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 nebulæ 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, untrammeled 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. Dunphy. 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 Brothers	Fire extinguisher.
4	Wm. N. Clark	Mode of hanging rudder
5	Wm. N. Clark	Water cask and life boat combined.
6	W. P. Glenby	Mode of scaling boilers and tubes.
7	W. A. Devon	Lowering, detaching and davits.
8	Thos. L. Reed	Detaching apparatus.
9	J. W. Bogart	Apparatus for unlashing boats.
10	James Higher	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. Beard	Self unhooking eye bolt.
15	Thos. J. Brown	Sleeping berth and life boat combined.
16	Clinton Roosevelt	Method of building vessels.
17	Clinton Roosevelt	Method of anchoring vessels.
18	N. Girord	Steam gage.
19	M. V. & S. C. Nobles	Detaching apparatus.
20	John Mitchell	Detaching apparatus.
21	E. Goulard	Hydrostatic unsubmersible 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. Barms	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 mattrass.
37	W. C. Marshall	Fire apparatus.
38	C. F. Matorana	Depression 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 Rackett	Life preserver.
44	J. Harrison	Boiler.
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	Carl Hennig	Pro eller.
51	George Hull	Detaching apparatus.
52	John A. Olmstead	Life boat and trunk combined.
53	J. W. Bogart	Patent car brake.
54	George M. Allerton	Life boat and raft.
55	George Henyston	Self-acting boat hook.
56	Frank Marguard	Life preserver.
57	Charles H. Hasker	Boat lowering and detaching app.
58	Marcus Hanan	Boat detaching apparatus.
59	Abraham G. Polhemus	Fire apparatus.
60	N. McKay	Life saving tackle.
61	Henry Hannen	Ship bed.
62	R. E. Everson	Life boat.
63	James Murtagh	Life raft.
64	Wm. R. Black	Self-detaching hook.
65	J. Hiles	Water gage and steam alarm.
66	Philip S. Justice	Steam gage.
67	Egbert P. Watson	Low water signal.
68	John Ryder	Life raft and gutta percha bolster.
69	N. Spencer 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 Zindorff	Safety valves.
76	Richard Montgomery	Steam boiler.
77	Joseph A. Miller	Anti-incrustator.
78	George W. Brown	Patent roelock and thole pin.
79	James Isted	Life raft.
80	John W. Doughty	Syphon feed regulator.
81	Boyd Elliott (Well's)	Automatic Boiler Feeder.
82	James T. Horam	Safety valve.
83	E. A. Turner	Steering apparatus.
84	Carlish, Mason & Co	Locked safety valve.
85	Carlish, Mason & Co	Detaching apparatus.
86	Carlish, Mason & Co	Water gage.
87	C. L. Frink	Water gage.
88	C. L. Frink	Safety valve.
89	H. N. Winans	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 purifyer.
96	T. C. Banks	Alarm gage.
97	G. H. Hart and E. Lumley	Patent rudder.
98	S. B. Coit & Co	Steam gage heater.
99	F. Fellingham	Detaching apparatus.
100	John Ashcroft	Low water detector.
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. Lighthall	Surface condenser.
107	Kubach & Clay	Fire alarm telegraph.
108	Brown & Level	Detaching apparatus.
109	G. G. Forshey	Steering apparatus.
110	Julien M. Constantin	Patent lever for furling sails from deck.
111	Edw. J. Monk	Detaching apparatus.
112	Josiah Foster	Settee 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 Gurwibly	Combination hose.
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. Low	Safety valve.
125	James Marks	Self-riding life boat.
126	William Moses	Detaching apparatus.
127	J. W. Stiles	Water ejector.
128	Farren, Traft, and Knight	Safety valve.
129	John Ashcroft	Patent felt protector.
130	Thomas Hanvey	Wood, etc., preserver.
131	William P. Hunt	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 Hurlburt	Detaching apparatus.
136	F. Fellingham	Life-preserving berth.
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 Sutton	Direct-acting safety valve.
144	H. L. Brevoor	Leakage indicator.
145	E. H. Covel	Combination pump.
146	W. M. Arnold	Steering gear.
147	A. L. Shears	Self-baling life boat.
148	William Porter	Self-acting 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. Ingoldsby	Mode of picking up boats at sea.
154	L. D. Ingoldsby	Steering and manœuvring sail & steam vessels.
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. Teuksburry	Hose coupling and pipe.
165	Abraham Inslee	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. Lillienthall	Telegraphic night signal.
172	G. A. Lillienthall	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	Life-preserving seat.
178	John Kennedy	Apparatus for laying-to in a gale.
179	Henry Leoratt	Locked valve.
180	R. Robinson	Locked valve.
181	— Dovle	Detaching apparatus.
182	Charles F. Brown	Patent anchor.
183	John F. Cooper	Folding water anchor or drag.
184	J. H. Holbrooke	Electric annunciator.
185	E. A. Wood	Steam gage.
