

THE GATHERER:

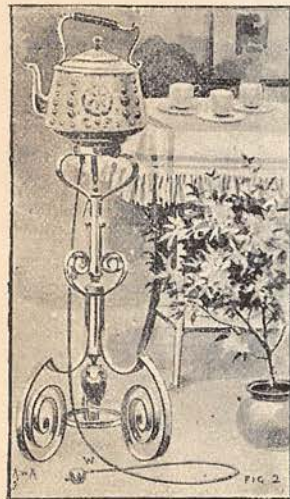
AN ILLUSTRATED RECORD OF INVENTION, DISCOVERY, AND SCIENCE.

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.

Electric Cooking.

Heating and cooking by electricity is now making rapid strides in this country, as it has already done in America. Electric frying- and stew-pans, kettles, flat-irons, curling-tongs, and other domestic utensils are now in regular use in homes provided with the electric current for lighting purposes. Figs. 1 and 2 represent a pair of tea-kettles with their stands, and the wires, w, w, which convey the current to the heater. This consists

of a platinum-iridium wire embedded in insulating cement, not liable to crack, and enclosed in the base of the kettle between an upper and a lower bottom. When the current traverses the wire it becomes hot and acts on the water like a fire, but without any attendant nuisance of dust, smoke, or carbonic acid gas. Fig. 3 represents an oven or cooking-stove on the same principle, with a row of terminals for applying the current to any desired part by means of the conductor, w. Joints, pies, as well as pots and pans, can all be heated as in the ordinary gas-stove.



ELECTRIC COOKING.—FIG. 2.

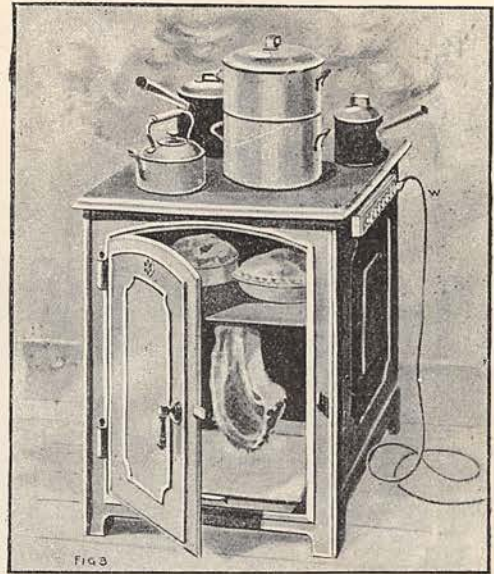
A Scientific Canon of Proportion.

Polycletus, Michael Angelo, Albert Dürer, and other famous artists have given us canons or rules of proportions for the human figure, but all these may be regarded as expressing the individual ideal of their author. Accordingly, M. Paul Richet, the well-known French writer on art, has gone to the actual measurements of Europeans and Americans carried out by Quetelet,

Topinard, and other anthropologists, and from them has drawn a scientific canon which is true to nature for the peoples concerned. Of course, such a canon will vary with different peoples, but it cannot fail to be useful to artists, who can no longer afford to ignore the facts of nature in shaping their ideal creations. One feature of the new canon is that the European height is about seven and a half times the length of the head, as in the canon of Polycletus.

Advances in Potato Culture.

Experiments on the application of electricity to the soil in growing fruits and vegetables are by no means novel, since they date back a century or more, but



ELECTRIC COOKING.—FIG. 3.

they are becoming more practical nowadays, and likely to have important consequences. Some time ago M. Spechnew, director of the Botanical Gardens of Kiew, cultivated potatoes between buried plates of copper and zinc connected above the ground by wires. The plates and the damp soil formed an "earth-battery" like that of Alexander Bain, the famous inventor of the chemical telegraph and the electric clock. The current developed by the plates traversed the soil about the roots of the potatoes and seems to have had a fostering effect on the growth of the plant.



A NEW HOLD-ALL.—FIG. 1.

