

RECENTLY PATENTED INVENTIONS.

Mechanical Devices.

DRILL-CHUCK.—WILLARD H. MERREL, Oneida, N. Y. To provide means whereby a drill or like tool may be firmly held in place to prevent it from turning in the jaws, this inventor provides a chuck whose body-portion has a transverse seat. Two jaws slide toward and from each other in this seat and meet at the center of the chuck. Interlocking fingers on the jaws hold the drill. The jaws have respectively right and left hand threads at one side, and at opposite sides are provided with shoulders. The enlarged end portions of a screw-rod bear against shoulders on the body, are oppositely threaded and are engaged respectively with the threads on the jaws. By this means the jaws are advanced and retracted. Two screws working in opposite sides of the body and having heads engaged with the shoulders on the jaws, lock the jaws in place.

MAGAZINE BOLT-GUN.—JOHN H. BLAKE, New York city. The fire-arm patented by this inventor is capable of being used either for single or for magazine firing, a simple and easily operated cut-off being provided, by means of which the magazine may be brought into or thrown out of action as desired, the magazine when not in action remaining in the gun. A cartridge-pocket is also provided in which a number of cartridges may be quickly placed. Only a single packet is placed in the magazine-chamber. This magazine-chamber is so constructed that the packet, while normally concealed, may be rendered visible at any moment. The packets are made so as to be carried loaded in a belt as is customary in carrying single cartridges, thus enabling a marksman to substitute quickly, a loaded for an empty packet in the magazine, a cartridge being at the time within the barrel ready to be fired. The bolt is so made that its parts may be easily separated and assembled again. In addition to its usual function, the sear in this gun is employed to prevent a rocking movement of the bolt when the latter is in firing position.

WEIGHING AND FILLING APPARATUS.—JOSEPH E. J. GOODLETT, Memphis, Tenn. In this invention we find means for filling receptacles with liquids, for delivering a predetermined quantity of the fluid, and for cutting off the delivery automatically. The apparatus includes, as its chief features, a weighing scale upon which the liquid receptacles are placed to be filled, a filler proper, which is provided with automatic valve and tripping mechanism for controlling the flow and delivery of liquid, and an electrical switch and circuit and co-operating devices for actuating the trip mechanism when the weight of the liquid delivered into a receptacle reaches the predetermined limit.

Railroad Appliances.

COMBINED DUST-GUARD, CAR-AXLE LUBRICATOR, AND HOT-BOX INDICATOR.—JAMES S. PATTEN, Baltimore, Md. The dust-guard provided for in this invention has, connected with the axle-box, a curved supporting spring whose convex portion bears upon the bottom and outer end of the axle-box and whose extended outer end rests upon the bearing of the journal, whereby the dust-guard is elastically held in place. The lubricator consists of a roller running in a stratum of oil and so pivoted to the upward and recurved rear ends of the spring that it will take up and transfer oil to the journal. The "hot-box" indicator operates in a box or holder having open perforations and means for supporting the latter in the axle-box above the oil-space, and holding it in contact with the bearing. In the box a substance is placed capable of emitting a strong, easily-perceivable odor when the oil runs out and the friction heats the substance, thus indicating the presence of a "hot box."

CAR-COUPLING.—HERMÉNILDE and AIME LOISELLE, Winnipeg, Canada. The purpose of this invention is the provision of a simple and effective car-coupling, which shall couple cars automatically when they come together, which shall not come apart accidentally nor cramp and bind in turning curves and which shall be adapted to couple cars having the ordinary construction of draw-bar and the ordinary link and pin coupling. The coupling has a pair of jaws pivoted on horizontal axes and having tapered noses and grappling surfaces, each face having a central recess with a lip at top and bottom. A lug partly closes one end of the recess and has a notch at the top and bottom of the lug for the purpose of locking the jaws against vertical as well as horizontal motion.

CAR COUPLING.—VALENTINE ERBACH, Scranton, Pa. This coupler is of the knuckle-type and is so constructed that it will be of less dimensions than ordinary knuckle-couplers, will not present any unnecessary side projections and will be simple and durable. In this coupling a draw-head is provided having a long and a short horn at opposite sides, the long horn being chambered and having a shoulder formed between its ends. A knuckle mounted to swing in the chamber of the long horn has a vertical shoulder in line with the shoulder in the long horn, and at its pivot point has its lower surface inclined and engaging a correspondingly-inclined surface on the draw-head. A release-lever is pivoted to the knuckle and is adapted to engage with its head an opposing knuckle when two draw-heads are brought together and are in coupling position.

