

["Old and New."]

## DENTISTRY IN THE UNITED STATES.

NUMBER 2.

## MOUNTING OF ARTIFICIAL TEETH.

The material used for the bases, or plates, upon which the teeth are attached, are various. The best is gold, after which follow silver, aluminum, continuous gum, and dental vulcanite. The iridio-platinum, whalebone gum, and several other bases, being entirely new, no decided opinion can be given upon them. Gold being the most expensive, not only in intrinsic value, but in the amount of labor necessary to make it up into plates, is not now as generally used as it was before the invention of the dental vulcanite base. A patient having a set of teeth made on gold pays not only for the amount, or weight, of metal received from the dentist, but usually, also, for all that the operator purchases from the dealer. When purchased from the shops, it is cut to a pattern which is made from the wax impression; but after being "struck up," that is, shaped to correspond to the upper or lower jaw, there is a great deal of filing, scraping, and finishing to be done, all of which takes from the weight of metal. Though the patient pays for these scraps, they are never demanded of the dentist; but he takes good care they are not lost. His finishing is done over a leather apron or "jeweller's drawer"; and, as a second "catchall," he has a piece of carpet under his bench. I have frequently imitated the pedler in "Aladdin" by exchanging, not "new lamps for old," but new carpets for old, giving a trifle in addition, much to the satisfaction of the dentist, and more to my own, as I have in one year cleared sixty-five dollars for the trouble of burning the old carpets in crucibles. This amount, of course, is very small compared with what the dentist saves in his apron. The first cost to the operator for gold enough to make an ordinary sized upper plate is about twenty-five dollars; and if the patient should try to sell this same plate after using it only once, or even after it has been "struck up" before using, it would only yield about twelve dollars in currency, which is the difference in weight and price in buying and selling.

Aluminum, the lightest in specific gravity of all the metals, is very seldom used, on account of the inability of the best mechanic to make a perfect fit with it, as the metal will shrink in the casting; and the slightest imperfection in a plate ruins it for service. Experimentally (that is, in making general models, or the like), this metal will answer for base plates; but practically (that is, in fitting a cast to any particular mouth), it is a failure. The manufacture of the continuous gum work is rather a hazardous undertaking, and requires a great outlay for furnace and tools, besides the apprenticeship, which is indispensable for becoming an expert in its manufacture; which facts have been a stumbling block in the way of its general use. Nor is this the only drawback. As its name indicates, in this work the plate which covers the mouth and the teeth is in one continuous piece, all being of the same kind of body; the various colors and enamels necessary to a natural appearance being applied to the discolored set, after which it is fused. It is during this process that the operator has his "heart in his mouth"; for he knows not whether even one out of the three sets which he has in his muffle will, when cool, fit the mouth for which it has been formed. When successfully made, the set has all the appearance of the natural gum and roof of the mouth; but the patient has in his mouth quite as much as he wants to carry, for the set is a trifle heavier than one on gold. Should it by accident drop, and strike upon a hard substance, it would be useless to pick it up, as nothing can be done with the pieces. Some operators can repair a set when merely cracked; but even when this is done in the most scientific manner, the repairing will show; and the second fusing which it gets in repairing is liable to warp it out of shape, and beyond redemption. For these reasons it is mostly ostracized by the profession. Silver requires as much labor, to swedge, solder, and finish, as gold, without as much profit, or as satisfactory results, as from the use of gold. It corrodes, and produces sores in the mouth if constantly worn; so that it does not answer for permanent sets, though it is frequently used for temporary ones, where gold is to be used for the permanent sets.

