Co. 65, 169, 512,	718, 1098
Vipond, Ont. 79, 98, 261, 301, 718, 797,	884
Virginia iron and zinc mining.	214
Virginia pyrites	148
Vitrification, Proposed legal definition	441
Vivian, G. Rectangular mechanical	*181
furnaces	384
Vivian, John, Death of.	287
Vogel, F. A. Magnetic separation,	
tin-wolfram-bismuth ores.	507
Vogelsang, Doctor	1057
Volcano camp, Nev.	964
Volcano, Iliamna, Alaska	964, 1006, 1053
Volcano, Lassen, Calif.	964, 1006, 1053

	Page
Von Chrismar, O. Hydro-elec. plant,	7, 619
Bolivia	754
Von Kugelgen, F., Death of.	1005
Von Polenz, Baron	105, 795
Vulcan. See "Penn Iron Mg. Co."	
Vulture Mines Co., Ariz.	105, 795

W

Wages. See "Labor."	
Wagner Azurite Cop. Co.	79
Wahl, H. R.	672
Waihi Grand Junction mill.	907
Wakefield Iron Co.'s hoists.	*742
Waldo mine, Nev.	1010
Walker, Robert	341
"Wall St. Journal" on New St. quota-	
tions	199
Wallaroo & Moonta, Cementation.	*438
Wallower mill, Mo.	*158
Walters, T.; T. Walters, Jr.	33
Wanakah Mg. Co., Colo. 78, 108, 373,	755, 882
War, European:	
—Allis-Chalmers Co. and supply of	
war material	877
—Canadian nickel exportation 30,	214, 343, 386, 503, 509, 715
—Caucasus in war time, etc.	*477, *681
—China, North, iron situation.	786
—Coal embargo, Gt. Brit.	919
—Contraband of war—List.	364
—Copper after war, What of?	709
—Copper export controversy 31, 51,	53, 228, 252, 270, 379, 923
—Economics—Daily costs, etc.	398
—French industries, German invasion	649
—French metallurgical companies'	
status	1030
—Galician oil fields, war time.	690, 1022
—German chemical industry	774
—German coal scarcity	940
—German copper requirements 458,	462, 521
—German foreign metal interests.	339
—German mining, State of	204, 228
—German mining men, etc., in army	340
—German potash embargo. 303, 349,	830
—Germany and zinc 174, 190, 347, 391,	429, 505, 704, 786, 857, 928
—Germany, what she is doing in	
chemical and metallurgical indus-	
tries	829
—Guiana, Dutch, influence on.	445
—Hoover, H. C., Work of.	243, 503, *935
—Houseman & Co. on economy.	209
—Iron industry in Europe.	830
—Johannesburg in war time.	277
—Lead-ore embargo, France.	1071
—"Lusitania," Sinking of.	875, 877
—Metals, Foreign inquiries for.	877
—Norwegian embargo, manufac-	
tured copper	513
—Note—Maps	962
—Notes—Editorial	960, 1050
—Portuguese embargo on tin.	1116
—Prisoners' employment 204, 398,	940, 1041
—Scandinavian situation.	520, 923, 965
—Spanish embargo on metals	1085
—Sulphur refineries not endangered	373
—Sweden's iron and steel trade 364,	528, 923
—Tin—British trade rules.	635, 885
—Zinc smeltery, English, bombarded	549
Wareham, Richard	872
Warlock, Charles	966, 1008
Warrior Cop., Ariz.	1051
Wartenweiler, Otto	689, 759, 927, 968
Wasatch Extension, Utah	173
Washington Alaska G. M. Co.	37
Washington claim-relocation case.	1078
Washington copper	51, 705
Washington gold and silver.	47
Washington mine, Colo.	511
Washington, University of—Smoker,	291, 837
Washoe. See "Anaconda."	
Wasp No. 2, S. D. 313, 552, 555, *864,	1098
Watch, Decimal time-study.	*866
Water, Débris transportation by.	459
Water-disinfecting outfit, Lyster's.	*533
Water-distilling apparatus.	*150
Water-power house, San Luis.	870
Water-power plant, Bolivian tin	
mine	*7, 619
Water-power plant, Chapin	914
Water-power plant, Granby Consol.	816
Water-tank controller, Green.	*905
Water-tank indicating gage.	

