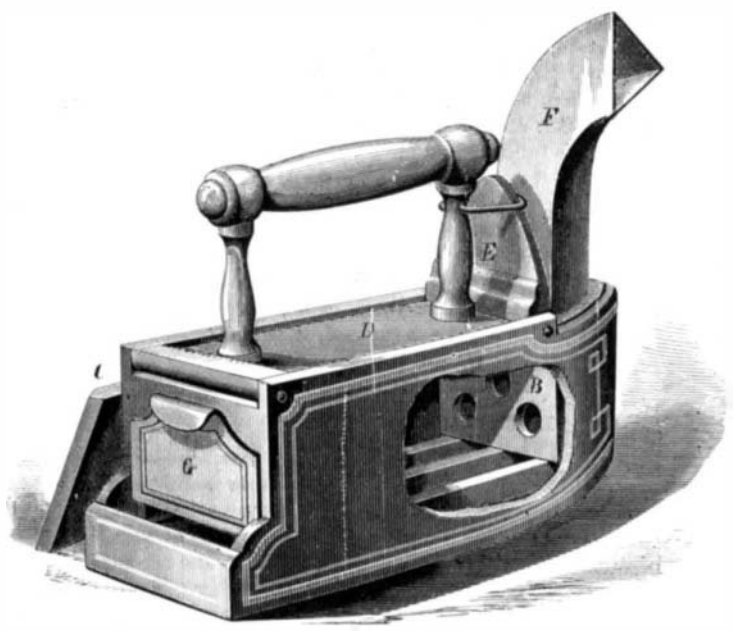
IMPROVED SADIRON.

In the accompanying engraving is represented a new sadiron, which is heated by fire placed within it. Devices are provided for regulating and maintaining a draft and for keeping the smoothing plate at a uniform heat. By this arrangement the frequent warming of the implement is avoided, and time and labor thus economized. As shown in the illustration, a portion of the side is broken away in order to exhibit the interior. The bottom plate is made with a rearward extension and an external box or chamber. which prevents the escape of ashes. On the bottom plate is cast a series of longitudinal ribs, between the ends of which and the walls air passages are left. Said ribs prevent the packing of the fuel on the bottom plate, and also serve to increase the draft which traverses the channels between them. They also make a connecting medium between the fire and the bottom plate, so that the latter, even when covered with ashes, is kept at a uniform heat. B is a partition which is inserted in grooves, and which rests on the ribs as shown. It may either be solid, as at C, in which case the draft passes beneath it, and combustion is confined to the under portion of the fuel, or it may be perforated as represented in place, when the draft is augmented, and a greater heat gained.

The lid is made in two sections, the larger of which, D, is hinged or swung on pivots at the rear, so that it may be turned up to give access to the fire chamber. When down, it is held in place by a shoulder on the front section, E. The latter neatly fits over the forward triangular compartment and can also be raised to a vertical position, in which case a flange or shoulder, as shown in the illustration, projects over and holds the section, C. The loop attached to the handle holds the front section in an upright position. F is the chimney, constructed to fit in the forward compartment. It may be inserted or removed as desired in order to increase or diminish the draft. The sliding door, at G, admits of shutting off the air supply, and thus extinguishing the fire.

Patented May 18, 1875. It is desired to sell the patent to the highest bidder, between the present time and the beginning of 1876. For further information address the inventor, Mr. R. H. Hasenritter, Hermann, Gasconade county, Mo.



HASENRITTER'S IMPROVED SADIRON.

THE CENTENNIAL COMBINATION CULINARY APPARATUS.