The dental vulcanite, or, as it is more commonly termed, "rubber," has for the past few years been almost universally used, and is every day gaining a firmer foothold in the mouth (so to speak) of our people, as well as abroad. This is not from its real merits, but from the dentists' pushing it. I have seen the time when dentists considered it a greater honor to save a natural tooth than to successfully extract it, and replace with an artificial one; but the influence of this "mercurialized gum" has been adverse to the point of honor, and too many of them look only to profit. This material, when purchased from the shops, is in sheets about three inches wide, five inches long, and three sixteenths of an inch thick. It is sold by the pound, each sheet being sufficiently large for one plate and part of another. It is very pliable, and, if slightly heated, can be pressed between plaster molds, and forced into the finest crevices. When the teeth have been placed in the base thus molded, the mold containing the gum and teeth in position is placed in a copper boiler made for the purpose, called a vulcanizer, heated to 320° Fab., and kept at that point more than an hour and a half; then it is taken out, and the plaster removed. The "gum," now vulcanized, has the appearance of a piece of Virginia pine bark, and can be cut, filed, and fitted to the mouth and cheeks, as easily as a piece of such bark, the difference being that the "plate," as it is termed after the above process, is susceptible of a high polish. As previously stated, this material is not pushed by the dentists on its

merits, but on account of the profit derived from making it up. That this composition is deleterious to the health of those wearing it, there can be no doubt, as many can testify who have tried it. I know two patients who have been unable to wear sets made upon rubber, but who have worn gold with comfort. The rubber plate salivated them, beside "par-boiling" the roof of the mouth. When rubber was first introduced, there was a great deal of controversy among dentists about it. As a class, they condemned it, because there was mercury in it—a statement which it is easy to prove by burning a piece in a spirit lamp, and seeing the "liquid metal" ooze from the mass. But suddenly their objections were overcome; and now they say "there is nothing like rubber." A single set, for which the patient pays twenty-five dollars, does not cost the operator, exclusive of rent and labor, more than six dollars, which pays for teeth, rubber, wax, plaster, varnish, tin, and wear of tools. As it is well known that an active mechanical dentist can make a set on this plan in a short working day, it gives him a good price for his knowledge and labor. I know four cases made by different practitioners, the time of making which varied from five to five and a half hours, from the taking of the impression until the patient was pronounced "fitted."

In kind and quantity of material used for plates in the different sections of the country, there is but a slight difference, the Eastern using about four fifths vulcanite base, the remaining fifth being divided among the other materials, and the Western and Southern holding about the same proportion. The amount of waste in base plates varies with the kind of material used. Rejected gold or silver plates can be remelted, and used over. The continuous gum is made on a platinum plate, which can be used again by re-rolling; but for the vulcanite there is no redemption. A plate rejected is a dead loss. The teeth may possibly be removed by patiently sawing and cutting the vulcanite away from the pins; but this usually costs more than the teeth are worth, and is seldom attempted. The inability of the operator to adapt the plate made for one mouth to another compels him to require a cash deposit, sufficient to cover all expenses, from the patient who orders the set; and by the amount required as a deposit, the patient can generally judge of the cash cost of the set.

## MEDICAL NOTES.

## Rickets and Softening of the Bones.

C. Heitzmann has shown by experiment that rickets and softening of the bones may be produced artificially in animals by giving them lactic acid. In carnivora, the continued use of this acid causes first rickets and then *mollities ossium*, while in herbivora it produces *mollities* at once without rickets. On the other hand, lactic acid is probably absent in cases of ossification of old age and of some diseases. Lactic acid is formed by the action of nitrogenous food on sugar of milk, sugar, and perhaps starch. It exists in considerable quantity in the juice of muscle, and must be connected with either its formation or action.

## Inhaling Sal Ammoniac.

Muriate of ammonia, in vapor, has latterly been added to the list of medicines taken by inhalation. Dr. Liebermann has effected several surprising cures of clergyman's sore throat by this method. The cures were obtained in from two weeks to six months, with four inhalations daily; each lasting five to ten minutes. The clergymen under treatment are compelled to avoid alcoholic drinks, tobacco, and spices. Public speakers and singers were likewise cured of the infection. When the disease extends to the nasal membrane, the patient should pass the vapor from the mouth through the nostrils, as some do tobacco smoke. If the malady extends into the Eustachian tube (often causing deafness), the patient should close the mouth and hold the nostrils tightly, and then blow as if to blow the nose, and the vapor will pass into the tubes. Deafness is either ameliorated or cured.

