

SOLIDIFIED TEA.

A novel mode of preparing tea for the retail trade, consisting in compressing the leaf into blocks of the size and shape represented in the annexed engraving, has been patented February 24, 1874, through the Scientific American Patent Agency. The advantages of the solidified tea, as it is termed, consists in a gain, claimed to be from 30 to 40 per cent, in the process of solidifying, both in strength and flavor. The reason ascribed is that the enormous pressure brought to bear on the leaf crushes the small cells, which contain the essential strength and real flavor of the tea, which is, to a great extent, wasted in using tea not so treated. Theine, the essential property in tea, has a tendency to prevent the decay of bone, hence the natural craving after tea by most elderly persons. Now the inventor considers that the process of solidifying thoroughly brings to the surface the theine in tea, thus rendering it medicinally superior to the article not so treated. The many properties thus set free, also insures, it is believed, an efficacious antidote to nervousness. As much strength is obtained in five minutes from the solidified tea, it is claimed, as can be drawn out of the same tea, not solidified, in five hours. The tablet, weighing four ounces, is divided into half ounces, so that the consumer can calculate how much should be used in a week or a month. Thus prepared, the tea is necessarily genuine, and cannot be adulterated. It is sold in a form that makes waste, deterioration, or loss of aroma, it is claimed, impossible. To travelers going abroad, its advantages are plain, as it occupies only one third the space of ordinary tea; and to families, hotel keepers, and institutions, the saving effected by the invention will probably be large.

State and county rights for sale. Address James Spratt, 54 Knowle Road, Brixton, London, S. W., England. Samples of the solidified tea may be seen at this office.

IMPROVED WHEAT STEAMER AND DRYER.

Many millers, after having tried various improvements for steaming wheat, have been compelled to abandon them in consequence of the grain passages clogging up with dampened wheat. The feed of the burrs being thereby altered, the constant watching of the miller is required to keep his mill grinding evenly, and to prevent the result of the wheat not being uniformly steamed. By reference to the illustration, it will be noticed that, in the device represented, the grain passage widens downwardly, to afford a greater space for the grain as it swells by the effect of the steam. This is very important for a wheat-steaming apparatus, and the patentee proposes to employ such form, whether the passage be annular, as shown, or otherwise. This apparatus may be placed between the stock hopper and burrs, if more convenient, or may be used as a silent feed, as shown. The tube, A, passes through the feed lever and is raised and lowered in regulating the feed of the stones with perfect facility. The steam connection is made by means of the flexible rubber steam hose, B, which connects with the steam pipe. The latter conducts the steam into the upper or steaming chambers, C, the walls of which are perforated. D is a branch pipe which conducts the steam into the lower or drying chambers, E. G is an escape pipe for condensed steam from both upper and lower chambers. The walls of the inner and outer chambers, C, are perforated, so that the steam may pass into the grain for steaming it from both sides as it descends in its passage. Below these perforations, the grain is subjected to the hot walls of its conduit, by which the surface dampness is dried off, after it has been sufficiently moistened to toughen the bran. H and I are stopcocks, to shut off the steam entirely from the upper or steaming chambers. J represents the grain passage, which widens downwardly, and in this example is of annular form. Above the passage is the hopper from which the wheat flows into the former. If the apparatus is to be used for drying grain which is too damp for grinding or does not require steaming, the steam will be shut off from the upper or steaming compartments; or by closing the globe valve shown, the steam is shut off altogether.

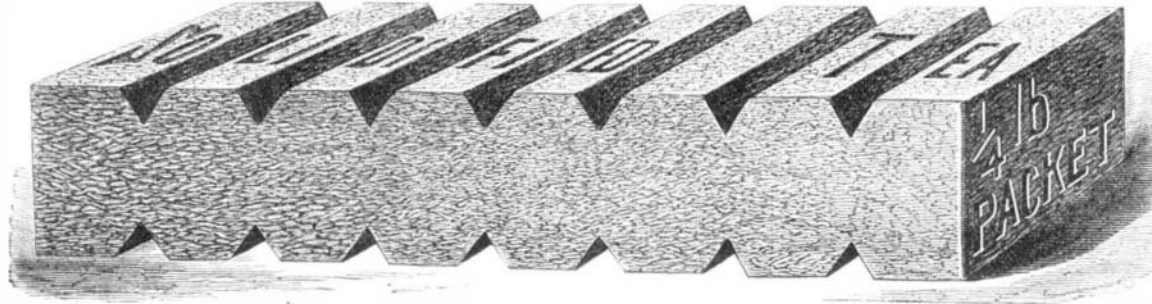
Patented through the Scientific American Patent Agency, March 24, 1874. For further particulars address the inventor, Mr. Pardon B. Hunt, Council Bluffs, Iowa.

