

IMPROVEMENT IN ARRANGING CUT FLOWERS.

At several of the exhibitions of the Royal Horticultural and Botanic Societies various groups of cut flowers, arranged on a new principle, have attracted much attention. These groups are in the form of a cone or pyramid, the only evidence of a containing vessel being the edges of a flat plate, which appear here and there where not concealed by the border leaves of the group. It is clear that, except by the use of soft plastic clay, it would not be possible to produce these effects in any ordinary vessel. But as clay is not without its inconveniences, a special kind of vessel has been invented by Mr. March, in the form of a solid dome or hemisphere, in which are sunk numerous tubular orifices, upright in the center and gradually diverging outward till they approach the horizontal.

This vessel rests on a separate plate of glass, terra cotta, etc., of wide diameter and nearly flat, but capable of holding sufficient water to refresh the border leaves of the group, which form a distinct feature in this kind of decoration. The plate is sometimes placed on a flat circle of dark Utrecht velvet. Flowers and leaves inserted in the tubes take the exact inclination desired, and the design can thus, as it were, be sketched out and studied as the work proceeds. This system gives the power of forming artistic groups, in which characteristic foliage takes a far greater part than is usually assigned to it in floral arrangements. In the case of wild flowers, for instance, primroses, bluebells, digitalis, campanulas, and others, according to season, are intermingled with grasses, ferns, bramble, and other beautiful foliage which can be found in every hedgerow. For an aquatic group, water lilies are appropriately mixed with forget-me-nots, rushes, arrowhead (see illustration), and other leaves of water plants, while stove and greenhouse flowers are appropriately treated with foliage which thrives in a warm temperature.

The smaller domes are best adapted to table decoration, as the flowers do not rise to an inconvenient height, but some of the tubular holders are made of large size for the display of massive subjects, such as sun flowers, peonies, hollyhocks, hydrangeas, branches of flowering trees and shrubs, large ferns, rushes, and pampas grass. These are not easily arranged in ordinary vases, but placed in the wide and deep tubes of such flower stands they form striking decorative objects, having all the better effect for irregularity of outline, which gives a bold character to the grouping. The main and commendable idea of the invention is to avoid overcrowding and to give to each spray of leaf or flower its separate and distinct meaning.—*The Garden.*

Molasses as Fuel.

The low price of common molasses some year or more ago led the *Planter* to urge its distillation into alcohol, and at the same time one of its correspondents suggested its use as fuel, and the suggestion attracted wide attention at the time, and several inventors had in hand apparatus that they believed would be successful in burning molasses if it were to be used as fuel.

Molasses is now as low or lower than ever, two cents per gallon hardly being obtainable for it. Of heavy-bodied molasses 166½ gallons will weigh a short ton of 2,000 pounds. This would make full cost \$3.33 per ton on the plantations, and rather less per ton than current prices for coal delivered there.

The question would then arise as to the fuel value of molasses. As it is almost altogether carbonaceous matter, it must have a considerable fuel value, but its relative merits, as compared with bituminous coal, we have no data at hand to determine. Heavy bodied common Louisiana molasses contains say 20 per cent water, 8 per cent ash, 12 per cent gums, and 60 per cent sucrose and glucose. Hence we have 72 per cent of carbonaceous matter available as fuel, and only 20 per cent of water. This would certainly make excellent fuel if there were competent devices to burn it, such as are used for liquid fuels.

Molasses has recently been used for fuel in Cuba, and with seeming success. It was there poured or sprayed on to the bagasse as it entered the furnace, and the judgment of those interested was that its efficiency as fuel, when used in this way, was incontestable.

Our grinding season is now approaching, and if our

inventors and engineers will take the matter in hand, they may be able to soon demonstrate the actual money value to us as fuel of this seemingly worthless by-product.

The molasses product of Louisiana for 1892 will probably reach 120,000 tons, and if of equal value with coal, it would represent 120 boat loads of 10,000 barrels each. Most of it is yet too valuable to use as fuel, but the constant tendency of our molasses is toward low grades, and year by year less of it is consumed as food. We need new outlets for it, and its possible use as fuel promises relief.—*La. Planter.*

Educational Progress in New Mexico.

BY H. C. HOVEY.