To test the point still further, M. Lagrange planted a section of a field in this way, another section in the ordinary way, without any plates, and a third in a manner different from either. This consisted in thrusting metal lightning-rods into the ground until their lower ends were on a level with the seed potatoes. The soil and the exposure in each case were the same, but the crops were different. In fact, the ratio of the yields in the three sections were as 78, 80, and 103. The first section had the best show of foliage but the poorest of roots, and the last section had not only the best harvest of roots, but it was obtained fifteen days sooner than the others. The action of the lightning-rods requires further investigation, but it seems to have been due to an electric discharge of the negative electricity of the ground into the positive electricity of the air. The experiments are so interesting that it is to be hoped other horticulturists will take the matter up. Stout iron wires, pointed at the upper end, ought to serve as well as copper ones for such lightning-rods.

A New Hold-All.

Our illustration shows a new hold-all, which is convertible into a leg-rest for the use of railway travellers, as in our first illustration. Dr. Batten, its inventor, also claims for it that it could be used as a luncheon table, or, in case of need, as a splint for a broken leg. But this last suggestion opens up too wide a field to be pursued further with pleasantness. As will be seen, the laths of which the device is constructed are secured by means of stout straps, and they are of just sufficient length to reach safely from seat to seat of an ordinary railway carriage. When the device is in use as a hold-all it packs into very small space, and weighs very little, despite the strength of its wooden laths.

A Simple Photometer.

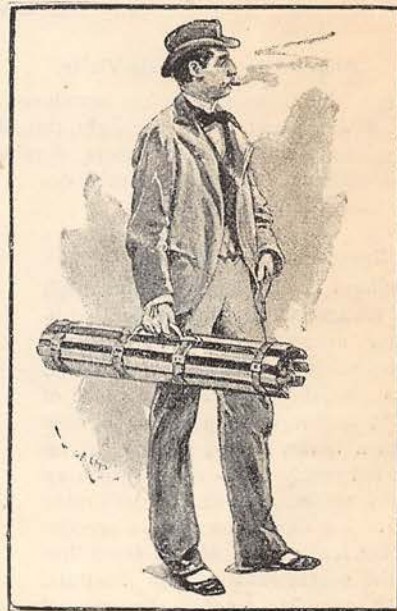
Dr. Simonoff has devised a portable photometer for giving the intensity of illumination at any place, which will be useful in testing the eyesight. It consists of twenty-four pages of different shades of blackness, arranged in a scale, and having words and phrases of different sizes printed on them. The degree of illumination is shown by the observer failing to read characters of a certain size.

The Earliest British Church.

Perhaps the most interesting "find" in the excavations on the site of the Romano-British town of Gallea Attrebatum, near Silchester, is the foundations of a Christian church, or basilica, dating from the fourth century, and believed to be the earliest in the country. It was only forty-two feet long, and the walls were built of brick and flints. It was paved with red bricks or tiles, but a square of white-and-black mosaic marks where the altar stood. Probably other churches will yet be found within the area of the town, as it seems too small to have contained all the Christians living there.

Safety Spectacles.

Workers in foundries, laboratories, and other places where the eyes are in danger from sparks, jets of molten metal, chemical liquids, and strong glares will



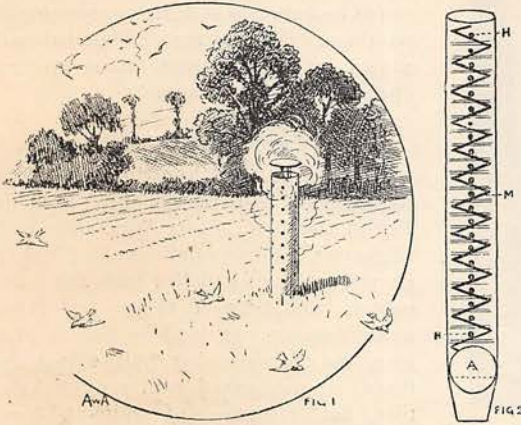
A NEW HOLD-ALL.—FIG. 2.

be grateful to the Association of French Industries for offering a prize to encourage the invention of a good protective spectacle. The prize has been gained by M. Simmel Bauer, whose spectacles consist of strong

rectangular lenses fixed in a kind of shield, which protects the brow and orbits of the eyes.