186	Benjamin Smith	Improvement in constructing vessels.
187	A. H. Colt	Patent granulated cork bedding.
188	Charles C. Teaton	Double lock-up safety valves.
189	R. W. and D. Davis	Patent boiler,
190	Thomas Huntington	Boat detaching apparatus.
191	Isaac Decker	Anti-incrustator.
192	B. I. Kellum	Patent oar.
193	W. Craig	Hose coupling.
194	Wilbert Banacliff	Improved life boat.
195	Barney McGinnis	Steam boiler.
196	Henry McDonough	Life boat elevator.
197	Charles Perley	Detaching block.
198	Charles Perley	Hose coupling.
199	John A. Fulton	Anti-incrustator.
200	Joseph Wood & Co	Steam valve pump.
201	Robert H. Griffith	Patent apparatus.
202	Daniel Barnum	Air-pump attachment.
203	N. H. Marston	Gage cock.
204	W. C Thompson	Life saving raft.
205	John B. Holmes	High and low pressure boiler.
206	F. E. Sickles	Steam steering apparatus.
207	John Golding	Life-saving mattrass.
208	Dr. Mannus Prister	Propeller steering apparatus (withd'n).
209	C. C. Peck (H. O. Maynard)	Safety hook.
210	James R. & Edward Dryburgh	Impt in steam chimneys of boilers.
211	Lyman B. Fitch	Detaching apparatus
212	J. E. Culver	Steam generating apparatus.
213	H. L. Stibbs	Temporary rudder.
214	William Carter	Detaching hook.
215	John Shaffer	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 detaching apparatus.
223	G. H. Wilson	Saterlee's patent davit block.
224	Armstrong and Brown	Patent anchor.
225	W. C. Dodge	Detaching apparatus.
226	John [illegible]	Engine piston.
227	Geo. O. Evans	Low water detector and alarm.
228	J. G. and J. Edge	Signal lights, rockets, and line rockets.
229	Pollock and Van Wagenen	Detaching apparatus.
230	Francis N. Gove	Steering apparatus.
231	Alonso Temple	Anti-incrustator.
232	E. Kellam	Detaching davit and cat block.
233	Geo. W. Richardson	Safety valve.
234	Chas. H. Baxter	Life preserving spar.
235	R. B. Donaldson	Steam gage.
236	Emile Rousseil	Life preserver.
237	J. H. A. Gericke	Turbinate 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 Salgee	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 signal.
246	James Cochrane	Pilots 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. Russet	Improvt. in steam and other engines.
252	Edward L. Brown & Co	Gage cock whistle.
253	J. R. N. Owen	Spec. and draw'g 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. Rollins	Improved steering apparatus.
259	Tait and Avis	Improved steam boiler.
260	E. B. Tannever & Co	Side lights.
261	Frank D. Bingham	Surge reliever.
262	E. Spencer	Steamboat wheel.
263	Geo. Unit	Ice navigator.
264	Mee and Jackson	Hose coupling.
265	John A. Rollins	Shipping rudder.
266	B. F. McAlhattan	Ship's bed.
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	Elijah Williams	Boat propellor.
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 Quigley	Flooding machine & fire extinguisher.
278	P. H. Vander Weyde	Anti incrustator.
279	S. S. Chandler	Lowering and detaching apparatus.
280	Asahel Abbott	Repeating quadrant.
281	John T. Ashley	Water-proof safe.
282	F. E. Sickles	Model and tank for boat.
283	John T. Ashley	Floating berth.
284	Charles K. Parshall	Model of a safety valve
285	D. F. Morseman	Power Governor.
286	Philip Hoelzel	Improved steam generator.
287	A. F. Crossman	Boat-lowering and hoisting apparatus.
288	C. Williams	Life buoy.
289	I. W. Reids	Improved tubular boiler.
290	Alvin Walker	American submerged ship pump.
291	R. Fletcher	Tidal alarm apparatus.
292	Charles Hopkins	Larsdelle's double-suc'n steam siphon.
293	R. Waddell	Hydraulic marine governor.
294	W. Fitz James Thiers	Hydro'c ventilator & auto'c ship pump.
295	A. T. Hayes	Anti-incrustator.
296	A. Arnold.	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 Bradly	New mode of applying safety valves.
302	Morgan Shepard	Lock-up safety valve.
303	Henry T. Brown	Eubank's imp't on steam engine.
304	Dr. J. Bryant	Patent bushings, etc.
305	William D. Andrews and Bro	Andrews' steam pump.
306	John Golding	Fog signal.
307	Edward Snell	Snell's patent anchor.
308	Springer 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. Copeland	Fusible plugs.
316	Ray's (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	Comb. matt. and life-preserving float.
322	Williams & Gee	Detaching apparatus.
323	Edward O. Banks	Detaching block.
324	A. Kauffman	Anti-incrustator.
325	James Eccles	Water indicator.
326	James Marks	Holmes' self-righting life boat.
327	Richard Atwell	Plan to prevent incrustation.
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	Exting'ng fire by liquid carbonic acid.
338	John M. Sturgeon	Non-inflammable fluid.
339	Keen 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	Kenyon & Co	Steam 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-trimming 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 power shall be transmitted to a shaft in a continuous rotary motion.

