

To recapitulate: the gas made from one pound of coal would yield a candle light for fifteen hours; one pound of the gas would yield a light equal to one candle for seventy-five hours; but could all the energy in a pound of carbon be converted into light, it would be equivalent to the burning of a candle for 12,410 hours.

Thus it will appear that by our ordinary methods of gas lighting we utilize much less than one per cent of the energy stored in the coal. I think we may reasonably expect that electricity, as developed by the thermo-electric battery, the magneto-electric machine, or some still more efficient apparatus, will help us in some way to bridge the chasm between fifteen and twelve thousand hour candle lights from a pound of coal. MOSES G. FARMER. Salem, Mass.

Correspondence.

The Editors are not responsible for the opinions expressed by their correspondents.

"Wirbel-Bewegung."

MESSRS. EDITORS:—Are you aware that smoke rings are frequently produced during the firing of light and heavy ordnance, from smooth bore as well as from rifle cannon, and from 3-inch to 15-inch calibers? Sometimes they proceed from the vent, but I think the more beautiful ones are from the muzzle. They appear of a double character, a ring within a ring, and always remind me of the rings of Saturn. During the firing of the 8-inch rifle in April last at this post, one stormy day I observed a double smoke ring unravel itself from the clouds of smoke. It gradually ascended, moving with considerable velocity against a head wind in line of fire, and continued to rotate distinctly for several minutes, expanding by degrees and throwing off a stream of smoke from the outer edge. The space within the inner ring on this as on all occasions was free of smoke. Meantime the general smoke of discharge was blown quickly to the rear and over the ramparts, being a very unexpected sight. I called the attention of the Captain of Ordnance and of others to the fact, that the smoke rings on occasions moved against a head wind.

Prof. Nichol, author of the "Architecture of the Heavens," puts forth the theory that the gaseous heavenly bodies may throw off rings while in the nebulous state, being a result of the combined actions of contractions and rotations. He thinks the rings may break up and form satellites. He says, "were an elastic belt placed on a wheel and driven with great velocity, the belt would stretch and rotate by itself, and would continue so doing were it not for the earth's gravitations; but it appears now evident that rings of nebulae may be formed under other conditions. T. T. Fortress Monroe, May 13, 1867.

Russian America.

For a distance of nearly 1,000 miles, says a writer in the New York Times, the whole coast is thickly studded with islands of all sorts and sizes. The inland waters formed by these islands are as calm and unruffled as a mill pond. In the summer season it is a paradise for those who have no other goal in view than to exist in a free, untrammelled atmosphere, skim tranquilly along the quiet waters in light canoes, and at night pitch their tents on the nearest island. There is always plenty of game to be found. Besides water fowl of every description, the larger islands mostly abound with elk, deer, black bear and grouse.

The main land presents a series of inlets and arms of the sea, running far into the heart of the lofty coast range. There is scarcely an acre of decent farming land to be seen; in fact, we may travel a long distance and not discover a spot level enough to build a good sized house on.

The Stiken River is the fourth in volume and size on the west coast of North America, ranking after the Columbia, the Colorado and the Frazer. It empties itself by three channels into the Pacific, 70 miles below Sitka, and in about 57 degrees north latitude. It took us four and a half days to ascend 170 miles, while in descending the same distance the vessel made the journey in less than sixteen hours. For the first hundred miles or so, the river is walled in by huge mountains with peculiarly sharp volcanic cones or peaks, rising one above the other and covered with snow. The scenery is of the grandest and most stupendous nature, and our little steamer, staggering and trembling against the swift current of the river, seemed a very cockle shell in the presence of these vast and silent creations of the Almighty. The most extraordinary natural feature that attracted our attention was a glacier or field of blue ice, about 40 miles up, on the north bank of the river. It is about 150 feet high on the river, and extends along the edge of the stream for eight miles, running back into a valley among the mountains as far as we could see. A cañon was finally reached, which baffled all attempts to pass through or around it, although several bold miners lost their lives before their companions gave up the hopeless effort to navigate the canon in their canoes. A land journey of 100 miles failed to find any practicable approach to the river, which was left unexplored farther.

