

IMPROVED CHURN.

The accompanying engraving is a sectional view of a new churn which, in addition to having various improvements in its construction, is claimed to produce and gather butter with great celerity. The apparatus rests on a base plate from which arise two standards, one of which is shown at A, which are surmounted by a top piece. The latter is cut to fit partially around the churn body, and is held in place by a detachable strap, B. The churn body is cylindrical in form and has a false bottom in which is pivoted the lower end of the dasher shaft, C. A number of radial arms or blades, made wide and inclined laterally, are secured to the dasher shaft, which is also surrounded by a curb or tube, D, in which it freely revolves. The curb, D, fits into a similar tube, E, which has radial flanges, F, attached to it, the outer edges of which rest against the inner surface of the churn body, so as to keep both curbs accurately centered and securely in place. The lower ends of the flanges, F, project below the lower end of the tube, E, supporting the same at a distance above the bottom so as to give a clear passage for the milk beneath. In operation, the curb, D, is adjusted so that its upper edge may be a little above the surface of the milk to be churned. Then, as the dasher is revolved, the blades raise the milk through the curb and project it outward over the edge against the sides of the churn body. A constant inflow of milk is thus caused beneath the lower edge, thus providing a continuous circulation and violent agitation of the contents of the churn, causing butter to appear in a very short time. The flanges, F, prevent the milk from receiving a circular motion from the dasher, by which its inflow beneath the curb would be impeded.

The cover of the churn is made in two parts, and has half round notches in the center, which, when the appliance is in place, form the upper bearing of the dasher shaft. To the upper end of the latter is attached a small pulley which communicates, by means of a belt, with a larger wheel provided with a handle to serve as a crank, as represented. The faucet shown at the base of the churn serves to draw off the contents when desired.

Patented April 22, 1873, by Mr. William H. Holdam, of Crab Orchard, Lincoln county, Ky., from whom further particulars may be obtained.

ODORLESS WATER CLOSET ATTACHMENT.

There is probably no more insidious cause of disease than the foul emanations from sinks and water closets. In city houses, the latter especially, through their close proximity to other portions of the dwelling, are often the source of serious nuisance.

In order, as it is claimed, entirely to obviate the disagreeable odor attendant upon the employment of these receptacles, the device illustrated in the accompanying engraving has recently been invented. It consists of a bellows, A, arranged with suitable inlet and outlet valves, the supply pipe of which connects with the upper end of the trap or the closet, and the pipe leading therefrom communicates with the lower part of the trap or the soil pipe, thus conveying the foul air from the bowl to the sewer conduits. The bellows arrangement is operated by a lever, cord, and pulleys in combination with the pull, as represented, or, in hopper closets, by the working of a cock.

The device is simple, and easily attached to ordinary closets. The inventor relates that he has tested it for some time in actual employment, with uniformly satisfactory results.

For further particulars address Mr. Philip C. Rowe, 203 Harrison avenue, Boston, Mass.

Improved Ship Signal Lights.

William Harvie, a coppersmith of Glasgow, Scotland, is the originator of an excellent improvement in this line, which has come into extensive use for steamships and sailing vessels. He employs lenses on the dioptric system, of pressed glass, and has succeeded in getting a paraffin light to burn brightly in any weather, without a glass chimney.

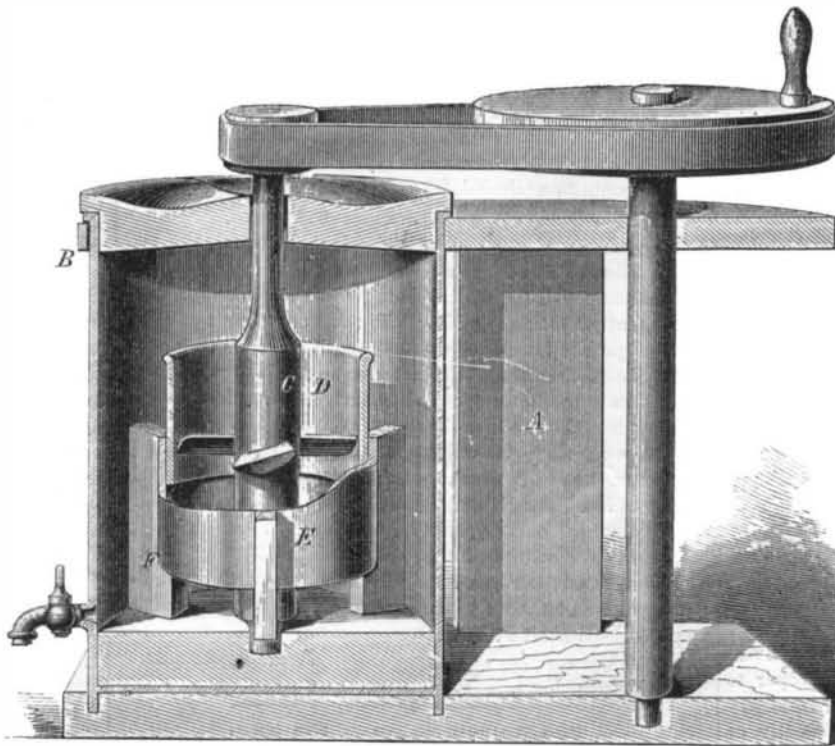
In order to accomplish this result, Mr. Harvie so divided the lamp that the inside chamber formed the chimney proper, the air for maintaining combustion passing down the upright tube, entering under a false bottom. The funnel by which the products of combustion escape from the lamp is so protected that no blow-down can take place; indeed, it seems that the Harvie lamp burns better in a storm than otherwise.