WASHING MACHINE.—G. R. Hughes, Centralia, Miss.—This invention consists in constructing a washing machine somewhat upon the plan of the common pounding barrel, but still very unlike it and partly more efficient in its operation and appointment.

ADJUSTABLE ECCENTRIC.—J. B. Strickland, Scranton, Pa.—This improvement relates to the manner in which an eccentric is secured to the shaft or axle of the locomotive or other engine, and to the manner in which it may be changed to suit the lead of the engine valve.

BEDSTEAD.—Isaac Pedrick, Bridgeton, N. J.—This invention has for its object to furnish an improved bedstead so constructed and arranged that the weight upon the bed bottom may press against the shoulders or ends of the side and end rails; so that the posts may be detached without taking the bed bottom apart; and that the slats may be easily turned over for dusting.

CATCH FOR DOOR LOCKS.—G. W. DaCunha. New York City.—This invention consists in an improved catch or nosing for door locks formed with a flange to project along the jamb, and with a flange to project along the casing, the whole being cast solid in one piece.

ANIMAL TRAP.—J. W. Hollingsworth, Salem, Ind.—This invention has for its object to improve the construction of the animal trap patented by the same inventor and numbered 58,826, Oct. 16, 1866.

CAR COUPLING.—W. A. Stowell, Morctown, Vt.—This invention has for its object to furnish an improved car coupling, simple in construction and effective in operation, which shall be self coupling and which may be uncoupled without passing between the cars.

