

agents, or for other reasons, are cordially invited to correspond with the publishers of this paper regarding their cases.—Eds.

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week; the claims may be found in the official list:—

Shoe for Mill-stones.—This invention consists in providing the shoe of the hopper of a pair of mill-stones with a screen arranged in such a manner as to effectually separate sand, cockle, and other impurities from the grain before the latter passes into or between the stones. The machines now used for cleansing grain, previous to the grinding thereof, do not perform the work thoroughly; some sand and other impurities will escape, especially if the grain be quite fowl. This improvement will separate these impurities from the grain, in consequence of the latter passing through or over the shoe in small quantities just previous to entering into the eye of the stone. Henry P. Crouse, of Hartland, Michigan, is the inventor.

Improved Faucet.—This invention relates to certain improvements in the construction of cocks or faucets whereby the principles and features of a compression valve and the opening and closing motions of the ordinary plug valve are combined, and an article produced which is simple in construction, durable in wear and which can be operated more easily than any other. John Broughton, of 41 Center street, is the inventor.

Cork Hat.—This invention consists of a cork hat made of two layers of cork which are prepared with composed oil, and packed or attached to an intervening piece of canvas, muslin or other textile fabric, in such a manner that a hat is produced which is durable, elastic and impervious to water and to the rays of the sun. By preparing the cork with such oil the hardness is removed from the same, and it is rendered soft, elastic and impervious to water. Thus prepared, the cork is applicable to hats, bonnets, caps and, in fact, to head coverings of every description. The hats made according to this invention are superior for lightness, strength, durability and coolness, and it is particularly applicable to hats used in summer and in warm climates. A. C. Crondal, 706 Broadway, is the inventor of this improvement.

Machine for grinding and polishing Saws.—This invention relates to a new and improved machine for grinding and polishing hand saws, whereby the work may be done in a very expeditious and perfect manner. The invention consists in the employment or use of a horizontal wheel provided with grinders or polishers, and having its shaft fitted in a suitable framing on the top of which there are placed a series of boxes to receive the saws to be operated upon by the grinders or polishers, which, as the wheel rotates, pass over the saws and perform the work. J. H. Weaver, of Waynesville, Ohio, is the inventor.

Raising Machine.—The object of this invention is an improvement in that class of machines which are used to raise or turn up the edges of sheet metal articles, such as plates, dishes, waiters, coffee-trays, etc., and it relates particularly to a machine intended for producing the raised edges of oval or elliptical coffee-trays. The invention consists in the employment or use, in combination with the rotating raising dies, of a swinging platform which can be raised to, and retained at, any desired inclination, in such a manner that the blank can be gradually brought from a horizontal to an inclined position while its edge is exposed to the action of the raising dies, and thereby the rim is turned up and shaped according to the configuration desired. In turning between the dies the blank is guided by its edge being held in contact with two adjustable stops, which determine the height or width of the rim to be produced. Henry Facks, of New York City, is the inventor.

Preparing Moldings.—This invention relates to an improvement in that class of machines, by means of which the preparation made of glue and chalk is spread upon the surface of wooden moldings previous to the application of the metal foil used in gilding. The invention consists in the employment or use of a box to contain the preparation, said box

being provided with a steam or hot water jacket, and arranged in combination with an endless belt with carrying hooks acting upon the moldings to be prepared in such a manner that the preparation is kept at a uniform temperature, and applied at such temperature to the surface of the molding in even and uniform layers; also in the use of an endless carrying belt running over smooth pulleys or drums for the purpose of feeding the moldings along under the box containing the preparation, and under the scraper, in such a manner that the motion of the moldings is perfectly uniform and steady, and the jar consequent upon the use of cog wheels or toothed racks for feeding the moldings is avoided; finally, in the application of side flanges to the scraper, the under surface of which is tapering down from its inner edge to the scraping edge in such a manner that said scraper forms a receptacle to retain the preparation and to prevent it running over the sides of the molding. Gustave Henze, of 329 Fifth street, New York City, is the inventor.

The Way to Make Black Ink.