Organized as a Territory in 1850, New Mexico has knocked in vain for admission to statehood, although other Territories have been admitted with a third her population and with inferior natural resources. Her singular loyalty to the Union during the last war, her rapid development of mines and agriculture, the unanimity of her citizens for recognition in the sisterhood of States, and other arguments that might be mentioned, have thus far been outweighed by the alleged illiteracy of her people. Without taking sides in the controversy, it is but fair that I should give certain facts, recently gathered from the most authentic sources, and that may be new to some of my readers.

All legal business, every lawyer's plea, the testimony of every witness, and the findings of the courts, must be rendered into Spanish in order to be understood by the common people. Until very lately Spanish was the only language used in three-fourths of the schools of the Territory. And yet, amid this anomalous state of affairs, there are signs of evident progress. This forward movement is largely due to the work done by what is known as "The New West Education Commission," having its headquarters in Chicago, but extending its operations for the upbuilding of non-sectarian schools throughout all the Territories. The honor must be shared, of course, with the various denominational schools. There are 600 students in the Catholic colleges at Santa Fe, Las Vegas, Taos and Mora, and about 2,000 more in their parochial institutions. There are 3,375 pupils in the various Protestant schools and academies.

Amado Chaves, the superintendent of public instruction, is a native Mexican, but highly educated, and enjoying the confidence of all sects, races and parties. He requires the English language to be taught in all common schools, and he insists that no teacher shall be employed who has not been previously examined and declared to be competent. The new legislation was originated as long ago as 1884, but was inoperative for lack of funds. This defect was remedied in 1890, and ample provision made for supporting an efficient

system of public instruction, which went into actual operation only last November. Since then, as officially reported, there have been enrolled 45,775 children of school age, of whom 22,599 are in the public schools and 6,137 in those that are denominational or private. The first public school in the Territory was erected last year at Las Vegas, at a cost of \$20,000; another has been built at Raton, costing \$7,000; other expensive ones are being erected at Deming and Albuquerque. Besides the government training schools, of which it is not my purpose to speak more particularly, there are four Territorial institutions, viz., the University at Albuquerque, the Agricultural College at Las Cruces, the School of Mines at Socorro, and the institution for the deaf and dumb at Santa Fe. It must be added that in many of the public schools the terms are short and the salaries inadequate. But the outlook is extremely hopeful, and the general sentiment seems to have been voiced in the noble words of Amado Chaves, who says: "The public school is the greatest product of the four centuries of American civilization. No other institution is so universal, and no other lies so close to the hearts of the people." All this is highly encouraging, and if the educational work now begun should be diligently pressed forward, it cannot be long before New Mexico will gain a worthy place as one of the sisterhood of States.



IMPROVEMENTS IN THE ARRANGEMENT OF CUT FLOWERS.

The tourist finds, to his surprise, at Albuquerque, Raton, Eddy, Deming, Springer, Roswell, Silver City, Kingston and Hillsboro, many of the best elements of American society, such as he would expect to find in cities of like size in Ohio or Indiana. He dines at excellent hotels, on whose tables not one Mexican dish appears; finds business blocks as pretentious as those in similar Eastern cities; handsome churches, club houses, and charming modern residences with the latest conveniences. At Santa Fe, Las Vegas and Socorro, the old and new are strangely intermingled. But a short ride from any of these places brings one into what is practically a foreign country. Stately country seats, whose inmates boast true Castilian aristocracy and refinement, are surrounded by mud cottages occupied by peons, too contented with their ignorance and poverty. Then, there are the romantic Pueblos, remnants of an ancient pagan civilization, dwelling in nineteen villages, and owning 906,000 acres of farm land, a peaceful, home-loving race, ruled by officers of their own choosing, just as they were when the country was discovered. The total population, American, Mexican and Indian, amounts to only 153,206, in a territory of 122,444 square miles. It is as though the citizens of Hartford and New Haven were scattered abroad through New England, New York and New Jersey, the only denizens of that broad area, in settlements as widely apart as Cape Cod and Malone, Hoboken and Eastport. What a task to unify, govern and educate such a people!

A Horse with a Tube in its Neck.

For half an hour one afternoon recently, a crowd surrounded a truck which had halted in front of the Exchange Place door of the Mills Building. Attached to the truck was a horse, and there was a peculiarity in the animal's appearance which had caused the crowd to gather.

The horse was doing its breathing, not through its nostrils, but through a tube inserted in its neck. The contrivance looked very much like an old-fashioned candlestick with the base and an inch or two of the shank showing. In the tube was a sort of a filter, to catch impurities in the air which passed through it, and the arrangement appeared to work very satisfactorily.

