

the distance to these is at least a hundred miles, it is obvious that the sight can only be rarely obtained. In addition to the *view* from these mountains, there is a *sound* that can occasionally be heard there, by which visitors are sometimes attracted; this is the roar of the breakers from where the Atlantic beats on the western shore of the Mull of Cantire, a dull, distant, heavy thud, which on calm breathless days can be caught by a sharp ear across the twenty miles that intervene. From the top of Cir Mhor we now descend again to the "Saddle," and thence, turning to the right, we make our way down Glen Rosie to Brodick, a distance of five or six miles. In its upper reaches Glen Rosie is wild and heath-covered, famous too for its adders, if local report be true, though I confess I have always regarded this as a pious fiction invented and propagated by the Duke of Hamilton's gamekeepers to prevent an excessive influx of tourists into the domain of the red deer. At the foot of the glen the scenery is milder and more varied than that of Sannox, low undulating hills and well-wooded dingles taking the place of the stern and barren slopes.

Such is one of the many fine walks and ascents that may be made in Arran. The best way to enjoy a visit to the island is, in my opinion, to avoid the hotels and larger lodging-houses, of which there are fortunately extremely few, and take one of the many cottages that can be rented in the summer months for a moderate

charge; but this can only be recommended to those who are inclined to "rough it" for awhile in the matter of diet and accommodation. There is one great advantage in Arran for those who wish to do much climbing, and this is that visitors are permitted to wander wherever they like across hill and valley, and are in no danger of being turned back by gamekeepers, as is too often the case on some Scotch mountains.

But though the presence of man is thus tolerated, even in the sacred regions of the red deer, the presence of man's faithful friend and follower is strongly deprecated and prohibited. "No dogs admitted except on business," is the *fiat* that went forth years ago from the Lord of Arran, and woe be to the tenant who, without permission, has either kept a dog himself or permitted the stranger within his gates to keep one! I was told by an Arran peasant, in whose cottage I spent a few weeks, that he had once kept a dog for a short time—"an awful kind dog," was his own description of it—but when it came to the gamekeeper's knowledge he was obliged to "make it away" by drowning it in the sea. My advice to those who wish for a week or fortnight of mountain climbing is therefore to try the Isle of Arran, provided always that they leave their dogs behind them.

H. S. S.

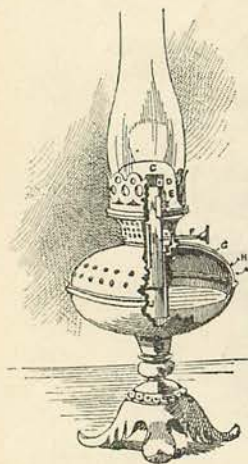
* * * The Illustrations to this paper are from Photographs by Messrs. G. W. WILSON & Co., Aberdeen.

THE GATHERER:

AN ILLUSTRATED RECORD OF INVENTION, DISCOVERY, LITERATURE, AND SCIENCE.

Correspondents are requested, when applying to the Editor for the names and addresses of the persons from whom further particulars respecting the articles in the GATHERER may be obtained, to forward a stamped and addressed envelope for reply, and in the case of inventors submitting specimens for notice, to prepay the carriage. The Editor cannot in any case guarantee absolute certainty of information, nor can he pledge himself to notice every article or work submitted.

A Safety-Lamp for Petroleum.



event of the lamp falling. Moreover, the oil reservoir is modelled on the principle of the unspilling ink-bottle; hence there is less escape of oil than in

The development of the Russian petroleum industry has led to the appearance of a new safety-lamp for burning that oil. It is made of metal, so as not to break or become over-heated. An air chamber on the oil reservoir allows the air to reach the flame in a warm state. No dangerous gas is formed in the oil reservoir, and the light can be blown out without fear of accident. There is no smell or waste of oil by vapourisation; and by means of two levers the flame is extinguished in the

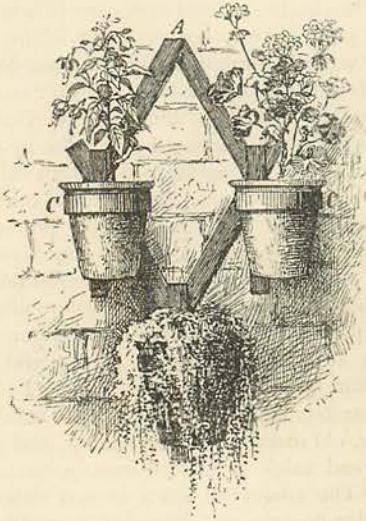
ordinary lamps. The turning of an ignited wick downwards by an ignorant or careless person is kept from igniting the oil by a special contrivance, and the flame put out. In the figure, A represents this contrivance, which is, in fact, an elongated wick-tube; C and D are pivoted caps, which extinguish the flame in case of accident; G is the air chamber over the reservoir, and the air enters it from outside through perforations at H, and passes upwards to the flame, cooling the lamp and warming itself; J is the cylinder or tube upon which the burner is screwed. The greater part of the oil runs behind this cylinder when the lamp assumes a horizontal position, as in the ordinary safety, or tax-collector's, ink-bottle. The price of the lamp is such as to bring it within the reach of all classes.

