RECENTLY PATENTED INVENTIONS. Engineering.

BLOWER.—Charles Rumley, Helena, Mont. This is a blower of durable and inexpensive construction, adapted to pump air into mines and other places, or for exhausting foul air and gases therefrom. | other convex with relation to the working face, and the A crank shaft is mounted in a case having inlet ports in its ends and a discharge port in one side, while a cylindrical piston on the crank of the shaft is adapted to close the inlet ports, and a valve, having one end pivoted to the across and close the discharge ports. There are but few parts to this blower, and it is not likely to get out of

hulls of vessels that great velocity can be obtained on a shallow draught, with the minimum of frictional resistance, permitting also of the use of strong armor plates without considerable increase of the draught. The hull. below the water line, has a reduced and tapering portion, provided with air boxes projecting downward on opposite sides, and forming longitudinal passages narrower at the bow than at the stern, rendering the capsizing of the vessel an impossibility, and protecting the paddle wheels from projectiles.

ROPE LAYING FOR LOG PULLING.—Edmund M. Ivens, New Orleans, La. This invention relates to another patented invention of $% \left\{ \mathbf{n}^{\prime}\right\} =\mathbf{n}^{\prime}$ the same inventor for an apparatus adapted to pull heavy cypress logs from yea, Jersey City, N. J. This is a novel and simple atswamp lands or brush, where the winding drums receive a mile or more of large wire cable, with which is connected a mile or more of messenger or loop section. The apparatus provides independently operated winding | having one convex face, one piece having coniform pro drums, with suitably arranged rope laying or leading devices, whereby the drums may be instantly reversed as

Railway Appliances.

SWITCH OPERATING DEVICE.-Harry H. McKee, Brooklyn, N. Y. This is an improvement on a formerly patented invention of the same inventor, rendering the application of the device more positive and simplifying the construction. The device is especially designed for use in connection with street railway cars. and provides for so locating the operating arms, or that portion which must appear at the surface of the roadbed, that these portions will be adequately protected and the boxing need not rise appreciably above the roadbed.

REFRIGERATOR CAR.—Ferdinand E. Canda, New York City. This invention provides improved means for securing the insulating material in the walls of a car, to prevent it from becoming crumpled or being jarred from its fastenings. The car walls are also made light, thin and inexpensive. The insulating frames or panels have on one of their sides a marginally protruding layer or facing of insulating material. the panels being clamped between the posts, braces, or sills of the car frame. A reliable tight joint is made between the insulating material and the car frame.

CAR SEAL.—Benjamin J. Sturtevant, St. Paul, Minn. This invention consists of a tag made of breakable material, and formed with a recess into which opens a slot, a spring hook being adapted to be drawn into the recess and having at one end an extension to fill the slot. The device effectually prevents unauthorized persons from tampering with the hook in the hollow tag to open the seal.

Mechanical.

LIFTING MACHINE. - David Nelson, Reno, Nev. This is a machine which may be employed as a jack or otherwise, having great purchasing power, with simplicity and quickness of operation. It is designed to facilitate the lifting of a bar or other bject in the direction of either end through applied eccentrics and loose dogs, the gripping dogs engaging equally on opposite sides.

Agricultural.

DISK HARROW.—John C. Bauer and John P. Feyereisen, Remsen, Iowa. These inventors have made an improvement in machines employing gangs of rotary disks running on the ground and breaking up the clods, employing therefor a set of small disks with suitable supports to hold them against the larger disks to scour and clean the latter of the adhering earth. The action of the pulverizing disks is thus made more effective and the draught of the team lightened.

PLANTER.—Caleb E. P. Hobart, Cherokee, Iowa. This is a machine especially adapted for planting corn, combining in one implement a planter and a drill. The machine obviates the necessity for cross markers or measuring chains, the seed droppers being located in such manner that they will themselves perfect squares.

PEACH SCREEN. - John P. Wilson, Hamburg, N. J. For sorting and screening peaches and accurately grading them in various sizes, this inventor has devised a cheap and simple apparatus, which may also be applied for other purposes It consists of an inclined bed with transverse slots and laterally inclined spouts, there being removable rails in detachable sections above the bed, and removable partitions above the meeting ends of the rail section.