In nervous asthma, with no pulmonary *emphysema* or dilatation of the heart, two cases were permanently cured out of six, and the others had the intervals between the paroxysms prolonged. In bronchitis, the inhalations were taken six times daily. In twenty-two chronic cases, the cure was effected in from seventeen to thirty eight days. In twenty-six cases associated with pulmonary *emphysema*, the secretion and cough were greatly benefited, and the cure was effected in from six weeks to two months; the *emphysema*, however, remained. In twelve cases of pertussis, the paroxysms of cough were much relieved in seven, and the disease cured in from three to five weeks; in the others there was no result. This vapor gives rise to more or less irritation of the mucous membrane, with loss and renewal of the epithelium, and local hypersecretion. Such temporary aggravation of symptoms is soon followed by relief. The pulse is increased, a sense of heat and moisture of the skin is often felt, and there is sometimes profuse perspiration, with increase of urine, improvement of the voice, and relief of the cough and tickling sensations. In severe cases, general treatment should accompany the inhalation.

## Croton and Chloral.

Dr. Oscar Liebreich, in the *British Medical Journal*, makes some important observations on the use of this new anæsthetic. He says it differs from chloral widely in some of its effects. A drachm of croton chloral, dissolved in water and swallowed, produces in fifteen to twenty minutes a deep sleep, with anæsthesia of the head. He has experimented on maniacs during an attack of mania. They remained sitting on their chairs in a deep sleep for two hours together. If anæsthesia had reached so high a degree through the use of hydrate of chloral, the patients would have dropped from

their chairs, and their pulses and respirations would have been considerably retarded. In some cases of *tic douleureux*, the remarkable phenomenon is exhibited of pain ceasing before sleep sets in. But the remedy only acts as a palliative in this dreadful disease. However, its action is to be preferred to that of morphia. He has never observed any unfavorable effects of croton chloral on the stomach or any other organ in frequent experiments. The indications for the use of this remedy are to be found: 1. In cases where hydrate of chloral is inapplicable on account of heart disease; 2. In cases of neuralgia in the region of the *nervus trigeminus*; 3. In cases where very large doses of chloral are necessary to produce sleep. He there recommends the addition of croton chloral to hydrate of chloral.

## Prurigo and Pruritus.

In the *London Medical Record*, Dr. Rothmund states that the internal administration of carbolic acid in pruritus excels every other method. He has tried also the hypodermic injection of it with marked success, there being no local irritation produced, as one would expect. Solutions of pure carbolic acid are better than those of carbolate of soda.

## A Cure for Hydrophobia.

It is stated that this most dreadful and most incurable of diseases finds its antidote in a plant, or rather tree. An infusion of the stems of *nottoria grandiflora* has been successfully employed in the East Indies, especially in the neighborhood of Bombay. Major Wheeler cites five cases of mad dog bites cured by this infusion; the sixth would not use it and died. This is from the *Archiv. der Pharmacie*.

KITE NAVIGATION.—Mr. John T. Lacey, of Bridgeport, Conn., has recently made a voyage of twenty-two miles on Long Island Sound, in the space of three and a quarter hours, in a row boat towed by a kite. The boat was twelve feet long and the kite ten feet high by eight feet wide. About six hundred feet of cord was let out. The speed of the boat is stated to have been considerably greater than that of a small sailing craft which attempted a race. This was probably due to the greater velocity of the wind at the elevated position of the kite. The towage of boats by kites is a very old amusement, but it is a slow method of navigation. The boat and kite can only travel in one direction, directly before the wind; whereas the ordinary sail boat can move obliquely, in various directions.

## DECISIONS OF THE COURTS.

## United States Circuit Court—Southern District of New York.

PATENT CASES.—MORITZ COHN vs. THE UNITED STATES CORSET COMPANY *et al.*

[In equity.—Before Blatchford, Judge.—Decided June 20, 1874.]

This suit brought on letters patent granted to the plaintiff, April 1873, for an "Improvement in corsets."

The claim is in these words: A corset having the pockets for the reception of the bones formed in the weaving and varying in length relatively to each other, as desired, substantially in the manner and for the purpose set forth.