GATE.—Jacob Vail, Beloit, Wis.—This invention has for its object to furnish an improved gate strong, simple and durable, and which may be opened and closed by the driver without getting out of the vehicle.

DISINFECTING SEAT FOR PRIVIES, ETC.—Neil Clifford, A. N. Bell. Brookyln, N. Y.—This invention consists in so combining with the seat of a privy, or other similar place, a receptacle for deodorizing or disinfecting. and in so connecting it with the said seat, that when such seat is used said deodorizing or disenfecting material will be thereby discharged into the vault below the seat.

STOVES.—A. Lee, St. Paul, Min.—This invention consists in an arrangement whereby the radiating surface of the stove is greatly increased, and fuel is economized.

CULLENDER BOILER.—B. F. Porter, Manchester, N. H.—My invention consists in combining with the common culinary boiler, the essential feature of the cullender or strainer, and also in dividing the space in the boiler by partitions which are removable at pleasure and also in providing means by which the cullender boiler may be used as a steamer.

RAKES.—J. M. Long, Hamilton, Ohio.—This invention has for its object to furnish an improved rake so constructed and arranged that the weight of the driver may cause the rake to act promptly when unloading, and so that when the rake teeth revolve up to unload, the shafts and the fingers may go down disengaging the rake teeth from the collected hay in much less time than can be done with other rakes.

SAFETY LAMP.—H. Weston, Towanda, Pa.—This invention has for its object the obviating of accidents which now occur in using lamps provided with kerosene, or other similar volatile hydro-carbons as a burning material. As the burning material is consumed the gradually enlarging space above it in the lamp becomes occupied by vapor or gas which is highly explosive, and which, if a loose wick be used in the burner, is very liable to be ignited by the flame, especially in blowing out the flame, which is frequently done after using the lamp, the wind driving the flame down around the loose wick into the body of the lamp. My invention has further for its object the prevention of the leakage of the burning material from the burner, which now occurs in a greater or less degree in using the ordinary lamps, and which runs down the sides of the same, soiling the hands when the lamps are grasped.

STRIPPING THE LEAVES FROM SORGHUM OR SUGAR CANE.—James A. Campbell, Kent, Ohio.—This invention relates to a new and improved machine for stripping leaves from sorghum and other sugar cane and also for depriving the stalks of their tops so that the cane will be fully prepared for the rolling or crushing mill.

MACHINE FOR RAKING, AND PITCHING OR LOADING HAY AND GRAIN.—Leopold De Laceé, Springfield, Ill.—This invention relates to a new and improved machine for raking and pitching hay and grain from the field as left by the mowing or reaping machine, and depositing the hay or grain upon wagons or carts, thereby enabling the farmer, with the aid of one or two men, to safely harvest and put under cover in a given time as much hay or grain as can be cut by two machines.

METHOD OF PREPARING AND PACKING OIL.—P. G. Finn, Erie, Pa.—This invention relates to a new and improved method of preparing and packing coal oil for transportation and storage.

BEEHIVE.—B. S. Haviland and E. H. Haviland. Fort Dodge, Iowa.—This invention relates to a new and improved beehive of that class in which a plurality of colonies are kept within a single box or house. The object of the invention is to afford a circulation of air through the several hives in the box or house so that the animal heat from all the bees will circulate freely through it. and in case of a weak colony being in the box or house it will receive a requisite amount of warmth from the others. The invention has also for its object the isolating of a hive from the others when necessary, in order that an empty hive may be cut off, so that those containing colonies may receive all the benefit of the animal heat, the circulation of the latter being confined to the inhabited hives.

DEVICE FOR ELEVATING ICE.—Henry Little, Middletown, N. Y.—This invention relates to a new and improved contrivance for elevating ice from the river, pond or lake where it is cut, into the ice house contiguous thereto.