We publish in full the directions and remarks of Dr. Ure in relation to making this article of universal use:—

Nutgalls, sulphate of iron, and gum, are the only substances truly useful in the preparation of ordinary ink; the other things often added merely modify the shade, and considerably diminish the cost to the manufacturer upon the great scale. Many of these inks contain little gallic acid, or tannin, and are therefore of inferior quality. To make 12 gallons of ink, we may take 12 pounds of nutgalls, 5 pounds of green sulphate of iron, 5 pounds of gum senegal, and 12 gallons of water. The bruised nutgalls are to be put into a cylindrical copper, of a depth equal to its diameter, and boiled, during three hours, with three-fourths of the above quantity of water, taking care to add fresh water to replace what is lost by evaporation. The decoction is to be emptied into a tub, allowed to settle, and the clear liquor being drawn off, the lees are to be drained. Some recommend the addition of a little bullock's blood or white of egg, to remove a part of the tannin. But this abstraction tends to lessen the product, and will seldom be practised by the manufacturer in view upon a large return for his capital. The gum is to be dissolved in a small quantity of hot water, and the mucilage thus formed, being filtered, is added to the clear decoction. The sulphate of iron must likewise be separately dissolved, and well mixed with the above. The color darkens by degrees, in consequence of the peroxydization of the iron, on exposing the ink to the action of the air. But ink affords a more durable writing when used in the pale state, because its particles are then finer, and penetrate the paper more intimately. When ink consists chiefly of tannate of peroxyde of iron, however black, it is merely superficial, and is easily erased or effaced. Therefore, whenever the liquid made by the above prescription has acquired a moderately deep tint, it should be drawn off clear into bottles, and well corked up. Some ink-makers allow it to mould a little in the casks before bottling, and suppose that it will thereby be not so liable to become mouldy in the bottles. A few bruised cloves, or other aromatic perfume, added to ink, is said to prevent the formation of mouldiness, which is produced by the ova of infusoria animalcules. I prefer digesting the galls to boiling them.

The operation may be abridged, by peroxydizing the copperas beforehand, by moderate calcination in an open vessel; but, for the reasons above assigned, ink made with such a sulphate of iron, however agreeable to the ignorant, when made to shine with gum and sugar, under the name of japan ink, is neither the most durable nor the most pleasant to write with.

From the comparatively high price of gall-nuts, sumach, logwood, and even oak bark, are too frequently substituted, to a considerable degree, in the manufacture of ink.

The ink made by the prescription given above, is much more rich and powerful than some of the inks commonly sold. To bring it to their standard, a half more water may safely be added, or even 20 gallons of tolerable ink may be made from that weight of materials, as I have ascertained. Sumach and logwood admit of only about one-half of the copperas

that galls will take to bring out the maximum amount of black dye,

Chaptal gives a prescription in his *Chimie appliquee aux arts*, which, like many other things in that book, are published with very little knowledge and discrimination. He uses logwood and sulphate of copper, in addition to the galls and sulphate of iron; a pernicious combination, productive of a spurious fugitive black, and a liquor corrosive of pens. It is, in fact, a modification of the vile dye of the hatters.

Lewis, who made exact experiments on inks, assigned the proportion of 3 parts of galls to 1 of sulphate of iron, which, with average galls, will answer very well; but good galls will admit of more copperas.

Useful Application of "Slag."

It is with satisfaction that we are able to direct attention to the invention of an improved mode of applying blast-furnace slag to building purposes, which has lately been devised by Mr. Parry, of the Ebbw Vale Ironworks, the more so since this method appears to strike at the root of the difficulties which have hitherto been insuperable obstacles to the application of blast-furnace slag. By applying a blast of air, or a jet of steam, to the slag as it runs from the smelting-furnace in a melted state, it is suddenly cooled, and reduced to a state of extreme subdivision, so as to be easily reducible to powder, an operation that would be entirely out of the question for any purpose with the slag in its usual stony condition. By this ingenious device, the slag is converted into a material eminently suitable for the purposes of brick-making, and for the manufacture of artificial stone, and it is also proposed to use it as a manure. To any one who has visited iron-smelting works, and seen the enormous mountains of slag, or, as it is technically termed, "cinder," growing around them, and covering land which would else be available for other purposes, the importance of any means of rendering this material useful will be apparent. Those who have not had this opportunity of judging will readily understand the importance of the subject, on considering that for every tun of pig-iron made, some three or four tuns of slag are produced, and that the present make of pig-iron in this country amounts to the enormous quantity of four and a half million tuns a year.