The Gas Wells of New York.—New Plan of Heating the Canals in Winter.

The novel proposition of Mr. R. A. Cheseborough to keep the Erie canal open in winter by means of steam pipes laid in the canal, at a cost of \$1,500,000 per annum, is now seconded by Professor Charles Plagge. The latter suggests the possibility of greatly reducing the cost for fuel by making use of the immense national supplies of gas which this State contains.

According to Professor Henry Wurtz, there are at least three belts of gas wells running across the State of New York,

from east to west. Professor Wurtz assumes the average tension of compression of the gas contained in the three gas charged horizons (the Salina, Marcellus, and Genesee), at 20 atmospheres. Estimating the porosity of the rock at only 5 per cent of its volume, the whole gas contained in the rock will assume at the surface the volume of the rock itself. If, therefore, the three New York belts are 200 miles long, and equal in mass to ten miles wide, and of 100 feet thickness (a moderate allowance), they will supply more than three thousand wells, each discharging 500,000 cubic feet of gas per 24 hours, for over 100 years. As, practically, 20,000 cubic feet of marsh gas (the principal constituent of the gas of natural gas wells) may be assumed to be equal in heating capacity to one ton of



anthracite, the amount of heat which could be drawn through out the middle tier of counties in Western New York is equal to 75,000 tons of anthracite per day, or to 27,375,000 tons per year. Although the line of outcrop of the Marcellus formation, from which the West Bloomfield gas comes, lies south of the line of the Erie canal, Professor Wurtz has also shown, in the same memoir, that the gas found in boring at Buffalo comes from strata lying far deeper and cropping out many miles further north than the Marcellus; and that on the general line of the canal, the Hamilton and Salina will be found for great distances, so situated as to be reached by borings not far therefrom, and at depths which will ensure their having retained their original gaseous contents unimpaired by outcrop leakage. It may therefore be accepted, with implicit confidence, that there are throughout that part of the State large districts within which, by judicious explorations, an immense number of natural gas wells may be developed, furnishing a fuel which raises itself out of the mine, and which may be made to transport itself to any point required. This almost inexhaustible source of fuel is the more valuable for the warming of the water in the canals, as the apparatus required can be constructed at a comparatively small expense and in such a way as not to need any extra hands for its attendance; so that the expense of keeping navigation open all

their erection in pillars and slabs of circular form, show past human labor, a fact further proved by the discovery of a large quarry of laminated lava which had evidently been worked once, though it is now buried in a dense forest. Along the coast great lava walls, some fifty feet above the sea level, extend, pierced with caverns which at certain times are the conduits of huge water spouts.

There are caves, we are told, unknown even to the missionaries, forming an arterial system, beneath a heavily timbered stretch of country, for miles. In some places the roof is a perfect arch, and quite as symmetrical as the finest railway tunnel. The various tropical trees indigenous to southern latitudes exist in great profusion, while others, comparatively unknown and of curious properties, abound. The anauli is a tree of excellent hard wood, which is a vegetable caustic not less positive in its action than nitrate of silver. The fau has a peculiar inner fibrous bark, from which fishing nets and fine lines are made, and also a beautiful white mat which resembles dressed sheepskin. The tensile strength of the fiber is greater than that of silk or hemp. The ava yields an in-

toxicating drink, which is prepared from the dried root by a disgusting process of mastication by young girls, and strained through cocoon fibers into a large bowl hewn from the trunk of a tree, the inner side of which, from constant use, attains a beautiful pigeon blue-colored enameled surface of high polish.

The report, we notice, puts forward as a strong point the discovery of a living dodo, a fact which, if true, would be of the highest scientific importance. But, unfortunately, both the writer, as well as several of our cotemporaries who have commented upon the fact, are mistaken. The *didunculus strigirostris*, or three-toothed pigeon, is not an extinct bird, and never has been considered as such. It constitutes the first subdivision of the *columbae*, and is allied, it is true, to the real dodo (*didus ineptus*), which is actually extinct, and is the type of the second division. Professor Richard Owen, F.R.S., describes the *didunculids* with considerable minuteness and classifies them as above. He states that they exist only upon the Navigator's Islands, and that they are trained and kept as pets by the natives. The bird is of interest as showing the living connection of the pigeons with the dodo, a question at one time a matter of considerable dispute among naturalists, but it is far from even closely resembling the true fowl. The three-toothed pigeon, for instance, is about the size of a partridge, while the dodo was as big as a swan; besides, there are a variety of other positive and distinct differences which it would be idle to particularize. If Colonel Steinberger had ever consulted Appleton's "Cyclopedia," he would have been spared the mistake of confounding the *d. strigirostris* with its larger relative.

