

The Best Lime for the Calcium Light

MESSRS. EDITORS:—Having had occasion to use the oxy-hydrogen or Drummond light, I was much annoyed by the breaking of the lime cylinders. Having tried various substitutes, I find that lime made from Italian marble is the most satisfactory. It does not crack, gives a good light and is easily prepared. Small pieces of white marble are put into a clear fire, in a stove or open grate. After remaining at a red heat for twenty to thirty minutes it is, after cooling, easily cut into any desired shape.

R. DOUGAN.

Washington, Pa., March, 2, 1864.

A Hint to Letter-writing Bores.

We consider as a general thing that our correspondents are a fair and high-minded set of men, such as we are most happy to accommodate by answering, so far as it is in our power, all their inquiries; but there are a few of whom we can very justly complain. They put to us all sorts of questions, to answer which might require a half-day of our valuable time; and if we snub them off with a short answer they are likely to reply back in complaining terms. It cannot be reasonably expected of us, that we should spend our time in such—to us—profitless letter-writing. We mean to be accommodating, but cannot consent to waste all our time in getting information for correspondents who seem not to know how to appreciate either our forbearance or the value of our time. As an example of what we mean, we have a case before us. A correspondent wants us to hunt through our files for a notice of some book which appeared in the SCIENTIFIC AMERICAN some years ago, and to help him find the book. He also wants us to find for him an English book which we do not believe can be had in this market. Another correspondent wants us to send to England, without delay, to get something which would require time and money to procure for him, but in regard to which he don't even enclose a three-cent postage stamp to prepay our letter. Another encloses three cents and wants a calculation made which would cost us two hours' hard study. It is well enough for all such correspondents to know that our time is worth to us more than a cent and a half per hour. Treat us fairly, and you will have no cause of complaint.

TRIVIAL THINGS.

A sarcastic correspondent writes to us, complaining of our publishing such information as the following:—"Rimmers should not be used in the cored-out holes of castings, as the sand and scale ruin the edge in a short time." He intimates that he knew this a long time ago, and, as a natural sequence, we had no right to put such matter into the SCIENTIFIC AMERICAN. This article is not directed toward that particular correspondent any more than to others who entertain similar views; a little reflection will convince any one how illogical and unreasonable the objection is. Suppose Professor Morse should write us, saying he had read something about the telegraph in the SCIENTIFIC AMERICAN, and considered it really too trivial, as he knew it all years ago; or that Professor Seely, having perused some article on chemistry, should immediately devote four pages to a scathing review of a two-line item; just because he had, in the progress of his studies, learned said elementary knowledge when he was a school-boy. The fact of the matter is, that a newspaper is analogous to a public table; we pay our money and we take our choice. We cannot go to the hotel and order the landlord to carry off the roast beef because we ate roast beef twenty years ago, and don't like it now, for they may be others who do. So it is with elementary knowledge; there are hundreds of accomplished mechanics like our correspondent, who know all about rimmers and grinding-drills, &c., but they have only become accomplished because they did know these things and every day experience their value; therefore to the apprentice who is growing up in his trade such reminders as we have mentioned are never lost; for a word in print is remembered longer than a chance caution dropped by some hasty foreman; or it may be the youth is never told and only learns by that hard master, experience, under whose rod we all of us come in the course of life.

Let us not despise little things because they do not happen to be new to us; to others they are invaluable, and in no instance does the lesson fail to impress it-

self upon the mind of those who read, not "as they run," but for the purpose of storing their minds with sound information.

Small Leaks in the Household Ship.

A thousand worm-holes, that will each admit scarcely a gallon of water during ten hours, will much sooner water-log a ship than a large hole through which is poured a gallon a minute. In the financial affairs of a family, though the large outgoes may be canvassed and avoided, the whole income may be dribbled away, and no advance be made toward competency, wealth, or position. As a rule, the financial success of any family depends more upon the economy of the wife than upon the earnings or business income of the husband. Mrs. Haskell, in her recently issued "Household Encyclopædia," throws together some of the small leaks in a household ship, which we copy for a double purpose: 1st, to show the men that their wives have a multitude of cares, of little details, to look after—generally far more items than occur in man's business pursuits; and 2d, to perhaps in some cases indicate to housewives details that they may not have thought of before:—

