

whereby they may be made cheaper and yet be strong, more durable, and more ornamental, with due elasticity.

Messrs. James Semple and Wilkinson Crossley, of Broad Brook, Conn., have patented an improved apparatus for extracting dyes, which consist of an upright cylindrical vessel containing horizontal plates for supporting the dye stuffs, provided with pipes for introducing steam, boiling, drawing off the extract, and forcing the latter from the vessel, and also provided with appliances for introducing the unleached dye stuff and removing the spent stuff. Devices for regulating the process are also supplied.

Mr. Thomas Robinson, of Newtonville, Ind., has invented a potato-bug catcher, so constructed that the insects can be conveniently caught and removed from potato vines and other plants. The device consists of a box having an inclined apron and extended sides to receive the bugs, guard plates to prevent the bugs from shaking out, guard plates to intercept the flying bugs, and a socket and handle for carrying the implement.

Mr. Thomas M. Ullery, of Wakefield, Kansas, has patented an improved lime kiln, which provides means for separating the burned lime from the ashes of the fuel, and for facilitating the drawing of the lime from the kiln. A horizontal shoveling plate is placed between the mouth of the kiln and the ashpit, coming short of the rear wall of the throat or opening into the bottom of the kiln, and supporting a grate inclined upward and backward from the rear of the shoveling plate to the rear or back part of the throat. In passing down the inclined grate the burned lime is separated from the ashes.

Mr. Frederick F. Bioren, of Newark, N. J., has patented an apparatus for removing snow from streets and railroads. An oil tank is provided with a series of wick tubes, and a fan blower provided with corresponding pipes that operate as blow-pipes to direct the air from the blower forcibly upon the flames issuing from the wick-tubes, thereby forming blow-pipe flames which are directed upon the snow or ice to be removed. A combustion chamber which can be vertically adjusted to protect, direct, and concentrate the flames is used, and the entire apparatus is mounted on a wheeled platform, to be drawn along the surface of the street as may be required.

Mr. James Simmons, of St. Louis, Mo., has patented an improved icebox, which has its main frame and walls so constructed that the refrigerator may be taken apart and closely packed for shipment, and put together again for use when wanted.

Mr. Robert H. Dimock, of New Haven, Conn., has patented a marine paint and process for manufacturing the same. The paint consists of linseed oil with certain preparations of copper incorporated therein to make a paint poisonous to animal and vegetable life.

Mr. Solomon B. Elithorpe, of Rochester, N. Y., has patented a lasting machine, which combines in a suitable frame a seat for holding a last, flanged levers for fitting the leather about the last, a vertically adjustable templet provided with clamps and pressing screws for holding and stretching the leather upon the last, and a gathering cord for holding the leather so stretched.

Mr. Joseph Johnson, of Lebanon, Ohio, has patented an improvement in harness, consisting in a novel construction and arrangement of devices used in connection with the back strap and collar, whereby provision is made for dispensing with traces or tugs for pulling, and with breechings for holding back.

COOKING BY STEAM.

In the popular mind steam cooking is associated with charitable soup kitchens, public poorhouses, prisons, and similar institutions, where sodden and unsavory food is turned out wholesale for uncritical palates. To apply steam for the finer work of the civilized kitchen is quite another matter; and to those who are unfamiliar with recent progress in this direction it seems little less than incredible that steam cooked food can, in range or quality, bear any comparison with that prepared by a skillful cook at an open fire. Yet it would seem to be precisely in the matter of quality in the product that steam is likely to prove most serviceable as well as most economical in the kitchen.

The one thing essential to good cooking (presupposing, of course, an intelligent cook and a proper supply of raw materials) is a supply of heat properly distributed and under perfect control as to intensity. These conditions are not easily met with direct fire heat, and when met necessitate incessant vigilance on the part of the cook to prevent such variations in the heat of the fire as may injure the quality of the food in preparation. Even with the utmost vigilance much food is overcooked either by miscalculation or to secure the proper cooking of the rest. In roasting and browning a joint, for instance, the thinner portions are very apt to be overdone or dried while the thicker parts are being sufficiently cooked.

With steam cooking, under proper conditions as to apparatus, these difficulties are entirely done away. With the same source of heat supply a dozen ovens in a row may be kept either at the same temperature steadily hour after hour, or each may be maintained at a temperature exactly suited to the work to be done in it, and varied as may be desirable, without affecting in any way the rest. This puts the work of the cook upon a strictly scientific footing, the various operations being individually and collectively under perfect control, thus ruling out entirely the large and wasteful element

of uncertainty, which costs so much in spoiled food and spoiled temper under ordinary kitchen conditions.