BICYCLE SADDLE.—LOUIS P. WELLMANN, Union, Hudson County, N. J. This saddle is made to form a flexible seat which may yield with the motions of the rider and which may be adjusted in width. The saddle has two independent seat-portions each with a depression of irregular shape in its upper face, which depression is adapted to fit the body. A stem is formed integral with each seat-portion, the stem and seat-portion being composed entirely of rubber, whereby the seat-portion will yield to the weight of the rider and bend as a whole with respect to the stem so as to conform with the position of the thigh.

SASH-FASTENER.—LEWIS H. BOWMAN, Walla Walla, Wash. The purpose of this invention is the provision of a fastener which shall lock a sash in any desired position without rattling and which shall make a tight joint between the sash and casing. The sash-holding device comprises a vertically moving sash-locking member, a horizontal lever pivoted beneath the window-sill, connections from one end of the lever to the sash-locking member, a bent hand-lever pivoted by

one end beneath the sill and having an arm lying flush with the sill when the window is locked, and a link connecting the lever near its bend with the other end of the first-named lever. The pivots on the hand-lever and its connected link are nearly in line when in locked position, the center pivot being sufficiently at one side of the center line to hold the parts locked.

SNAP-HOOK.—CHARLES F. FRANCISCO, Lakeside, Cal., and EUGENE E. SHAFER, San Diego, Cal. This invention has for its purpose the provision of a simple, cheap, and efficient snap-hook which remains firmly in locked engagement with the ring or buckle to which it is coupled. The snap-hook comprises a frame portion having a hooked portion and three cross-pieces, of which the first two are at the lower side, with an open space between them, the third cross piece being arranged at the upper side and between the first two cross-pieces. A U-shaped spring has its lower bent end hooked over the second cross-piece, its middle bend surrounding the first cross-piece and its free end pressing upwardly. A latch is arranged within the frame above the free end of the spring.

HARNES ATTACHMENT.—WILLIAM R. PHILLIPS, Pomona, Cal. The attachment provided for by this inventor may be applied to any harness, and is arranged to hold the lines in proper position so as to prevent entanglement with other parts or with the horse's tail. The attachment comprises a loop having at one end means for securing it to a strap and having its rear member split or separated to form an opening for the entrance and removal of a line and provided with lugs for engaging apertures in the strap to which the loop is attached.

PIPE-COLLAR.—EDWARD J. MALLEN, New York city. This pipe-collar is made with a body plate constructed in removable sections. Clamping plates are adjustably and removably held in the body plate and are made of spring-material. End clamping plates are mounted to slide in engagement with a central clamping-plate, each clamping-plate having a pipe-receiving opening and divided at a portion in its surface. This division extends from the pipe-receiving openings to the outer edges of the plates. The device is applicable to all kinds of pipes and will not mar the appearance of a ceiling or wall. Fire-proof material may be filled in around the pipes, thus deadening all noise and preventing dirt from dropping down.

Designs.

HOSE REEL SPOOL.—HARRY E. DONNELL, New York city. This design consists of a hub from each end of which extend spokes arranged in pairs, the inner end of the spokes of a pair being separated and the outer ends being joined and terminating in a circular rim. The inner end of one spoke in a pair, joins the inner end of the adjacent spoke of the next pair.

GAME-BOARD.—WILLIAM B. GILES, New York city. In this design, the surface of a game-board is divided into two parts or fields, with a groundwork of contrasting colors and with a series of disk-like figures, the color of one series of figures differing from that of another.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for 10 cents each. Please send the name of the patentee, title of the invention, and date of this paper.

NEW BOOKS, ETC.

LOGIC, DEDUCTIVE AND INDUCTIVE. By Carveth Read, M.A. London: Grant Richards. 1898. Cloth, 12mo. Pp. 323. Price £0.6.

This work more definitely separates logic, pure and simple, from all other studies, and especially from psychology and metaphysics. It is, in fact, a concise and comprehensive textbook of logic, the mastering of which is made more easy by the aid of questions that are introduced as an appendix.

