Around the barrel is wound the wire rope that holds the 1,500 pound weight. The weight is simply a box with pieces of iron in it. That is very old-fashioned. Now we have iron weights so moulded that they can be added to or subtracted from, and the weight can be graded to a nicety. A new wire rope was put to the chimes weight the other day. The rope is what is called tiller rope, and is 280 feet long and three-quarters of an inch thick. It takes me an hour and a half to wind up the clock."

St. Paul's clock has a single back gear and two weights of 1,000 pounds each. It takes three-quarters of an hour to wind it. St. John's clock is wound in less than an hour; while the modern clock of St. George's, in charge of the same keeper, is wound in fifteen minutes.

THE FACE IN HEALTH AND DISEASE.

Among the earlier authors who were ignorant of many of the present methods of determining the condition, size, and position of the bodily organs (since the art of auscultation and percussion is a growth of later date), the study of the human countenance formed a very important part of the preparatory drill. The followers of Hippocrates and Galen were rendered perfect in their perceptive faculties. The former gave, in his masterly work, descriptions of disease which are still considered classic; while the latter, in his essays on the "Temperaments," is equally careful to note the most trivial alteration either of the face or of the posture. In modern times the diagnostic value of general physiognomy has been studied by De Salle, Jadelot, Siebert, Lavater, Laycock, Corfe, and others. Those who question the utility of this much neglected department of science would do well to read Darwin's great work on the expression of the emotions in animals, and the contributions of Connelly upon the typical shades of expression peculiar to the insane. With a view of systematizing and arranging the collected investigations of the above named authors, and bring within the compass of a single article such practical information as the anatomy of the face may afford the practitioner, Dr. Ambrose L. Ranney contributes an illustrated paper on the subject to the December number of the New York *Medical Journal*. The physiognomy of the sick presents innumerable shades of expression, and these may not only be the direct result of the influence of the ever-varying passions upon the muscles of the face, as is the case in health, but they may also be classed as morbid phenomena, each of which possesses some special significance. The diagnostic valueof *facial lines and wrinkles* has had its share of support from many authors. These wrinkles may be classified in six groups:

(1) *The transverse rugæ*, situated on the forehead, and thought to be expressive of an extreme amount of pain arising from causes outside of the cavities of the body. (2) *The oculo-frontal rugæ*, extending vertically from the forehead to the root of the nose, and thought to express distress, anxiety, anguish, and excessive pain from some *internal cause*. It is said that when the first-named rugæ meet the latter abruptly during the course of an acute disease, some serious lesion of the brain, or its coverings, is developing. (3) *The line aoculo-zygomatica*, extending from the inner angle of the eye downward and outward, passing across the face below the malar bone. This, in children, is said to indicate a cerebral or nervous affection; and, in adults, some disorder of the genitalia. (4) The *linea nasalis*, extending in a curved line downward from the sides of the nose. This line is said to be strongly marked in phthisis and in atrophy. Its upper half is thought to be a reliable indication, if prominent, of intestinal disease; the lower half is supposed to indicate the existence of disease affecting the stomach. When it appears conjointly with the foregoing (No. 3), it is claimed that it may be regarded as a positive indication of worms in children, provided a peculiar fixed condition of the eye exists and a pallor of the face is present. (5) *The linea labialis*, extending downward from the angle of the mouth till it becomes lost in the lower part of the face. This is usually developed in connection with those diseases which render breathing laborious or painful, and is commoner in children than adults as a valuable diagnostic sign. (6) *The linea collateralis nasi*, extending from the nose downward to the chin in a semicircular direction. It is thought to be a reliable guide to diseases of the thoracic and abdominal viscera.

The nostrils are of practical interest from a medical standpoint. They dilate forcibly and rapidly in difficult respiration, when produced by disease; and itching of the nostril is regarded by many authors as a valuable diagnostic sign of intestinal worms. Marked elevation of the nostril is regarded by some authorities as an indicator of pain within the cavity of the thorax. The eye also affords many diagnostic signs. An irregularity of the pupils of the two eyes indicates, as a rule, pressure upon nerve centers or upon the optic nerve itself. In adynamic fevers the eyes are heavy and extremely sluggish, and are, as a rule, partially covered by the drooping eyelid; while in certain forms of mania they are seldom motionless. In "Bell's paralysis," due to failure of the facial nerve, the eyelids stand wide open and cannot be voluntarily closed, since the orbicularis palpebrarum muscle is paralyzed. In cardiac hypertrophy an unusual brilliancy of the eye is perceived. In scarlet fever a peculiar glistening stare exists, which is in marked contrast with the liquid, tender, and watery eye of measles. Many diseases of the eye itself tend to greatly alter the normal expression of the face, and prominent among these may be noted cataract, glaucoma, cancer, iritis, etc. Abnormalities of the pupils may afford the practitioner material aid in diagnosis. The pupils are found to be dilated during attacks of dyspnœa and after excessive muscular exercise, in the latter stages of anæsthesia, and in cases of poisoning from belladonna and other drugs of similar action.

