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By **RUFUS PORTER.**

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much interesting intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Experiments;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

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TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1/2 cents for every subsequent insertion.

Alphabet of Short Rules.

[We found the following in an exchange; and finding it to be excellent poetry, with the exception of rhyme and measure, we have ventured to make a small addition to each line, by way of improvement.]

Attend well to your business—honest man;
 Be punctual in your payments—when you can;
 Consider well before you promise—strong;
 Dare to do right—the opposite is wrong;
 Envy no man—nor aught against him say;
 Faithfully perform your duty—every day;
 Go not in the path of vice—but rather dread it;
 Have respect for your character—and credit;
 Infringe on no one's right—rather protect it;
 Know thyself—important; don't neglect it;
 Lie not, for any consideration—of this beware;
 Make few acquaintances—unless you've time to spare;
 Never profess what you do not practice—no;
 Occupy your time in usefulness—where e'er you go;
 Postpone nothing that you can do now—as well;
 Quarrel not with your neighbor—but all anger quell;
 Recompense every man for his labor—correctly;
 Save something against a day of trouble—directly;
 Treat every body with kindness—in your dealings;
 Use yourself to moderation—under excited feelings;
 Vilify no person's reputation—'tis worse than self;
 Watchfully guard against idleness—yourself;
 'Xamine your conduct daily—and amend;
 Yield to superior judgment—of an elder friend;
 Zealously pursue the right path—to the end.

Farmers in 1776.

Man to the plow,
 Wife to the cow,
 Girl to the barn,
 Boy to the barn,
 And all dues were netted.

FARMERS IN 1837.

Man a mere show,
 Girl, piano,
 Wife, silk and satin,
 Boy, Greek and Latin,
 And all hands gazzeted.

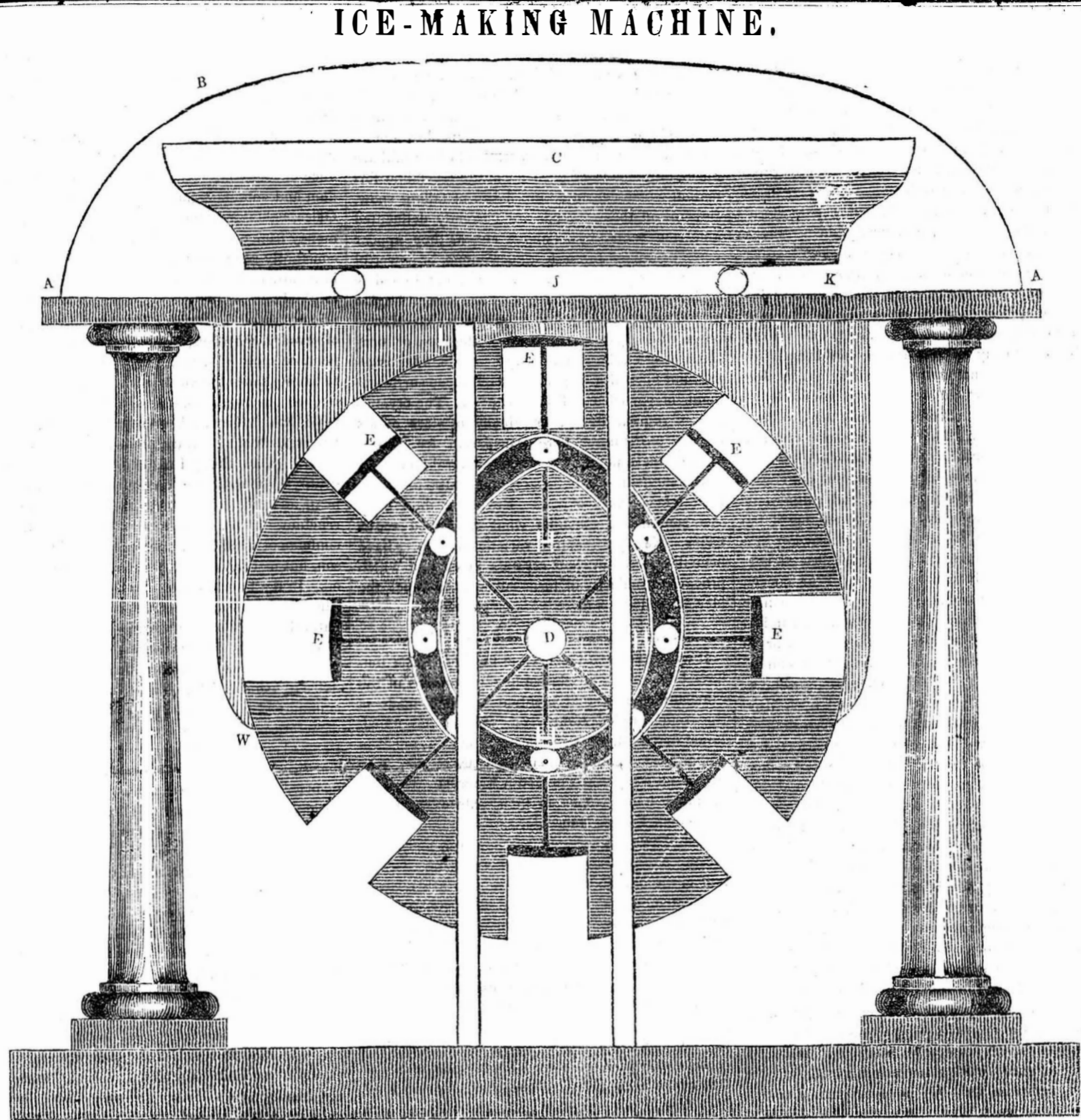
FARMERS IN 1846.

