

this costume was worn a beautiful hat of fancy straw, having two minute *rouleaux* of velvet sewn outside the brim, which curved slightly at the side, and an artistic bow of shot gold and heather coloured silk was slipped through a curved loop of the straw in a charming way.

There are many pale-tinted muslins freely scattered with white spots now fashionable, and deliciously cool-looking and becoming they are for young ladies, whether made with the skirts slightly draped on each side of the front or with the plain severity qualified by a flounce edged with narrow Valenciennes, put on with a vandyke heading. Pretty full bodices are arranged with fichu frills describing a deep point back and front, the V being filled in with ribbon fastened on the shoulders with rosettes, a broad sash ribbon encircling the waist and tied at the back in bows and very long ends; the sunshades to correspond are also made in rows of muslin and lace, and hats with rough straw crowns and broad brims of lisse or lace are profusely decorated with flowers and ribbon; in fact, no head gear or costume would merit the assertion of being new, unless ribbon appeared in rosette, bow, or sash, upon it. I have designed a dress (*see* illustration on p. 635) to show a present style of arranging the ribbon on the bodice, in this instance it is black satin profusely

dotted with tiny jet sequins or paillettes. The material of the dress is pale blue canvas, ornamented with a yoke, collar, and cuffs of the much-worn guipure lace. The skirt is perfectly plain, setting out at the hem. A tight-fitting bodice lining has the fronts draped and trimmed with the ribbon forming braces and finished with rosettes of bows, accentuating the waist-line and ending in a sash at the back. A large puff to the elbow and thence tight to the wrist is a marked feature of the designs for sleeves, which continue large for *fête* and out-door wear, but are greatly diminished on full evening dress. It is a style that has much to recommend it on the score of becomingness when not carried to excess. The charming hat of old gold straw has a full ruche of pleated white chiffon, the minute hem showing a line of black silk, black marguerites with yellow centres and green foliage being grouped in an erect spray at the left side of the flat crown.

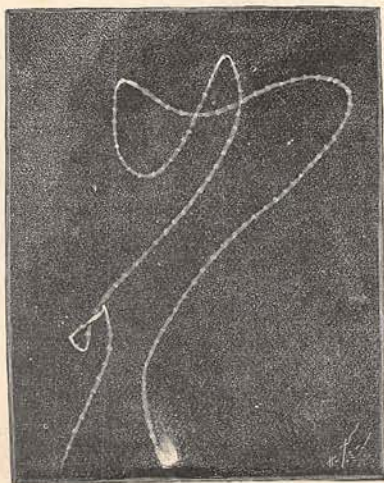
A. LL. GRIFFITHS.

Cut paper patterns for making costumes from the original designs illustrated in this article may be had, cut to the sender's measurements, for one shilling each. Application should be made to the Author of "Chit-Chat on Dress," care of the Editor of CASSELL'S MAGAZINE, La Belle Sauvage, London, E.C.



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.

Bead Lightning.



Chain, bead, or chaplet lightning is a rare phenomenon and very little is known about it. The observer sees a dotted line of light without branches like forked lightning, but curving gently and sometimes appearing to form figures

like the letter S or the figure 8. Happily a flash was photographed for the first time by Mr. W. N. Jennings, Philadelphia, at 2 a.m. on June 10th, 1890, but not brought into public notice until the Chicago Exhibition, where it was shown in the pavilion of the United States Weather Bureau. Our illustration reproduces this photograph, which bears out Planté's description, "a chaplet of bright beads strung on a narrow luminous thread." The flash first rose from the horizon, and afterwards returned to the ground, where a small flash, like an explosion, could be seen. Signs of a gyratory motion can be detected at the lower knot of the figure, when the photograph is enlarged; and on the whole, it would seem either that the flash is the apparent path of one or more electric balls—that is to say, globe lightnings—or a file of these balls partially formed along a luminous path of induction, but not detached from one another. Further and exact observation is necessary before we can pronounce definitely on this little understood phenomenon.



A Railway Bicycle.