ELECTRO-DYNAMICS—THE DIRECT CURRENT MOTOR. By Charles Ashley Carus-Wilson, M.A. London and New York: Longmans, Green & Company. 1898. Cloth, 16mo. Pp. 298. Price \$1.75.

The aim of this volume is to apply the principles of electro-dynamics to the direct current motor. As it is a work intended for the enlightenment of electrical engineers, the author takes it for granted the reader is familiar with the use and design of motors; but he in the main avoids all technicalities, hoping thereby to render the volume useful to engineers generally.

THE CURE OF WRITER'S CRAMP AND THE ARM TROUBLES OF TELE-GRAPHERS AND BALL PLAYERS. By S. H. Monell, M.D. New York: J. B. Taltalart. 1898. Pp. 49. Paper 8vo. Price 50 cents.

Business and Personal.

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

- Marine Iron Works. Chicago. Catalogue free.
"U. S." Metal Polish. Indianapolis. Samples free.
Gasoline Brazing Forge. Turner Brass Works. Chicago.
Yankee Notions. Waterbury Button Co., Waterbury, Ct.
For bridge erecting engines. J. S. Mundy, Newark, N. J.
FERRACUTE Machine Co., Bridgeton, N. J. Full line of Presses, Dies and other Sheet Metal Machinery.
Improved Bicycle Machinery or every description. The Garvin Machine Co., Spring and Varick Sts., N. Y.
For Sale—Recent patent. \$08.480, on apparatus for drawing liquids. A. Wahl, 96 Hoboken Av., Jersey City, N. J.
The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

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.

The Raw Silk Machine Wipers that are manufactured by the American Silk Mfg. Co., of Philadelphia, have attracted the attention of the government arsenals as being the best and really the most economical article of the kind. They are considered to be far superior to cotton waste, as thorough cleansers, and are, therefore, well adapted for use in intricate gun machinery and delicately made instruments. They are exceedingly soft to the touch, and as they can be thoroughly cleansed when soiled by means of ordinary soap and hot water, their great saving will be at once apparent. These silk machine-wipers have long been favorites in many of the best engineers' and machine shops in the country, and they will undoubtedly be found of great value to our army and navy departments. Wherever used they have been praised, and the order duplicated, which speaks well for both their efficiency and economy.

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

Notes & Queries

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. Writers 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.

(7472) W. H. M. writes: In the May 15, 1897, issue of your paper, you have an interesting article on a toy calorific engine. You state that they are simple and reliable; that they have been known for years. This being the case, allow me to ask you why small and light ones of from 1 to 4 horse power have not come into general use for running fans, launches, etc.? There must be some drawback, and for the benefit of several of your readers here, please state it in the Notes and Queries. A. The calorific engine is rather heavy for the power produced, and has never seemed successful in very small powers—although largely in use for domestic pumping. For power purposes, the explosive motor, which is of much less weight in proportion to power, has almost displaced the calorific engine.

(7473) J. H. W. L. says: Will you advise me what is a good tonic to prevent hair from falling out of the head?

- A. Quinine sulphate..... 20 grs.
Tincture of cantharides..... 2 fl. drms.
Fluid extract of jaborandi..... 2 "
Alcohol..... 2 fl. oz.
Glycerine..... 2 "
Bay rum..... 6 "
Rose water—enough to make..... 15 "

The quinine is dissolved in the alcoholic liquids by warming slightly, then the other ingredients are added.

TO INVENTORS.

An experience of fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled 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 persons 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 our extensive facilities for conducting the business. Address: MUNN & Co., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

AUGUST 2, 1898,

AND EACH BEARING THAT DATE.