The driver explained that tracheotomy had been resorted to to save the life of the horse, which had suffered from asthma. The tube had been in use for several months, and the horse appeared to be as well as ever. It was certainly able to do its full share of work. Every two or three days the tube was taken out and cleaned, but the horse had it in its neck the rest of the time.—*N. Y. Times.*

PETER WENDOVER BEDFORD, Ph.G., professor emeritus of the College of Pharmacy of the City of New York and founder and editor of the *Pharmaceutical Record*, died July 20, while in attendance on the meeting of the American Pharmaceutical Association, at the Profile House, White Mountains, N. H. He was born in Johnsville, Dutchess County, N. Y.

The British Association.

Professor Lodge advocated the creation of a national physical laboratory. His idea was that the amateur would, as at present, start lines of research and carry them on till they became unwieldy, but that at that stage, instead of dropping them or leaving them for the Continent to continue, our own national laboratory should take them up.

GEOLOGY OF PALESTINE.

Professor E. Hull gave a description of the "Physical Geology of Sinai and Palestine." The expedition, the results of which he communicated, started from Egypt, passed through the desert to Moses' Wells, thence through the Sinaitic Peninsula, along the Gulf of Akaba, and through the Araba and Jordan Valley to the foot of Mount Hermon. The most remarkable fact noticed by the expedition was the existence of terraces, showing that at one time the Dead Sea had risen to the level of the Mediterranean, the Jordan in the glacial period forming a lake 200 miles long.

THE COLOR OF ANIMALS.

The influence of food and surroundings on color was illustrated in a paper by Mr. E. B. Poulton on the colors of lepidopterous larvæ. Several members of a large brood of caterpillars of the pepper moth were exhibited which had been reared under different conditions. Those which had been confined among green leaves and twigs became green, those which had had black and brown twigs mingled with their food were brown or black, while others which had been reared among spills of white paper had made a pathetic attempt to imitate their surroundings. Experiments with artificial colors showed that both blue and red tended to produce a dark coloration, especially the former, while, strangely enough, painted twigs did not

produce the same effect as those whose tints were natural. Mr. Poulton was able to show that the sensory stimulus producing the change did not act through the eye, as in the case of the chameleon, frog, and sole, but through the skin. It consists, moreover, in the formation of definite pigment, and hence is not so rapid as in those animals. It is possible to modify the color of a caterpillar only once or twice in its lifetime.

THE HABITS AND POWERS OF SPIDERS.

The Rev. Dr. McCook read a paper on "The Social Habits of Spiders," in which he criticised the observations of Dr. Simon, from which that observer had concluded that certain spiders were social in their habits. Dr. McCook said that all spiders were solitary in their habits, and that the discovery of a social species, if confirmed, would be most important. The appearances which led Dr. Simon to the hypothesis of a social habit might, in default of further observations, be interpreted by the phenomena commonly observed to occur in the history of many common forms. Lest the audience should think too hardly of spiders, he might mention that there really were cases in which the male and female lived in amicable relations for a considerable period.

He discussed the capability of spiders as weather prophets. He mentioned that this belief was as old as the time of Pliny, who stated that when a river was about to rise, the spiders in the neighborhood built their webs at a greater elevation, and that it seemed to have been almost universally believed. He concluded, from his own observations, that there was no ground for the theory.

ARABIA.

In description of a recent journey in Yemen, Mr. Walter Harris said that, although by most people

Arabia was considered to be a desert, he had found that Yemen, at least, was a country of magnificent fertility. The great plateau lying at an elevation of from 7,000 to 9,000 feet above the sea level was in a state of excellent cultivation. Water was by no means scarce, in fact, in many places there were rivers of no inconsiderable size. Although the journey had been made once or twice before, he was probably the first European who had reached Sanaa from Aden.

Artificial Ivory.