	Page		Page		Page
Weighing machine, Automatic	*975	Wis. State Mg. Trade School	296	Zinc, Australian, situation 190,	505,
Weights and measures, China	895	Wis. zinc	65, 162, 451, 452	704, 857, 1045	
Weiland, Adelbert L.	792	Wis. Zinc Co.	80, 718, 884, 1098	Zinc, Bawdwin mines, Burma	*177,
Weissbein, Joseph, Death of	1134	Wis. zinc mines safety rules	24	*202, 502	
Welding, Borax used in	1076	Witherbee-Sherman mine houses	446	Zinc boxes, Care of	699
Welding, Electric-arc	*947, *951	Witherill, Charles S.	166	Zinc—Calcination of calamine	626
Welding, Oxyacetylene, in mining,	*393, *534, *741	Witt, O. German chemical industry	774	Zinc, Canada	451
Anaconda, etc.	*393, *534, *741	Wolcott, G. E. Drifting with stoper	*860	Zinc-carbonate ores, Cleaning, High-	*906,
Wells, R. C. Electric Activity in	1104	Wolffersberger, E. S.	1005	land, Wis.	62, 162, 451, 452
Ore Deposits	712	Wolfin, H. M.	342, 508, 1006	Zinc concentrator, Clark's	53
Wentdorf, Herman	228, 252	Wolfram. See "Tungsten."		Zinc Corp. (British)	63, 1045
Werner, R. Copper, Germany	510	Wolframite, Lower Burma	684	Zinc Corp., Joplin dist.	591
Werringer Mining Co.	*375	Wolfstone, Colo.	108, 510	Zinc-crazy, Boston gone	710
Wesselon diamond mine	47	Wolverine, Mich. 56, 343, 425, 511, 631,	882, *1109	Zinc-dust precipitating system, Mer-	*1079
West Africa gold	*433	Wolverine & Ariz.	171	rill Met. Co.'s "Mills"	*534
West Coast business	79, 154	Wonder Mg. Co.	112	Zinc-dust precipitation systems, Air	452
West End Consol., Nev.	*660, 671, *850, 897, 918	Wood as power-plant fuel	*645	in	*534
—Apex litigation	908	Wood flotation machine	*455	Zinc-dust statistics	452
West Rand Consol. costs	217, 428	Wood mine, Colo.	381	Zinc—European industry notes	786
Western Australia. See "Australia,"	825	Wood pipe, Bulletin on	611	Zinc, Ferrocyanide determination of	285
"Australasia"	873	Woodruff, E. G., on Colo. oil shales	773	Zinc, France	62, 140
Western Chemical Co.	676	Woodward, C. D. Safety first	658	Zinc, Germany	62
Western Hydrate Lime Co.	553	Woodward Iron Co.	675, 836	—Smelting combination changes, em-	886, 857, 928
Western Nevada mine	1057	Worcester, L., Jr., Case of 667, 670,	753, 876	bargo, etc. 174, 339, 347, 391, 429,	786, 857, 928
Western Zinc M. & R. Co.	78	Worcester Polytech. anniversary	*1089	Zinc, Guatemala, mines	*703
Western Zinc Oxide Co.	511, 859, 925	Worcester, S. A. Pressure ventila-	*981	Zinc hydrometallurgy	96
Westinghouse electric lighting set	*15	tion, Cripple Creek	*981	Zinc, Idaho	59, 109, 451
for steam shovel	*656	Workmen's compensation. See "Com-	*981	Zinc, Ill.	62, 451
Westinghouse fault localizer	234	—Report	825	Zinc in alloys, Determining	701
Weston, E., Medal presented to	217, 428	World productions. See metals, etc.,	825	Zinc in ores, Duty on	1071
Wettlaufer-Lorrain, Ont.	873	by name and individual counties.	84	Zinc in 1914	62
—Report	873	World's principal mines, Data	*141	—Revised statistics	451
What is the matter with mining?	384	World's seaborne commerce—Map	*456, 548	Zinc, Influence of impurities on	990
Wheeler, H. A. S. E. Mo. had dist.	60	Wrangell harbor photo	*1033	Zinc Issues Co.	66
in 1914	384	Wrench, Self-adjusting car, Stephens-	1033	Zinc, Italy	62, 690