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

- Abrasive hand tools, files, etc., carrier for, H. Foeke..... 608,513
Adhesives, making, G. Eichelbaum..... 608,368
Air compressors, automatic switch for regulating electric, Moseley & Funk..... 608,340
Animal trap, T. E. Trout..... 608,493
Armature for dynamo electric machines, Anderson & Thomson..... 608,277
Asphaltum and manufacturing same, J. A. Dubbs..... 608,372
Axle lubricator, car, E. W. Hancock..... 608,329
Axle setting and straightening tool, B. F. Smith..... 608,323
Badge, A. H. Adams..... 608,357
Bale of box hook, M. Botulinski..... 608,172
Bales, apparatus for unwinding cylindrical cotton, Bosca & Bener..... 608,399
Baling press, N. B. Wilder..... 608,583
Ball working machine, H. Meltzer..... 608,470
Bath. See Galvanic bath.
Battery zinc, D. Ogden..... 608,216
Bed, cot, I. Coburn..... 608,547
Bed, cot, I. Coburn..... 608,523
Red spring, N. J. Shields..... 608,232
Bedstead, I. Coburn..... 608,545, 608,546
Beehive swarm preventer, J. Koopman..... 608,261
Bell, bicycle, H. S. Fullman..... 608,478
Bell, bicycle, E. H. White..... 608,499
Belt regulator, O. K. Sietto..... 608,486
Beverage cooler, L. Baumelster..... 608,169
Bicycle, C. E. Stockford..... 608,350
Bicycle attachment, J. S. Lord..... 608,262
Bicycle attachment, W. B. Spencer..... 608,235
Bicycle crank fastening device, F. V. Gauthier..... 608,448
Bicycle crank shaft, S. A. Bonnelly..... 608,349
Bicycle crank shaft, A. Ledvahl..... 608,399
Bicycle rear, H. Wilburn..... 608,241
Bicycle mud guards, machine for making, G. L. Allen..... 608,313
Bicycle speed signal, G. Bittmar..... 608,511
Bicycle support, F. Barto..... 608,543
Bicycle support, O. P. Brethitt..... 608,290
Bicycle support, Jackson & Britten..... 608,393

