

RECENTLY PATENTED INVENTIONS.

Apparatus for Special Purposes.

AUTOMATIC SUCTION-PUMP OR VACUUM-CHAMBER.—C. H. WETTLIN, Asbury Park, N. J. This apparatus removes obstructions in water-pipes, but is otherwise applicable where sudden and powerful suction is required. The vacuum for producing suction is produced by decomposition and explosion of some substance supplied to the chamber of a drum or cylinder. The drum has a holder for the explosive substance, means for controlling its admission to the chamber, and electrical means for producing ignition of the substance, while within the chamber is a device for distributing it, so as to produce a more effective explosion and powerful vacuum.

CONCENTRATOR.—L. F. SCHOENEFELDT, Denver, Col. In this case the invention relates to improvements in machines for separating the values from dry crushed ores, dry gravel, dry sand, an object being to provide a concentrator operating by centrifugal action that shall be light, strong, and durable, easily operated, and while taking up a very little space will provide for a large output.

Heating and Lighting.

STOVE.—F. J. PIOCH, Creston, Iowa. Efficiency in heating and in ventilating the fire, and easy removal of ashes, are among the objects of this invention. There are no idle corners in this stove in which ashes and dirt may accumulate. Air passing all around the fire-pot obviates all danger of burning out the pot and the degree of heat given the air is so intense as to increase the efficiency of the stove to a marked extent.

Machines and Mechanical Devices.

TUBE OR ROLL FORMING MACHINE.—C. SURMANN and R. D. DOUGLAS, Fall River, Mass. Primarily the inventors have in view the production of a machine the sections whereof forming the mandrel will be capable of being readily moved toward or from each other, thus enabling the tube or roll at all times to have a positive bearing inside the same, yet when it is desired to remove the tube from the mandrel the latter's circumference may be decreased, whereby the roll may be easily slipped from the same.

Of Interest to Farmers.

HAY-KNIFE.—W. S. SHIPPY, Bayfield, Col. This knife is capable of being used by the hand or foot, or both if desired. The main feature of its construction is that it needs to be raised only about six inches to feed and cut the whole length of the knife, while knives of similar character must be raised nearly, if not wholly, their entire length to cut and feed properly.

CATTLE-STANCHION.—W. T. EDWARDS, Elkhorn, Wis. This improvement refers to stanchions employed for holding cattle while milking or for other purposes which require a certain number of cattle to be separated from a herd and held spaced apart by an engagement of their heads and necks with parts of the stanchions. The object is to provide details of construction for a stanchion which will adapt the device for holding cattle by their necks and permit release either individually or all at a time.

CORN-SHOCKER.—T. L. CREATH, Mount Sterling, Ohio. The invention relates to an apparatus intended principally for forming shocks of corn and depositing them in upright position in the field, the apparatus being attached directly to the harvester by which the corn is cut. It also relates to an arrangement of the harvester-frame, the draft apparatus being rearward of the front end of the harvester and the horses walking one at each side thereof.

Pertaining to Vehicles.

NECK-YOKE ATTACHMENT.—D. N. LUSE, Carroll, Iowa. By the construction of this attachment the yoke can swing freely to the front and rear and can turn at its center upon the swinging bar, giving freedom of movement to the yoke and properly supporting the front end of the pole. The yoke is so connected with the pole that the invention avoids any projection of the pole beyond the neck-yoke connection, obviating difficulties resulting from the catching of checkreins over the pole ends and the interference by the projecting end of the pole striking animals, end-gates, etc. It can be employed upon carriages or wagons or any other implement-tongue.

WHEEL.—J. B. McMULLEN, Howard County, Md. Mr. McMullen's invention is an improvement in wheels, and particularly in pneumatic-tire wheels, and has for its object to provide a novel construction of devices for securing the tire and for operating the securing devices. It comprises means to forcibly operate the side plate into and out of engagement with the wheel by a simple appliance, which may be applied to and removed from the wheel at pleasure.

Miscellaneous.

HOSE-SUPPORTER.—FRANCES C. McDONALD, Box 393, Chicago, Ill. In carrying out the present improvement the inventor has particularly in view the provision of a device which will firmly and securely retain the upper edge of the stocking through the medium

of a locking device, which forms an important part of the invention. This garment-supporting device is exceedingly simple in its construction and positive in its operation, while embodying the essential features of cheapness and convenience.