Men all in debt,
 Wives in a pet,
 Boys mere muscles,
 Girls, snuff and bustles,
 And every body cheated.

LIFE SAVED BY DRUNKENNESS.—The Paulding, (Miss), Clarion gives us a real instance where rum drinking was the cause of saving a life. Several years ago, a Creek was tried in Hancock county, for the murder of another Creek. During the progress of the trial, the Sheriff got so drunk that the Judge ordered him into custody, and so found himself without an officer. The jury returned a verdict of guilty, and his honor was in a predicament. There was no Sheriff, and he doubted his power to appoint one *pro tem.*—and to save embarrassment, a new trial was granted. The prisoner remained in jail two years, and being put on trial again at the recent term of the Court, has been acquitted. The Clarion says he is probably innocent of the murder, but he would assuredly have been hung if the Sheriff kept sober!

CHEAP PAINT.—The Ontario Farmer gives the following recipe for a cheap paint. He says he has tried it on brick and finds it well calculated to preserve them, and prefers it to oil paint. He says, also, that it will last longer on rough siding of wood than oil paint will on planed siding or boards. Take one bushel of unslacked lime and slack it with cold water; when slacked, add 50 lbs. of Spanish whiting, 17 lbs. of salt and 13 lbs. of sugar. Strain the mixture through a wire sieve and it will be fit for use, after reducing with cold water. In order to give it a good color, three coats are necessary on brick, and two on wood. It may be laid on with a brush similar to whitewash. Each coat must have sufficient time to dry before the next is applied.

A person being told that a Mr. Smith wished to speak with him, declared he knew no man of that name.



THEORY.—It is an established point, as we have heretofore mentioned, that water, when placed in perfect vacuum, will spontaneously boil until it freezes; in other words, pure water will boil at any temperature below the freezing point, when totally relieved from atmospheric and other pressure; and the vapor produced by the ebullition, carries off the caloric from the water till the remaining water becomes congealed to ice. This fact has been recently established by experiments with the common air pump and receiver; but as this experiment can be applied only to very small quantities, the machine here represented has been invented for the purpose of producing ice in sufficient quantity for convenience.

EXPLANATION.—This is a sectional view of a rotary air-pump surmounted by a receiver or vacuum chamber, containing a basin of water. A circular metallic plate, A A, is well planished near the periphery, where it comes in contact with the convex top or lid, B, which is made of glass or copper, and fitted air-tight to the plate. A metallic basin, C, is placed within the receiver and filled two-thirds full of water: the basin being elevated half an inch from the plate, to allow a free circulation between. The rotary pump is mounted on an axle, D, and is occasionally turned by a crank, (not represented in the cut.) Eight or more cylindrical chambers in the periphery of the wheel, are fitted with pistons, E E, &c., to which are attached piston rods which extend towards the centre, passing through guides at H, whereby they are kept in the right position. A small friction-wheel is attached by a pivot to the side of each piston rod, about midway from the piston to the opposite end of the rod; and these friction wheels, or rollers play in an elliptical groove; and the sides of this groove being stationary, guide the wheels in an elliptical circuit during their progress round the centre; and by this influence and constraint on the wheels, each piston is drawn from the periphery towards the centre, and again returned to the periphery during each revolution of the pump. From J to K a narrow slot is made vertically through the plate, and extends down to the periphery of the pump; so that when the pistons are drawn towards the centre, the expanding air from the receiver falls into the cavities, and is thus carried beyond the termination of the slot at the point I, and thus prevented from returning to the receiver; the casing being fitted air tight to the periphery, and covering the calibres of the small chambers. A groove is made in the opposite casing from L to M for the escape of the air from the chambers as the pistons approach the periphery. When the air is exhausted from the receiver a vapor will rise from the water, and will fall by its own gravity into the chambers, so that by the motion of the pump, the vacuum is maintained and the water becomes frozen in from one to three minutes, according to its quantity.