A GRINDSTONE should not be exposed to the weather, as it not only injures the woodwork, but the sun's rays harden the stone so much as, in time, to render it useless. Neither should it stand in the water in which it runs, as the part remaining in water softens so much that it wears unequally, and this is a very common cause of grindstones becoming "out of true."

THE income of McCormick, the noted patentee of the reaping machine, was last year, \$169,760

LIFE-SAVING INVENTIONS.

The labors of the Commissioners are at last finished, the Board having adjourned on Friday, May 24. It will necessarily be several weeks, however, before their voluminous report will be ready for publication. Below we give our readers a full list of all the inventions presented for examination, kindly furnished us by the secretary of the board, Mr. W. A. Murphy. This, we may remark, is the only complete list yet published:

- 1. F. J. Latham. Sheet anchor.
2. F. J. Speckman and N. Hand. Water gage.
3. Levy Prothero. Fire extinguisher.
4. Wm. N. Clark. Mode of hauling bladder.
5. Wm. N. Clark. Water cask and life boat combined.
6. W. P. Mearns. Mode of scaling boilers and tubes.
7. Thos. A. Reed. Detaching apparatus.
8. Thos. A. Reed. Lowering, detaching and davits.
9. J. W. Buzart. Apparatus for unlashng boats.
10. James Higgins. Improvement in steering apparatus.
11. James Gregory. Gage cocks, water gages, etc., comb.
12. James Gregory. Steam whistle.
13. Peter Scofield. Steam gage.
14. Daniel N. Reed. Blow-off valve.
15. Thos. J. Brown. Blasting bed and life boat combined.
16. Clinton Kaus. Method of building vessels.
17. Clinton Kaus. Method of anchoring vessels.
18. N. Ulwood. Steam gage.
19. M. V. G. C. Nobles. Detaching apparatus.
20. John Mitchell. Detaching apparatus.
21. E. Goulard. Hydrostatic unsubsersible vessel.
22. Smith & Henis. Magnetic water gage.
23. Smith & Henis. Jacket for same.
24. A. Hicks. Steam steering apparatus.
25. Bisbee & Co. Anti-incrustator.
26. R. H. Dale. Regulator for propellers.
27. S. Bama. Low water detector.
28. Geo. W. Lamb. Metallic life buoy and life raft.
29. C. W. Copeland. Locked valve.
30. D. P. Davis. Pressure indicator.
31. James E. Cole. Character of ocean water.
32. M. T. Davidson & Co. Steam gage.
33. C. G. Meinhardt. Life boat lowering device, and mode of constructing vessels.
34. J. F. Brown. Low water reporter.
35. E. D. Taylor. Duplex slide valve.
36. Wilson & Hauer (Louis Bauheffer). Life-saving mattress.
37. W. Marshall. Life apparatus.
38. C. F. Felt. Detector of water.
39. Thomas W. Roys. Life Barge.
40. N. B. Allen. Detaching apparatus.
41. James McMurchy. Safety valve.
42. J. R. Vaughan. Life boat.
43. Charles Kackett. Life preserver.
44. J. H. Hasker. Life raft.
45. Moore & McFarland. Detaching apparatus.
46. Peterson & Gunner. Detaching apparatus.
47. Peterson & Gunner. Self-furling sails.
48. Hargrave & Bibber. Detaching apparatus.
49. J. J. McIntyre. Patent storm anchor.
50. C. H. Miller. Life raft.
51. George Mui. Detaching apparatus.
52. John A. Olmstead. Life boat and trunk combined.
53. J. W. Buzart. Patent car brake.
54. George M. Allerton. Life boat and raft.
55. George Henynton. Self-acting life hook.
56. Frank Marguard. Life preserver.
57. J. H. Hasker. Boat lowering and detaching app.
58. Marcus Hanan. Fire apparatus.
59. Abraham G. Polhemus. Fire apparatus.
60. N. McKay. Life saving tackle.
61. Henry Hansen. Ship beam.
62. E. B. Everson. Life boat.
63. J. H. Hasker. Life raft.
64. Wm. R. Black. Self-detaching hook.
65. J. Hiles. Water gage and steam alarm.
66. Philip S. Justice. Steam gage.
67. Robert P. Watson. Low water signal.
68. John Ryder. Life raft and gun perch bolster.
69. N. S. Adams & Thomas. Anti-incrustator.
70. S. G. Cabbell. Anti-incrustator, broom, and screw for cleaning boiler.
71. S. G. Cabbell. Anti-incrustator.
72. S. G. Cabbell. Marine atmospheric alarm signal.
73. S. G. Cabbell. Door for ship's cabin.
74. Fletcher & Harrison. Safety valves.
75. John Zindorf. Safety valves.
76. Richard Montgomery. Steam boiler.