Miscellaneous.

MEASURING FORCE OF PROJECTILES. -Heinrich Brunswig, Troisdorf, Germany. To accuing water, with a head formed of a jelly or soft glutinous, allied subjects. substance, to retain the water and at the same time perthe tank is a tray with perforated bottom and transverse partitions forming compartments in which the projec-

COAL, GRAVEL, AND ORE SCREEN.-George W. Cross, Pittston, Pa. This is an improve ment on a formerly patented invention of the same inventor, and consists of a metal screen having an integral web portion with rectangular interstices, the two parallel $\,$ sides of one interstice being the one concave and the interstices of one row being opposite to the connecting bars or webs of the adjacent rows.

PREVENTING CREASING OF FABRICS. Albert Hox, Crefeld, Germany. To prevent creases in case and the other to the piston, is adapted to swing heavy plushes and velvets this inventor has devised a box in which the opposite sides have fabric-engaging cramps or arms, the two ends of the box being hinged to fold down, whereby the fabric will be held under a slight SHIP.—Alberte Foerste, Berlin, Gertension to prevent sagging and imposing weight on the many. This inventor designs to give such shape to the folds beneath, thereby preventing creasing and preserving the perfect condition of the fabric.

SHOE FASTENING.—Chaskel C. Eisenberg, Stettin, Germany. This fastening consists of a draught band having a series of clips movable on suitable guides along the edges of the parts to be fastened, the clips varying from each other and the band having devices corresponding to the clips for engaging each its corresponding clip, the devices successively moving the clips in one direction for fastening the parts, and collecting them when moved in the opposite direction. The invention is also applicable to various other articles of dress and personal wear.

LACE FASTENER. - Edwin A. Pumtachment for a shoe or glove, to retain the end portions of lacing cords, and permit their quick and easy release. It consists of two perforated sheet metal pieces, each jections at its corners and a depending tang at each end, while a securing shank is passed through the perforations of both pieces and through the article on which the device is applied.

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.

SCIENTIFIC AMERICAN

BUILDING EDITION

AUGUST, 1894.-(No. 106.)

TABLE OF CONTENTS.

- 1. An elegant plateoin colors showing a residence at Plainfield, N. J., recently erected for George H. Babcock, Esq. Perspective views and floor plans. A picturesque design. Mr. E. L. Hyde, architect,
- A residence at Edgewater, Ill., recently erected for Mrs. Eva L. Prescott. Perspective elevations and plate in colors, together with floor plans. An excellent design. M. J. L. Silsbee, architect, Chicago, П1.
- residence recently completed for J. P. Clarendon Esq., at Hackensack, N. J. Two perspective elevations and floor plans. Mr. J. E. Turhune, archi-
- tect, Hackensack, N. J. An attractive design. A dwelling at Erie, Pa., erected for William J. Seli, Esq., at a cost of \$4,500 complete. Two perspective elevations and floor plans. Mr. C. F. Dean,
- architect, Erie, Pa. 5. A beautiful residence recently erected at Belle Haven, Conn. Three perspective elevations, one interior view, together with floor and ground plans. Mr. C. P. H. Gilbert, architect, New York City. A model
- design. 6. The beautiful residence of E. Einstin, Esq., at Pompton, N.J. Perspective elevation and floor plans. Cost complete about \$20,000. Architect, Mr. Manly N. Cutter, New York City.
- 7. A conveniently and economically arranged suburban Esq., at Carthage, Ill. An attractive and picturesque design. Perspective elevation and floor plans. Cost \$3,000 complete. Architects, Messrs. G. W. Payne & Son, Carthage, Ill.
- ed dwelling, recently erected for A. N. O'Harra, Esq., at Carthage, Ill. A pleasing design. Cost complete, \$5,500. Architects, Messrs. G. W.
- ground plan. A unique design. Mr. C. P. H. Gilhard and cracking, and at the same time water has no bert, architect, New York City.
- 10. The Club House of the Knickerbocker Field Club, recently erected at Flatbush, L. I., N. Y. Engravings and floor plans. Messrs. Parsett Bros., architects, Brooklyn, N. Y. A neatdesign in the Colonial style.
- An elegant residence of A. B. Bigelow, Esq., at Cranford, N. J. Perspective elevation and floor plans. Estimated cost, \$6,000, Mr. Manly N. Cutter, architect, New York City.
- iscellaneous Contents: The Hayes metallic lathing, illustrated.-Nonsuch Palace.-The Joseph Dixon Crucible Co.-The slate business.-New and old styles of eaves troughs. illustrated.—The Weathered hot water heaters.-Design for mantel and fireinsulating papers.—An improved vise, illustrated. -What becomes of all the lumber-Globe ventilator, illustrated.—An improved sadiron, illus-