HATCH-COVER FOR MARINE VESSELS.—W. W. DAWLEY, Geneva, Ohio. In modern vessels hatches are made so heavy as to render their movement very laborious. Mr. Dawley seeks to overcome this disadvantage by employing a carrying wheel or wheels for the hatch-cover, and means for raising the cover on or lowering it from the support of the wheels. The cover may be lowered down on the hatch to close it, and to uncover the hatch the cover is raised until supported by the carrying-wheels, and the cover and wheels run along the deck until the hatch is quite uncovered.

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

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry.

MUNN & CO.

Marine Iron Works, Chicago. Catalogue free. Inquiry No. 4993.—Wanted manufacturers to negotiate for manufacturing on large scale an automatic fence gate; has its own post and all of steel.

"U. S." Metal Polish, Indianapolis. Samples free. Inquiry No. 4994.—For manufacturers of dry placer machinery in Los Angeles, Cal.

AUTOS.—Duryea Power Co., Reading, Pa. Inquiry No. 4995.—For manufacturers and promoters of suburban electric railways.

Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O. Inquiry No. 4996.—For dealers in new and second-hand boilers and engines of 3/4 to 5 h. p., suitable for small launch.

For logging engines. J. S. Mundy, Newark, N. J. Inquiry No. 4997.—For machines for weaving wire and wood picket fencing.

Sawmill machinery and outfits manufactured by the Lane Mfr. Co., Box 13, Montpelier, Vt. Inquiry No. 4998.—For quotations on 100 and 1,000 of a cheap grade of compressible rubber bulbs, with 1 foot of 3/4 rubber hose attached, such as used on atomizers.

American inventions negotiated in Europe, Felix Hamburger, Equitable Building, Berlin, Germany. Inquiry No. 4999.—For wholesale dealers in Indian beads.

Edmonds-Metzel Mfg. Co., Chicago. Contract manufacturers of hardware specialties, dies, stampings, etc. Inquiry No. 5000.—For dry placer washers for gold mining.

For Machine Tools of every description and for Experimental Work call upon Garvin's, 149 Varick, cor. Spring Streets, N. Y. Inquiry No. 5001.—For manufacturers of broom machinery.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway New York. Free on application. Inquiry No. 5002.—For manufacturers of the "cotton carding machine."

The largest manufacturer in the world of merry-go-rounds, shooting galleries and hand organs. For prices and terms write to C. W. Parker, Abilene, Kan. Inquiry No. 5003.—For makers of machinery for putting wires in shipping tags, also firms making these tags.

Empire Brass Works, 106 E. 129th Street, New York, N. Y., have exceptional facilities for manufacturing any article requiring machine shop and plating room. Inquiry No. 5004.—For machinery for a steam laundry.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Verne Refrigerating Machine Company, Foot of East 138th Street, New York. Inquiry No. 5005.—For manufacturers of wire-casels.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 18 South Canal Street, Chicago. Inquiry No. 5006.—For the manufacturers of the Star magnifying paper weight.

Wanted—Revolutionary Documents, Autograph Letters, Journals, Prints, Washington Portraits, Early American Illustrated Magazines, Early Patents signed by Presidents of the United States. Valentine's Manuals of the early 40's. Correspondence solicited. Address C. A. M., Box 776, New York. Inquiry No. 5007.—For parties to manufacture, in quantities, a flat, indelible pencil about 3/4 inches long when inclosed in a nickel-plated metal case, and having an imprint stamped on this case.

Inquiry No. 5008.—For parties engaged in raising skunks. Inquiry No. 5009.—For manufacturers of small leather washers 3/8 inch inside and 9/16 outside.

Inquiry No. 5010.—For manufacturers of chain adders. Inquiry No. 5011.—Wanted, oboe and bassoon gouging machines and tools for making the reeds for same. Also for makers of brass staples for the oboe.

Inquiry No. 5012.—For manufacturers of a movable drag saw operated by horse power, with hollow shaft, made in several sections and telescopes, so that the saw can make several cuts from a tree or log at one setting.

Inquiry No. 5013.—For makers of gage wire stitching or stapling machines. Inquiry No. 5014.—For makers of machines for making shot.

Inquiry No. 5015.—For a machine for making cement bricks, of capacity of 5,000 bricks daily. Inquiry No. 5016.—For makers of drop forgings for dental forceps.

Inquiry No. 5017.—For dealers in Indian seed beads, and all classes of fancy olive, spar, jet, pearl and Venetian beads, at wholesale.



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 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 price. Minerals sent for examination should be distinctly marked or labeled.