Whitton, Walter	384	Adamson	1033	Zinc, Japan	63, 872
White, C. H. Metallurgical Analysis	*704	Wright's, F. E., investigations	103	Zinc, Joplin dist., ore	162, 451
White Caps. See "Dexter-White	*103	Wright, H. G.	549	Zinc, Kansas	62, 65, 451, 452
Caps."	214	Wright, I. L. Pinos Altos dist.	*133	Zinc-metallurgy improvements—	Brooks' briquetting with salt;
White, D. Origin of Coal	58	Wright, W. H. Ski travel, Calif.	*521	Engels' use of zirconia	896, 917
White Iron Lake Mg. Co.	388, 676, 758, 967, 1044, 1095	—Seneca mining dist., Calif.	*1072	Zinc metallurgy in 1914	95
White lead, etc., in 1914	623	Wyoming petroleum	69, 830	Zinc, Mexico	451
White Pine, Mich. 38, 56, 79, 260, 299,	33			Binc mine, Don't buy now	752, 873, 1050
388, 676, 758, 967, 1044, 1095	920			Zinc, Missouri	62, 65, 451
—Starting of operations	9, 103			Zinc, Mont.	162, 451, 452
White, Robeson T.	166			Zinc, Okla.	62, 65, 66, 162, 451, 452
White, Rush J.	33			Zinc-ore rise celebrated, Joplin	1050
Whitehead, W. L. La Sirena Jame-	672			Zinc-ore treatment, Electromagnetic,	*979
sonite	*944			by Campbell process	659
Whitehill, J. B.	920			Zinc ores, Cadmium removal from	659
Whiteley, E. E.	672			Zinc prospecting, Southern Appa-	895
Whittier, Charles C.	*944			lachians	340, 579
Wiard, E. S. Steel ladders	920			Zinc residuum for hog cholera	*449
Wickes, G. T., Death of	1005			Zinc-retort discharging machine, Sim-	96, *449
Wickham, Henry, Death of	109			monds'	26, 63
Wilbert mine, Ida.	217			Zinc shavings, Precipitation on, Bull-	821
Wild Cat Leasing Co.	691			finch	1129, 1131
Wile, J. I. Tendency of American	*607			Zinc-smelters' combination, Alleged,	254
milling-machinery practice	*414			1129, 1131	254
Willfey, Mears, tailings mill; long	507			Zinc smeltery, English, bombarded	1141
Willfey tables, etc.	1009, 1097			Zinc smeltery, U. S. Steel Corp.	1141
Willfey rotary-hearth roaster	*1088			Zinc smelteries, Poland	*146
Wilkinson, Currie & Amigo	1128			Zinc smelteries, U. S.—Tables	63, 453
Willard camp, Nev. 715, 796, 841, 968,	1055			—Table of roasting furnaces	420
1009, 1097	1096, 1097			Zinc smelting, Electric	96
—Description and photo	*1118			Zinc-sodium alloy as precipitant in	948
Williams' automatic safety lock and	1055			cyaniding	162
indicator for shaft gates	1096			Zinc—Statistical review	923
Willis, C. F. New era in mining edu-	384			Zinc, Sweden—Export prohibition	734
cation	1134			Zinc, Tenn., Eastern, deposits	830
Willow Valley Mg. Co.	676, 967			Zinc, United Kingdom	62, 442, 830
Wiltshire Bishop Creek	1037			Zinc, U. S.	45, 62, 162, 207
Wilson, G. B. Rock cart	1072			—Revised statistics by states	451
Wilson, H. M.	756			—Foreign trade	596
Wilson, M. E.	838			Zinc, Utah, ores	451, 630
Winona, Mich. 56, 216, 260, 343, 511,	979			Zinc, Virginia, mining	214
676, 967	*142			Zinc, Wis.	65, 162, 451, 452
—Report	979			Zinc, Wis. mines, safety rules	24
—Regrinding costs	*979			Zinc, World, by countries	62
Wire-rod production, U. S.	*142			Zirconia in zinc smelting	896
Wireless station for Juneau	979			Zook, J. A. Joplin dist.	64
Wireless telegraphy, Ajax mine	*142				
Wisconsin, Campbell process in	979				
Wis. first-aid work	*142				
Wis., Northern, New iron ranges	979				