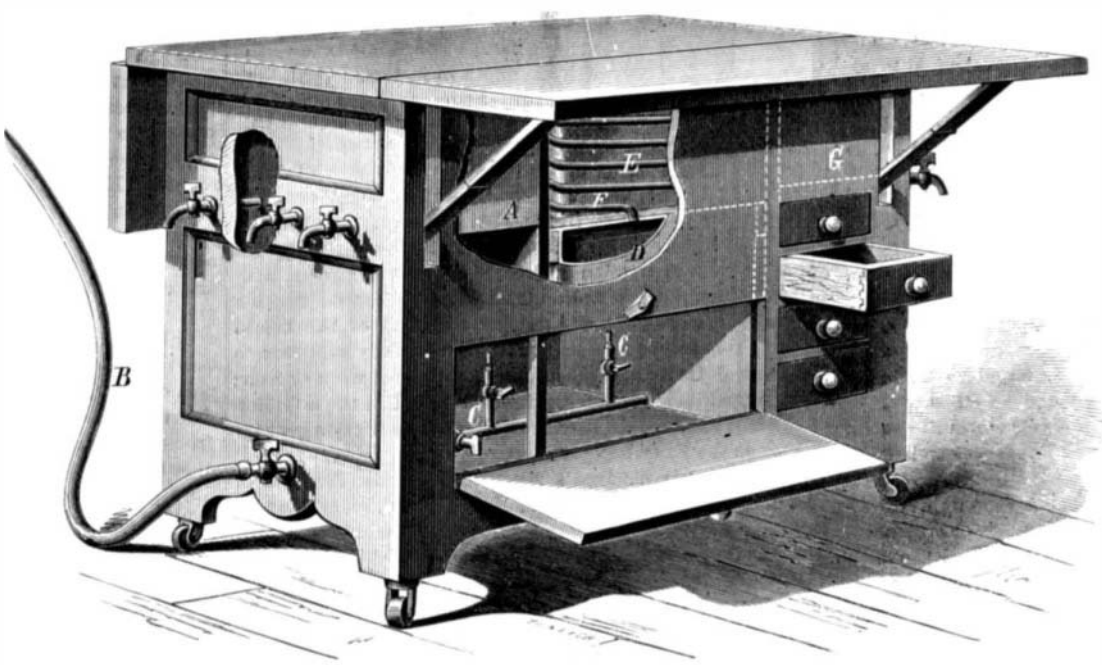
The annexed engraving represents an ingenious piece of furniture in which are combined a variety of articles which we presume were never before brought into such immediate conjunction. In the one device there is an ice box and a heating apparatus, which last may be used for any culinary operation or for clothes boiling. There are several useful drawers, besides a receptacle for a constant hot water supply, while the top may serve as a table. The invention is, in fact, a kitchen in itself, and is well suited for the wants of small families living in limited apartments. It obviates the use of the cooking stove, and thus the heat and expense of the same are avoided. It is compact in size, requiring no more room than an ordinary table, and its construction is quite simple.

The top may be extended by the swinging leaves shown, which are supported by jointed braces. These, when the leaves are not raised, fold back into suitable chambers. At A are arranged tanks for heating water and for preparing tea and coffee. B is a tube which conducts gas to the burners, at C. Instead of gas, kerosene lamps may be used. The heat from either gas or lamps warms water in the tank, D, the steam from which is utilized in the steamer, E, through the latter having a perforated bottom. From the steamer the steam enters the worm, F, there condenses, and returns to the tank, D, thus securing a constant water supply in the latter, and also being prevented from escaping into the room. Access is given to the fire chamber by the door shown. The ice box, which is located at G, is made with a perforated bottom, so that it can be used for other purposes if desired. The faucet in connection therewith carries off the waste water.

The steamer may be replaced by a sheet iron pan, having apertures for kettles, spiders, etc., or by a pan adapted for holding as many as a dozen flat irons at once, to heat the same. Also a sheet iron oven may be inserted for baking purposes. The condenser can be inserted and used as a wash boiler, in which case the coil, F, will conduct a stream of water upon the clothes, thus cleansing them more quickly and saving in a measure the work of rubbing them. There is also a bread tray and mixer, which can be used for washing disbes. Bread can be set and raised in the coldest weather in the tray, if the latter be kept slightly warm by means of a small lamp or gas flame.

The inventor states that the cost of burning kerosene in his apparatus will not exceed one cent per hour. Of course heat can be generated or extinguished in a few minutes and readily adjusted to any required degree by simply regulating the lamps or gas. The invention may be found useful for camp meetings, picnics, etc., and might prove especially convenient for families who occupy small apartments in Philadelphia during the Centennial.

Patented September 17, 1875. For further information address Mr. A. J. Randall, Belvidere Seminary, Belvidere, N.J.



THE CENTENNIAL COMBINATION CULINARY APPARATUS.

Steam as a Fire Extinguisher.

A remarkable instance of the thorough efficiency of steam as an extinguisher of fire in an enclosed space is afforded by the report of the master of the steamship Petrarch, of Liverpool. The Petrarch was bound from Genoa to Antwerp, with a cargo of sulphur, etc., and after passing Lisbon experienced very severe weather, and at 10 o'clock A.M. was struck by a heavy sea, which threw her on her beam ends. A loud report was then heard from the forehold, and smoke was discovered arising from the ventilators and hatches. The hatches were immediately opened to ascertain the cause, and the cargo was found to be on fire. The vessel was then put before the wind. and the hose laid on, and four feet of water pumped into the hold. The fire, however, increased; and finding water of no avail, the hatches were battened down and steam was turned on at high pressure from the main engine. At 6 A. M. the cargo was still found to be burning; but at 8 A. M. the fire was mastered, and the vessel then proceeded to St. Nazaire, where she arrived in safety. The master attributes the extinction of the fire and the consequent safety of the vessel to the use of the steam jets.—*Nautical Magazine.*

Look Out for the Sewing Machine Monopolists.