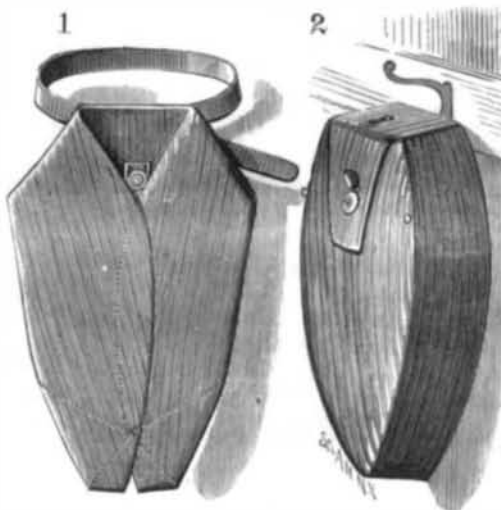
A practical illustration of these truths, as well as of the capacity of steam cooking to cover the entire range of culinary processes, is furnished daily in the extensive kitchen of the well-known restaurant of Messrs. Crook & Nash. This establishment, which ranks among the first in New York in respect to age, size, and the quality of the cooking, has lately been refitted and provided with a complete outfit of steam appliances on the patented system of Mr. John Ashcraft. No fire is used in the kitchen, the steam being taken from an adjoining building and distributed in pipes to the various sets of cooking apparatus. For baking, roasting, broiling, and other operations requiring a dry heat, the steam surrounds the cooking chamber, but does not enter it. Boiling is done either in jacketed vessels surrounded by steam, or as in cooking vegetables the steam is directly admitted to the articles, which are cooked in their own juices with no wastage of material or flavor. The meats cooked by this method are exceptionally tender and juicy, and free from the flavor of gases absorbed from the fire, the taint of scorched flesh or fat, and other unsavory qualities usually developed in irregular cooking with fire.

With the increasing use of steam in dwellings and larger establishments the employment of steam in cooking is likely to be greatly extended. Where public systems of steam heating are adopted steam cooking stoves must entirely take the place of existing ranges; and, judging from the result obtained by Messrs. Crook & Nash and others, the change from fire to steam is pretty certain to lead to better as well as more economical cooking than now prevails.

Great economy is also possible through the employment of the waste steam of factories for culinary purposes. In many cases the heat now thrown away in waste steam would amply suffice to cook the food of the workmen and their families and do it better than is possible with the ordinary cooking stove.

CONVERTIBLE TRAVELING CAP AND SCARF.

The article of apparel shown in the annexed engraving is designed especially for travelers' use, and is convertible into



CONVERTIBLE TRAVELING CAP AND SCARF.

what is known as a "flat scarf" and into a cap, answering an excellent purpose in either capacity. The top of the article is made in the form of a cap, and the flexible side portions fold in when the article is used as a scarf. A clasp is secured to the top, which is engaged by eyes attached to the sides when they are closed down upon the top. By unclasping the sides and unfolding them, a comfortable cap is formed.

This article has been patented by Mr. A. Weiler, of Creffield, Prussia.

Substitutes for Lumber.

We are in receipt, from Mr. S. W. Hamilton, of Lawrence, Kansas, of a sample of lumber made from straw, manufactured after a process patented by himself, the particulars of which he does not explain. He informs us, however, that he can manufacture lumber like the sample sent, in any desired length, from 12 feet upward, and to 32 inches in width, at a cost competing with the better or finishing grades of pine, although he does not inform us whether this competition will apply equally to sections where lumber is comparatively cheap, as at Chicago, and at Western grain producing points, as at Kansas. We imagine, however, that the expense will vary but little at any point where straw is obtainable in large quantities.

The manufacture is, of course, confined to a grade which will compete with the better class of lumber, as there would be no object in filling the new product with knots, and shakes would scarcely be obtainable even if desired, while sap and decayed wood must be impossibilities. The sample sent to us will hold a nail as well as wood, is equally susceptible to a high painting finish, and can be polished to as high a degree as is at all desirable. Being made waterproof, we can discover no possible reason why it should not be as durable, or even more so, than pine or even oak, while its adaptability is evidently as great for roofing purposes, as for the fine work of a dwelling.