ADMIRAL WAGER, of the British navy began his career upon the ocean, as an apprentice to an honest old Quaker, Cap. Hull, of Newport, Rhode Island. On the first serious trial of his mettle, he gave proof of those qualities so essential to a seaman, and especially an officer—coolness and courage.—His master's ship, commanded by his master, was approached by a piratical schooner full of men, thirsting for spoils and for blood. Capt. Hull's Quakerism would not allow him to defend himself or his vessel—but young Wager was no Quaker, and determined the guilt of his blood should not, if he could help it be on the pirate's heads. After a good deal of earnest entreaty, and a little respectable force, he got the good captain into the cabin, and accidentally fastened him in. Taking command of the ship, he made hasty but efficient preparations to run over the pirate. Hull watched his movements with interest; and, looking out from the companion way and perceiving the object of young Wager, could not help observing to him—“Charles, if thee intends to run over that schooner, thee must put the helm a little more to the star-board.” Charles observed the direction of the Quaker. The ship passed directly over the schooner, which sunk instantly, and every pirate perished. This exploit procured for Charles a commission in the British Navy, and thus laid the foundation of his fame and fortune.—*Exeter News Letter.*

PREPARING FOR A FLOGGING.—George S. having offended his father, was ordered to prepare himself for a flogging the next morning. George retired, and the next morning, bright and early, appeared before his father, to undergo the execution of his sentence. “Take off your coat, George,” was the stern command. Off went the coat, and the father standing with a well prepared hock in his hand observed that his son's back, from one extremity to the other, appeared unusually protuberant. “What have you got on your back?” said he. “My jacket,” replied the boy. “Well, what have you got under it?” demanded the father. “A leather apron four double,” replied the lad. “A leather apron, have you indeed, and what's that for?” “Why, pa,” said the youngster, with a grave countenance, “you told me to prepare for a flogging, and I got as well prepared as I could.” The angry father turned away to hide a laugh, and the boy escaped a flogging by being so well prepared for it.

INSOLENCE REBUKED.—Beaumarchais, the author of the “Marriage of Figaro,” was the son of a Parisian watch-maker, but raised himself to fame, wealth, and rank, by the mere force of his talents. A young nobleman, envious of his reputation, once undertook to wound his vanity and pride by an allusion to his humble origin—handing him his watch and saying, “Examine it, sir, it does not keep time well; pray ascertain the cause.” Beaumarchais extended his hand awkwardly, as if to receive the watch, but contrived to let it fall on the pavement. “You see, my dear sir,” replied he, “you have applied to the wrong person, my father always declared that I was too awkward to be a watchmaker!”

A MILD REPROOF.—To a young infidel who was scoffing at Christianity, because of the misconduct of its professors, the late Dr. Mason said, “Did you ever know an uproar to be made because an infidel went astray from the path of morality?” The infidel admitted that he had not. “Then don't you see,” said Dr. Mason, “that by expecting the professor of Christianity to be holy, you pay it the highest compliment in your power?” The young man was silent.

SHELL LAC, a valuable substance in the arts, is the product of a female insect in the East Indies. It bores through the bark, when the sap flows and buries the insect—till worms are formed, which pierce the way, leaving their skins, which drying, forms Lac; this is removed from the twigs for use.

CATALOGUE OF AMERICAN PATENTS ISSUED DECEMBER, 1845.