77. Joseph A. Miller. Anti-incrustator.
78. George W. Brown. Patent roolock and thole pin.
79. James Isted. Life raft.
80. John W. Douglas. Syphon feed regulator.
81. Boyd Elliot (Well's). Safety valve.
82. James T. Doran. Safety valve.
83. E. A. Turner. Steering apparatus.
84. Carlsh, Mason & Co. Locked safety valve.
85. Carlsh, Mason & Co. Detaching apparatus.
86. Carlsh, Mason & Co. Water gage.
87. C. L. Frink. Water gage.
88. C. L. Frink. Safety valve.
89. N. N. Wians. Anti-incrustator.
90. Worden, Rensford & Co. Syphon pump.
91. S. Bickerstaff. Safety valve.
92. S. Bickerstaff. Low pressure valve.
93. G. H. Clemens. Detaching apparatus.
94. S. B. Palmer. Low water alarm.
95. E. R. Stillwell. Feed water purifier.
96. T. C. Banks. Alarm gage.
97. G. H. Hart and E. Lumley. Patent rudder.
98. S. B. Colt & Co. Steam gage heater.
99. J. H. Fellingham. Detaching apparatus.
100. John A. Miller. Low water alarm.
101. James M. Miller. Heater and surface condenser.
102. Wm. R. Bagley. Detaching apparatus.
103. James S. Newell. Apparatus for cleaning boiler tubes.
104. James S. Newell. Spring traveler.
105. Brown & Level. Detaching apparatus.
106. Wm. A. Litchell. Safety condenser.
107. Knubach & Clay. Fire alarm telegraph.
108. Brown & Level. Detaching apparatus.
109. G. G. Forshey. Steering apparatus.
110. J. Ulmen M. Constaatin. Patent lever for furling sails from deck.
111. Edw. J. Monk. Detaching apparatus.
112. John W. Hill. Sette boats.
113. John W. Hill. Safety valves.
114. George Shone. Locked valves.
115. George Shone. Hose coupling.
116. Flowers, Patten & Co. Boat lowering and detaching apparatus.
117. Flowers, Patten & Co. Locked davits and cradle.
118. Benedict, Torry, and Gurwilly. Combined apparatus.
119. George T. Palmer. Patent floating (apparatus) anchor.
120. Henry Mosley. Anti-incrustator.
121. Henry Mosley. Detaching apparatus.
122. George F. Palmer. Ship's windlass and pump gear.
123. Lorenzo Fulton. Low water indicator.
124. W. H. Mew. Safety valve.
125. John A. Litchell. Floating life boat.
126. William Moses. Detaching apparatus.
127. J. W. Stiles. Water ejector.
128. Farren, Traff, and Knight. Safety valve.
129. John Ashcroft. Patent felt protector.
130. Thomas Hand, etc. preserver.
131. George T. Hurst. Steering apparatus.
132. Lewis Youmans. Low water detector.
133. Henry Mosley. Glass for cylinder for use of carbonic acid gas.
134. Henry Mosley. Amalgamation of copper and cobalt.
135. Snow and Hurlbut. Detaching apparatus.
136. F. Litcham. Fire extinguisher.
137. B. F. Miller. Safety vessel.
138. G. B. Massey. Detached apparatus.
139. G. B. Massey. Leakage alarm gage.
140. Osborn and Massey. Hose coupling.
141. John J. Clyde. Movable life preserving berth.
142. M. W. Brown. Fire proof paint.
143. John A. Litchell. Direct-acting safety valve.
144. H. L. Brevoort. Leakage indicator.
145. E. H. Covell. Combination pump.
146. W. M. Arnold. Steering gear.
147. A. L. Shears. Self-bailing life boat.
148. William Porter. Floating pump.
149. O. Warden. Signal light.
150. J. D. Mason. Detaching apparatus.
151. J. D. Mason. Life boat.
152. J. D. Mason. Patent anchor.
153. L. D. Ingoldisby. Mode of picking up boats at sea.
154. L. D. Ingoldisby. Steering and manœuvring sail & steam.
155. B. Smith. Surf boat.
156. B. Smith. Life boat.
157. B. Smith. Ventilator.
158. B. Smith. Steering apparatus.
159. J. N. B. Bond. Steam boiler feeder and low water detector.
160. J. N. B. Bond. Steam generator.
161. Henry Dirkes. Improved life boat.
162. Henry Dirkes. Method of anchoring.
163. D. Regester. Self-adjusting hook.
164. H. D. Teuksbury. Hose coupling and pipe.
165. Abraham Insley. Safety valve.
166. Marine Signal Company. Fog trumpet.
167. Benjamin Sneden. Life boat, surf boat detaching apparatus.
168. Walter P. Burroughs. Boat detached apparatus.
169. Bright O. Kirk. Blower.
170. E. H. Ashcroft. Low water detector.
171. G. A. Litcham. Telegraphic night signal.
172. G. A. Litcham. Line rocket.
173. John Wright. Life raft.
174. James McDonough. Self-inflating raft.
175. James McDonough. Life boat.

