

CACTUS DAHLIA, MRS. FRANCIS FELL.

As the result of the increased attention that raisers have of late years devoted to cactus dahlias a considerable number of varieties belonging to the section were submitted to public notice during the past season. As our reports of the several exhibitions and meetings will have shown, a large proportion of the novelties were so highly meritorious as to greatly enhance the value of the group of which Juarezi is the type for the creation of bold effects at the late summer and early autumn exhibitions and for supplying blooms for indoor decorations. Chief among the novelties of the

for decorations, and has the promise of becoming popular for market culture. When submitted to the Floral Committee of the Royal Horticultural Society at Chiswick, in September, Mrs. Francis Fell received an award of merit, the highest distinction conferred upon florists' flowers.—The Gardeners' Magazine.

Remedy for Diphtheria.

It is reported that Professor Löffler, of Greifswald, the discoverer of the diphtheria bacillus, has suggested a new remedy for the disease. The mixture recommended is said to consist of alcohol, 60 per cent; toluol,

Blast Furnaces in the United States.

The number of blast furnaces in activity in the United States at the commencement of November, 1894, was 181, their aggregate weekly productive capacity being 158,866 tons. The corresponding number of furnaces in operation at the commencement of August, 1894, was 135, their aggregate weekly productive capacity being 115,356 tons. At the commencement of May, 1894, there were 127 furnaces in operation, their aggregate weekly productive capacity being 110,210 tons; at the commencement of February, 1894, 125 furnaces, with an aggregate weekly productive capacity



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first class was Mrs. Francis Fell, of which a characteristic illustration is given, an exquisitely beautiful variety, introduced by Mr. T. S. Ware, of the Hale Farm Nurseries, Tottenham, who has done so much to enrich our gardens with cactus, decorative and single dahlias. The blooms, as shown in the illustration, are about 6½ inches in diameter, have long, slightly twisted florets with revolute margins, are quite full, and of snowy whiteness. They are, it may be added, borne on stiff, erect stalks, of sufficient length to admit of their being readily used for decorations of all descriptions. The variety has a free branching habit, is profuse in flowering, and is equally useful for the embellishment of the garden and for the supply of blooms

36; and solution of ferric chloride, 4. Menthol is added to deaden the pain caused by the application, which is effected by means of pieces of wadding, the affected parts being at first treated every three or four hours. Of seventy-one patients treated by this method from the outset, all have been saved, while only one death occurred out of twenty-six cases treated after the second day of the attack.

MANY farmers are in the habit of giving their cows hot water for their drink in cold weather, claiming that they yield one-third more milk than when given cold water. Care should be taken not to give the water so hot as to burn the cows' throats.

of 99,242 tons; at the commencement of November 1893, 117 furnaces, with an aggregate weekly productive capacity of 80,070 tons; at the commencement of August, 1893, 169 furnaces, with an aggregate weekly productive capacity of 107,042 tons; at the commencement of May, 1893, 251 furnaces, with an aggregate weekly productive capacity of 181,551 tons; at the commencement of February, 1893, 251 furnaces, with an aggregate weekly productive capacity of 171,201 tons; and at the commencement of November, 1892, 244 furnaces, with an aggregate weekly productive capacity of 171,082 tons. It will be seen that, after a period of severe depression, the production has nearly regained the level at which it stood two years since.

RECENTLY PATENTED INVENTIONS.

Engineering.

BLOWER OR PUMP.—Charles Rumley, Helena, Montana. This machine, to be used for either of the purposes named, has a nearly cylindrical case, with inlet and discharge ports and a side offset, a piston rotating in the case, with a valve arm journaled in the offset and pivoted to the piston, while a valvular extension on the arm extends into the offset and to one side of the discharge port. The invention is an improvement on a former patented invention of the same inventor, whereby the parts are so arranged as to prevent possible leakage, and the back pressure will be largely removed from the piston.

AIR CUT-OFF FOR FURNACES.—Robert D. Rhodes and Ludwig Klotz, Leadville, Col. A mechanism to control the air blast into the interior of the furnace has been devised by these inventors, to work in such manner that the air for oxidizing sulphur in ores or furnace products may be distributed into the mass to be calcined or roasted from the periphery of the revolving furnace, and will reach only those sections where the air is required. The improvement is more especially designed for revolving roasting furnaces having perforated pipes or flues in their interior to force blasts of air into the ore or furnace products undergoing treatment.