Our engraving shows the bicycle now employed by the Russian gendarmes in travelling along the State railways to watch for any obstructions or signs of danger to the train of his Imperial Majesty the Czar. It chiefly differs from road cycles in that the wheelman can give all his energies to the propulsion, as no steering gear is needed, and therefore in addition to the pedals for his feet, there are two levers which he works with his hands.

A Hinged Mast.

In navigating the Manchester Ship Canal and other waters crossed by bridges, the top-masts of vessels are an impediment, and hence a species of hinged top-mast which can be lowered, like the funnel of a steamboat, when passing under bridges has been introduced. The mechanism is very simple, and the device is preferable to the older telescopic masts now in use.

The Purest Air on Earth.

When the atmosphere becomes foul with smoke and dust, it purifies itself by forming clouds, which break into rain. The dust-particles are the nuclei on which the water vapours condense into mists and clouds. We should, therefore, expect that populous and manufacturing towns are the great centres of befoulment, while mountains and seas, with their mists and rains, are the great purifying areas. Mr. John Aitken, F.R.S., has found this to be the case by actual observation of the dust-particles in the air of different localities. The purest air on earth is probably to be found in the middle of the Atlantic and Pacific Oceans. In the Atlantic, at all events, Mr. Aitken has found the lowest number of dust-particles—only 71 in a cubic centimetre, the centimetre being one-fifth of an inch. In the Highlands of Scotland, a mountainous country surrounded by seas, his figure is

141, in the Alps it is 381, and in the Mediterranean 891 particles per cubic centimetre. When it is remembered that in a large town the number of particles in a cubic centimetre is measured by hundreds of thousands and millions, the purity of sea and mountain air is better comprehended.

A New Wind Motor.

The windmill which we illustrate is likely to be useful in many ways: for instance, in generating electricity from wind-power. It is twenty feet in diameter, and of the horizontal or turbine class; the sails, having a total area of 300 square feet, are concave screens carried by five radiating arms. A semi-circular shield, operated by the vane on the turret, controls the action of the wind on the sails. The central shaft, which is turned by the sails, is prolonged downwards to the engine or dynamo house, as shown. With a wind going sixteen miles an hour, the motor develops four horse-power.

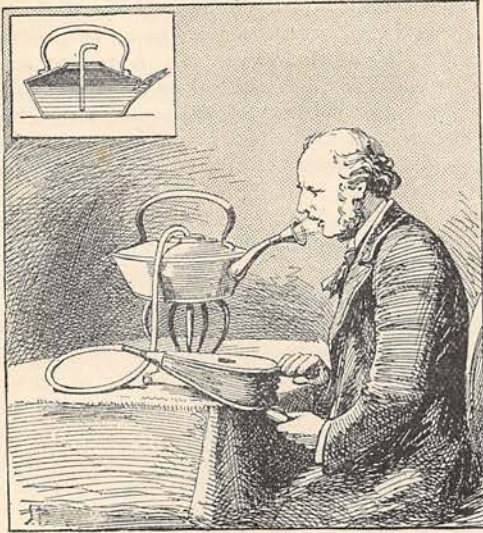
Household Novelties.

The "Unicus" Tea-infuser is a perforated cap which, when filled with tea-leaves, slides on to a tea-spoon and may then be used to prepare a single excellent cup of tea without the trouble of a tea-pot or any risk of "over-stewing," and its consequent tannin. For holiday use or upon a journey the Unicus would prove invaluable.—An "Anti-dust" Brush has just been patented, the use of which does away with any necessity for sprinkling floors with water, tea-leaves, saw-dust, or any other medium for preventing the rising of dust during the sweeping of uncarpeted floors. The brush itself is circular in shape, and is surmounted by a metal reservoir in which is carried a disinfecting fluid, "Stourolene" by name. In the ordinary way the brush is used rigid, but if the dust begins to rise, the pressing of a peg in the handle allows the brush to revolve and at the same time charges it with the fluid.—A literary man, who has unjustly suffered sundry pricks and wounds from adjusting the ordinary curtain hooks, to help his wife, has turned his hurt