BOX FOR HOLDING POWDER OR PULVERULENT SUBSTANCES.—George A. Moss, New York City.—This invention relates to a new and improved box for holding powder or pulverulent substances and is designed for putting up for sale those powders which are used, or applied for use, by sprinkling them from a perforated cover, such, for instance, as blue or indigo powder used in the laundry for clothes, the box in which the powder is put up and sold answering, by simply perforating the cover, to sprinkle or shower the powder from.

PORTABLE SEAT.—James F. Campbell and Cornelius Tinney, Williamsburgh, N. Y.—This portable seat is intended more particularly for use by drivers on street cars, and it is of such a construction that it can be readily applied and detached, and when applied adjusted to any position desired.

HOG HOLDER.—W. and C, Leffingwell, Clarksburgh. Ohio.—This invention relates to an improved hog holder for ringing, wiring or snouting, or for slaughtering hogs, and consists of an adjustable box capable of admitting one hog at a time, and of being adjusted to the size of the hog so that he cannot turn, and of holding his head fast in the position required, whereby the dangers and difficulties attendant on the present mode of handling hogs for the above purposes as well as the injurious effects thereof upon the hogs, are entirely obviated.

CAR COUPLING.—W. H. Mays, Hillsburgh, Nova Scotia.—This invention relates to a new and improved car coupling of that class which are commonly termed self-acting or self-coupling, and it consists of a draw hook attached to one draw head and a projection or ledge attached to the other draw head for the hook to catch over; the above parts being used in connection with a releasing or disengaging mechanism, whereby the coupling of two cars, when they come in contact, is rendered certain, and the ready disconnecting of the same, when necessary, effected.

LIME KILN.—George Atkins, Sharon, Pa.—This invention relates to an improved mode of constructing kilns for burning lime and consists in forming the bosh of the kiln in the shape of a truncated cone, based on an inverted cone, similar in its general conformation to that of a blast furnace, and provided with two tiers of furnaces which extend into the body of the kiln and open directly into the chamber, to throw the heat uniformly throughout the mass of limestone combined therein, and thus burn the lime better.

EQUATING SOLAR CHONOMETER.—L. Mifflin, Germantown, Pa.—The object of the equating solar chronometer embraced in this invention is to exhibit the mean or clock time of day in lieu of the solar time.

PRUNING SHEARS.—Peter Keck, Zanesville, Ohio.—The nature of this invention consists of a combination of three levers to form a pruning shears whereof the cutting blade has a convex edge, the levers being so attached as to produce a drawing cut, and has for its objects increased facility in the use of the pruning shears, and the production of a clean cut.

COMPRESSION COCK.—Charles M. Alburger, Philadelphia, Pa.—This invention relates to an improvement in compression cocks or faucets and consists in raising the valve seat by forming it with a flange or bead around the edge to receive upon it a washer made of block tin or other suitable substance placed on the lower end of the spigot, in order to make them perfectly water and steam tight.

GAS APPARATUS.—B. L. Fetherolf, Tamaqua, Pa.—This apparatus is designed for generating illuminating gas from petroleum for family use, by applying a gas generator to an ordinary cook or heating stove, like a water back or fire brick lining, and thus by means of the fuel used for domestic purposes supplying the house with light as well as heat, and making a saving.

GANG PLOW.—James W. Sursa, San Leandro, Cal.—This invention relates to an improvement in gang plows, and consists in the arrangement of a device for raising and lowering the plows whereby they may be set at any required depth for working, or elevated above the ground to clear it entirely when the plow is moved from place to place.

ENVELOPE.—Ralph S. Jennings, New York City.—This invention relates to improvements in the construction of flat envelopes which are more particularly designed to be used for transmitting money and valuable documents safely by express and the mails.

CARRIAGE.—Francis Baker, New York City.—This invention relates to that class of carriages having low or half doors, and the invention consists in a novel arrangement of parts for supporting the glass or window frames therein.