The Scientific American Architects and Builders Edition is issued monthly. \$2.50 a year. Single copies, 25 cents. Forty large quarto pages, equal to about two hundred ordinary book pages; forming, practically, a large and splendid MAGAZINE OF ARCHITEC. A. Best Bermuda arrowroot........... 134 oz. TURE, richly adorned with elegant plates in colors and rately measure the penetrative force of projectiles this with fine engravings, illustrating the most interesting inventor provides an apparatus consisting of a tank hold- examples of Modern Architectural Construction and

The Fullness, Richness, Cheapness, and Convenience mit the projectile to readily pass into the tank. Within of this work have won for it the LARGEST CIRCULATION of any Architectural Publication in the world. Sold by all newsdealers. MUNN & CO., Publishers, 361 Broadway, New York.

Business and Personal.

The charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Adver-tisements must be received at publication office as early as Thursday morning to appear in the following week's issue

"U. S." metal polish. Indianapolis. Samples free. Wood pulp machinery. Trevor Mfg. Co., Lockport, N.Y.

Screw machines, milling machines, and drill pre-The Garvin Mach. Co., Laight and Canal Sts., New York. and sand pumpingplants. Irvin Van Wie, Syracuse, N. Y.

Emerson, Smith & Co., Ltd., Beaver Falls, Pa., will

Split Pulleys at Low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

The Carter Pressure Water Filter and Purifier for hotels, factories, etc. See illustrated adv., page 47. Field Force Pump Co., Lockport, N. Y.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail. \$4; Munn & Co., publishers, 361 Broadway, N. Y.

Patent Electric Vise. What is claimed, is time saving. No turning of handle to bring jaws to the work, simply one sliding movement. Capital Mach. Tool Co., Auburn,

Competent persons who desire agencies for a new popular book, of ready sale, with handsome profit, may apply to Munn & Co., Scientific American office, 361 Broadway, New York.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.



HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be

personal rather than general interest cannot be expected without remuneration. scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of

Tinerals sent for examination should be distinctly INDEX OF INVENTIONS marked or labeled.

(6176) R. J. L. asks how to make peach ratafia. A. Ratafia, for flavoring, is by no means difficult to make when the peach is in season. The following is a simple recipe: Blanch 2 ounces of peach or apricot kernels; bruise them well; put them into a bottle, and fill it nearly up with good brandy; dissolve in a cup of cold water 1/2 pound of white sugar candy, and add it to the brandy after it has stood for a month on the kernels; strain off the kernels before you add the sugar; then filter through paper, and bottle off in small bottles for use. Another rather more expensive method of making it is to take 50 bruised peach kernels, 1/4 pound of bitter almonds, 1 pound of white sugar candy, and mix thoroughly with 11/2 pint of 90 per cent alcohol, then add 3 quarts of water and 1% gallons of malt spirits.

(6177) W. B. W. says: I have a tent cottage recently erected for George W. Payne, that is made from ordinary canvas that I wish to render waterproof; kindly inform me what preparation I shall use. A. The following is a simple and cheap process for coating canvas for wagon tops, tents, awnings, etc. It renders it impermeable to moisture, without making it 8. Perspective elevation and floor plans of a well arrang-stiff and likely to break. Soft soap is dissolved in hot water, and a solution of iron sulphate added. The sulphuric acid combines with the potash of the soap, and the iron oxide is precipitated with the fatty acid as in-Payne & Son, Carthage, Ill.