"Much waste is often experienced in the boiling, &c., of meats. Unless watched, the cook will throw out the water without letting it cool to take off the fat, or scrape the dripping pan into the swill-pail. This grease is useful in many ways. It can be burned in lamps mixed with lard; or, when no pork has been boiled with it, made into candles. When pork is boiled alone, it will do to fry cakes, if cleansed. Again, bits of meat are thrown out which would make hashed meat or hash. The floor is sifted in a wasteful manner, or the bread-pan left with dough sticking to it. Pie-crust is left and laid by to sour, instead of making a few tarts for tea, &c. Cake batter is thrown out because but little is left. Cold puddings are considered good for nothing, when often they can be steamed for the next day, or, as in case of rice, made over in other forms. Vegetables are thrown away that would warm for breakfast nicely. Dish towels are thrown down where mice can destroy them. Soap is left in water to dissolve, or more used than is necessary. If Bath brick, whiting, rottenstone, &c., are used, much is wasted uselessly. The scrub brush is left in water, pails scorched by the stove, tubs and barrels left in the sun to dry and fall apart, chamber pails allowed to rust, tins not dried, and iron-ware rusted; nice knives used for cooking in the kitchen, silver spoons are used to scrape kettles, or forks to toast bread. Rinsing of sweetmeats and skimmings of sirup, which make good vinegar, are thrown out; cream is allowed to mold and spoil; mustard to dry in the pot, and vinegar to corrode the cask; tea, roasted coffee, pepper and spices, to stand open and lose their strength. The molasses jug loses the cork, and the flies take possession. Sweetmeats are opened and forgotten. Vinegar is drawn in a basin, and allowed to stand, until both basin and vinegar are spoiled. Sugar is spilled from the barrel, coffee from the sack, and tea from the chest. Different sauces are made too sweet, and both sauce and sugar wasted. Dried fruit has not been taken care of in season, and becomes wormy. The vinegar on pickles loses strength or leaks out, and the pickles become soft. Potatoes in the cellar grow, and the sprouts are not removed until they become worthless. Apples decay for want of looking over. Pork spoils for want of salt, and beef because the brine wants scalding. Hams become tainted or filled with vermin, for want of the right protection. Dried beef becomes so hard it can't be cut. Cheese molds, and is eaten by mice or vermin. Lard is not well tried in the Fall, and becomes tainted. Butter spoils for want of being well made at first. Bones are burned that will make soup. Ashes are thrown out carelessly, endangering the premises, and being wasted. Servants leave a light and fire burning in the kitchen, when they are out all the evening. Clothes are whipped to pieces in the wind; fine cambrics rubbed on the board, and laces torn in starching. Brooms are never hung up, and soon are spoiled. Carpets are swept with stubs, hardly fit to scrub the kitchen, and good new brooms used for scrubbing. Towels are used in place of holders, and good sheets to iron, taking a fresh one every week, thus scorching nearly all in the house. Fluid, if

used, is left uncorked, endangering the house and wasting the alcohol. Caps are left from lamps, rendering the fluid worthless by evaporation. Table linen is thrown carelessly down and is eaten by mice, or put away damp and is mildewed; or the fruit stains forgotten, and the stains washed in. Tablecloths and napkins used as dish-wipers; mats forgotten to be put under hot dishes; teapots melted by the stove; water forgotten in pitchers and allowed to freeze in winter; slops for cow and pig never saved; china used to feed cats and dogs on; and in many other ways a careless and inexperienced housekeeper will waste, without heeding, the hard-earned wages of her husband; when she really thinks, because she buys no fine clothes, makes the old ones last, and cooks plainly, she is a most superior housekeeper."

The next time an unthinking husband is disposed to be severe because some trifling matter has been neglected, he should "put that in his pipe and smoke it."—*American Agriculturist.*

Loading Guns by Steam.