HAY AND COTTON PRESS.—J. G. Roux, Raymond, Miss.—The novelty of this invention consists in two horizontal screws, located in a frame and connected to yielding levers, which are attached to the follower of the press in such a manner as to act powerfully on the said follower. These levers are acted upon by the screws in such a manner that when the greatest pressure is required, the levers are at a point where the screws have the greatest advantage and exert the most power.

TEASELING ATTACHMENT TO GIG MILLS.—Ernst Gessner, Aue, Saxony.—This invention relates to an attachment to gig mills, which is composed of a series of revolving disks covered with cards or other suitable material, which act in conjunction with adjustable guide rollers in such a manner that by the revolving motion of the disks and their position in relation to each other, the fiber of the cloth is acted on throughout the whole width of said cloth and under variable angles, and furthermore, the cards act uniformly and continuously on the surface of the cloth, thus raising the nap perfectly in a comparatively short time.

BOTTLE STOPPER.—Horace S. Carley, Cambridgeport, Mass.—This invention consists in securing the stopper to the neck of the bottle, in such a manner that it can, when drawn out of the neck, be swung out of line with the same without detaching it.

GRIND STONE.—Warren P. Miller, New York City.—This invention relates to a grind stone which is composed of a number of blocks of grinding material, which are placed and held upon a cast-iron or other metal disk, in such a manner that they form a ring of grinding material, the face and not the periphery of which is to be used for grinding saws and other metal articles.

HORSE-SHOE MACHINE.—John W. Kingsbury, New Bedford, Mass.—This invention relates to a machine for forming horse shoes from cold bar iron, the machine being so arranged as to be adjustable for all sizes of horse shoes, and so that one shoe is formed during each revolution of the horizontal and driving shaft of the machine.

DEVICE FOR HOLDING CIGARS.—Charles Appel, Hoboken, N. J.—The object of this invention is to construct an apparatus into which a burning cigar can be laid when the same is not to be smoked, and which can then be placed into the pocket without injury to the cigar and without burning the pocket. The device will be of great value to smokers when entering cars or ladies' rooms, or other places where smoking is prohibited; they can then put the burning cigar into my improved holder where it will be extinguished, and can be used again whenever desired.

TEMPORARY RUDDER.—H. L. Stibbs, Savannah, Ga.—This invention has for its object to furnish an improved temporary rudder, so constructed and arranged that should the vessel's rudder become lost or broken, it may be readily and quickly adjusted in place.

CAR COUPLING.—J. Smith and J. F. Irvin. La Porte, Ind.—This invention consists in providing for drawing the pin from the coupling link, when the cars are to be uncoupled, by a slide which has a cogged rack attached to it, and in a pinion on a horizontal shaft which works in the rack.

SEED SOWER.—Elijah U. Scoville, Manlius, N. Y.—This invention relates to seed sower, by which all sorts of seeds from the coarsest to the finest can be sown, and which can be adjusted for sowing any desired quantity at once, so that the seed can be spread thicker or thinner as may be desired. The invention consists chiefly in the use of a revolving roller, which is arranged longitudinally below the seed box. For the circumference of this roller are arranged longitudinal grooves, which receive the seed from the hoppers in the seed box, and distribute it upon or against a revolving, zig-zag, wire seive spreader, by which the seed is struck and spread evenly over the surface of the soil.

ADJUSTABLE SELF-SHARPENING PLOW POINTS.—Mr. H. G. Hall, of Putnam, Ohio, has just patented a new and valuable point for plowshares, which can be removed and replaced at pleasure. The point is of chilled iron, cast on a shank of wrought iron, which fits into a dove-tailed recess cored in the share. It can be reversed, so that when worn on one side the other side may be presented for service. His invention comprehends also adjustable edges, to be changed at will. The device seems to add greatly to the durability of a plow, while it does not materially increase its cost.

CARD HOLDER.—H. H. Pember, New York city.—This card-holder is intended more especially for travelling trunks.