A stable at Belle Haven, Conn. Perspective viewand with linseed oil. The soap prevents the oil from getting

(6178) W. R. says: A man can walk 33miles in a day and be very much fatigued at night. The same man, if he be an expert, can on a bicycle run 100 miles in same time. Where does the extra power come from which increases his speed three times? In the last case he carries his own weight and the additional weight of the bicycle. A. The ways and means of converting power into speed through mechanical devices do not show that extra power is developed through such contrivances. In fact, there is probably far greater muscular power expended in running a bicycle 100 miles in 10 hours than in walking 33 miles in the same time. The method of applying power for any special purpose is place, illustrated.—The "P. & B." sheathing and when applied to the best results, and impletion results. in the various ways of attaining it in animals designed for speed and in the flight of birds. Man was not built in nature for speed, but by his genius converts his strength into speed on the best mechanical princi-

(6179) F. E. L. asks how to make a good paste for mounting photographs.

Sheet gelatine or best Russian glue.....80 grn.

Put the arrowroot into a small pan, add 1 ounce water and mix it thoroughly up with a spoon, or the ordinary mounting brosh, until it is like thick cream, then add 14 ounces water and the gelatine broken into small fragments. Boil for four or five minutes, set it aside until partially cold, then add the methylated spirit and six

drops of pure carbolic acid. Be very particular to add the spirit in a gentle stream, stirring rapidly all the time. Keep it in a corked stock bottle and take out as much as may be required for the time and work it up nicely with the brush. A number of additional formulas will be found in "The Scientific American Cyclopedia of Receipts, Notes and Queries," from which the above formula was taken.

(6180) C. E. W. says: 1. Will you please suggest some way to kill or stop the red and black ants from entering our pantry? A. Put borax around the The Garvin Mach. Co., Laight and Canal Sts., New York. | cracks of the floors, shelves, etc. 2. Will you please Centrifugal Pumps for paper and pulp mills. Irrigating give me the formula used by botanists to preserve the color of flowers to be mounted in an herbarium? A. Dust salicylic acid on the plants as they lie in the send Sawyer's Hand Book on Circulars and Band Saws press, and remove it again with a brush when the free to any address. flowers are dry. 3. A way to color a piece of hardened steel blue otherwise than by heat. A. Blue finish without heat.—Clean every part carefully, and apply nitric acid 1 part diluted with 10 parts of water until a blue film is produced on the surface. Then wash with warm water, dry, and wipe with linseed oil.

> (6181) Reader says: Our village has a system of waterworks on the gravity system. It is a tank holding 1,400 barrels, 14 feet high, staves, and built on posts 50 feet high. The tank is built on a hill 25 feet high, which gives an elevation altogether of 90 feet when the tank is full; 1000 feet from the tank at the bottom of of the hill a water gauge shows a pressure of 45 pounds when the water is not running. Now, what we would like to know is this? How long will it take to empty the tank through a one inch nozzle 1,000 feet from the tank at the bottom of the hill, where the pressure is 45 pounds (still pressure)? A. In the absence of detailed statement as to size of pipe and its windings in the village distribution to any nozzle, which we assume to be fire nozzle of good form, we can only approximate the time of emptying the tank to be four and a half hours.

(6182) G. W. M. says: Will you please inform a reader of the SCIENTIFIC AMERICAN through query column of same of a substance to remove yellow stains from linen caused by iron rust? A. By adding 2 parts cream of tartar to 1 part oxalic acid ground fine and kept dry in a bottle you will find, by applying alittle of the powder to rust stains while the article is wet, that the result is much quicker and better. Wash out in clear warm water to prevent injury to the goods.

TO INVENTORS.

An experience of forty-four years, and the preparation of more than one hundred thousand applications for battenis at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and person contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices which are low, in accordance with the times and okr extensive facilities for conducting the business. Address MUNN & CO., office Scientific American, 361 Broadway, New York.