The Paris Exhibition of 1889.

Our illustrations show the grounds and buildings of the forthcoming Paris International Exhibition next year in the Champ de Mars, and gardens of the Trocadéro opposite (Fig. 1). Besides the great

for sea-sickness. A little syrup of orange, raspberry, or tolu is a good medium for taking it in. The dose for young infants is, according to our authority, half a grain to a grain and a half administered three times a day. For older children the dose can be increased; and it is remarked that the medicine should be taken systematically, for otherwise the amelioration of the patient's condition may not continue.

A Simple Flower-Bracket.



A simple flower-bracket for garden walls, which can be made by an amateur, has been devised by Mr. Alfred Sinclair, of Coventry. As shown in our engraving, it consists of a diamond-shaped frame, A, made of $\frac{3}{4}$ inch hoop-iron, in two pieces, bent, and then riveted together by a small $\frac{1}{8}$ inch rivet at each end where the pieces cross. This frame is hung on a large nail driven into the garden wall. Three hooks of $\frac{3}{4}$ inch

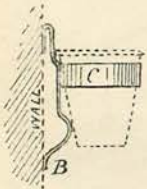


FIG. 2.

iron, bent to the shape B, shown in the side view (Fig. 2), keep the flower-pots in a vertical position with the help of three circles of hoop-iron, C C C, riveted to the frame. The materials and tools required for making the device are merely the hoop-iron and nails, with pliers, shears, punch, hammer, and anvil. Mr. Sinclair recommends $4\frac{1}{2}$ inch pots as looking best.

Electric Acupuncture.

The Chinese, we are told, employed acupuncture at least 4,000 years since, and the Japanese adopted it long ago. Their practitioners employed puncturing needles of gold and silver, and their manufacture was an art of great importance. They were of different shapes: some bladed like swords, and others of the ordinary needle form. At the end of the eighteenth century acupuncture was introduced into Europe, and was developed in the present century. M. GaiFFE, a French electrician, has recently constructed a variety

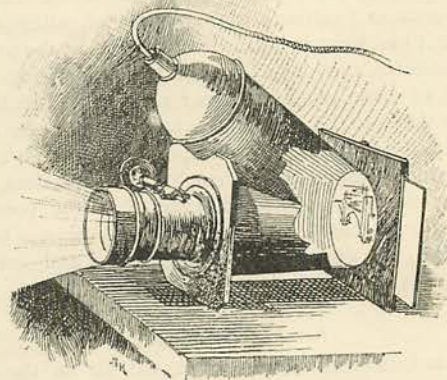
of needles for electric acupuncture, specially applicable to the perforation of painful tumours, so as to avoid unnecessary pain. By the electric acupuncture the current is conveyed into the tumour and applied at the point where it is most required to effect the dissolution of the morbid liquid contained in it. For this purpose the blade is varnished, except at the point, and thus insulated, so that the current only escapes at the point. Glass or india-rubber has been used to coat the needle, but insulating varnish is preferred, since it does not thicken the probe so much. The upper end of the needle is connected to one pole of the voltaic battery used, and there is a conducting-plate applied to the skin and connected to the other pole. When, therefore, the needle is forced into the tumour, the current flows from its point to the conducting-plate through the flesh, and decomposes any unhealthy fluids there may be in its passage. This process aids the absorption of these secretions, and the destruction of the tumour. The operation, as performed by French physicians with these improved needles of M. GaiFFE, is almost painless, and there is hardly any blood-letting.

A Sun-Stove.

Professor Morse, of Salem, Massachusetts, has devised a simple stove for warming rooms by means of solar heat. It consists of a shallow box, having a bottom of corrugated iron and a glass top. This device is placed outside the building, so that the sun can shine directly into it. The rays pass through the glass and are absorbed by the metal, heating it to a high temperature and warming the air of the box. The air, which on sunny days rises to a temperature of 90° Fahr., is conveyed into the room which is to be heated.

The Auxanoscope.