The advantage of turning this waste slag to account would be almost incalculable, for not only would the profit of the iron-master be increased, but the cost of iron might be reduced, if Mr. Parry's method of using the slag should result in that success which there is every reason to anticipate it will meet with. Another point which is deserving of notice in regard to this application is that it is one which in its magnitude bears some proportion to that of the production of the material sought to be used. The rapid progress of building and of engineering operations is such as to offer a promising future to any good plan of providing materials for construction from other sources than those hitherto available, and probably of better quality than have hitherto been obtainable. The manufacture of bricks is one of those arts which has remained, probably, more stationary than is the case with most branches of industry, and the activity which has of late years been manifested in the attempts to produce artificial stone or building blocks shows that there is a want of something more, and, if possible, better than the old-fashioned clay brick, which has, in its time, done good service, and is, therefore, not to be despised, but which, in common with all other things, is liable to be superseded in the ordinary progress of improvement, and in consequence of the development of new requirements and new resources. We sincerely hope that this interesting invention of Mr. Parry's may prove to be all that he can hope and all that can be desired, both in advantage to himself and to the community generally.—*London Mining Journal*.

PRESERVED FRUIT.—We are indebted to the Oneida Community, Oneida, N. Y., for some choice specimens of their preserved fruits. They are nicely put up in glass jars, and not only attract the eye but delight the taste. We recommend our friends who wish to purchase a good article in this line to call on M. L. Bloom, Agent of the Community, No. 40 Reade street, New York.

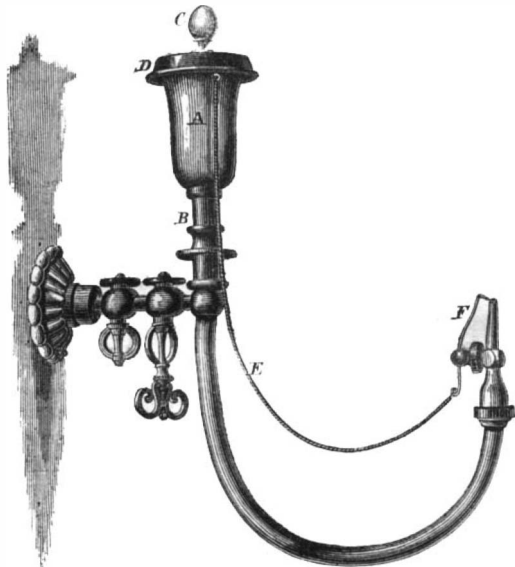
Improved Boot-blackening Case.

No doubt many of our readers who polish their own boots and shoes have found it exceedingly inconvenient to have their brushes and blacking lying about in one place and another, wherever careless housemaids choose to throw them. There are often busy little fingers, too, prone to do things which they should not, ready and eager to investigate the contents of the blacking boxes, and to eat the paste for the sake of the sweetish taste the molasses imparts to it. It is also annoying to hunt about for a box, or some place to put the foot on while the boot is polished. All these vexations will hereafter be avoided wherever the apparatus illustrated in the accompanying engraving is used. It will be seen that a neat box is provided, with a pedestal, A, on which the foot is set. This pedestal has a spring base, so that the foot can be inclined at any angle, and all parts become accessible to the brush. The blacking is always held firmly in one place, and the brushes are to be put inside the case; the lid lifts for that purpose. The bottle at the side contains liquid blacking, so that all the necessary fixtures have their several places. The wire handles, B, at one end of the case, afford a convenient brace to hold by while polishing. The can, C, is to contain water for the paste blacking. This is a very useful contrivance, and one which should be introduced into every well-regulated house. To persons living in hotels or boarding-houses, as well as housekeepers, it will be found equally advantageous.

Patented through the Scientific American Patent Agency, on the 13th of October, 1864, by J. H. Porter, No. 415 Hudson street, New York. For the apparatus or purchase of rights address as above.