The English are great hands at getting up "new" things after they have been invented by somebody else first. An individual named "Walker" (a significant appellation) claims the armor on the Monitors as his discovery, and now another person, Mr. Cunningham, has just invented an apparatus for working large guns by steam power, and thinks it is a great novelty. Capt. Eads, of St. Louis, Mo., has now nearly ready for service a gunboat called the *Mihcau-kee*, which is an iron-hull gunboat with two revolving turrets, one of which is invented and patented by James B. Eads, and the other is after the plan of Capt. Ericsson. Both mount two eleven-inch Dahlgren guns. In Mr. Eads's turret the guns are moved entirely by steam, and are loaded in the hold of the vessel, and raised by steam to be fired. They are run out by steam and recoil against steam, one man being all that is needed to work the guns, with the exception of loading them. The portholes are only the size of the muzzles of the guns, yet twenty-two degrees of elevation and five degrees of depression can be obtained from them. It is now over two years since Edwin L. Stephens, Esq., exhibited a steam-loading apparatus on board of the *Naugatuck*.

A Chorus of Anvils and Artillery.

At the inauguration of the new Governor of the free State of Louisiana, which was celebrated at New Orleans on the 4th of March, the music probably surpassed, in noise at least, anything previously attempted. It was arranged and conducted by Mr. P. S. Gilmore, of Boston. The voices of 8,000 school children were accompanied by the strains of several military bands, and the chorus was swelled by the beating of 50 anvils, by the ringing of all the bells in the city, and by the thunder of 50 pieces of artillery! The cannon were fired simultaneously by one electric wire, the ends of which were brought to Mr. Gilmore's table, and the times of ringing the bells were controlled by connecting a wire from the table with the telegraph of the Fire Department. It is said that this bold and novel experiment was entirely successful, and that the blending of tremendous sounds was impressive beyond description.

A Novel Patent Case.

An interesting proceeding took place on Saturday, in the Supreme Court of the District of Columbia. The question involved was whether one of several assignees of a patent-right could legally apply for a re-issue. Mr. Holloway, the Commissioner, decided negatively, and, on Saturday, the assignee in question got a mandamus from the Supreme Court of the District to show cause why proceedings in respect to the application for re-issue had been stayed. John L. Hayes, Esq., the chief clerk of the Patent Office, appeared before the court, and made an argument in support of the position taken by the Commissioner, which Chief Justice Carter complimented for its ability, but he ordered that the case should be carried up at once to the court by a compliance with usual applications in form to effect that result.

Few people comprehend the great amount of sugar used annually in the United States. In 1862 there were 432,411 tons, or 864,822,000 pounds, or nearly twenty-nine pounds to each man, woman, and child, estimating the population at 30,000,000.

Improved Leather-polishing Machine.

The highly-finished surface of fine leather is usually imparted by hand labor; in this engraving we present a view of a machine for accomplishing this object which does the work in a superior manner and effects a great saving in time and labor. The construction and operation of this machine is as follows:—The framing, A, carries a vertical shaft, B, which works between two parallel bars, C, at the top, and is connected at D to a bar sliding between two rollers at E and F; this vertical shaft, B, is jointed to the connecting rod, G, which, in turn, is fixed to a cross-head sliding on guides between the timbers, H; from this crosshead proceeds the pitman, I, to the crank wheel, J, which is turned by power of any kind, either steam, water or by hand when neither of the other two are available. The bar, B, has a metallic roller, K, fastened at its lower extremity so that it can be adjusted to suit the nature of the work, and the skin to be polished rests upon a metallic plate underneath it. At one side of the skin may be seen a clamp, L; the skin is attached to this, as shown, and the clamp is then fed over the surface of the table, the roller, which is the polisher, acting on it continually. The belt which drives the feed gear is seen at M. There is also an arrangement for raising

the tool stock so that the operator can place another skin underneath the roller or tool when the first one is completed. This arrangement consists in applying a lever at one side of the frame so that the workman can press upon it with his foot and thus accomplish the object. The frame slides through mortises, N, at the bottom. The stroke of this machine may be altered at will by simply turning the hand wheel, O. This wheel is on a shaft that runs through the main driving shaft, and the pinion, P, is secured to it; there is a rack, Q, on one side of the crank which elevates or depresses the pin when the pinion is turned; suitable means are provided for keeping the pin stationary except when it is necessary to move it. These are the principal parts. It is obvious that when the tool stock, B, is put in motion that the sliding action of the wheel, K, will impart a high finish to the leather in a manner apparently every one without further explanation. These machines are said to work exceedingly well, two of them having already been put in operation. Any desired style of figure can be given and it is warranted to do the work expeditiously and thoroughly. One of them can be seen at work in Stockport, N. Y. The patentees desire to introduce their machine into districts where this labor is now done by hand, and capitalists desiring to embark in this enterprise should address the patentees, R. L. & C. Smith, of Stockport, N. Y. It was patented by them through the Scientific American Patent Agency on the 10th of January, 1860.