- 176. G. F. Darling. Detaching apparatus.
177. Henry Matthews. Anti-pressure seat.
178. John Kennedy. Apparatus for drawing in a gale.
179. Henry Leoraft. Locked valve.
180. R. Robinson. Locked valve.
181. — Dove. Detaching apparatus.
182. Charles F. Brown. Patent anchor.
183. John H. Cooper. Floating water anchor or drag.
184. J. H. Holbrook. Electric annunciator.
185. E. A. Wood. Steam gage.
186. Benjamin Smith. Improvement in constructing vessels.
187. A. H. Colt. Patent stratulated cork bedding.
188. Charles C. Teaton. Portable rack-up safety valves.
189. R. W. and D. Davis. Patent boiler.
190. Thomas Huntington. Patent boiler apparatus.
191. Isaac Decker. Anti-incrustator.
192. B. I. Kellom. Patent oar.
193. W. Craig. Hose coupling.
194. Wilbert Banachin. Improved life boat.
195. Barney McGinnis. Steam boiler.
196. Henry McDonough. Life boat elevator.
197. Charles Perley. Detaching hook.
198. Charles Perley. Hose coupling.
199. John A. Fulton. Anti-incrustator.
200. Joseph Wood & Co. Steam valve pump.
201. Robert H. Gilman. Patent apparatus.
202. Daniel Barnum. Air-pump attachment.
203. N. H. Sage cook. Life boat.
204. W. C. Thompson. Life saving raft.
205. John B. Holmes. High and low pressure boiler.
206. F. E. Sicles. Steam steering apparatus.
207. John Golling. Life-saving mattress.
208. Dr. Mannus Frister. Propeller steering apparatus (with'n).
209. J. C. Peck (H. O. Maynard). Safety hook.
210. James L. & Edward Dryburgh. Impr. in steam chimneys of boilers.
211. James B. Peck. Detaching apparatus.
212. J. E. Conyer. Steam generating apparatus.
213. H. L. Stibbs. Temporary rudder.
214. William Carter. Detaching hook.
215. John Schaffer. Safety valve.
216. John Schaffer. Fusible alloy plug.
217. Thomas Mitchell. Steam generator.
218. Charles Magge. Anti-incrustator.
219. Charles Magge. Low water alarm.
220. A. Carr. Low water alarm detector.
221. Henry Payne. To prevent collision of locomotives.
222. L. and H. Raymond. Lock-up de achms apparatus.
223. G. H. Wilson. Saterlee's patent davit block.
224. Armstrong and Brown. Patent anchor.
225. W. C. Dudge. Detaching apparatus.
226. John Frisbie. Engine piston.
227. J. C. Peck (H. O. Maynard). Low water detector and alarm.
228. J. G. and J. Edge. Signal lights, rockets, and line to kets.
229. Pollock and Van Wageningen. Detaching apparatus.
230. Francis N. Gove. Steering apparatus.
231. Alonso Temple. Anti-incrustator.
232. J. C. Kellam. Detaching davit and cat block.
233. G. W. Richardson. Safety valve.
234. Chas. H. Baxter. Life preserving spar.
235. R. B. Donaldson. Steam gage.
236. Emile Rousset. Life preserver.
237. J. H. A. Gericke. Turbine force pump.
238. Par, Fox & Robertson. Monitor and armor plated vessels.