(9286) F. B. asks: You no doubt

have been asked the question regarding the man and the squirrel—the squirrel keeping on the opposite side of the tree from the man as he walks around the tree. Does the man walk around the squirrel? It seems to me a foolish question, but I would like your answer to settle a dispute. A. We have answered the man-and-squirrel question so many times, in our columns, that we supposed every one had seen it. If a man walks around a tree he also walks around everything upon that tree whether it is in motion or at rest upon the tree. This seems so plain that there need be no question of its correctness. Any other conclusion seems to us entirely absurd and illogical.

(9287) M. D. P. asks: Will you kindly let me know through your valuable paper if No. 30 or 31 (Brown & Sharpe's) gage soft copper wire will work on an induction coil described in SUPPLEMENT No. 160; if not, what size will I have to use? A. The description of the coil in SUPPLEMENT No. 160 states that No. 36 wire should be used in the secondary winding. We should now advise that it be silk covered rather than bare wire as was used in the original coil. The practice has changed since that paper was published. It is a long time since the paper was published and many changes have been made in the construction of coils. The extensive demand for X-ray and wireless telegraphic apparatus has required many thousands of coils.

(9288) E. B. W. asks: I wish to know if iron, steel or copper plates will deteriorate when in contact with mercury, and if so, under what conditions and in what way? A. Iron and steel do not amalgamate with mercury and are not affected by contact with it. Copper is slowly amalgamated by mercury and after a short time would be reduced to a paste by contact with mercury if the mercury were in quantity sufficient to do this.

(9289) J. and M. W. ask: Do you know of any means whereby we can obviate the difficulty which we have of late, or since cold weather set in, experienced through the paper being surcharged with electricity in running off the edition of our paper on a perfecting press? It has been represented to us that to place a coating of paraffine on the iron rollers over which the paper passes would afford relief. Do you know as to the probable virtue of such an expedient? Or can you suggest any other way in which we may remedy the evil? A. We think you will find more relief from electricity in your printing paper by use of moisture than by paraffine, which is an insulator and would not conduct the electricity off as you wish. Spraying the rolls is the method in many offices. Steam in the air of the room might produce relief. Trouble from this source is common and we have never known any complete preventive.

(9290) J. A. M. asks: What is the meaning of the occurrence of the sparks of the ocean water when in contact with hand at night? By what means so much ocean water is salted and what parts is the salt formed of? A certain article says radium turns into helium; is helium electricity? A. The light seen in the ocean, when the water is stirred, at certain times of the year is due to the presence of numerous tiny, microscopic animals which are then present in the water in enormous numbers. They are like jelly fish, and shine as the firefly shines on the land. The name "phosphorescence" is given to it. Saltiness of the ocean water is produced by the constant emptying of the rivers of the earth into the ocean, while the only escape of water from the ocean is by evaporation and the evaporated water is fresh. The rivers carry down continually a minute proportion of salt in their water, soaked out of the soils. In the centuries of the earth's previous history this salt has accumulated sufficiently to produce the present saltiness of the sea water. Inland lakes without outlets are also salt, such, for example, as the Great Salt Lake in Utah, and the Sea of Azof, while the great lakes north of the United States are fresh, since the water is carried off by the St. Lawrence River, and salt does not accumulate,

Helium is not electricity, but a gas which has been known for a good many years.

(9291) C. H. M. asks: 1. How is carborundum made? A. Carborundum is made by heating carbon and silica in an electric furnace till they combine chemically into carbide of silicon. There are numerous details, but the essential step in the process is the chemical combination of the carbon and the silicon. 2. Could you tell me how the capacity of a copper wire of an electric current is calculated by allowing 400 circular mils per ampere? A. A "mil" by which wires are rated is one thousandth of an inch. A circular mil is the square of a mil. Thus a wire whose diameter is 10 mils will contain 100 circular mils, and at 400 circular mils per ampere may carry one-quarter of an ampere. 3. How would I determine the capacity of a copper wire by the number, B. & S. gage? What is meant by circular mils? A. A copper wire table usually gives the diameter of each size of wire in mils and in the next column the number of circular mils. Thus No. 10 B. & S. wire is 101.89 mils in diameter and contains 10,381 circular mils, which is the square of the diameter in mils.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending January 12, 1904.