For which Letters Patent of the United States were Granted

July 31, 1894,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these pate	nts.]
Accordion, zither, T. J. Muller	523,902 523,830
Ammonia, making, L. Steruberg. Arc rupturing device, G. T. Voorhees	523,819 523,967 523,776
Armature for dynamo-electric machines, H. G. Reist	523,685 523,746
Reist. Reist. Baling press M. C. Nixon Bar fixture, M. Bensinger Battery. See Galvanic battery.	523,681 523,784
Battery plates, making secondary, W. L. Silvey Battery plates, making stiffened connectors for secondary, W. L. Silvey Poor straightoning apparatus J. F. Landahl	523,689 523,949 592 770
Bed, folding, Shelton & Gentry	523,948 523,899 523,884
Awning, window D. Jones Baling press, M. C. Nixon Bar fixture, M. Bensinger Battery, See Galvanic battery. Battery plates, making secondary, W. L. Silvey. Battery plates, making secondary, W. L. Silvey. Beam straightening apparatus, J. F. Lundahl. Bed, folding, Shelton & Gentry. Bell, door, B. S. Cowles. Bell, door, B. S. Cowles. Bell, tsword, S. N. Bickerstaff. Beverage vessel, J. M. Van Fleet. Beverage vessel, J. M. Van Fleet. Beverages, apparatus for charging and drawing carbonated, E. Stahl. Bicycle, F. H. Peck. Bicycle seat post, A. Perkins. Bicycle seat post, A. Perkins. Bicycle seat post, A. Perkins. Bicycle wheel, G. H. Chinnock. Bicycles, etc., driving mechanism for, W. P.	523,828 523,951
Bicycle, F. H. Peck	523,943 523,944 523,944 523,952
Bicycle wheel, G. H. Chinnock. Bicycles, etc., driving mechanism for, W. P. Bit and mouth opener graphined P. N. Henris	523,891 523,964 523,811
Block. See Insulating block. Blower, centrifugal, W. H. Harrison Roller See Coffee boiler Hot water boiler	523,935
	523,672 523,808 523,901 523,756
Boiler furnace, steam, White & Forestell	523,756 523,824 523,703
Boilers, water circulating, feeding, and discharging apparatus for steam, D. B. Morison Bone cutting machine, F. W. Mann	523,915 523,771 523,956 523,728
Bottle neck, Pells & Steiner. Bottle packing case, W. P. Lowrie et al. Bottle, siphon, J. Mersereau.	523,728 523,673 523,727
Box. See Sheet metal box. Brake. See Car brake. Bread in ovens, means for deodorizing and sweet-	523,918
Bricks tiles at a machine for propring 1 1 con	523,797
hardt. Burgry seat, C. Gussett. Burner. See Vapor burner. Cabinet, record, biographical, and memorial, J. E. Whalen	523,835 523,755
Walten. Can. See Sealed can. Can cleaning machine, J. R. Rowlands Car brake, J. T. Duff Car brake, M. McNulty. Car coupling, J. P. Kirk. Car fender, E. Thomas. Car life guard, street, Parmenter & Gooding. Carding machine, condenser or finisher. J.	
Car coupling, J. P. Kirk. Car fender, E. Thomas. Car life guard, street, Parmenter & Gooding.	523,713 523,763 523,775 523,667 523,693 523,683
Carding machine, condenser or finisher, J. Cromie. Cartridge holder, M. H. Durst. Case. See Bottle packing case. Map case. Pen or pencil case. Reading case. Caster, Mann & Akers.	523,832 523,886
or pencil case. Reading case. rester Mann & Akert. Caster, furniture, J.T. Yegiard. Caterpilar trap. T. D. Noone. Chain, five, B. Baldwin.	523,772 523,801 523,682
Caterpillar trap, T. D. Noone. Chain, drive, E. A. Baldwin. Chair, L. C. Lazear Chlorides, making liquid. A. Sommer Chuck, emery wheel, J. T. Giblin Chute for loading vessels, cars, etc., J. M. Dodge. Cigar piercer. C. Horn.	523,682 523,877 523,839 523,715
Chuck, emery wheel, J. T. Giblin	523,890 523,851 523,858
Chute for loading vessels, cars, etc., J. M. Dodge. Cigar piercer, C. Horn. Circuit closer, automatic, J. W. White. Clothes line reel, A. W. Foster. Clutch, friction, T. A. Weston. Coffee boiler, J. W. Carpenter. Comb, J. W. Howlett.	523,701 523,853 523,874 593,656
Comb, J. W. Howlett	523,C65