BOILER AND METALLURGICAL FURNACE.—James W. McGranahan, Harrison, N. J. The grate is, with this construction, at some distance from where the heat is applied, and the stream of gas produced is led through flues to the fire box or bed of the furnace, where a clear gas fire is maintained, without ashes or dirt, the air supply being conducted through flues or heaters contiguous to the smoke and gas flues, the walls of the air flues thus becoming highly heated, and correspondingly heating the air supplied for combustion. The grate may be of the ordinary type, or such as used in Siemens furnaces, producing a quantity of incompletely burned gases.

Railway Appliances.

CAR FENDER.—Edward K. Thoden, Brooklyn, N. Y. This is a foldable, downwardly spring-pressed catcher frame, projecting from a hanger frame, readily transferred from one end of the car to the other, the fender, when released by the driver, having enforced contact with the track rails, adapting it to catch a person struck by its elastic front edge portion. The guard rim of the fender, when struck by a falling body, is automatically elevated to prevent the person from falling off and hold up the limbs so that they will not drag on the roadbed.

CAR FENDER.—Andrew Mohn and August J. Bothur, Hoboken, N. J. This device consists of a brush held under each end of the car, and of a diameter to cover the roadway to the outer side of each rail, the brushes to be revolved by a mechanism connected with one of the car axles or by an electric motor. The axle of the brush may be connected or disconnected, by means of a clutch mechanism, with the power which rotates it, on moving a shifting lever, the brush being also moved down close to the track as desired, its revolution removing persons from the track without liability to serious injury.

SWITCH.—James Joyce, De Lamar, Idaho. This invention relates to switches operated by a moving train, and provides a working mechanism applicable to a two-way, three-way, or any ordinary switch, with means for throwing the switch by a passing train. Contact rails are arranged to be struck by mechanism on the car, working the switch in series so that they will be struck successively without severe shock, there being also contact wheels and operating mechanism on the car, whereby the wheels may be brought into contact with any desired series of contact rails on the track. The switch may also be thrown by hand as well as the ordinary switch.

SWITCH OPERATING DEVICE.—William Dryden, Brooklyn, N. Y. This improvement comprises a mechanism especially adapted for street railway cars, whereby the switch may be shifted in advance of a moving car, the operator on the platform throwing the shifting device into engagement with the switch points. A shoe pivotally connected with the car is adapted to engage one of the switch points, a spring normally holding up the shoe, which may be depressed by a screw shaft carried by the car, and there being a belt connection between the screw shaft and a hand shaft.

CAR COUPLING.—Charles D. Curry, Denison, Texas. This is an improvement in couplings of the side latching or Janney type, and which are arranged to be uncoupled from the side of the car. The recessed drawhead is channelled on one side and a latch-block pivoted in the recess, while a vertically sliding locking pin is recessed in its side, a detent hook with lateral arm being adapted to rock in the channel to engage the hook with the recess in the pin. The parts when partially detached are supported by other parts of the coupling, and thus prevented from falling on the track.

Electrical.

TROLLEY CATCHER.—Martin V. B. Nichols and James A. Fraser, Port Arthur, Canada. A guideway in which slides a weight is held on the car, according to this invention, the weight being flexibly connected with the trolley pole, and held elevated by a detent which is released by the upward movement of the trolley arm, automatically preventing it from flying up when disengaged from the trolley wire. The attachment is simple and inexpensive, can be quickly adjusted by the motorman to reset the wheel against the wire, and serves to pull the trolley arm down from the wire and supports as the wheel jumps therefrom.

Mechanical.

MOULD FORMING MACHINE.—Louis His, New York City. For forming and shaping moulds for castings, especially for preparing moulds for casting propellers, this inventor has devised an apparatus which is perfectly adjustable either vertically or laterally, and

is provided with a rotary knife or cutter head adapted to accurately form the mould, the cutter head being under perfect control while in motion, so that it may be given any desired pitch. The flask, with properly tamped sand, is placed beneath the cutter head, the latter being moved into contact by adjusting screws, and by its revolution scooping out the sand, the pitch, the height, and the longitudinal direction of the cutter head being readily changed and controlled as the operation proceeds.

Agricultural.