A contracted state of the pupils exists during alcoholic excitement, in the early stages of anæsthesia from chloroform, and in poisoning by morphia and other preparations of opium, chloral, and some other drugs. Certain signs may also be had from the lips and mouth. In sickness, if the angle of the mouth be depressed, pain and languor may be read; and when the corrugator supercilii muscle cooperates with the depressor muscles of the mouth, acute suffering is proclaimed. Extreme pallor of the lips is seen in excessive hemorrhage, in purpura, in chlorosis, etc.; deep lividity denotes a defective oxygenation of the blood, and occurs in diseases of the lungs, heart, and larynx; while pale lividity occurs in cases where the circulation of the surface is languid or imperfect. In painful affections of the abdominal organs the upper lip is usually raised and stretched overthe gums or teeth, so as to give a diagnostic expression to the countenance, which is considered by some as of great value. Many of the specific forms of disease have their own special physiognomy, which have a value to the diagnostician, but a further reference to which can scarcely be made in a short article like the present. It is to be hoped, however, that these facts from Dr. Ranney's paper, fragmentary as they necessarily are, may tend to awaken in the profession a renewed interest in a subject which is rapidly being lost sight of, and the value of which is often ignored. It is not to be expected that sight alone can guide the medical attendant to unerring diagnosis, but that it mayproveof the greatest value as *an aid*, the facts adduced seem to render undisputed.

THE CHICAGO POLICE ALARM SYSTEM.

Mention has been made in this paper of the system of telegraphic alarms recently adopted in Chicago for police signaling. Sixty days' trial of the system in the 12th Street District has convinced the city authorities of the advantages of the system, and it is now proposed to extend it to the West Lake Street District, covering an area of over four square miles.

The public alarm-houses, as described by the city Chief of Police, are built of wood, and just large enough to admit a man. They are placed upon the sidewalk, as near to street corners as practicable, and securely fastened either to telegraph poles or corner stores. The keys to such houses are uniform; they are furnished to respectable citizens upon application at the station, and a record kept of the names of key holders. A mechanical alarm to register the location of the complaint is inclosed in a small box attached to the side of the house, which box also incloses a telephone for the use of the officer traveling that particular post, and which places the officer in direct communication with his commander at the station. The citizen who possesses a key can, by pull ing down a lever which protrudes through a slit outside the box, procure the attendance of three policemen and a horse and wagon in from one to four minutes after entering the alarm-house. The wagon carries a stretcher, blankets, shackles, handcuffs, etc., and can be used either as an ambulance or conveyance for prisoners. The alarm-houses are furnished with patent locks, which, after opening, retain the key until an officer arrives with a master key, which he inserts in the reverse side of the lock and releases the original; this precaution is taken to prevent false alarms, and to keep the complainant at the alarm-house until the officers arrive to hear the complaint and apply the remedy. A large bell will be procured and erected upon each station, and at a given signal each officer in the district will be required to report immediately at the alarm-house upon his post, so that if any serious crime be committed in the district the officer in command at the station can summon each man on post duty, and telephone to his whole command at once, giving information to his men of the nature of the crime committed, and, if known, a description of the criminals, thus putting each patrolman on the alert to arrest the suspected parties.

In addition to these public alarm stations are private boxes combining police and fire alarm calls, which are to be placed in stores, offices, and dwellings at a cost of about $30 each. These boxes are so small that they can be set in a wall, behind a desk, or under a counter, and a noiseless alarm given, which will not disturb the thief or swindler until the officers arrive to make the arrest.

Fire-alarms can be given in the same manner, and registered at the headquarters of the Fire Department in one second after the alarm is turned in.

A Georgia Ice Factory.