An Automatic Scarecrow.

A bird and vermin scarer which is likely to prove effective has been devised by a Kentish gentleman,



and will be understood from our illustration. It consists of a hollow post, as shown, having a row of twenty-four holes (H H, Fig. 2) containing cartridges which are fired in turn by a slow-match, M, zig-zagging from one to another. The post is perforated with other holes to allow the sound to escape, and the top is covered with a cowl to keep out the wet. The match can be timed to start the explosions at day-break, which is, we understand, a hungry time with birds who are mindful of the early and misguided worm.

Aluminium Cartes-de-Visite.

A French aluminium worker has introduced cartes-de-visite of this metal which are light, thin, flexible, of silvery lustre, and of course more durable than paper. Aluminium foil is apparently destined to many useful applications.

Spectacles for Horses.

Mr. Dollond is of opinion, as the result of long investigation, that horses, and probably other animals, suffer like human beings from short and defective sight. And he thinks that this is often the cause of "shying"; and it is frequently the case that when a horse, having "shied" at an object, is led gently up to it and given an opportunity of seeing it, its fear will quite disappear. But this is not always practicable or convenient, so Mr. Dollond has devised the spectacles which we illustrate, and which completely cover the eyes of the horse, being held in their places by means of thin straps. If bi-focal lenses are used in the spectacles it is found that the road appears to rise in front of the wearer, and the horse is thus induced to step up. And hence has arisen the use of

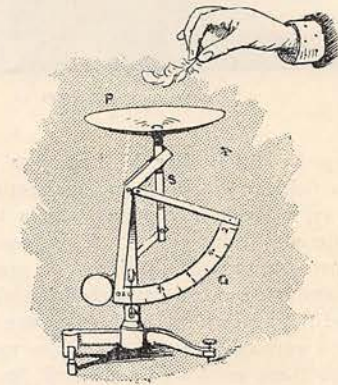
this variety of spectacles by horse-trainers for the promotion of high-stepping.

A Glass House.

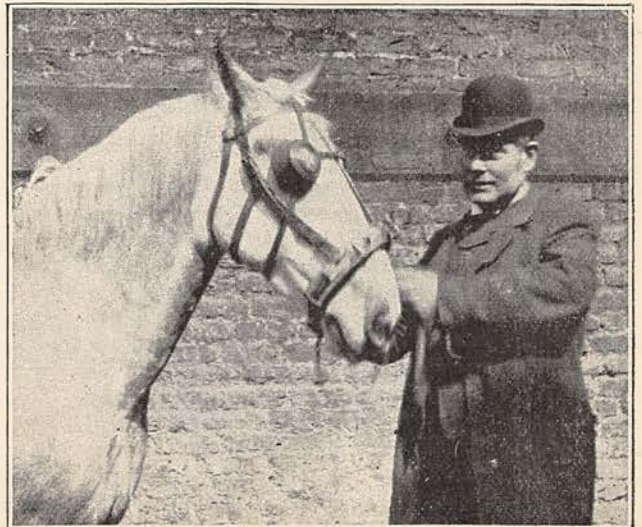
The old saying that people who live in glass houses should not throw stones is in a fair way of becoming obsolete. Seventeen houses of glass brick are now in course of erection at Chicago. They are hollow for the sake of lightness, and can be coloured or moulded on the face. Of course, they are able to resist atmospheric deterioration much better than ordinary brick, and can be easily cleaned. Mr. FitzPatrick of Glasgow is the inventor of the process whereby they are cast.

A New Chemical Balance.