It will be remembered that a signal failure attended the efforts of the sewing machine combination to procure the sanction of Congress last winter to an extension of the sewing machine monopoly. We learn that the combination intend to make a vigorous outlay of money during the coming session in the hope of extending another patent, which will have the same effect which the extension of the former patent would have secured. Indeed, it is said that the matter has been so effectually "fixed" that the extension will be renewed without serious opposition.

BRASS wire should be softened before being used for rivets. To soften, heat and allow to cool or dip in water.

Another Rival for Keely.

Still another competitor has made his appearance, and disputes the laurels of the far-famed Keely. Unlike the frank manufacturers of the puzzling apparatus which we illustrate in another column, the new discoverer does not avow his machine to be a trick or clever mechanical problem, but declares it a *bona fide* motor, capable of generating gigantic and colossal power from a ten foot water pressure, and to be operated by mechanism which consists simply of—but that is a secret. The inventor, Mr. Thomas of Chicago, wants to bet Keely $5,000 that his motor will do all Keely's does and that continuously, and in a few weeks he is going to run a large factory with it, and make an improved machine, and get a patent, etc

Inter-Ocean describes the new wonder as follows

"Two cylinders, of cast iron, about twelve inches in diameter and twelve inches deep, with appropriate internal pipes, compose the generator, into which a stream of water is admitted at a pressure of about ten pounds to the square inch, and at a velocity equal to that pressure; in other words, the contents of the generator, which consist of pure water and air, only receive the momentum or energy due to the motion of water under a ten foot head. From the top of each of these cylinders rises a cap or receptacle, similar to the air chamber of an old-fashioned fire engine. From the cap on one of the cylinders, a pipe appears to run to the other cylinder; and from the chamber on top of the second cylinder, a tube connects with the reservoir where the power is stored. The reservoir is of heavy iron, and from the top of it rises a hollow pillar of cast iron, like the cylinder of a steam engine, only, of much greater strength. Within the cylinder which has a bore of about one and one half inches' plays a rod of iron half an inch in diameter. This rod terminates in a solid cap of iron beveled at top to a knife edge, which is crossed by an iron bar about five feet long. This bar acts on the same principle as the lever of a safety valve, the top of the iron rod being the fulcrum, and the weight on the further end of the lever bearing down on the rod with a force equal to 8,000 on the square inch.

"As soon as the stream of water is permitted to flow into the cylinders of the generators, the motive power begins to collect in the reservoir, and, passing up through a check valve in the bottom of the cylinder, which is above the reservoir, forces the iron rod and the lever up to the ceiling; here its upward progress is stayed by the heavy frame work of the building."

The Germination of Seeds.

Some interesting experiments on the growth of seeds have been conducted by M. Uloth. These were undertaken with a view to determine whether seeds could be made to germinate in ice, and the process may be described as follows: Seeds of various species were placed in grooves made in ice cakes, and over the grooved surface other plates of ice were laid, and the whole removed to a cool cellar in January, and there they remained till the following May. An examination then made disclosed the fact that many of the seeds had actually germinated, the roots penetrating into the ice. It is but natural, says *Appleton's Journal*, that facts of this startling character should give rise to controversy, and so we are not surprised to learn that opposite views are entertained as to whence the heat needed for the process of growth was obtained. In the opinion of the experimentor, it was obtained, or rather liberated, in the growth of the roots while forcing themselves into the ice.

From Norway.

One of our subscribers, resident at Flekkefjord, Norway writes us as follows:

At one of the last sittings of the Storthing (the Norwegian parliament) appropriations were made for a general exploration of the waters that lie between the Faroe Islands, Iceland, Spitzbergen, and the coast of Norway. A body of scientific men is to attend the expedition, which is to start in the spring, next year. A steamer is now being fitted out, at Bergen, for the purpose.

"Advices from Hammerfest state that the Swedish polar expedition arrived at the mouth of the Jenisei river on August 15. Four days afterwards Professor Nordenskjöld left the vessel, to return to Stockholm overland. The vessel arrived at Hammerfest on September 26, carrying with her a rich collection of natural history specimens."

THE truest threads in holes are cut from taps having no clearance in the threads. Such taps also cut threads more uniform in size than those having clearance in the thread

THE corners of the square head of a tap should be well rounded or chamfered off, so that the wrench will readily adjust itself to the square of the tap.