TRANSPLANTER.—Otto F. Mulhaupt, Shreveport, La. This is a box-like structure of very thin wood, designed to quickly decay, and with its sides and bottom having numerous apertures through which the roots of the plant may reach the surrounding ground and receive moisture. The bottom slides in side slots and may be removed if desired, the transplant affording a perishable receptacle in which small plants may be raised from the seed and transferred to the ground without removing the earth from around the roots and disturbing the growth of the plant.

Miscellaneous.

NEWSPAPER WRAPPING MACHINE.—James T. McColgan, Nashville, Tenn. According to this improvement a presser cylinder is mounted to rotate in conjunction with an intermittently revolving core, the cylinder swinging toward and from the core, while a feed table guides the paper and wrapper between them, there being also a cutting mechanism, a paste supply roller, and a swinging frame carrying them both to move the roller in contact with the wrapping paper. Address pasters may be attached to the wrappers before or after wrapping, the machine being designed to automatically wrap newspapers and other publications for mailing in a most efficient manner.

DOOR LOCK ATTACHMENT.—Waldo G. Rex, Shelton, Washington. According to this invention certain devices are applied to the inner keyhole face plate of the door and to the interior of the lock, to afford increased protection against interference from the outside of the door, preventing the falling out of the key, its being forced out by a burglar, or being taken out by children and lost. The improvement also affords protection against picking by automatically closing the keyhole by the operation of the key in locking the door, also preventing listening or peeping through the keyhole of the lock door by outsiders.

WINDOW SCREEN.—Harley E. Moyer, Conway Springs, Kansas. An outer frame, as provided by this invention, has aligning sockets in the opposing rails, a screen-covered frame with one of its bars perforated fitting in the outer frame, while a pintle in one bar of the screen-frame engages one of the sockets of the outer frame. A beaded pintle fits in the aperture of the screen-frame and the socket of the outer frame, and has a laterally projecting spring finger engaging a latch bolt secured to the screen frame. The device is readily removable, and the windows can be cleaned on both sides of the sash at any time.

DISINFECTING APPARATUS.—Frederick J. Mitchell, New York City. In this apparatus an atomizer adapted to draw from a disinfecting fluid receptacle is also connected with a compressed air reservoir by a pipe in which is an automatically operating valve, the discharge nozzle of the atomizer being connected with the object to be disinfected. The invention also provides for the automatic operation of the apparatus by hydraulic or equivalent power or by a pump, for the disinfection of drains of all descriptions, soil pipes, waste pipes, or for disinfecting the atmosphere of a compartment.

DUMPING MECHANISM.—Thomas Wright, Jersey City, N. J. This invention relates to coal or other freight dumping wagons, providing therefor a novel and effective adjusting mechanism, the body elevating mechanism being automatic in its adjustment from a folded condition to a complete elevation, effecting a sufficient inclination of the body rearwardly for the speedy and certain discharge of the load in bulk. After the load is discharged by gravity, the wagon body automatically returns to its place, the parts being then folded.

HAME STAPLE.—Riley Stoner, Grand Junction, Col. This staple comprises two independent limbs converged on inner faces at the same ends, a sleeve block fitting between the converged faces, while a clamping bolt engages perforations of the limbs and sleeve. The construction is such as to obviate abrasive wear on the body of the bolt which connects the limbs of the staple with the sleeve block that forms the bight of the latter, renders the staple strong and light and permits the ready removal and replacement of worn parts.

DETACHABLE PAD FOR BREAST STRAPS.—Gustav L. Heyman, Carlisle, Ky. This is a harness pad consisting of a rubber air chamber formed in one piece, with marginal overlapping lips or claws projecting upon the opposite side from the bearing surface of the pad. It is cheap and easily fitted to any breast strap, breeching or belly band, by means of its overlapping lips or claws, and is always smooth and pliable when inflated, preventing chafing and keeping the bearing surfaces of the animal cool and comfortable.

DENTAL PLUGGER.—James W. Dennis, Cincinnati, Ohio. Two patents thus entitled have been granted this inventor for an instrument having a yielding working face and especially adapted to facilitate the introduction of amalgamating filling into the cavity of a tooth, the yielding surface of the plugger conforming in a measure to the contour of the surface of the tooth being treated. In one case the working surface of the plugger consists of a removable shoe, preferably of soft rubber, and in the other the plugger has a socket in which a tip of yielding material is adjustably held to turn, so that by the use of the instrument the amalgam will be rapidly and efficiently distributed and the mercury worked to the surface of the filling, from whence it can be readily removed, leaving a very hard and unshrinkable filling in the tooth.