239. Henry H. Pember. Improvement in hanging rudder.
240. J. S. Jackson. Detaching apparatus.
241. Oliver Salge. Hose coupling.
242. S. Beckerstaff. Low water detector.
243. J. B. Russell. Covington's steering apparatus.
244. John R. Grace. Surf Boat.
245. T. C. Banks. Leak seal.
246. James Cochran. Flots listening trumpet for fogs.
247. Charles Dion. Fire alarm.
248. Howard and Chase. Adjustable gage lock.
249. J. N. McIntyre. Life raft.
250. Daniel Clark. Fog signal.
251. Charles F. Basset. Improv. in steam and other engines.
252. Richard L. Brown & Co. Gage cock whistle.
253. J. R. Owen. Spec. and drawing elliptic rotary pump.
254. G. Symmes. To equalize exp. and to generate steam.
255. John A. Schule. Improved motive power.
256. John McKenzie. Self-acting pump.
257. J. W. Fox. Bartlett's expelling pump.
258. John A. Hollins. Improved steering apparatus.
259. Tait and His. Improved steam boiler.
260. E. B. Tannever & Co. Signal lights.
261. Frank D. Bingham. Surge reliever.
262. E. Spencer. Steamboat wheel.
263. Geo. Unit. Ice navigator.
264. Meo and Jackson. Hose coupling.
265. J. O. A. Rollins. Shipping rudder.
266. B. F. McAlhatten. Ship's beam.
267. E. A. G. Roulstone. Life raft.
268. Wm. Ayeres and Overton. Patent anchor.
269. James Benson. Feathering paddle wheel.
270. F. S. Schlesinger. Patent steering indicator.
271. Eliah Williams. Boat propeller.
272. Samuel B. Nowlan. Vertical cut-off steam safety valve.
273. Samuel B. Nowlan. Geometrical steam mercury gage.
274. Samuel B. Nowlan. Exhaust for sanitary ventilating ships.
275. Samuel B. Nowlan. App. for gen'g steam without a boiler.
276. Samuel B. Nowlan. Air cells to prevent found'g of ships.
277. John Wesley. Flooing machine & fire extinguisher.
278. P. H. Vander Weyde. Anti-incrustator.
279. S. S. Chandler. Lowering and detaching apparatus.
280. Asahel Abbot. Repeating quadrant.
281. John T. Ashley. Water-proof safe.
282. F. E. Sicles. Model and tank for boat.
283. John T. Ashley. Floating berth.
284. Charles E. Marshall. Model of a safety valve.
285. D. F. Moisenian. Power Governor.
286. Philip Hoelzel. Improved steam generator.
287. A. F. Crossman. Boat lowering and hoisting apparatus.
288. C. Williams. Life buoy.
289. W. H. Reynolds. Improved tubular boiler.
290. Alvin Walker. American submerged ship pump.
291. R. Fletcher. Tidal alarm apparatus.
292. Charles Hopkins. Lardelle's double-suc'n steam siphon.
293. R. Waddell. Hydraulic marine governor.
294. W. Fitz James Thiers. Hydro-e ventilator & auto ship pump.
295. A. T. Hayes. Anti-incrustator.
296. A. Dancer. Danger indicator.
297. John Sloan. Self-propelling life boat.
298. C. H. Griffin. Automatic water inspector.
299. Charles M. Cresson, M. D. Anti incrustator.