Natural ivory under analysis shows albumen, gelatine, alumina, magnesia, calcium carbonate, and tribasic phosphate of lime. By this process quicklime is first treated with sufficient water to convert it into the hydrate, but before it has become completely "slaked" an aqueous solution of phosphoric acid is poured upon it, and while stirring the mixture the calcium carbonate, magnesia, and alumina are incorporated in small quantities at a time; and lastly, the gelatine and albumen, dissolved in water, are added. The point to aim at is to obtain a compost sufficiently plastic and, as intimately mixed as possible. It is then set aside to allow the phosphoric acid to complete its action upon the chalk. The following day the mixture, while still plastic, is pressed into the desired form in moulds, and dried in a current of air at a temperature of about 150° C. To complete the preparation of the artificial product by this process, it is kept for three or four weeks, during which time it becomes perfectly hard. The following are the proportions for the mixture, which can be colored by the addition of suitable substances: Quicklime, 100 parts; water, 300 parts; phosphoric acid solution (1.05 specific gravity), 75 parts; calcium carbonate, 16 parts; magnesia, 1 to 2 parts; alumina precipitated, 5 parts; gelatine, 15 parts.

RECENTLY PATENTED INVENTIONS.**Electrical.**

REMOVING ARMATURES.—Stephen H. Sharpsteen, Honesdale, Pa. To quickly and conveniently remove the armature from between the field magnets for inspection or repair, carrying the armature and its support independent of the usual bearings, with safety to the operator, is the object of this invention. A track extends through the dynamo between the magnets and above the armature, being supported at opposite sides of the dynamo, and traveling hangers on the track have vertically adjustable hooks to hook under the ends of the armature shaft, whereby the armature may be lifted and carried away.

FIRE ALARM TELEGRAPH.—Andrew J. Coffee, Portland, Ore. This improvement relates more especially to fire alarms in which auxiliary boxes are used in connection with main district signal boxes, and provides means whereby the exact auxiliary that has been turned in may be located, the boxes not interfering to cause confusion. The invention comprises a controller having operative electrical connections with a signal box, auxiliary boxes in series electrically connected with the controller, manually operated means for setting the controller mechanism, with automatic locks therefor. The mechanism is easily operated, and a return signal is provided at the auxiliary box, so that any one bringing in an alarm may know that everything is in good working order.

TROLLEY CARRIAGE FOR CONDUITS.—Stephen L. Platt, Elgin, Ill. This is a wheeled carriage adapted to be engaged by the car hanger, a contact wheel being journaled in spring-pressed bearings in the carriage. The slotted conduit or duct supports the conducting wire and rails arranged within it, on which travels the carriage having a wheel in contact with the wire, and the whole construction is simple and durable, and not likely to get out of order.

Mechanical.

SAW TOOTH.—John W. Todd, Portland, Ore. This is an improved removable tooth for circular saws, having a shank and point seated in the saw blade, and its outer edges formed partly on a segment of a different circle than the seat in the saw blade, the end of the shank adjacent to the point having a spring part pressing on the point to hold the latter on its seat. The tooth may be conveniently inserted or removed from the blade, as desired, for sharpening or other purposes.

TOOL.—Charles E. Harris, Saxton's River, Vt. An attachment for hammers and hatchets is provided by this invention, consisting of a piece having a threaded shank, a pointed prong, and a knife, the shank fitting in a screw-threaded socket in the end of the handle, where it projects through the hammer or hatchet, in combination with which the tool is designed to be used in shingling, clapboarding, and similar work.

KNIFE BLADE MACHINE.—Thomas R. Moore, Walden, N. Y. This machine has parallel oscillating rolls geared together between their ends and provided with opposed dies, in combination with a spring-actuated lever, a gear wheel on the lever-actuated roll, and a locking and tripping mechanism for locking and unlocking the gear and roll. The machine is strong and durable, and designed to rapidly work strips of metal to the right shape for finishing, all the pieces of metal being shaped alike.

GLOBE VALVE.—Frank M. Moore, Spreckelsville, Hawaii. This invention provides a novel improvement in the securing nuts and in the valve itself, to facilitate the grinding and reseating of the valve. The construction is such that the packing gland and packing will not be unduly affected either by

the ordinary operation of the stem or in regrinding, and the valve may, by removing the nut, be restored to perfect condition at a trifling cost.

ROLLER MILL SCRAPER.—John Harvey, Brooklyn, N. Y. This patent covers an improvement upon a former patented invention of the same inventor, by which the vertical adjustment of the scraper strip under the roller is facilitated, and the operator may bring the exact degree of pressure upon the roller needed to cause the strip to remove compacted crushed grain from its surface, and whereby also the scraper strips may be used until they are almost entirely worn away, besides affording improved means for securing the strips in place below the rollers.