SEWING-MACHINES.—Robert Barclay, Buffalo, N. Y.—This invention relates to a sewing-machine, the presser foot of which receives an oscillating motion simultaneously with the feed wheel in such a manner that a rectilinear even and sure feed is obtained. The oscillating motion of the presser foot is effected by a cam which acts on a spring dog which connects with the presser foot, and which is adjustable by a set screw in such a manner that the feed motion of the presser foot can be regulated to correspond to the motion of the feed wheel. Said cam is mounted on the end of the shaft which serves to produce the motion of the needle slide, and it acts in conjunction with an additional cam, which serves to impart a rising and falling motion to the take up mechanism, the object of which is to take up the slack of the needle thread as the needle descends, so as to prevent the formation of a loop on the top of the material to be sewed.

HORSE HAY FORK.—H. H. Hatheway, Clockville, N. Y.—The object of this invention is to so construct and arrange a hay fork that it will operate easily, and that the tines will be prevented from coming into contact with beams or other obstructions.

SEED PLANTER.—D. H. Hull, Plantsville, Conn.—This invention relates to a seed planter which can be used for planting corn, cotton and other kinds of seeds, and which is so arranged that the plows and scrapers can be raised out of the ground with ease and facility, and that the same can be let into the ground to any desired depth.

SUGAR CANE STRIPPER.—S. Terry Hudson, Success, N. Y.—This invention relates to a device for stripping off the leaves of sugar cane, and consists in an arrangement of springs in pairs fixed upon a moveable stand support, which may be stuck upright in the ground in the field anywhere convenient to the cane, and shifted about as the leaves accumulate in stripping, so as to save handling them.

MANUFACTURE OF IRON AND STEEL.—Lorenzo Sibert, Mount Solon, Va.—The nature of this invention consists in a new method of treating cast iron produced in an ordinary blast furnace for the manufacture of iron and steel of superior quality.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address the correspondent by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 50 cents a line, under the head of "Business and Personal."

P. T. L., says if you rub your finger on the outside of a glass lamp from the surface of the oil upward, a thin film of oil will appear to rise on the inside.

W. N. B., of Iowa.—The barrels of double barreled guns are so set that the shot from both barrels may strike the same spot. They are slightly inclined to each other toward the muzzle, and the lines of direction are intended to meet at the ordinary distance of firing. Shot gun barrels should be more inclined than rifle barrels.

G. W. M., of Pa.—Concrete is a mixture of mortar with coarse materials like gravel and fragments of brick and stone. When the concrete is to be exposed to water, hydraulic cement should be used instead of lime. Lime mortar may be mixed with cement in any proportion, but the hydraulic property of the concrete is lessened by the increased proportion of lime. Whether a concrete or stone wall should be used for a cellar and foundation would depend mainly upon the cost of material when the work is to be done. A concrete wall is not so durable as a wall of hewn stone.

R. F. W., of N. Y.—The spectacle lens you send is a genuine pebble *i. e.*, it was cut from a crystal of quartz. Such lenses are often designated by the locality from which the quartz was obtained as Brazillian, Scotch, Madagascar, etc. A genuine pebble lens will readily scratch window glass.

J. H. W., of Mass.—The water and steam in a boiler when the fire space does not reach above the surface of the water are at the same temperature.

P. D., of C. W.—The publication of your article on the Harrison boiler would provoke a discussion which would be neither interesting nor important to a majority of our readers.

L. T. R., of Conn., suggests that some ingenious inventor "fix up" a whistle to be operated by the wheels of the vehicle used by milk men, meat and other peddlers to announce their approach.

A. J. W., of N. Y., wonders that some genius does not invent a small hand blower to supersede the common bellows for family use. One operated by clock work, cheap and efficient, he thinks would sell like hot cakes.