A very sensitive chemical balance is illustrated herewith. The pan, P, is mounted on a vertical

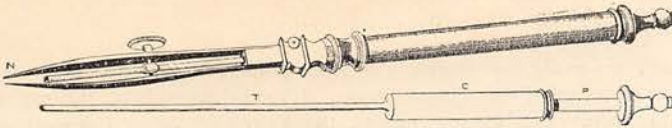


spindle, S, which is connected by means of a link-work to a graduated sector or scale, G, on which the weight is indicated by a pointer. Of course, the pan with its load is balanced by a counterpoise.



SPECTACLES FOR HORSES.

A Reservoir Drawing-Pen.



The reservoir principle has now been applied to the mathematical drawing-pen, of which an example is shown in the above figure. The Indian ink is sucked into the reservoir, C, by drawing out the piston, P, and the tube, T, conducts it to the nibs, N. The supply of ink to the nibs is regulated by the plunger, P, and to lay the pen aside for some time it is only needful to blow the ink out of the nib, as that in the reservoir keeps good for days.

An Omnibus Electric Lamp.

The London General Omnibus Company have adopted the portable electric lamp which we illustrate

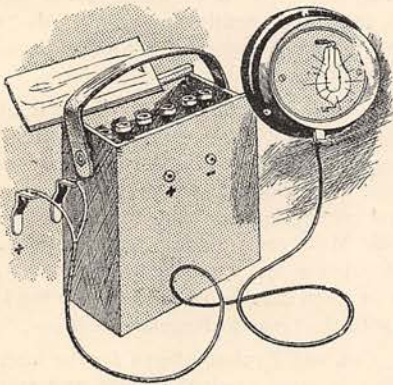


FIG. 1.

for the lighting of their vehicles on the principal routes of the Metropolis. The current is derived from an accumulator weighing eight pounds and carried in the box (see Fig. 1). The lamp has a white enamelled reflector behind and is fixed on the ceiling of the car, while the box is placed under the seat, as in Fig. 2. A button-hole lamp, fed by a pocket battery, is also supplied to the company's ticket-inspectors

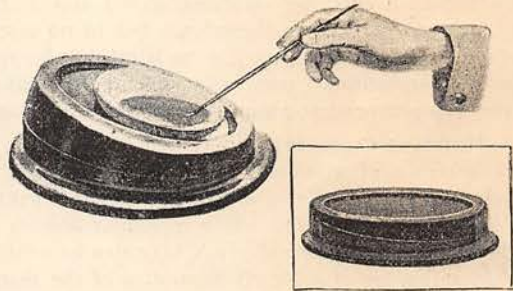
A Collection of Novelties.

This is the season for botanising, and botanising implies a vasculum. We have one before us from a Birmingham firm which is of a good shape, and both light in weight and strong in make. And the fact that it could be turned to more prosaic use than botanising is surely of advantage to our readers.—Who is there that has not lost either keys or pocket-knife at one time or another? A Glasgow firm has introduced a system which, at any rate, promises to add to the chances of restoration. They are making a two-bladed knife with a metal handle and a registered number engraved upon it. This knife may be readily attached to the key-ring, and then, if both

are lost, anyone finding and returning them to the Glasgow house will be rewarded.—Our next novelty is for the wash-stand, and consists of a single dish with trays for all the articles generally kept upon a wash-stand, so that the number of articles liable to be knocked off the wash-stand is reduced to a minimum, and everything is well within reach.—And, lastly, we must say a word for a new antiseptic and washable distemper for walls. It rejoices in the name of Pertrulycus. For schoolrooms, as well as for the house, it should prove a godsend, especially as it is applicable to papers as well as to colour-washes.

An Adjustable Saucer-Stand.

Artists and draughtsmen will find the colour saucer which is shown in the woodcut very useful. It rests



on a stand of hard wood made of two parts, the upper revolving on its centre at an angle to the horizontal, and thus tilting the saucer.



AN OMNIBUS ELECTRIC LAMP.—FIG. 2.