An apparatus for projecting drawings, photographs, medals, and so forth, on a screen—in other words, an electric megascope—has been devised by M. Trouvé,



a well-known French electrician. It consists of two cylindrical tubes fitted together at a certain angle. One is provided at its upper part with a lamp and a parabolic reflector; the other contains an ordinary

photographic objective lens. At the angle formed by the junction of these tubes is placed the object whose image is to be projected. In the accompanying figure the apparatus is cut away to show this arrangement. The object may be solid as well as plane; for example, the works of a watch, which form an interesting projection. The lamp employed is an electric incandescent lamp; and another form of the apparatus is provided with a third tube containing a second lamp placed in the focus of a parabolic reflector. A battery of four bichromate cells is used for the lamps.

A New Naval Game.

The new naval game of Lieutenant H. Chamberlain is played with a board and movable vessels, islands, and rocks; two dice-boxes and a die. A couple play—one manœuvring the ships attempting to run the blockade, the other directing the vessel of the enemy in chase. Having arranged who shall make the first move, the game begins by the person who plays second arranging the islands and rocks in a way likely to retard the progress of the blockade-runners. Victory goes with the vessel which succeeds in ramming the other or driving her ashore, or with the vessel escaping from the port to sea. The play-board is of paper, and it may be folded up like a chess-board. It is divided into squares, as shown, and marked with the cardinal points of the compass, N., E., S., W. The south edge of the board, B B', is coloured to represent land, and has an opening, C, for the port from which a vessel, D, heading due N., escapes. If she reaches any of the north squares, she is successful; for these mean "open sea." Certain squares on the north, from F to G, F' to G', are set apart for the position of the enemy's ship, H, keeping watch, and it can be placed in any one of them, heading due east or west. The islands, J J, and rocks, K K, cover a certain number of squares, each of which represents a certain area. When the vessels come within the pre-determined range of 1,000 yards, the die is cast to settle the effect of the shots. On three sides of the die is marked the word "miss," the other sides have "dis" (disabled = 4 points), "pen" (penetrated = 2 points), and "hit" (1 point). A code of rules has been drafted, and the game requires no umpire.

Condurango.

Professor Oser, of Vienna, has made experiments with a new tonic, "condurango" bark, and he finds that it has an excellent effect upon the appetite, and that it relieves over-sensitiveness. In some patients,

however, its use may set up nausea, which is corrected by employing different preparations of the bark, such as wine or liquor. He considers condurango worthy of a place in the materia medica as a symptomatic remedy.

A Stereoscopic Camera.

Mr. Augustus Stroh has given a simple method of forming a stereoscopic camera. It consists in taking out the rising front of an ordinary half-plate camera, and replacing it by a front with two lenses. The only other arrangement necessary is a partition inside the camera, dividing it into two compartments. This can be made of thin wood or cardboard. We may add that Mr. Stroh has constructed a stereoscopic detective camera for instantaneous work. We may also mention here that Mr. W. R. Wynne has devised a spirit-level for cameras, which can be carried in a small box in the vest-pocket, or fixed to the camera itself.

A Purple City.

A remarkable atmospheric effect was observed at Moscow on the evening of May 19th last, during sunset. The rays of the sinking sun were intercepted by clouds which, owing to some peculiarity in their absorbing power, caused the whole city to appear suffused in a vivid purple light. The phenomenon lasted for about eight minutes, and

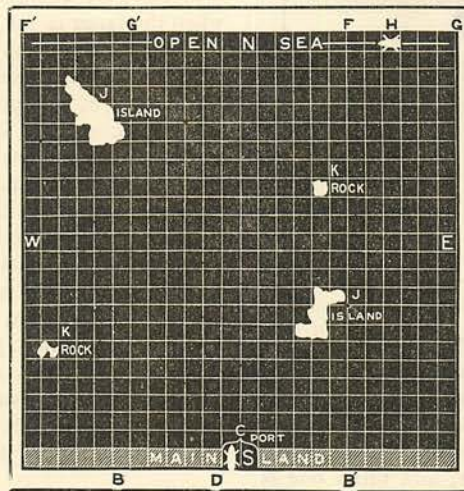
produced a weird impression, which can be more easily imagined than described.

A Destructive Wave.

An enormous wave is reported to have struck the beach at Baraçoá, in Cuba, recently, and flowed inland for a distance of 400 feet, before it retired. It destroyed in its course nearly 300 huts and houses, but happily no lives, as the inhabitants saw it coming, and fled to the nearest hill. Curiously enough, the wave was neither tidal nor due to earthquake disturbance, but, it is stated, to a north wind, which had blown for three successive days.

Wire Soles.