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

Table listing various inventions and their patent numbers, including items like Acid, acetyl para cresotinic, B. R. Seifert., Adding machine, L. Cerf., Advertising display device, D. Jones., Air brake systems, supplemental auxiliary feed for, Jones & Swanstrom., Amusement and advertising device, M. W. Beemer., Apparel, wearing, E. G. Runyan., Automobile due shield and lamp support combined, L. C. Savale., Automobiles or the like, speed controlling mechanism for, C. C. Rlotte., Awning frame coupling, A. D. Campbell., Axle box dust guard, car, E. E. Sager, et al., Axle boxing, vehicle, G. W. Davis., Bag fastener, B. vom Eigen., Bag frame handle, B. vom Eigen., Bags, manufacture of, J. B. Collins., Bags, etc., suspending attachment for game, G. F. Clarke., Baking powder, G. L. Teller., Bale wires, machine for bending the cross-heads of hay, H. P. Wilson., Ball and socket fastener, M. Sternberg., Barrow wheel, C. E. Knoch., Basin, catch, W. Aylward, Jr., Bath. See Film bath., Battery tanks or cells, skeleton frame for electric, D. F. Jones., Bearing, combination ball and roller, H. V. Hill., Bed chair or bed sofa, H. A. Linderoth., Bell, electric, H. E. Dey., Bench-shears, G. J. Capewell., Bicycle with rowing attachment, S. L. Batchelor., Binder, loose leaf, G. A. Roede., Blind fitting, window, E. C. Harris., Block signal system, electric, L. C. Werner., Boat, A. Viert., Boiler attachment, steam, T. Mills., Boiler tubes or staybolts, fastening for steam, Massey & Spenser., Bolster, Ingoldsey & Bowling., Bolt holding implement, J. S. Scott., Book holder, Steiner & Hall., Bookcase, Cree & Dickson., Bottle, non-refillable, H. Hahn., Bottle, non-refillable, H. Kahlmus., Bottle, non-refillable, E. C. Luks., Bottle, non-refillable, G. C. Besonet., Bottle stopper, J. A. Jones., Box, B. vom Eigen., Box-making machine, W. H. Butler., Bracelet or other ornament, W. F. Sim., Bracket, J. Gardner., Braiding machine racer, C. W. Hassler., Brake apparatus, automatic fluid pressure, M. Corrington., Brake beam, R. P. Lamont., Brake block shoe, M. Potter., Brake mechanism, automatic fluid pressure, M. Corrington., Brick cut-off table, W. H. Beltz., Brooder, C. E. Adair., Brush, A. Schickling., Brush combined hat and clothes, C. Lahe., Bucket, clam-shell, S. Swedenborg, reissue., Buckle, C. E. Smith., Butter, testing, M. Vogtherr., Button, cuff, W. Doherty., Calculating machine, D. E. Felt., Calendar, B. Rosenfeld., Calendar, J. A. Cheape., Camera plate holders, releasing device for magazine, E. G. Odquist., Can, J. J. Shannon., Can opener, C. A. Ford., Cap-closure, rotary, H. J. S. Hall., Car brake, Copeland & Montague., Car, convertible, M. Power., Car coupling, H. E. Welsh., Car coupling, E. C. Washburn., Car draft connection, railway, C. S. Payne., Car interchangeable draw gear, railway, F. L. Clark., Car side bearing, railway, C. F. Huntoon, reissue., Carbon articles, making, E. G. Acheson., Carbureting device, explosive engine, L. P. Mooers., Card feeding machine, D. H. Waters., Carpet stretcher, J. M. Brown., Cart, dumping, J. Hovas., Case. See Bookcase., Centering machine controller or stop bar, L. H. Vold., Centering mechanism, J. S. Bancroft., Centrifugal machine, M. de Marcoville., Chair foot rest, G. A. Bower., Chair head rest, shaving, C. E. Haeger., Checking or unchecking device, A. E. Fisher., Checking the output of machinery, apparatus for, L. Lenot., Chopping device, H. Breitstein., Chip, E. De Lamater., Clock, electric striking, W. Olson., Closure, E. E. Chapman., Clothes-line fastener, C. F. Smith., Clothes pin, A. Smith., Clutch mechanism, reversing, W. J. Wright., Coal carrying vessel or bag, manual, N. J. Marshman., Coal, depository for, Mackrow & Cameron., Coat hanger, R. Eyras., Coffee treating machine, T. R. Timby., Collapsible tube and spreader, combined, C. L. Huddle., Collar clasp, J. Clement., Colter, N. W. Travis., Comb, W. S. Bechtold.