The question of cost appears to us to be the most important element yet to be practically solved. We can see no reason why it is not susceptible of being worked under the plane or other ordinary tools of the carpenter, and when once fitted to its place, we can readily believe that it will be free from shrinkage or swelling. In appearance, the sample before us resembles hardwood, being about as dark as oak and more dense in texture, with a specific gravity one-fifth greater than thoroughly seasoned black walnut. For finishing purposes, it will not, as a rule, be necessarily as thick as ordinary lumber, its tensile strength being apparently double that of wood of the same thickness. On the whole, we are favorably impressed with the appearance of the new artificial lumber.

In connection with the new styles of building material, we may mention a new block of buildings now in course of erection on the corner of Randolph and Dearborn streets in this city, the facings and trimmings of which are wholly of terra cotta, which is another name for baked clay. These trimmings are moulded to the desired shape, and may be made as highly ornamental as is the carved pattern in which they are formed. By adding a mixture of sawdust with that portion of the clay which does not require a finished surface, the block may be reduced in any reasonable degree as regards weight, while, being hollow, a large piece is comparatively light. The faces being made of finer clay, carefully moulded, present a finished character, and the block as a whole presents as rich an appearance as any in this city of elegant buildings, and is in favorable contrast with the massive stone pillars of the lower part of this or the surrounding buildings. It is evident that inventive art combined with æsthetic taste will, in the future, readily adapt itself to the demands of civilization, and while building timber may grow scarcer, succeeding generations will think of the age of wood as well suited to the needs of a generation which, in its rapid settlement of a new country, found it indispensable, at the same time congratulating themselves upon the possession of more durable, fully as ornamental, and equally as cheap a substitute in clay, glass, paper, and iron. We may speculate upon the details of architectural estimates in the future as including paper for doors and window frames, floors, mouldings, and roof; glass for porches and pillars, as well as for lighting; terra cotta for window caps and sills, and as well for cornices and walls; and iron for beams, joist, and rafters, with not a sliver of wood in the whole construction. Future generations will realize what at present we but anticipate.—*N. W. Lumberman.*

INTERNATIONAL GEOGRAPHICAL CONGRESS.

The Italian Geographical Society, to whom the direction of the Third International Geographical Congress has been committed, announce that the meeting will be held this year in Venice, September 15 to 22.

The Third International Geographical Exhibition will be held at the same place, beginning September 1 and closing October 1.

The preparatory work of the Congress and the Exhibition has been intrusted to a managing committee, presided over by the President of the Italian Society. It is probable that the Congress will be divided into seven scientific groups:

1. Mathematical Geography, Geodesy, Topography.
2. Hydrography, Maritime Geography.
3. Physical Geography, Meteorology, Geology, Botany, Zoology.
4. Historical, Ethnographical, Philological Geography; History of Geography.
5. Economical, Commercial, Statistical Geography.
6. Methodology, Tuition and Diffusion of Geography.
7. Explorings and Geographical Travels.

The Congresses at Antwerp, in 1871, and at Paris, in 1875, were very successful, and have had an important influence on the progress of geographical discovery. Correspondence, whether with regard to the Congress or the Exhibition, should be addressed to the Managing Committee of the Third International Geographical Congress, 26 Via del Collegio Romano, Rome.

Explosive Medical Compounds.

The medical and pharmaceutical journals have recorded a number of cases of explosions having taken place by the admixture of explosive substances. Among the prescriptions having given rise to such accidents we will mention the following: 1st. Mixture of hypophosphite of lime, 50 centigrammes; chlorate of potash, 3 grammes 75 centigrammes; lactate of iron, 30 centigrammes. 2d. Solution of glycerine, 8 grammes, in acid chromic, 4 grammes. 3d. Mixture of chlorate of potash, tr. ferri perchlorid. and glycerine has exploded in the pocket of a patient. 4th. Chlorate of potash mixed with catechu and used as a dentifrice, may explode in the mouth of the patient, provided hard friction is used. 5th. Pills of oxide of silver (frequently used in England in affections of the stomach) have exploded in the patient's pocket. Pills of permanganate of potash and ferri reduct., pills of golden sulphur of antimony and chlorate of soda, may explode during or after their preparation. It is, therefore, essential to avoid associating glycerine, and, in general, substances easily reduced, with such oxidizing agents as chromic acid, chlorates, permanganates, and certain organic acids.—*Bull. gén de thérapeut.*

A FAST ATLANTIC PASSAGE.—The Arizona, of the Guion Line, arrived at Queenstown February 2, having made the quickest trip on record. The time from New York was 7d. 22h. 23m.