AN ARTIFICIAL FLOWER THAT BLOOMS.

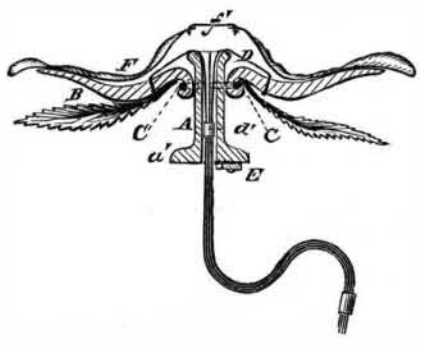
French artificial flowers are now made so closely to resemble genuine blossoms that it is difficult, save by a close inspection, to detect the imitation. In order to render the counterfeit still more complete, the present inventor has devised a flower which can be worn either as a bud or blossom, and can be folded or expanded as desired, so that it mimics the natural blooming of cut flowers.

Fig. 1.

A is a small tube, Figs. 1 and 2, of such a size that it may be readily passed through and worn in a buttonhole, and which has a flange, *a'*, formed around its end. The other end of the tube is flared a little, and around it are placed the inner ends of four leaf-shaped arms, B. The inner ends of the arms, B, have circular hooks formed upon them to receive the rubber ring spring, C. To the arms, B, a little above their hooks, are attached the ends of threads, D, which are passed through the tube, A, and have a bead, *d'*, attached to them in such a position that it may be within the tube, A, when the arms, B, are expanded, and when the arms, B, are drawn together, by pulling upon the threads, D, it may be at the rear end of the tube, A, so that it may be caught upon the said end, as shown in Fig. 1, to hold the arms, B, closed. By this construction, by disengaging the bead, *d'*, from the end of the tube, A, the rubber spring, C, by drawing upon the hooks of the arms, B, will expand the said arms. If additional security is required for holding the arms, B, closed, a button, E, may be pivoted to the end of the tube, A, having a notch formed in its edge to receive the threads, D, so that by passing the button, E, between the end of the tube, A, and the bead, *d'*, the arms, B, may be held securely in place when closed.

F, Fig. 2, are the petals, the outer parts of which are attached to the outer parts of the arms, B, which represent sepals. The inner ends of the petals, F, are connected across the end of the tube, A, by threads, *f'*, to keep them in proper

Fig. 2.



position. When the flower is closed the petals, F, fold at a little distance from their inner ends.

Patented through the Scientific American Patent Agency May 1, 1877, by Mr. Stacy Potts, of Philadelphia, Pa.

A New Invention in Telephones.

Mr. T. A. Edison has invented a new telephone, which is thus described:

The transmitting apparatus consists simply of a long tube about two inches in diameter, having one end covered with a thin sheet brass diaphragm which is kept tight by a stretching ring. In the center of the brass diaphragm is riveted a thin disk of platina, and immediately in front of this disk is an adjustable platina-pointed screw secured to a rigid pillar.

To transmit the music it is only necessary to sing or play into the open end of this tube. This causes the diaphragm to vibrate, and the platina points, meeting, make the circuit, and the electric current transmits every vibration over the wire to the receiving end.

The receiving apparatus employed by Mr. Edison for reproducing the tones is based upon an original discovery made by him some five years ago. This discovery was that when a piece of paper moistened with certain chemical solutions is laid upon a metallic plate connected to the positive pole of a battery, and a platina-faced wire connected to the negative pole of the battery is drawn over the paper, the passage of the current through it causes all friction to disappear, and the platina-faced wire slides over the paper as iron upon ice; but if the current be interrupted, this effect instantly disappears, and the normal friction of the paper causes the wires to be drawn over it with difficulty. This principle is applied to the receiver—a resonant box, a drum or wheel having flanges on both sides. This wheel is secured to a shaft rotated by a handle. A continuous strip of paper from the reel passes over the drum, the surface of which is roughened. Resting upon the drum is a smooth platina point upon the spring, which is secured to the center of the resonant box, and presses the platina point with considerable force upon the chemically prepared paper. The current from the battery passes to the spring, to the platina point, thence through the moist paper—which in this state is a conductor—thence to the drum, and back to the battery.