CONVEYER.—Pinkney C. Wilson, Paterson, La. This invention relates to cane mill conveyers, for carrying the crushed cane from one mill to another, or for the conveyance of bagasse, the conveyer adjusting itself automatically, according to the quantity of material to be conveyed. The improvement consists of a sprocket chain carrying knives and passing over sprocket wheels, of which one is mounted in fixed journals and the other in journals carried by pivoted arms.

Agricultural.

CHURN.—Geo. S. Agee, Willow Springs, Mo. This churn is made with an angular rocking frame, pivoted at its angle to a support, there being a foot treadle at the lower end of the vertical member of the rocking frame and a dasher shaft clamp on the outer end of the horizontal member, whereby a swinging treadle is formed to operate or actuate the dasher by the foot. The invention also includes a specially constructed dasher and other novel constructions and combinations of parts.

CELERY DIGGER.—Maurice M. Ranney, Comstock, Mich. This is a simple and inexpensive machine, the shovel of which may be given any desired draught and lowered to any depth for cutting the roots, while the sides or mould boards may be adjusted upon the bottom to take any thickness of dirt required from the sides of the celery being dug. The implement may be used for hilling purposes as well as for digging.

Miscellaneous.

TYPE WRITER.—Analdo M. English, New York City. This is a simple, very inexpensive, and conveniently operated mechanism, taking up but little more space upon a desk than an inkstand, and with which anyone not an expert can readily make a type written letter or other copy. The letters and characters are on the top of a small revoluble disk, and a small knob opposite each is moved to a depression centrally in front of the operator to make the impression, the carriage then being moved along the space of the letter by a finger piece. The letter or character may be seen as soon as printed, and the register is perfect, the carriage being moved back the length of a line, when another lever is pressed upon. The paper is shifted by hand for line spacing by a simple paper-holding clip, which enables one to write upon ruled paper, when desired, with great facility.

WASHING MACHINE.—Silas P. Lowell, Eugene, Oregon. The suds box of this machine is circular, and in its bottom is mounted a revoluble disk, on which are upright perforated tubes and a central perforated cylinder, through which water may be passed to the clothing to be washed. The cleansing is effected, as the disk is revolved, by a middle or central rubbing against the tubes, and also by a further rubbing between the tubes and upright side ribs on the inner side of the suds box.

PORTABLE PASTRY RACK.—Charles F. Jesser, Staunton, Va. This device consists of a suit-

able supporting frame, to which is pivoted a series of laterally movable receptacles, adapted to be swung within the frame, the receptacles having vertically movable covers. The improvement may be used as a display rack, although especially designed to facilitate the carriage of large quantities of pastry, the rack being very durable and permitting of the ready arrangement of the articles within it, while the articles may be securely locked against displacement, and sufficiently covered to protect them during transit.

PUZZLE DICE BOX.—Hippolyte Goujon, Paris, France. This box is of barrel shape, and has a tapering, open end, with a shoulder in which fits a removable head with a removable plug and bung. The construction is such that it is a puzzle to find out how to open the box, the accessories tending to confuse one not understanding its intricacies.

METALLIC CEILING.—William W. and Robert H. Old, Leadville, Col. Panels formed with flanges are, by this invention, adapted to engage grooves formed in furring strips secured to the supporting beams or joists, the covering strips for the furring strips being formed with flanges interlocking with the flanges of the panels. By this means the panels are held in place so as to allow of expansion without bending or bulging, giving a neat and finished appearance to a wall or ceiling, and no screws, nails, or similar devices are needed to fasten the panels and covering strips in place.

TIMEPIECE CALENDAR.—Paul J. Johnson and Joseph H. Hamill, Globe, Arizona Ter. An attachment for watches and clocks is shown by this patent, which may be easily put on timepieces already in use, to indicate the day of the month. It consists of a metallic disk with a pointer extending inward from its edge, and with a central boss and graduated disk marked for the days of the month, this disk also having a notched periphery. A finger with curved spring arms is mounted on the boss of the hour hand and engages the notched periphery, so that on two revolutions of the hour hand a day's advance is marked on the graduated disk. The disk requires setting once a month.

WATCH CASE.—Victor Nivois, Brooklyn, N. Y. In a watch case shell filled with baser metal attached thereto by solder, and having on its inner face a recess, is a lift spring adjustably secured to the backing or filling, the larger part of the lift spring occupying a recess in the filling, while a catch or releasing spring forms a dust band, constituting essentially a circle within the center, and of such width that it conceals the filling, its recess, and the lift spring.