A NEW WIND MOTOR.

to profit (we hope), by inventing what he calls the "Stand-up" Curtain hook. This is constructed on the principle of a balance, and having two upward-turned points, will not only hold a curtain with singular firmness and evenness, but will secure the pleats. A curtain-hook which cannot come undone is indeed a



A HOME-MADE INHALER.

novelty, and worthy the attention of every housewife.—A new placque-holder, called the "Perfect," which has just been patented, is at once strong and easily fitted to the china to be supported. At the back of a brass centre-plate are three slots through which run flat strips of brass, with hooks at one end to grip the edge of the plate or bowl. If the other end of the strip be then bent back, a secure and unalterable hold is given, and suspension by means of a ring in the centre-plate is easy and safe.—A flexible spatula has just been introduced which commends itself to all who are in attendance on the sick, in hospitals or at home, as it may be used for spreading ointments, etc.—A Family Blacking-box that has just been introduced by a Welsh firm deserves a place in every household. Across the centre of the box, which is made of japanned metal, is mounted a polished wood roller that of necessity revolves in the blacking as the brush is passed over it. The result is that the blacking is distributed evenly over the surface of the bristles, and as there is no longer any need to dip one end of the brush in the blacking the bristles are not filled up and the life of the brush is thus prolonged.—An Improved Pie-cup, "the Rosebud," has just been patented, in which is a number of small holes just below the crown upon which the pastry rests. These holes communicate with the funnel which projects above the upper crust of the pie. By the use of this cup, the inventor claims that juice or gravy is retained in the pie, and that meat pies are made much more digestible.

A Home-Made Inhaler.

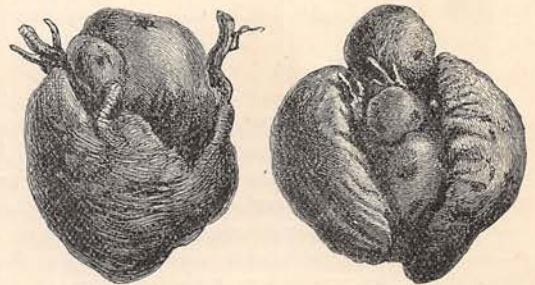
Inhalations of aromatic vapours such as those from terebinthine, eucalyptol, and pinol are recommended for most affections of the larynx and bronchial tubes, and hence it may be useful to show how an inhaler can be made from a teapot or kettle and a pair of bellows. The mouth of the teapot should be closed by a bung, through which an indiarubber tube is passed into the liquid to be vaporised (as shown by our illustration, particularly in the small section in one corner of it). The other end of this tube is joined to the nozzle of an ordinary domestic bellows; and a funnel or mouthpiece is added to the spout of the teapot. On working the bellows the medicinal liquid in the teapot is agitated, and the fumes are blown from the spout into the mouth of the patient, who inhales them at his pleasure. To make the process as effective as possible, the liquid should first be heated by placing the teapot or kettle beside or on the fire.

Electrified Balloons.

Several balloons have caught fire in a mysterious manner, and the ignition has now been traced to electricity developed on the silk of the envelope, either by the friction of the air or the cordage. The electricity charges the metal of the safety-valve, and when this is worked a spark is produced which ignites the gas and sets the balloon in flames. The obvious remedy is to construct the valve in such a way that it will not yield a spark.

Keeping Potatoes.

Potatoes become unfit for cooking when they germinate, and in order to keep them the buds should be removed; but this is a troublesome process, and as M. Schribaux has recently shown, it suffices to steep them for ten or twelve hours in water acidulated with one or two per cent. of commercial sulphuric acid (marking sixty-six degrees on Baumé's areometer); larger proportions of acid being used for kinds with a thick skin. The acid kills the buds without penetrating



the skin of the potato. One or two varieties of potato would appear not so well adapted for this treatment, since in them there are sometimes sprouts inside the tuber, as appears from the accompanying illustration; but the freak is believed to be accidental.

A Useful Glass.