The principal defence relied on in this case is that the invention of the patentee is found in the Johnson provisional specification, regarded not as a patent, but as a publication printed in England prior to the patentee's invention.

Held by the court:

An English provisional specification regarded not as a patent, but as a printed publication.

Such a specification, in order to be sufficient to invalidate a patent in this country, must describe what is claimed in the patent, in a manner so distinct and clear as to leave no reasonable doubt that the thing described is the same.

Under the first section of the act of July 8, 1870, which provides that it may be set up as a special matter of defence to a suit for the infringement of a patent, that the invention covered by it had been previously described in a printed publication, such defence must be established affirmatively by the defendant before judgment can be rendered in his favor.

Cohn's patent of a corset woven of a shape to fit the person of the wearer, and with woven pockets for the whalebones, varying in length relatively to one another, to accommodate the desired shape of the corset, held invalid, in view of English provisional specification, Johnson, No. 148 of 1864.

[Charles M. Keller, for the plaintiff.  
George Gifford and W. C. Witter, for the defendants.]

## NEW BOOKS AND PUBLICATIONS.

THE PSYCHOLOGICAL AND MEDICO-LEGAL JOURNAL. Conducted by W. A. Hammond, M.D., assisted by T. M. B. Cross, M.D. New Series, Vol. I., No. 1. Five dollars per annum. New York: F. W. Christern, 77 University Place.

The preëminence of Dr. Hammond as an authority on neurology and mental disease gives interest and value to this publication, which is a continuation of the *Journal of Psychological Medicine*, some time since discontinued. It contains Dr. Hammond's recent address, as President of the Neurological Society, on "The Effects of Alcohol on the Nervous System," a document of great value on a difficult subject, usually discussed with more acrimony than sense. The opinions of Drs. Lente, Willard Parker, Peters, and Clymer are reported; and some able and exhaustive criticism on current literature germane to the subject, with an address to the reader, closes the book.

GAZETTEER OF RAILWAY STATIONS IN THE UNITED STATES and the Dominion of Canada. Price \$1. Philadelphia: National Railway Publication Company, 233 South Fifth street.

This compendious volume gives the telegraph, express, post and money order offices, and their locations as to county, State, and line of railway, with the population, and the name of the express company delivering at each railway station. It is a useful volume.

BULLETIN OF THE MINNESOTA ACADEMY OF NATURAL SCIENCES, with the Reports of Committees, etc. Minneapolis, Minn.: Johnson and Smith.

## Inventions Patented in England by Americans.

(Compiled from the Commissioners of Patents' Journal.)

From August 14 to August 22, 1874, inclusive.

ATTACHING PICKS, ETC., TO HANDLES.—C. A. Hardy, Philadelphia, Pa., *et al.*

BOOT, ETC.—J. L. Joyce, New Haven, Conn.

CAR SPRING.—G. Godley, New York city.

CAR WHEEL.—R. N. Allen, Hudson, N. Y.

FLASK FOR CASTING.—J. F. Whiting *et al.*, Boston, Mass.

GAGE COCK.—T. A. Weston, Ridgewood, N. J.

MAKING CAST IRON.—G. G. D. L. Byron (of New York city), London, Eng.

MOLDING CEMENT PIPES, ETC.—J. M. Stockwell, Portland, Me.

PLATING MACHINE.—O. M. Chamberlain, New York city.

REGISTERING FARES, ETC.—E. Chesterman, Philadelphia, Pa.

ROLLER COMPOSITION.—J. H. Osgood, Boston, Mass.

ROLLER SKATE.—W. P. Gregg, Boston, Mass.

SEWING MACHINE.—J. Hayes *et al.*, New York city.

SEWING MACHINE.—J. T. Jones, Hion, N. Y.

SUSPENDERS.—B. I. Greely, Boston, Mass.

TOOL-HOLDING CHUCK.—F. Armstrong, Bridgeport, Conn.

VENTILATING BEDS, ETC.—E. L. Roberts, Plainfield, N. J.