A correspondent of the Hartford *Times* describes as follows the factory of the Georgia Ice Company at Atlanta:

On the ground floor is a boiler 50 feet long and 4½ feet in diameter, containing 150 feet of 3½ inch pipe. The boiler is kept filled with aqua ammonia, which is separated by the steam heat into ammonia gas and water. The gas, leaving the water in the boiler, forces its way through a 6 inch pipe outside the building to the roof, three stories up, where it passes into 15.000 feet of coiled pipes, in which it is converted into liquid by cold water thrown over it in fountain jets. This liquid passes into 15,000 feet of three-quarter inch pipe, arranged in vertical sections 30 feet high and 3 feet apart, and its sudden liberation into these pipes turns the liquid pure ammonia into vapor, and the sudden expansion makes the pipes intensely cold. Now, above these hundreds of vertical pipes are innumerable little fountain jets throwing spray all over the pipes, the spray freezing gradually, forming an immense icicle of pure ice around each pipe. The gas next goes into 15,000 feet of absorbing pipe, and, being cooled by water running on the pipes, it is met by water forced into the pipes, and thus converted back into aqua ammonia, which goes into the big boiler, and is not used over again. There is no waste, the same ammonia being used and reabsorbed any number of times. The water used for the spray is drawn from a well 75 feet deep, on the premises, and the large blocks of ice (which are loosened from the pipes by a little hot steam) come out pure and clear, and entirely free from any odor or objectionable taste.

After the pipes have been stripped, about five weeks are required for a new lot of the requisite thickness to form. But, of course, the pipes are never all stripped at the same time, the ice towers being in all stages of formation. The factory has a capacity of 35 tons per day, but 20 tons keep pace with the demand, and it isn't stored, but cut every day as it is delivered, and it sells at from $10 to $12 per ton.

ENGINEERING INVENTIONS.

Messrs. T. A. Trudelle and Eusebe Maheux, of Quebec, Canada, has patented an improved car coupling, which consists of a spring-actuated draw head and peculiarly adjusted levers operating a coupling pin, in combination with a spring-actuated draw bar, that serves to hold the coupling pin up when the cars are uncoupled.

Mr. Benjamin F. Walker, of Derrick City, Pa., has patented an improved clasp-packer for well-tubing joints to prevent the waste of oil when removing tubing from oil wells. The device is made in two semi-cylindical parts, hinged to each other at one side edge and fastened at the other side edges with a hook and pin, and provided with packing at its ends and side edges to adapt it to be clasped around the tubing at its joint, and having a side opening and hose to carry the oil to a receiver.

An improved engineer's level-rod has been patented by Mr. Michael L. Lynch, of Cameron, Texas. This invention relates to the class known as "self-reading level rods," and is distinguished from others by the peculiar manner of marking the scale upon the face of the rod, whereby the readings of fractions of a foot may be readily made without the use of a sliding target.

Improvements in steam generators, designed more particularly for generating steam for heating buildings, but applicable generally to the generation of steam for power purposes or other uses, has been patented by Mr. Nelson Coombs, of Titusville, Pa.

Mr. William J. French, of Carencro, La., has patented an improved device for securing nuts on railroad, bridge, and other bolts. The invention consists of a recessed segmental washer, in combination with a segmental forked or pronged clip locking in with said washer.

Barbed Wire Fence Patents.

In a recent issue the Chicago *Inter-Ocean* reports an important decision by Judges Drummond and Blodgett, of the United States Circuit Court for the Northern District of Illinois, with regard to the right to manufacture barbed fence wire. Fourteen suits were decided, all in favor of the complainants, the Washburn & Moen Manufacturing Company, of Worcester, Mass., and Isaac L. Elwood, of De Kalb, Ill., who are jointly interested in the patents involved, and are also largely engaged in the manufacture and sale of barbed fence wire. The decision is that all persons who have been manufacturing and selling the infringing barbed wire are liable for back damages. It is stated that Judge Lowell, of the United States Circuit Court of the Massachusetts District, had advised the complainants, who had several suits pending in his circuit, to await the decision of Judges Drummond and Blodgett. It is also reported that numerous suits pending in Iowa, Missouri, and other States have been suspended for the same reason, but will now be proceeded with. By this decision the complainants are shown to be the only parties who have the right to manufacture and sell barbed fence wire.

Uselessness of Chian Turpentine in Cancer.

Dr. Henry Morris, after giving Chian turpentine a pretty thorough trial in several cases of cancer, the details of which he gives in the *Lancet*, arrives at the conclusion that this recently vaunted remedy is utterly valueless in this dread disease. He says: "I am not able to report that there is a single symptom over which the drug seems to exercise even frequently, not to say constantly, an influence. It cannot be relied upon to assuage pain, to diminish or alter the character of the discharges, to check hemorrhage, or promote the destruction of the growth by ulceration or sloughing. In the few cases in which the patient at first thought she was benefited, the impression was due to that 'clutching at straws' tendency, that is so often observed in persons suffering from lingering and incurable disease, and to her being encouraged to think that she was taking a new and certain cure. Rest, regulation of diet, attention to the bowels, an anodyne at night, and the extra local cleanliness which follows from the use of injections and lotions, will of themselves, and without any internally administered drug, give temporary ease and improvement."

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