A new glass, which will stand sudden changes of temperature, has been made by two German chemists,

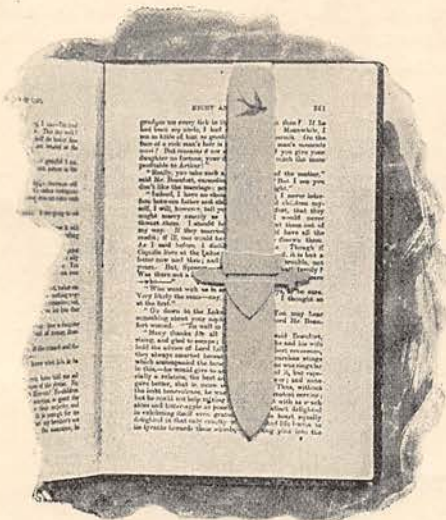
Herren Winkelman and Schott, of Jena. Vessels of this glass can be exposed directly to the flame of a Bunsen burner, thus saving both gas and time, now lost by having to interpose a sheet of wire-gauze. In addition to being serviceable in the laboratory, the new glass may come into use for domestic purposes.

A Pointing Book-Marker.

The book-marker which we illustrate herewith is made of stiff material such as celluloid and has a sliding pointer, which can be moved up and down so as to indicate the line on any page at which the reader left off reading. In this way the time usually lost in finding the right place is saved.

Unrecognised Languages.

Young people are prone to form languages for their own use; and of 150 specimens of the kind published by the "Am Ur-quell," a German folk-lore journal, a large proportion are those of boys and girls; while others were collected from thieves, peasants, and

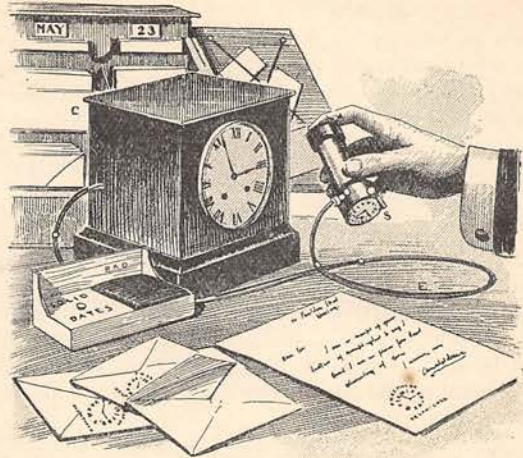


A POINTING BOOK-MARKER.

secret societies. For example, there is "Medical Greek," used by medical students; "Dog Latin," or the speech of a baby learning to talk; "Crane language," used in Denmark; "Sa-la language," used in China; "Robber language"; "B-language"; "Language of the Cat's Elbow," and so on. Many of them are the ordinary language of the neighbourhood, modified by the insertion of syllables, a plan which schoolboys often follow. A case in point is the "Gibberish, or Hog Latin, of American children": for instance, "Willus yoovus govus withus meevus?" for "Will you go with me?" Others again are formed by replacing the letters of a word by others, as in the "Tut language" of Texas, and the "Guitar language" of Hungary.

A Time and Date Stamp.

The device which is shown in our engraving is intended to record the time and date of receiving or



A TIME AND DATE STAMP.

despatching letters, telegrams, and so on. It is very simple in its action, and consists of a small clock, C, the works of which move an hour- and a minute-hand on the face of the stamp, S, which is figured like that of a clock. The motion is communicated from the clock to the stamp by means of two flexible spirals, E, as shown, and the face of the stamp, when inked on a pad in the ordinary way, leaves an impression of itself on the paper. The date is given by movable type-plates changed from day to day.

The Bird that Flies Longest.