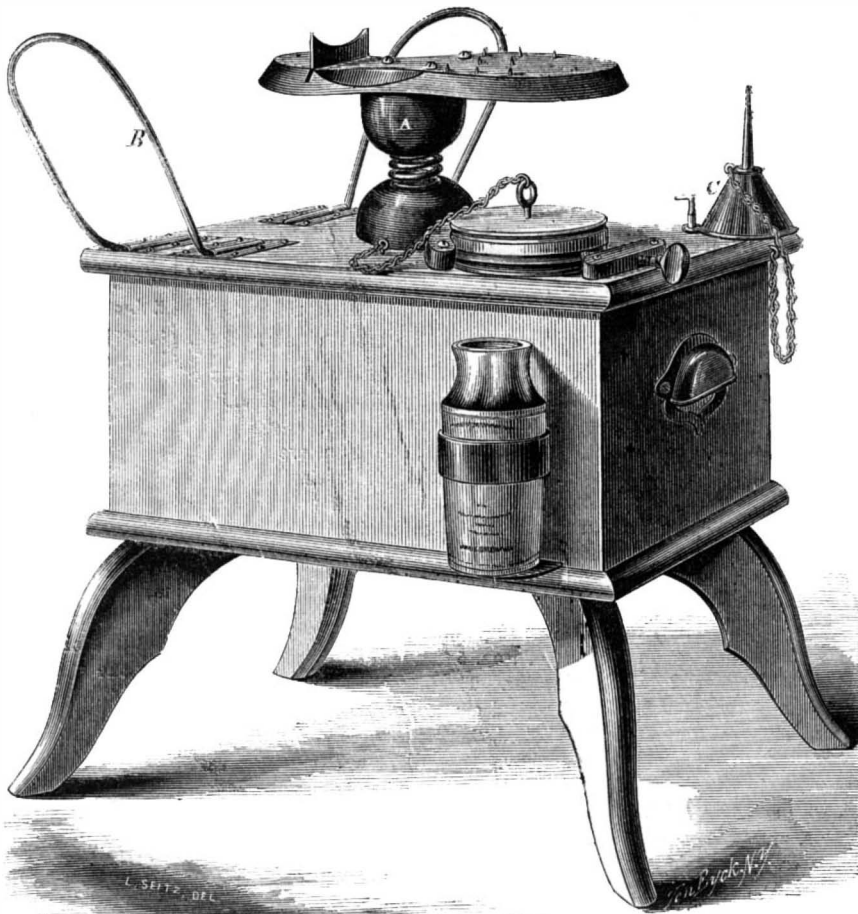
CORNELIUS AND BAKER'S ELECTRIC BRACKET.

The idea of lighting gas by electricity is not new. In former years many plans were tried to effect the object, but they all lacked the simplicity required to make them practicable. When the Cooper Insti-



tute was dedicated it was intended to light every burner instantaneously by electricity at a certain point in Mr. Cooper's (the founder) address. The time came, but the light did not; and the orator, after pausing for a light in vain, omitted that part of the ceremony. This bracket, or apparatus, is liable to no such derangement, for the electric current is generated by friction, and is certain to work. We have

one in our office, and have tried it at all times and found it infallible. It will be generally understood by the following description:—The brass cup, A, sets on the hard rubber insulator, B, and has a fur lining, which is afterward covered with silk. The knob, C, is the handle to a hard rubber cap, D, which fits the cup so snugly that a slight pressure is needed to force it down to the bottom. By the friction of the

**PORTER'S BOOT-BLACKING CASE.**

cap with the fur and silk lining, the cup is charged, and the conductor, E, carries the spark to the wire, F. This wire is of platinum, and is set at a definite point from the burner. By merely lifting the cap, D, the gas jet is ignited. The operation is as beautiful as the effect is instantaneous, and the use of matches is entirely obviated. For use in parlors, sleeping rooms and, in fact, all places, this bracket is an exceedingly convenient thing, and produces a great saving of matches. One can be seen in operation at this office. Patented by Robert Cornelius, in October, 1864. Manufactured by Cornelius & Baker, manufacturers of gas fixtures and chandeliers, 710 Chesnut street, Philadelphia.