DENTAL MATRIX.—This is a further improvement of the same inventor in matrices to be

placed between the teeth to form a temporary wall for the cavity to be filled. The matrix comprises two plates adapted to embrace the edges of opposing teeth, the plates each having a rib, while a wedge with a longitudinal groove in its side face is adapted to be inserted between the plates. By making the ribs of softer metal than the plates, the wedge member when forced in does not grate upon a hard surface.

DENTAL CLAMP.—According to another invention of Mr. Dennis, the body of a dental clamp is so made that the jaws are readily removable, enabling a number of jaws to be fitted to a single body, the jaws being made in pairs and differently shaped to fit variously formed and inclined teeth. The jaws may also be adjustably located in the body of the clamp, and thus accurately fitted to a tooth, and the bearings or inner faces of the jaws are of yielding material, such as soft rubber, enabling the clamp to be used on extremely sensitive teeth without pain to the patient or without lacerating the gums.

FILLING FOR TEETH AND FILLING THE TEETH. are the titles of two additional patents also granted Mr. Dennis, the filling being especially prepared in stick form, so that particles may be removed and inserted in the cavity as a basis filling. The prepared filling is composed of copper, gutta percha and zinc, and the filling is designed to be an efficient preventive and arrester of decay, while capable of holding by amalgamation an indestructible cover or wearing surface. The process of filling patented consists in applying to the cavity a basis filling, faced with an amalgamating metal in a comminuted state, or in the form of filings applied to the facing, the interior copper or plastic filling being thus protected by a strong and reliable outer filling of gold or other suitable metal.

GARMENT PATTERNS.—Marie Tucek, New York City. This inventor has devised a new method of laying out and cutting patterns or garments, requiring but few measurements and comparatively little skill. For waists, a system of lines composed of a waist line and perpendicular lines are produced upon the material, with a line at an acute angle to the waist line and lines parallel to the acute angled line. On these lines are transferred measurements obtained from the body, in conjunction with unit measurements, thus laying out the individual parts of the pattern or garment, each part being laid out complete before the draughting of the next adjoining part is commenced.

GARMENT SUPPORTER.—Emma and Herbert Johnston, Cincinnati, Ohio. This is a simple device for attachment to one garment for the support of another garment, being especially adapted, when attached to the corset, for holding up ladies' skirts. It consists mainly of a wire spring frame, with an eccentric pintle and spring tongue, a pin secured to the pintle engaging the tongue. The device forms an efficient and quite inexpensive fastening.

BELT HOOK SLIDE.—Louis Sanders, Brooklyn, N. Y. This is a slide which may be attached to a belt which is on or off the person, the slide affording a support for the skirt and keeping the skirt band concealed beneath the belt. The slide is also so made that the belt will be prevented from wrinkling or puckering. The slide has an ornamented body on the outer face of the belt, and carries a pin extending down behind the belt, this pin engaging an eye at the lower end of the body and having at its lower end a hook. An auxiliary pin prevents the sliding or puckering of the belt.

CHEESE CUTTER.—Frederick J. Siewers, Galena, Ill. In this machine the cheese is supported on a platform or table connected with a dial, the moving of the platform a certain distance causing the dial to indicate a pound or fraction thereof or any desired weight, when a knife will be brought into operation to cut the exact amount designated on the dial from the cheese. The cut is made on a line drawn from the center, the operative mechanism of the dial having been previously set in accordance with the known weight of the entire cheese.

BUNDLING CIGARS.—Domingo Acosta, Key West, Florida. This inventor has devised a bundling cabinet of compact and inexpensive construction, which may be folded in a small and convenient package, and with which cigars may be bundled in any desired quantities, the cigars being thus held in uniform shape prior to bundling.

MECHANICAL TOY.—Abraham Martin, London, England. In this toy a magnetized spindle is mounted to rotate in bearings, while an armature is held by magnetic attraction in driving contact with the spindle, the armature carrying a figure or object to which eccentric movements are imparted by the revolution of the spindle, thus moving, in a manner not readily apparent to the beholder, toy ships, dancing figures, etc.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS AND PUBLICATIONS.