REVOLVING PAPER FILE.—Ralph E. Ferguson, Akron, O. This is a device for use in stores, etc., for filing checks, bills, sales slips, and memoranda, securely holding them and permitting of their convenient examination. It consists of a revolving frame carrying rings or disks one above the other, spring-pressed impaling pins being hinged on the rings or disks, and adapted to engage with their free ends recesses in the next following ring.

AXLE BEARING.—Thomas J. McGee, Hattiesburg, Miss. This is a bearing adapted for all sorts of vehicle wheels and axles, and which may be inexpensively made. The tapering axle box has a closed outer end provided with a threaded aperture and an annular recess in the inner end of the box to receive the axle collar, and to the outer end of the box a plate is secured overlapping the outer end of the hub and preventing the displacement of the box. When the parts are in place no dirt can get within the box and no oil can ooze out to injure the hub or collect upon any part of the vehicle.

ANIMAL SHEARS.—Charles and Harry Burgon, Malin Bridge, England. This invention relates to instruments for shearing or clipping sheep and

other animals, and covers an improvement on a formerly patented invention of the same inventor, devising a better mode of mounting the forked crossthead upon the vibrating or oscillating lever, by which the top cutters are driven, and of applying a spring to press the cutters on the comb plate with the necessary pressure. An improved construction is also provided of the pivotal axis upon which the vibrating lever oscillates, whereby the working loose of the axis is avoided.

UNICYCLE.—Abraham and Fernando Yost, New York City. The main wheel of this machine has an inner toothed band, within which is mounted a stationary hand, having overlapping side flanges, and supporting a suitable framework, in which is journaled a gear wheel extending through a slot to engage the teeth of the toothed wheel, while a seat-carrying frame supported on anti-friction rollers is held to contact with the toothed band, handle bars being supported in front of the seat. The wheel is adapted to be driven by a rider sitting within it, the driving mechanism being very simple and efficient.

CLOTHES LINE SUPPORT.—Robert McNab, Paterson, N. J. This invention relates especially to an adjustable safety arm for pulley clothes lines, such as are usually arranged with one end supported adjacent to a window of a building and with the other end upon an outside pulley. The arm is attached to the window frame, and supports the line-carrying pulley, which may be conveniently brought into any desired position and there fastened, while, when not in use, the arm may be dropped and held in a vertical position outside of the window.

MESSANGER'S PICKET.—James C. Hays, Rusk, Tex. This invention provides an improved form of bullet-proof cage or miniature fort in which an expressman or messenger may lock himself in case of danger, and fire upon an assailant with safety. It is practically a large box of sheet steel, mounted on rollers, and having a side door and port-holes with closing shutters, with means for attaching it to the flat top portion of the tender.

WINDOW SEAT.—Wm. Engler, Brooklyn, N. Y. This device is designed also to be used as a blackboard, music rack, or writing desk, and consists of a board having cleats at its opposite ends, a piece hinged to one edge, and a hinged bar folding into the rabbet of the edge of the hinged board, there being a sliding adjustable bar for leveling up the board when used as a window seat or writing desk, and a brace to hold it in inclined position when used as a blackboard or music rack.

TO START RACE HORSES.—James J. Sullivan, New York City. This invention provides a screen device so arranged as to insure a fair and prompt start for the horses, ranging the horses against the screen. The screen consists of side pieces, between which is secured a network, a wire connecting the upper ends of the pieces, to the lower ends of which is secured a wire carrying cushions, the improvement also covering other novel features. The device is designed to entirely avoid injuring or frightening the horses, and may be quickly and conveniently carried out of their path when a start is to be made.

MECHANICAL FLY TRAP.—Emil Rathgeb, New York City. A hollow waterwheel is, according to this invention, held to turn on a base board, and has face buckets with inwardly extending arms, a reservoir of sweetened water above the wheel delivering upon the buckets by slow dripping, so that the flies light upon the slowly turning wheel to drink the sweetened water, and are carried down to a tank beneath.

TOY MORTAR.—Grant B. Nichols, Wapakoneta, O. A stick or toy gun barrel has a toy mortar secured on its end, and provided with a ball seat, in the rear of which is an explosion chamber, to which leads a firecracker opening. The device is cheap and