Mr. J. Lancaster, an American naturalist who has spent five years on the west coast of Florida studying the birds there, has come to the conclusion that, of all the feathered tenants of the air, the "frigate-bird" can fly the longest without resting. He has seen one flying for a whole week night and day without repose. The frigate-bird can feed, collect materials for its nest, and even sleep on the wing. Apparently its wings can be controlled automatically, or by reflex action, without the power of its will, and it probably adapts itself to take advantage of the upward or bearing force of the wind, which Professor Langley has shown to support kites and birds in soaring and proposes to employ in his flying-machine. The spread of the frigate-bird's wing is great, and it can fly at a speed of ninety-six miles an hour, without seeming to flap its wings much. In fact, Professor Langley and others interested in flying-machines might study the movements of the bird with profit by means of Marey's instantaneous photographs. The albatross, that "king of the high seas," as Mr. Lancaster calls it, is larger than the frigate-bird; but, if it follows a vessel for four or five days, it has to rest on a rock or on the ship itself.

A Cool House.

Dr. W. Vander Hayden, of Yokohama, has erected a novel house designed for hot climates. The walls are translucent and built of hollow glass bricks filled

with alum water, which, as is well-known, has the property of intercepting heat rays. The bricks rest in cast-iron frames, and are packed with felt; while the roof is flat and supported on cast-iron pillars. The ceiling is made of glass panes with strips of rubber between them; over it is a thick layer of ashes, and above that a wooden framework covered with cement.

"Spectacles for Double Vision."

In the paragraph under this heading, which appeared in our May number, we omitted to state that, although prismatic spectacles have been in existence for some considerable time, the discovery that they can be used as a substitute for tenotomy in cases of congenital squint is quite recent, and is due to Mr. A. Fournet.

THE GARDEN IN JULY.

THE Carnation and Picotee are the two chief flowers of this month, and they are approaching fullest beauty. Put a neat stick to each flower stalk that seems in need of support, and give liberal waterings when the weather is dry. Flowers that burst very much should be kept in bounds by an indiarubber ring or a thin piece of raffia round the calyx. Carnations of this type are not desirable, and raisers of new varieties are successfully fighting against this great fault. Towards the end of the month layer the shoots. First make a basin round the plant, then spread in the bottom some finely-sifted soil, and with a sharp knife make an upward cut through a joint. Bend the layer down



BORDER CARNATIONS.

(From a photograph by E. J. Coaling.)

into the prepared soil and peg firmly. The leaves about the part cut through should be trimmed off. It is better to layer rather early, as then the rooted plants can be got into their winter quarters before frosts occur. Propagate the homely pink by pipings, which are really half-ripened cuttings. Dibbled into sandy soil in the open, or, better, in pots, they will soon root. Annual flowers last longer in beauty if decaying blooms are picked off to prevent formation of seed, which is extremely weakening to the plants. Put a strong stake to hollyhock spikes if in an exposed position, and when giving water to roses, bedders, or any other plants, always well soak the soil, as dribbles do more harm than good. They encourage surface roots, which the sun quickly dries up. Window plants soon get dry at this season, and dust accumulates on the leafage. Once or even twice a day they must be looked at, and every week at least the leaves sponged with tepid water. As regards the greenhouse, syringe either in the early morning or in the evening, never when the sun shines upon the plants. Plant out Celery. Sow Runner Beans again for a late crop, if possible. Thin out fruit finally on peach and nectarine trees. The trees will suffer if too heavily burdened. Poor fruit is not wanted.

PRIZE COMPETITIONS.

DETECTIVE STORY COMPETITION.

AWARD.

The First Prize of FIVE GUINEAS is awarded to
Mrs. TANQUERAY,
Pondsbridge Vicarage,
Huntingdon;

The Second Prize of FOUR GUINEAS to
Miss H. E. D. MILLS,
8, Florence Terrace,
Falmouth;

The Third Prize of THREE GUINEAS to
Miss B. E. DUFFETT,
Mead Vale,
Redhill.

HONOURABLE MENTION is accorded to
JAMES CARTER EDWARDS,
Stockwell, S.W.

All unsuccessful Competitors who wish for the return of their MSS. should apply for them within one month from the date of the publication of the award (see Rule 7). Stamped addressed wrapper or envelope must be sent in every case.

SIX-PART STORY COMPETITION.

The manuscripts in this Competition are under consideration, and the Award will, it is hoped, be made in an early number.

We hope to publish the result of our Amateur Gardening Competition next month.