MANUEL PRATIQUE DE L'AERONAUTE. Par W. de Fonvielle. Paris: Bernard Tignol, editeur. Librairie Scientifique, Industrielle et Agricole. Pp. iv, 246. Price \$1.25.

There are constant inquiries for books on balloons, giving practical information on ballooning and other subjects connected with the aeronautical science. Here at last we have the subject treated from the point of view of the practical aeronaut, with numerous illustrations, practical recipes, and advice on the subject.

THE FURNACE WORK MANUAL. An exposition of furnace work in all its branches. Compiled from files of the American Artisan. By Sidney P. Johnston. Chicago: The American Artisan Press. 1895. Pp. 268.

This thoroughly practical treatise, illustrated by over 200 cuts, treats of furnace work proper, tells how the pipes should be cut, how they should be laid and connected, and describes the construction of furnaces, all the

details of pipes, dampers, and the minutiae of hot air heaters. It is evident that it covers a ground heretofore but little treated, as this book works from the standpoint of the practical furnace builder or plumber who is called upon to introduce furnaces into houses. We anticipate for this book a circulation proportionate in great measure to the amount of interest taken by this class of artisans in their business, and in proportion to the height of the ideal which they have formed of their profession.

THE UNIVERSITY TUTORIAL SERIES. A text book of statics. By William Briggs and G. H. Bryan. London: W. B. Clive. Pp. vii, 220. Price 60 cents.

A cursory view of this work impresses one most favorably with it. Although it is an English book, it, fortunately, is not one that is restricted to one of the syllabus courses, but is simply intended to be adapted to the wants of the elementary student. With its very excellent illustrations, table of contents and answers to problems, little need be said about the absence of an index, for it hardly seems to be needed.

THE UNIVERSITY TUTORIAL SERIES. A text book of dynamics. By William Briggs and G. H. Bryan. London: W. B. Clive. Pp. 192, xiv. Price 80 cents.

What has been said about the preceding work applies equally to this one. The nice make-up of the book, its clear printing and excellent arrangement, go to impress one most favorably with it, and incline us to recommend it to our readers.

THE DYNAMICS OF LIFE. AN ADDRESS DELIVERED BEFORE THE MEDICAL SOCIETY OF MANCHESTER, October 3, 1894. By W. R. Gowers. Philadelphia: P. Blakiston, Son & Company. 1894. Pp. 70. Price 75 cents.

The author, in this treatise, which is an address reprinted from the pages of the Lancet, endeavors to account for the dynamics of the living being. How successful he is can only be judged by a full perusal of the work. Anything of the sort makes interesting reading, and we think that the work, short as it is, deserves an index.

SCIENTIFIC AMERICAN BUILDING EDITION.

JANUARY, 1895.—(No. 111.)

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1. An elegant plate in colors, showing a Colonial cottage at Williamsbridge, N. Y., recently erected for Chas. H. Love, Esq. Two perspective elevations and floor plans. Cost complete \$4,250. Mr. Arthur C. Longyear, architect, New York City. A pleasing design.
2. A Colonial residence at New Rochelle, N. Y., recently erected for J. O. Noakes, Esq., at Iselin's Park. Two perspective elevations and floor plans. Cost \$5,000 complete. Mr. Manly N. Cutter, architect, New York City. An attractive design.
3. Colonial residence at Montclair, N. J., recently erected for Sylvester Post, Esq. Two perspective elevations and floor plans. Messrs. W. S. Knowles & A. H. Thorp, architects, New York City. A pleasing design.
4. A seaside cottage recently erected for C. H. Manning, Esq., at Kennebunkport, Me. Two perspective elevations and floor plans. A picturesque and unique design after the "New England" lean-to roof order. Mr. H. P. Clark, architect, Boston, Mass.
5. A residence at East Orange, N. J., erected at a cost of \$7,000. Architect Mr. W. F. Bower, Newark, N. J. Perspective elevation and floor plans.
6. The First Presbyterian Church at Stamford, Conn. Two perspective elevations and ground plan. A design of great architectural beauty, treated in the Romanesque style. Mr. J. C. Cady, architect, New York.
7. A residence at Scranton, Pa., erected for E. B. Sturges, Esq., at a cost of \$5,000 complete. Architect Mr. E. G. W. Dietrich, New York City. Perspective elevation and floor plans.
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