N. D. H., of Pa.—The ordinary method of getting rubber into the form of sheets is to grind it up in a machine called a masticator. In this process the rubber is softened and made more plastic. In this condition it is passed between powerful rollers or callenders, from which it comes in a continuous sheet. Another plan is to spread a thick solution of rubber on a level surface. and allow the solvent to evaporate. Coal tar naphtha and light petroleum oil are suitable solvents. The rubber used in these processes must be raw or unvulcanized.

D. W. P., of Pa.—A good way to purify the mercury of your steam gages, which you say has become foul, is to wash it in a strong solution of sal soda, and then filter it through a cornet of paper, that is paper rolled up so as to make a narrow conical cup which shall have a very small opening at the bottom for the mercury to pass out. The mercury should be filtered several time until it is completely dry,

R. L., of Pa.—The specimen you send is specular iron ore. When pure it contains 69¾ per cent of metal. Your sample is slightly magnetic.

J. K., of Pa.—Fermentation of beer, and consequently the generation of carbonic acid, may be checked by cooling to near the freezing point. But the cooling will not destroy or decompose the carbonic acid already formed, as you appear to suppose.

G. A. H., of Pa.—The Ruhmkorff apparatus is simply the ordinary induction coil which is used for medical purposes, on a large scale. In a large apparatus the electricity has great tension and great care is required to secure insulation. The primary wire is only a few yards in length and is wound on a pasteboard tube. The primary helix is inclosed in a glass tube and upon the glass tube the secondary wire is wound The secondary wire should be one or more miles in length; fifty miles of wire have been used in a single machine. The secondary wire is covered with silk, and each layer is further protected by a coating of melted shellac. For experimental purposes the secondary wire is sometimes divided and wound in separate helices, so that a part or the whole may be used.

P. J. R., of Ohio, is not satisfied with what has been said on the question "why ice is slippery," and propounds the theory that ice is composed of smooth globular particles which are easily detached, and that a body sliding on ice rolls on these particles.

G. W. B., of N. Y., believes that the influence of the moon on the growth of plants is generally recognized, and has been informed that a man has retored his hair, which had become quite thin, by having it cut immediately after each new moon!

A M. D., of Mass., has a machine which has become so thoroughly charged with electricity that its operator is affected badly by it. Near the driving pulley is a 10 inch belt which travels 1,300 feet per minute and from which the electricity comes. The electricity may be taken off from the belt before it reaches the machine by arranging near it a series of metallic points which unite on a wire conductor leading to the ground.

E. S. G., of N. J.—A gas meter measures the gas by bulk only, and therefore when the pressure is much varied it does not register correctly. At high pressures the meter underestimates, . . . We have not heard of any water wheel which establishes a new principle in pneumatics.

B. F. W., of Ala., says he can get a hundred wagon loads of mica from the mountains at little expense, but it is not able to say that it is of commercial good quality. He should send a fair sample of it to some reliable chemist or mineralogist and ask his advice.

E. W., of Pa., is a miller and desires to learn how to rid himself of the first known as the pest known as the bolt eater. It is a black bug about half an inch long and destroys the silk bolting cloths. each of which is worth fifty dollars.

E. G. G., of N. Y.—There are many patents concerning mixtures of tar with gravel, sand, fragments of stone, etc., to be used for garden and other walks. It is not proper for us in this place to give a catalogue of the patents or to discriminate between their respective merits.

N. P., of Phila.—One of the best articles for destroying cockroaches are red wafers—scatter a few about the places where they most appear and they will eat them with a relish and soon die. The Persian insect powder is also a good article for the purpose but phosphorus paste is better than the latter.

Business and Personal.

The charge for insertion under this head is 50 cents a line.

Parties having a deposit of "mica" can sell by addressing W. W. B., 26 Holliday street, Baltimore, Md.

Flax Mill Wanted at Coloma, Ill. See advertisement and address A. P. Smith, Sterling, Ill.

Molders' Tools, Surface Gages, etc. (Manufacturers of), send price list to "Traveler,' Box 143, Grand Rapids, Mich.