- (Continued from No. 15.)
- To James Robb, Lewiston, Pa., bee hive: December 31.
 - To Aaron Colton, Pittsfield, Vt., bee hive: December 31.
 - To Thomas D. Burrall, Geneva, N. Y., corn-sheller: Dec. 6.
 - To Allen Eldred, Genheim, N. Y., cultivator: December 20.
 - To Jonathan Ball, New York, machine for riveting pipes: Dec. 20.
 - To S. G. Reynolds, R. I., machine for heading and pointing pins.
 - To Daniel Newton, Louisville, Ky., machine for double-seaming tin ware: Dec. 20; ante-dated July 7th.
 - To John J. Howe, Derby, Ct., machine for beating and cleaning wire: Dec. 26.
 - To Theodore Ely, New York, cotton roller gin: December 11.
 - To R. P. Cunningham, Abington, Ct., operating shuttles of looms: Dec. 16.
 - To W. Y. Singleton, Springfield, Ill., waterproof cement: Dec. 26.
 - C. S. Edwards, Rushville, Ind., mode of preserving potatoes: Dec. 31.
 - Ebenezer Barrow, New York, air-heating furnaces: Dec. 11.
 - Wm. Beebee, New York, circulation of hot water: Dec. 16.
 - James Maclean, Philadelphia, tubes for lamp wicks: Dec. 26.
 - Samuel Pierce, Peekskill, cooking stoves: December 6.
 - Saml. Myers, Schenectady, cooking stoves: December 31.
 - H. Gatusonski and F. P. Wiczicki, New York, stoves for fire places: Dec. 11.
 - C. L. H. Webb, Lockport, portable stoves: Dec. 6; ante-dated August 30.
 - Jas. Montgomery, Memphis, steam boiler: December 26.
 - John Ericsson, New York, steam engine: December 20.
 - James Davis, Jr. Floucester, Mass., saddle and jaws for booms: Dec. 16.
 - James Maull, Philadelphia, sails for ships: December 11.
 - J. W. Wilson, Philadelphia, yard-trusses for vessels: Dec. 20.
 - Geo. W. Eddy, Waterford, railroad car wheels: J. T. Craddock, Baltimore, filters and refrigerators: Dec. 31.
 - B. S. Benson, Harford, Md., hydraulic ram: December 26.
 - E. W. Ellsworth, East Windsor, Ct., water ram: December 6.
 - John Mecay, Millsborough, Pa., water wh.: December 26.
 - Autos Linsey, Canton, Me, bark mill: December 26.
 - Robert Manck, Honeyville, Va, flour Bolt: December 26.
 - Josiah Platt, Bridgeport, grinding mills, &c.: December 26.
 - E. Page, Barcelona, N. Y., machine for turning cars, &c.: Dec. 20.
 - Joseph Magoun, East Cambridge, Mass, pressing glass in moulds, Dec. 6.
 - Walter Hunt, New York, inkstand: Dec. 11.
 - N. B. Jewett, Worcester, musical reeds: December 31.
 - Richard Hemming, Boston, cylindrical type-setting: Dec. 16.
 - L. D. Fleming, Newark, abdominal supporter: December 31.
 - Benjamin Sweet, Mount Morris, N. J., medicated baths: Dec. 31.
 - A. H. Reiss, Baltimore: bathing apparatus: December 16.
 - John Allen, Cincinnati, teeth setting: December 16.
 - Allen Ward, Camden, NY, tailor's measure: December 26.
 - Wm. W. Woodworth, administrator of William Woodworth, planing machine: December 27.

THE SHELLS: A FABLE.—A father returned from the sea coast to his own home, and brought with him, for his son, some beautiful shells, which he had picked up on the shore. The delight of the boy was great. He took them, and sorted them, and counted them over. He called all his playfellows to show them his treasure; and they could talk of nothing but of the beautiful shells. He daily found in them new beauties, and gave each of them a name. But, in a few months, the boy's father said to himself, “I will now give him a still higher pleasure: I will take him to the coast of the sea itself. There he will see thousands more of beautiful shells, and may choose for himself.” When they came to the beach the boy was amazed at the multitude of shells that lay around, and he went to and fro, and picked them up. But one seemed still more beautiful than another; and he kept always changing those he had gathered for fresh shells. In this manner he went about changing, vexed, and out of humor with himself. At length, tired of stooping, and comparing, and selecting, he threw away all he had picked up, and returning home weary of shells, he gave away all those which before had afforded him so much pleasure.

DIGNIFIED CONDUCT OF A YOUNG LADY.—Eliza Embert, a young Parisian lady, resolutely discarded a gentleman to whom she was to have been married, because he ridiculed religion. Having given him a gentle reproof, he replied, “that a man of the world would not be so old-fashioned as to regard God and religion.” Eliza started—but on recovering herself, said, “from this moment when I discover that you do not respect religion, I cease to be yours. He who does not love and honor God, can never love his wife constantly and sincerely.”