300. Bond, Turnbull & Co. Steam-boiler feeder.
301. Edward Brady. New mode of applying safety valves.
302. Morgan Shepley. Fire extinguisher.
303. Henry T. Brown. Submar. stimp. cushion engine.
304. Dr. J. Bryant. Patent busting, etc.
305. William D. Andrews and Bro. Andrews' steam pump.
306. John Golling. Fog signal.
307. Edward Snell. Snell's patent anchor.
308. Springs and Bartram. Boiler water gage.
309. Charles Wing. Signal lamp.
310. Thomas Silver. Marine steam-engine governor.
311. Charles W. Copeland. Wire tiller rope.
312. Norman L. Wheeler. Wheeler's boiler.
313. A. C. Stimers. Frazee's life boat.
314. R. H. Andrews. Single-acting force pump.
315. Charles W. Copplins. Gage.
316. R. W. Woodward. Ventilator & marine fire protect'n app.
317. C. W. Walley. Life-preserving raft.
318. J. F. Brown. Detaching apparatus.
319. Jos. Humphries. Floating anchor and life preserver.
320. W. C. Thompson. Life raft.
321. Benj. Palmer. Cool. matt. and life-preserving float.
322. Williams & Gee. Detaching apparatus.
323. Edward O. Banks. Detaching block.
324. A. Kaufman. Anti-incrustator.
325. James Eccles. Water indicator.
326. James Marks. Buoyant self-righting life boat.
327. Richard A. Jewell. Anti-incrustator.
328. Laurence F. Frazee. Boat-lowering apparatus.
329. L. Frazee. Boat-lowering apparatus.
330. Esau Rowing. High-pressure boiler.
331. A. C. Crondal. Cork matt. cushion, and life preserver.
332. J. R. Taylor & Co. Brown & Harfield's windlass.
333. C. Warden. Signal light.
334. E. Buckman. Ship drag.
335. Jno. H. Marr. Anti incrustator.
336. A. Gilman. Shipping rudders at sea.
337. Prof. Ogden Doremus. Ext'ng'ng life by liquid carbonic acid.
338. John M. Sturgeon. Non-inflammable fluid.
339. Keene Brothers. Steam gage.
340. American steam-gage Co. Steam gage.
341. J. A. Libbertz. Detaching apparatus.
342. J. W. McKenzie. Water tank.
343. Mr. Ryan. Wappich's rudder braces.
344. Thomas A. Devyr. Method of constructing ships.
345. Brown & Newman. Water expeller.
346. Benson & Co. steering apparatus.
347. Capt. Franzen. Steering indicator.
348. W. D. Andrews & Bro. Super-heating steam boiler.
349. John Moody. Life boat.
350. John Moody. Light ship.
351. Mr. Raymond. Self-inflating patent wind sail.
352. L. Raymond. Rowlock.
353. P. Kennedy. Engineer's signal bell.
354. R. F. Crane. N. W. Mfg Co's low water indicator.
355. A. C. Boon. Wing life boat.

Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.

CONVERTING RECTILINEAR MOTION INTO ROTARY.—J. A. Ehle, Greenburgh, Wis.—This invention consists in operating a balanced lever or working beam with sliding carriages and hooks attached, upon polygons or triangles, so that the powershall be transmitted to shaft in a continuous rotary motion.