The operation is as follows: When the handle is turned the paper passes forward, and the normal friction between the point and the paper serves to give a forward motion to the spring; hence one side of the resonant box is drawn out. If now a wave of current passes through the paper, all friction ceases, and the spring not being pulled, the side of the resonator regains its normal position; and this takes place at each vibration. By means of this friction the most feeble currents, which would not produce the slightest effect upon an electro-magnet, thus exert extraordinary strength. This apparatus will respond and reproduce with great power the highest notes of the human voice, which are nearly inaudible when magnets are employed, the slowness of their operation being due to the time required for the magnetization and demagnetization of currents, which delay the action and mutilate the signals.

This description refers more especially to the apparatus for the transmitting of the human voice in tones or singing. The only difference between this and the speaking telegraph proper, however, is in the substitution of a plumbago point for the platina point in the adjustable screw of the transmitter. This again is another original discovery of Mr. Edison's, viz., that plumbago changes its electrical resistance with enormous rapidity under pressure, the effect in this application being that when the diaphragm is vibrated weakly contact is made with the plumbago point very lightly; and the resistance of the plumbago being but slightly reduced, a weak current is sent out from the battery, and a weak effect produced at the receiving station. When, however, a strong pressure of the diaphraghm is effected, by reason of the exercise of a more powerful vibration of the voice, the resistance is very greatly reduced, and a strong current passes to the line and a strong or loud effect is produced at the receiving station. Hence the amount of power, with all its fine gradations generated by the voice at the transmitting station, is transmitted in its proportions to the receiving instrument, and thus the fine articulation of the voice is obtained. This of itself is a wonderful invention, and will be of great value to electricians in other fields. The ability to send from a battery currents of different strength automatically is a new and valuable invention in electricity.—*Philadelphia Press.*

Balloons in War.

M. Menier, an inventor of a military hot air balloon, recently delivered in London a lecture on war time aeronautics. In conducting experiments at Woolwich, his aim has been to find a balloon which could ascend and descend rapidly for a prolonged period, could be steered, and could proceed against the wind. Rejecting hydrogen gas as an inflating medium, because it could not be generated in the air, and escaped very freely, compressed air for the same reason, and mechanical force as cumbrous and unworkable, he chose hot air, because, although it requires greater cubical capacity, the material employed for the balloon need not be specially prepared, and is therefore lighter and less liable to spontaneous combustion. By employing a special kind of fuel, the balloon can be kept up in the air for twenty or twenty-five hours, while considerable changes in the density of the air, and consequent rapid ascents and descents, are rendered easy. To his balloon, which is spherical in shape, M. Menier affixes wings all round, except in front, and a tail behind, managed by the aeronaut, acts as a rudder.—*Philadelphia Ledger.*

A New Steam Street Car.

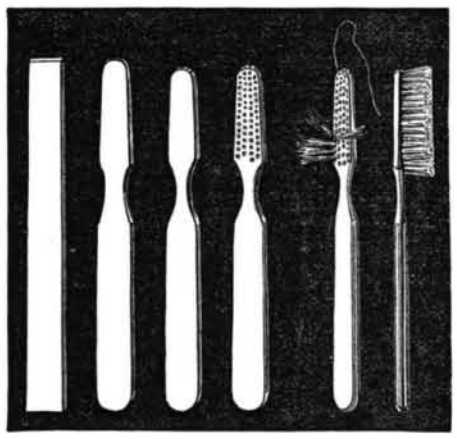
General John D. Imboden has invented a system of steam for street cars that promises to influence in a large degree the railway companies and the public in their decision as to whether steam or horse power shall be generally used for the locomotion of these conveyances. The engine is an independent sub-motor—a complete machine of itself, and can be attached to any of the present horse cars. It is simple, easily handled, cheap, and, better than all, causes no discomfort to passengers, it being out of their sight, smell, and hearing. It has its own framework, wheels, and springs, carries its coal, water, and engineer, and sustains half the weight of the car and passengers, the other half being carried by a single pair of car wheels, just in front of the rear platform. The car body is pivoted at its front end, on the engine, resting on a bed plate and springs over the boiler. The engine has four driving wheels, with a wheel base of only four feet, and, owing to the simple, pivoted connection with the car body, it is capable of curving freely. The boiler is horizontal, with simply a vertical furnace and steam dome under the driver's seat, which is outside the front of the car.