The flying fox, which is abundant, enters into the structure of the native religion. Specimens of this strange animal have been found measuring four feet from tip to tip of the wings.

The temperature of the islands is remarkably uniform, averaging for four months about 80°. The equability of the climate, rarely varying over more than 7° from sun to shade, renders the body extremely sensitive to its changes. The people are Polynesian Malay, symmetrical in form, and simple in their habits. They are readily taught, and few, it is said, cannot read and write their own language. The population is about 35,000. *Ic*, the Samoan "fine mat," enters more largely into their political organization than any creed or custom they have ever held. Families count their wealth, and all real and personal estate is counted, by mats, and the sacredness of the cloth is everywhere venerated.

The trade of the country consists in cotton and copra, or dried cocoa nut, that in the former being insignificant, and in the latter amounting to a home value of over three million dollars.

A Golden Chicken.

The Vallejo (Cal.) *Independent* describes the following singular search for a gold mine: A short time ago Smith and Barr sold a chicken to a customer. A day or two ago the customer returned and was anxious to learn from whom Smith & Barr had purchased that chicken. At first he declined to tell why he wished to know, but finally told that he had found pieces of coarse gold in the chicken's crop, and was satisfied that there must be plenty of it where the chicken came from. The chicken was traced to a man and his wife who brought down a lot from Lake County, and the gold hunter started off in quest of the chicken raisers. He is going to scour the country until he finds them, and then he expects to see gold lying around on the ground loose and in great abundance.

RED COLORING MATTER OF THE BLOOD.—M. Béchamp has isolated the red coloring matter of blood, which shows the presence of iron.

Fig. 1

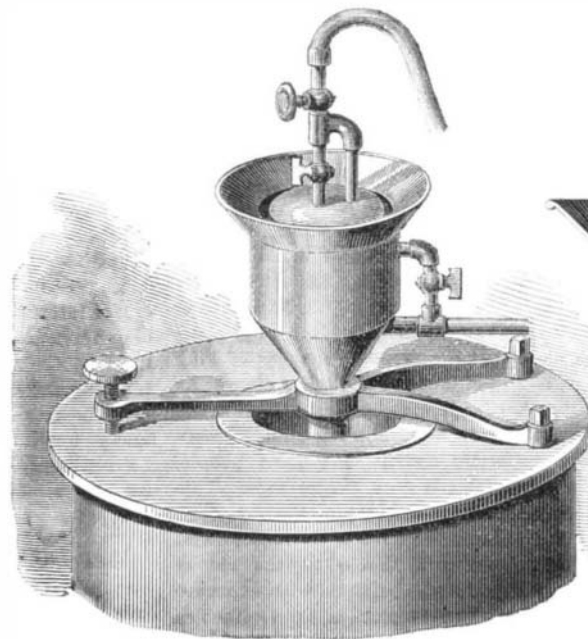
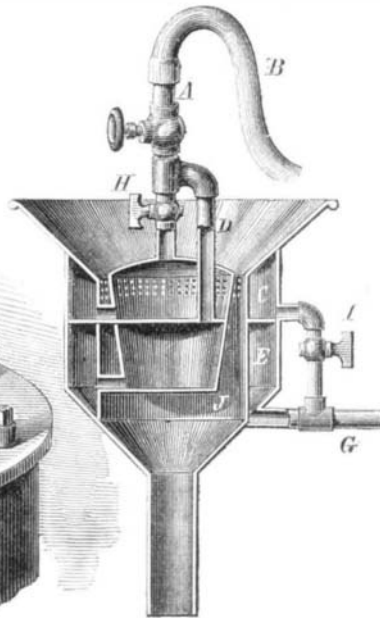


Fig. 2



HUNT'S IMPROVED WHEAT STEAMER AND DRYER.

winter will be confined to little more than the interest on first cost of plant, which will probably not be greater than that as estimated above for artesian wells.

The Samoan Islands.

Colonel A. B. Steinberger, late United States special agent to the Samoan or Navigator's Islands in the South Pacific Ocean, has recently submitted a report embodying much interesting information concerning that little known section of the globe. The entire group over which his examinations extended is between 13° 27' and 14° 18' south latitude, and reaches from 169° 28' to 172° 48' west longitude. The islands are of volcanic formation, which everywhere gives evidence of great antiquity, and seem to have been lifted from the ocean bed by a mighty convulsion of Nature.

With the political character of Colonel Steinberger's mission, we have nothing to deal. In scientific intelligence, however, and notably with references to the structure, climate, etc., of the islands and their inhabitants, the report offers profitable reading. In the writer's graphic description of this remarkable land, we read of strange structures, apparently the ancient works of man, regarding which not even tradition is extant. The smoothness of the stones, and