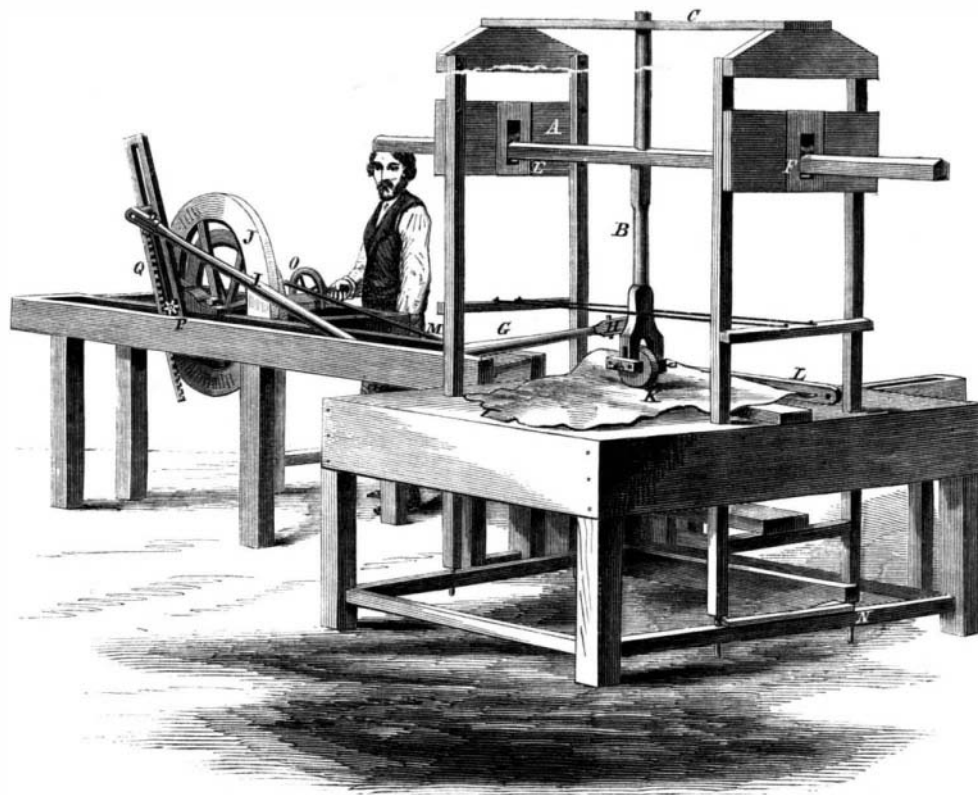
Improved Ox Yoke.

Those who have witnessed the practical everyday work on a farm must have been struck with

the imperfect means by which oxen are usually attached to the yoke, and how severely it taxes them at times, not only by its weight but because of its rigid and unyielding nature. The usual pace of the ox is slow and stately, and in his progress he naturally swings his ponderous head from side to side with even measure; but with the ordinary ox yoke all this is denied him, and he must literally "bow to his

F, which runs upon the rollers, G. It is easy to see, as the bolsters are moved back and forth on the yoke, the belt will run over the rollers and cause them to work evenly and easily as often as the oxen move their heads. Uneven roads and the natural habits of the ox are thus accommodated, and the result is a much greater amount of work with less fatigue to the cattle. The bows, H, also pass through metallic bushes,