When subjected to a photometric examination in the public gas testing office Glasgow, the Harvie patent signal lamp was found to give, in front, a ray of light from the center of the lens equal in intensity to that given by ninety-eight standard sperm candles, and at the side a ray of light from the center of the lens equal to the light of sixty-seven candles; while the common lamp in front gave a light equal to eight

candles, and at the side the light of three candles. And while the naked light of the patent lamp was equal to eight and a half candles, that of the common lamp was only equal to three candles. Hence, not only are the rays of light thrown in the proper direction, but the increased illuminating effect of the light is due both to the lens and the lantern itself.

The Australian Water Cooler.

In reference to this device, illustrated on page 371 of our volume XXIX, our excellent correspondent Mr. O. C. Woolson states that similar vessels are used in the West Indies;

**HOLDAM'S IMPROVED CHURN.**

they are made in Spain, of a very porous earthenware from blue clay. "In no case must you touch your lips to the jar, but hold it above your head, anywhere from six inches to two feet, and let the liquor run into your mouth, or, rather, clear down your throat. It is a remarkable fact that, in quenching thirst in this way, you cannot drink one drop more than just what your stomach needs; and if you keep on pouring after that point is reached, you run in danger of

would, for the reason above given, save many a fellow from the cramp. I am going to try the clay in this country, to see if it is suitable for the purpose."

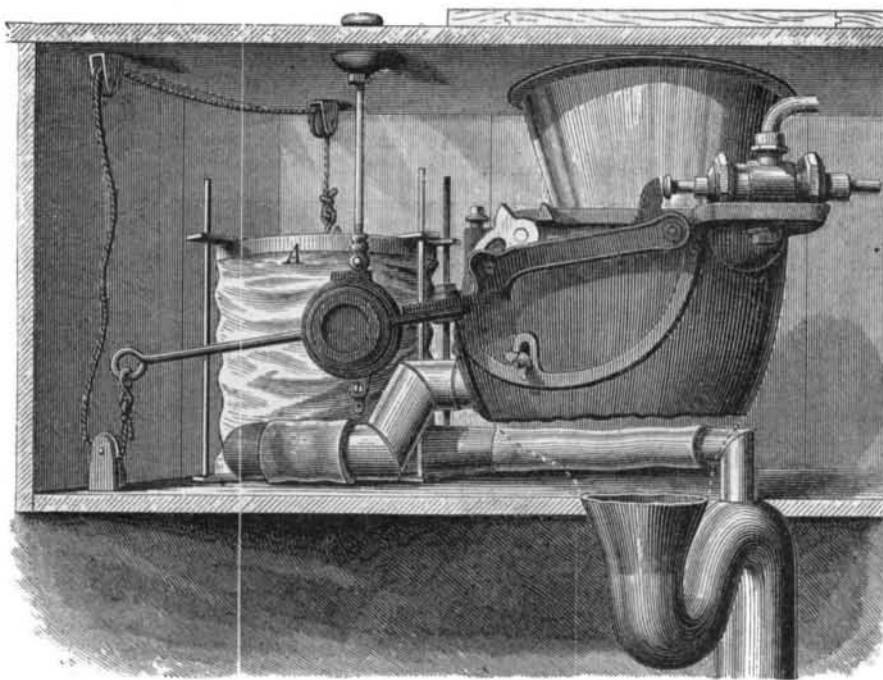
What shall we do with our Boys?