Converting Iron into Steel.

At the Academy of Science, M. Caron sent in a paper on Cementation, in which, contradicting the views entertained by M. Margueritte, who supposes pure carbon to be alone sufficient to convert iron into steel, he remarks that the operation on a large scale consists in enclosing iron bars in a large box of the same metal, together with charcoal made of green wood. When the mass has got to a red heat, the oxygen of the air contained in the box forms an oxide of carbon by its contact with the charcoal; on the other hand, the nitrogen of the same air forms cyanides with the alkaline metals contained in the charcoal, so that the iron to be cemented is in contact with three principal elements—carbon, oxide of carbon, and the cyanides alluded to, all of which elements are necessary to cementation.

BLOCKADE RUNNING.—The captain of a vessel direct from Glasgow, Scotland, says there are hundreds of steamers building and fitting out in the Clyde and adjacent waters, all to run the blockade. They act as if the war was to last for the next five years. He says every shipbuilder on the Clyde has gas-lights in his yards, and, with relays of hands, works every hour of the twenty-four.

The Way to Prepare Tripe.

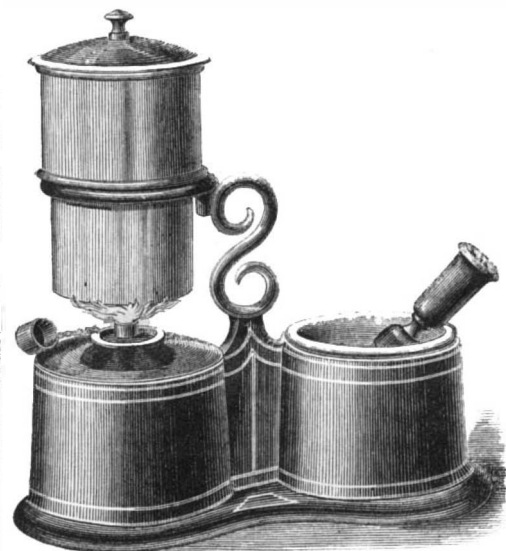
At the last meeting of the Farmers' Club, Solon Robinson, in reply to an inquiry by a correspondent, gave the following clear directions for preparing tripe:—

"Cut as small an opening into the paunch as possible through which to empty the contents. Do this with care, so as not to smear the outside, and carefully wash off any substance that may adhere. Then let one man thrust his arm into the opening and seize the bottom firmly, while another turns the sac inside out. Now sow up the slit that was cut, firmly, with strong twine. The sac is now to be thoroughly washed in cold water, and then either covered with whitewash just as you would cover a sheepskin to loosen the wool, or else placed in a tub of strong alkali made of lime, or wood ashes or potash, and kept there until the woolly coating is loosened so that it can easily be scraped off with a knife. As soon as this is the case, give the sac another thorough washing to cleanse it of the lime, and then it is ready to be cut up for scraping. Cut it in long strips, about five or six inches wide; lay one of these upon a table or board before you, fastened at one end with a couple of tacks, and scrape with a dull knife until quite free of the adhering coat. Then wash and put the tripe to soak in weak brine for twenty-four hours or longer. Then wash again and it is ready for boiling. It should be boiled until it is quite tender, when it may be pickled or put away to be eaten fresh after re-cooking by stewing, frying or broiling; and

there certainly is no part of a beef that affords richer or more palatable food; it is through the sin of ignorance that it is so often wasted."

BOURNE'S HEATING AND SHAVING APPARATUS.

This engraving represents an extremely convenient apparatus for heating water for shaving, or other domestic purposes. Both the spirit lamp and the soap dish are contained in an ornamental cast-iron stand which is bronzed, or ornamented in any desired style. The lamp and water vessel are made of



japanned tin, or any other material, and the soap dish can be removed for cleansing, when necessary. To boarders and others it will be a great convenience.

Rights for the sale of this apparatus and all further information can be had by addressing Charles S. Bourne, Springfield, Mass., by whom it was patented through the Scientific American Patent Agency, on Sept. 13, 1864; or Wm. E. Udell, Albany, N. Y.