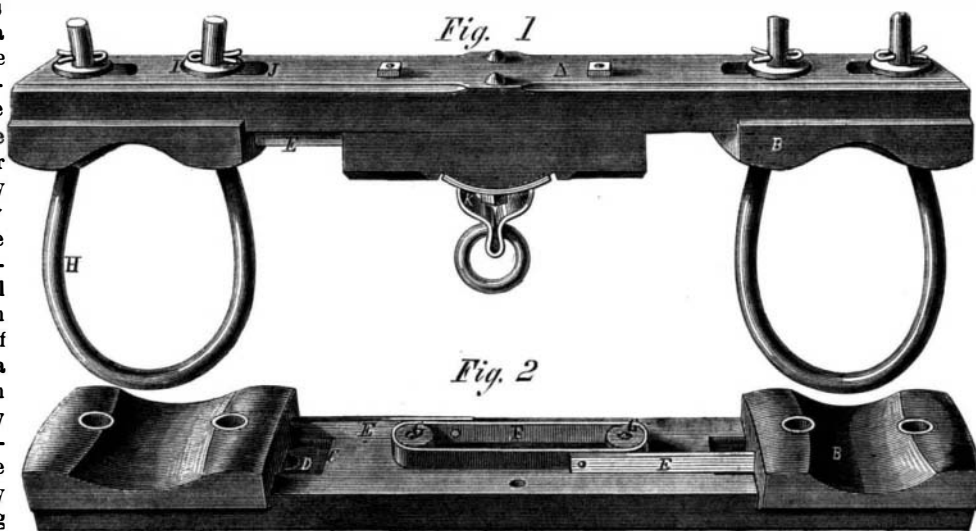
I, and the yoke beam has slots, J, in it through which the bows move as the bolsters approach or recede from the center. The eye-bolt in the center is also fitted to a semicircular seat, and the plate, K, has slots in it also, so that it can slip from side to side. This yoke is very strong and well made; it is correct in principle, and we hope to see it generally substituted for those so long in use. It was patented on the 4th of November, 1862, through the Scientific American Patent Agency by T. D. Lakin, and assigned to himself and Charles Wilder, of Peterboro', N. H. For further information address Charles Wilder, as above.

**SMITH'S LEATHER-POLISHING MACHINE.**

yoke" and bear its burden as best [he may. The consequences of this badly-arranged ox yoke are, that the beast is chafed and fretted by it; that he works with much less willingness, and gets wearied out sooner than he would if the yoke were adapted to his natural habits.

In the engraving herewith presented we have a yoke which is very different from the old-fashioned one, and much better suited to the peculiarities pre-

and four feet in width, capable of turning out armor plates of the largest size; the firm has also erected a sheet mill ninety feet long by eighty feet wide. The Messrs. McKnight, of the Birmingham Works, have erected a new sheet-iron and armor-plate mill, the buildings of which are sixty by eighty feet. The plate mill has a capacity of fifty tons per week, and is constructed with a view to the rolling of sheet-iron, for the production of which it has a capacity of one thousand tons a year. The Messrs. Jones & Laughlins, of the American Works, have erected a building two hundred by one hundred and twenty-five feet, within which is constructed two sheet mills, and a twelve-inch train for bar, and three eight-inch trains for small iron and hoops; three heating furnaces and two annealing furnaces. The capacity of these mills is thirty tons per day. Messrs. Reese, Graff & Dull have built a forge, a plate mill and a sheet mill, occupying a building two hundred and five by one hundred and five feet. The plate mill is constructed for rolling armor plates for naval uses, ten feet long and from one to

**LAKIN'S PATENT OX YOKE.**

viously alluded to. In addition to this paramount consideration it is very much lighter, neater looking, and, it is believed, altogether a great improvement. In Fig. 1 we have an elevation of this yoke in which A is the yoke proper, and B the bolster or saddle which spans the beast's neck. These bolsters slide back and forth on the yoke, being connected together in the manner shown in Fig. 2. By referring to this figure the reader will see that there are grooves, C, in the yoke, and that the bolsters have projections, D, which fit in them; he may also see that there is a metallic bar, E, connected to the bolsters on the yoke; these bars are strongly fastened to the endless belt,

one and a half inches thick, weighing from one thousand and six hundred pounds to a ton each. The plate mill has a capacity of one hundred tons, the sheet mills a capacity of fifteen tons, and the forge of two hundred and ten tons a week. They have also erected a hoop mill of two trains with a capacity of eighty tons per week, the mill building of which is one hundred and twenty by seventy-five feet. Messrs. Kroman & Philipps, and Messrs. Wharton, Brothers & Co., have each put up a new mill.

THE Pacific-coast gold mines yielded ore to the value of \$52,500,000 last year.