It is as impossible to make a chemist, or an engineer, or a naturalist, of a boy, if he has no special taste or aptness for these studies, as to make a poet out of a Digger Indian. It is no unusual circumstance for parents who have boys just entering upon manhood to come to us desiring counsel in regard to placing them in a chemical laboratory, that they "may learn the trade," as, to their eyes, the business appears remunerative. They have no special genius, no training in preparatory studies, no decided leaning towards chemical manipulation or research, but the desire is to have them "made" into chemists. There is a mistaken idea, common to many parents, that their children are as well adapted to one employment as another, and that they only need opportunities to learn regarding this pursuit or that, to become proficient and rise to eminence. More than half the sad failures so commonly observed are due to being forced into the wrong road in early life. Young men are forced into pulpits, when they should be following the plough; forced into courts of law, when they should be driving the plane in a carpenter's shop; forced into sick rooms, as physicians, when they should be guiding a locomotive, or heading an exploring party into the Rocky Mountains; forced into industrial laboratories, when they should be in the counting room or shop.

It is a wise provision of Providence that nearly every boy born into the world has some peculiar distinctive capability, some aptness for a particular calling or pursuit: and if he is driven into channels contrary to his instincts and tastes, he is in antagonism with Nature, and the odds are against him. One of the earliest and most anxious inquiries of parents should be directed to the discovery of the leanings of their children, and if they find that their boy, who they earnestly desire shall adorn the bar or the pulpit, is persistently engaged in constructing toy ships, and wading in every puddle of water to test their sailing qualities; if he reads books of voyages, and when in a seaport steals away to the wharves, to visit ships and talk with sailors, it is certain he is born for the sea. Fit him out with a sailor's rig, put him in the best possible position for rising to the honorable post of ship-master, and you have discharged your duty. If, on the other hand, he is logical, discriminating, keen, fond of argument, let him enter the law; if he is fond of whittling, planing, sawing, constructing, and neglects his studies, turn him over to a good carpenter, to learn the trade. If he begins early to spend his pennies for sulphur, niter, oil of vitriol, *aqua fortis*, etc.; if he is such a persistent experimenter that you fear he will kill himself, or set your buildings on fire; if his pockets are full of abominable drugs, and his clothing so charged with the odor of stale eggs that you refuse to admit him to the table at meal times, why, the chances are that he is a "born" chemist, and it will be safe to start him off to some technical school for instruction.

The question is, not what we will make of our boys, but what position are they manifestly designed to fill; in what direction does Nature point, as respects avocations or pursuits in life which will be in harmony with their capabilities and instincts? It is no use for us to repine and find fault with the supposed vulgar tastes of our boys. We must remember that no industrial calling is vulgar; every kind of labor is honorable; and it is far better to be distinguished as a first class cobbler or peddler than to live the contemptible life of a fifth rate lawyer or clergyman.

There are thousands of boys born into the world possessing scarcely a trace of ambition. Such do not care for distinction, or even for wealth; if they can procure the humblest fare, by constant toil, the aspirations of their boyhood, and subsequently of their manhood, are fully met. They are negative characters, happy with nothing, and suffer no elation or depression, whether in sunshine or under a cloud. These boys, who often afford much mortification to ambitious parents, fill a most important niche in the world; in fact, the world could not do without them. They constitute the great army of men who build our railroads, tunnel our mountains, load and unload our ships, cut down our forests, and manipulate the red hot iron masses which come from our blast furnaces. We cannot alter the temperaments of such boys. Nature is stronger than we are, and well is it that this is so. We may hold them by the power of wealth or controlling influences, but when these fail they fall at once to their place, in obedience to a law as irresistible as that which Newton discovered in the fall of the apple. Study to learn what they are capable of doing for themselves; encourage them to do well whatever work is suited to their natures. Regard every calling as honorable, the labor of which is honorably performed, and thus insure happiness and prosperity to our offspring.—*Boston Journal of Chemistry.*

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choking yourself. There may be some of your readers and thinkers who doubt this, but I state it as a fact; and you may try again and again to swallow more than you really require, and you will be foiled every time; and for this reason I regard the practice of quenching thirst in this way the most healthy that was ever tried. In very warm weather, when one is inclined to drink often and much, to the injury of health, it goes beyond the practice of taking one swallow and two breaths, etc. It takes a little practice to accomplish the throwing the water in the mouth, and the first attempt will probably require a change of shirt and possibly one's whole attire; but that would only occur with those that are extremely awkward; generally the third or fourth attempt is successful, and then it is as simple as drinking from a glass. In some parts of Spain, they drink wine from these jars; and it is said that, when it is passed around the table for each person to drink, in case any one, not accustomed to the practice, allows his lips to touch the spout, the next in turn takes it and without a word throws it upon the floor and calls for another jar. That will do very well for Spain, but we do not handle wine in that way. I hope the time will come when these jars are generally used in this country. For rolling mill and furnace men they are very suitable, and