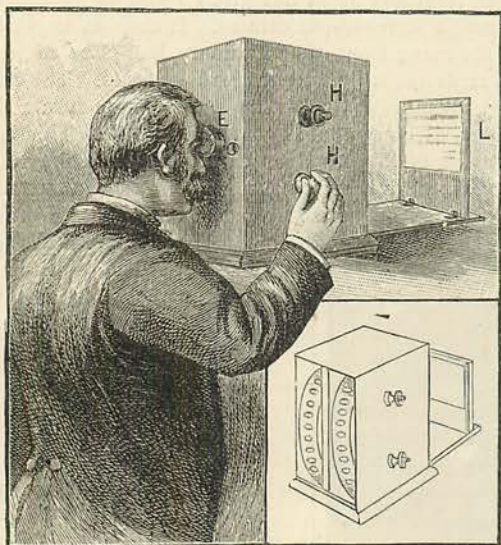
A Nuremberg inventor has devised a sole for shoes, consisting of wire network overlaid with a composition resembling india-rubber. The soles have been tested in the German army, and found more durable than leather. We may add that canvas shoes, rendered watertight by a kind of varnish, are now used in the Austrian army.



A NEW NAVAL GAME.

A Levelling Machine.

A levelling machine has been introduced into South Staffordshire, from America, for imparting to sheets of iron, steel, or copper, a uniformly flat surface. The sheet is simply fed into the machine, which is worked by hydraulic power, and automatically grips and smooths it.



A New Opsimeter.

A useful "opsimeter," or instrument for determining the eyeglass or spectacles required for failing eyes, has been introduced by Mr. E. Barnard. The woodcut shows the device as ready for use. The person looks through the eye-pieces, *EE*, and turns one or other of the handles, *HH*, at the side of the box until he can read the letterpress, *L*, fixed at a certain distance. A small hole shows the power or "sight" of the glasses required by means of an indicator, which need not be described. The right-hand figure of the illustration exposes the interior of the box, with lenses of different powers mounted upon revolving drums, which are brought into the line of sight of the looker as he turns the handles.

A New Method of Bleaching.

A method of bleaching has recently been tried in the North of Ireland, which is likely to prove a commercial success, according to our information. It is a modification of the plan proposed by M. Hermite for bleaching by liberation of chlorine under the action of an electric current. The new method is due to Messrs. Cross and Bevan, who found that a solution of magnesium chloride when electrolysed by the current delivers up active oxygen of strong oxidising properties. They also found that a smaller quantity of bleaching-oxygen effects the purpose than when ordinary bleaching-powder is used. In short, the new process is about one-third cheaper than the old, if some experiments are to be trusted. The process has

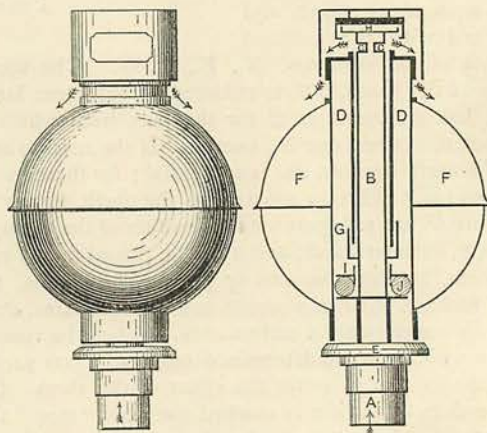
been applied not merely to the whitening of yarn but of paper pulp. At Belfast the electrolysed solution circulates through the bleaching-tank, and is kept active by the voltaic current. The tank is of special construction; but as the process is capable of further modification, we need not enter into details.

Spirally-welded Pipes.

Pipes of sheet iron or steel cut into strips and welded in a spiral are now made at East Orange, New Jersey, U.S., of sizes from four inches in diameter upwards. They are intended to take the place of cast-iron pipes when these would be too expensive to use. A special machine is used in their manufacture.

A New Cistern Valve.

A valve for stopping the water supply to a cistern when the latter is full, by utilising the water pressure in the main, has been introduced. The water enters the valve by the inlet, *A*, and passes up the stem, *B*, to issue at full pressure by outlets, *C C*, until the cistern is charged. When the level reaches half up the ball, *F*, the ball with the cylinder, *D*, begins rising from the plate, *E*, thus partially closing the outlets, *C C*, and the water enters *D* by passing between *B* and *D* to the receiver, *G*. This causes the ball and cylinder, *D*, to leap up to the india-rubber seating, *H*, and seal the outlets, *C C*. The pressure of the water then acts between the cylinder, *D*, and the collar, *I*, which rests on a rubber seating, *J*, and effects the closure of the lower portion of *D*, stopping the supply in a silent manner. The day's supply having thus been delivered, the valve locks itself until released by the turncock. On an intermittent service system a supply of 150



gallons can be had in a few minutes, and emptying the cistern does not induce a fresh supply by the falling of the ball, owing to the locking of the valve. On a constant service a supply of fresh water need only be admitted by the householder when required. The diameter of the ball is about $5\frac{1}{2}$ inches, and the length of the device about 9 inches.