This test car has been made of the same size as that of an ordinary horse car, so as to demonstrate thoroughly that in order to convert the latter into a locomotive nothing is necessary but to take off its front wheels, put this handy little engine in their place, and nail up the front door. The interior and the rest of the car can be left intact. The new car occupies four feet less street space than one of the dummies now in use on Market street, and ten feet less than a horse car, the horses being dispensed with.—*Philadelphia Times.*

THE peculiar odor of Roquefort cheese has been found by Mr. Mencki to be due to a volatile oil of a yellow color, neutral reaction, and sharp burning taste. He separated the oil by distilling a portion of the cheese with sulphuric acid.

BRUSHES.

In making brushes by hand two different methods are pursued for inserting the bristles into the holes made for their reception in the pieces forming the backs. The workman following the first method gathers the bristles into little bunches, winds thread around their lower ends, dips these into molten pitch, and insert them into the holes with a slight rotary motion. In the second mode of procedure a loose bundle of bristles is laid with its center exactly over one of the holes, a strong cord or thin brass wire is made to enter the hole from the back, encircle the bunch, and pass



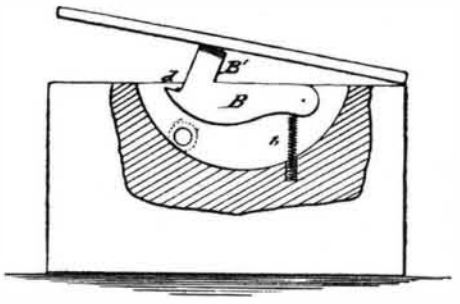
MODE OF FASTENING BRISTLES IN TOOTH BRUSHES.

out again, when on drawing it taut the bundle of bristles is broken in the middle and made to stand erect. The surface of the brush is afterwards leveled by means of a knife or other sharp cutting instrument.

Some small brushes will occasionally be met with, the backs of which, though forming but one piece, do not, however, exhibit any traces of holes or wire. These peculiar brushes are made by first drilling a series of longitudinal canals into the further end of the back, with which canals the bristle holes communicate. The wire or thread is passed through these canals, drawn out at each hole, twisted into a loop in which the bristles are laid, and finally drawn taut again. These openings in the end are afterwards filled up, previous to polishing.

A CIGAR-CUTTING CIGAR BOX.

Our engraving represents one of those ingenious little ideas which almost always prove remunerative to their originator. Plenty of devices have been suggested for cutting off the ends of cigars: some have been placed in watch charms, others in ornamental cigar stands, but no one seems hitherto to have thought of placing the cutter in the cigar box itself, as is done in the present invention.



B is the cutting knife acted upon by a spiral spring and retained in its recess by a stop pin, *d*. The knife has a handle at B'. To cut off the cigar end it is necessary only to insert the extremity in the aperture made in the box, and press down the cover which acts on the knife.

This device was patented through the Scientific American Patent Agency May 22, 1877, by Mr. A. E. Ebert, of Knoxville, Tenn.

Theory of Luminous Flames.

Experiments on the above subject are given by K Heumann, in which he finds that carbonaceous matter will give luminous or non-luminous flames, according as the temperature of the flame is high or low; diluting the gaseous combustible with indifferent gases also requires a higher temperature to cause a separation of the carbon, and thus produce luminosity. Reduction of temperature in a flame prevents either partially or entirely the formation of carbon, consequently the author thinks that the deposition of carbon on cold surfaces in a flame is not the consequence of cooling, as a deposition may be formed on red hot surfaces, but burns away in contact with air. In burners of different materials, those of iron were found to prevent the luminosity of the lower part of the flame to a greater extent than those of steatite, also when the burner is heated, a greater amount of light is produced, the consumption of the combustible remaining the same. Herr Heumann thinks that by heating the burner the luminosity is increased, and extends to a greater extent over the lower part of the flame.—*Nature.*

A GOOD whitewash for walls is made by adding to fresh slacked lime and water, a solution of starch, a little salt, and a few drops of dissolved indigo or bluing.