- Bicycle support, A. W. Lewis..... 608,464
Billiard cue, B. Hutzel..... 608,377
Binder, P. Wright..... 608,312
Blower, rotary, N. W. McIntosh..... 608,377
Boiler tube cleaner, F. W. Bradley..... 608,418
Book, note, C. H. Hastings..... 608,286
Book support, W. F. Frazee..... 608,515
Boot tree or stretcher, F. J. Farmer..... 608,386
Bottle, etc., stopper, C. J. Muldoon..... 608,286
Bottle valve stopper, E. M. Raiguel..... 608,271
Bottles, etc., stopper for, G. Koch..... 608,407, 608,408
Bowling alley pin, H. H. Luke..... 608,294
Box. See Mail box.
Box making machine, Keunen & Hogfeldt..... 608,201
Bracket. See Shade bracket.
Brake. See Car brake.
Brake, W. H. Sauvage..... 608,561
Brake rod, B. Haskell..... 608,392
Bread cutting knife, W. Merkle..... 608,337
Broom clasp, W. H. Cason..... 608,510
Brush, F. Goehring..... 608,365
Bucket, H. F. Riggs..... 608,304
Bulkheads and partitions, passageway for, D. Bois..... 608,189
Burner. See Gas burner. Hydrocarbon burner.
Burner and chimney holder, J. H. Moss..... 608,395
Bushings, tap hole, Hammer..... 608,436
Button, C. W. Stimson..... 608,487
Button, two part separable, O. L. Mahon..... 608,410
Cabinet, kitchen, W. Lackey..... 608,336
Cabinet table, kitchen, J. L. Huestis..... 608,260
Callipers, center finding register, G. W. Davis..... 608,183
Capo tasto, P. Benson..... 608,322
Car brake, automatic, F. A. Perry..... 608,429
Car, combined ventilating and refrigerator, F. Thompson..... 608,237
Car draught rigging, railway, D. Loomis..... 608,522
Car floor frame, railway, C. C. Wentworth..... 608,414
Car heating system, J. F. McElroy..... 608,212
Car journal box, railway, F. Hoeltz..... 608,332
Car replacer, C. E. Bailey..... 608,324
Car step, folding, T. Kendrick..... 608,335
Cars, adjustable rack for railway, M. Butler..... 608,437
Carbureter, J. R. Stephenson..... 608,531
Cards for use in Jacquard machines, apparatus for preparing, G. A. Crum..... 608,473
Cash register, Hoffman & Norton..... 608,551
Cash register and indicator, L. S. Burridge..... 608,509
Cash register, autograph, J. A. Hoff..... 608,374
Casket stand, G. Crommiller..... 608,442
Cattle guard, P. H. Hazzel..... 608,426
Celluloid press and vulcanizer, J. C. Biron..... 608,512
Chain, sprocket, H. E. Stahl..... 608,530
Chair. See Reclining high chair.
Chuck, screw machine, E. V. Gauthier..... 608,449
Churn, N. Isachson..... 608,404
Churn operating mechanism, L. Berke..... 608,322
Cigar holder and tobacco pipe, J. Bigelow..... 608,170
Clamp. See Floor clamp.
Clasp. See Broom clasp.
Cleaner. See Boiler tube cleaner. Pipe cleaner.
Clock, repeating alarm, W. J. Davies..... 608,424
Cloth line machine, E. T. & H. McK. Marvick..... 608,468
Clothes line hanger, R. & N. Luckner..... 608,205
Coal cutting or mining machine, Wanting & Johnson..... 608,240
Cock and waste, stop, J. F. Coffey..... 608,179
Coin wrapper, metallic, H. H. & T. S. Hipwell..... 608,521
Commutator, C. B. Potter..... 608,299
Cooler. See Beverage cooler.
Corn husking implement, L. F. Rife..... 608,303
Coupling. See Thill coupling.
Crane, H. Sawyer..... 608,227
Cranes, apparatus for producing traversing motion of overhead traveling, J. G. & E. G. Fiebel..... 608,191
Cream separator, J. W. Thayer..... 608,311
Creamer, F. E. Sargent..... 608,482
Cultivation, apparatus for steam, Fowler & Benstead..... 608,514
Cultivator, J. H. Dodson..... 608,402
Cultivator, D. M. Motherwell..... 608,411
Cup. See Milk cup.
Current induction motor, alternating, C. S. Bradley..... 608,249
Cushion. See Seat frame cushion.
Cutter. See Wire cutter.
Cutting head, J. W. Schleicher..... 608,272
Deaf to hear, appliance for enabling the, R. B. G. Gardner..... 608,255
Device for raising or lowering telegraph poles, M. T. Gordon..... 608,193
Domestic press, G. W. Felton..... 608,268
Door check, F. Lenhart..... 608,548
Drill, Columbus & Hesselstein..... 608,248
Drill. See Electric drill.
Drum, heating, C. B. Tourville..... 608,386
Dye, brown black sulfur, H. R. Vidal..... 608,356
Dye, green alizarin, K. Tan..... 608,258
Dye, making, H. R. Vidal..... 608,258
Electric combination lock, H. G. Carleton..... 608,320
Electric conductor joint, Patten & Mavor..... 608,412
Electric drill, reciprocating, H. Casler..... 608,175
Electric heater, J. F. McElroy..... 608,343
Electric lock, H. G. Carleton..... 608,321
Electric lock combination mechanism, H. G. Carleton..... 608,322
Electric machines, regulating dynamo, C. P. Steinmetz..... 608,309
Electrical distribution, C. P. Steinmetz..... 608,307
Electrical distribution system, C. P. Steinmetz..... 608,308
Electrode, battery, H. E. Wilkins..... 608,537
Electrolytic apparatus, J. G. A. Rhodin..... 608,300
Electromechanical lock, H. G. Carleton..... 608,319
Electrotype plate routing machine, J. H. Ferguson..... 608,550
Elevator safety stop or brake, W. McGee..... 608,297
Emergency wheel brake, G. Benson..... 608,417
Engine. See Gas engine. Rotary engine. Traction engine.
Engines, igniting mechanism for explosive, J. Lizotte..... 608,409
Excelsior machine, rotary, J. Rollins..... 608,450
Explosive and igniting mechanism, G. Benson..... 608,417
Eyeglass stud, J. H. Nason..... 608,214
Farm gate, B. J. Hucker..... 608,367
Fastener, C. V. Walter..... 608,495
Feed water purifying device, J. S. Calkins..... 608,250
Fence gate, wire, F. G. Gorman..... 608,428
Fence post, C. E. Gorman..... 608,259
Fire escape, Buck & Meaker..... 608,419
Fish hook, J. M. Stadel..... 608,348
Floor clamp, E. C. Ingersoll..... 608,458
Form, dress or garment, A. B. Friel..... 608,327
Fruit knife, A. Fartridge..... 608,267
Furnace. See Heating furnace. Smoke consuming furnace.
Furnace front, steam boiler, J. Howden..... 608,376
Gage. See Pressure and vacuum gage.
Galvanic bath, C. E. Schnee..... 608,228
Gateway door for box cars or steamboats, J. McAllister..... 608,289
Garment and tent, convertible, F. Terramorse..... 608,351
Garment holder, E. S. West..... 608,488
Gas burner, A. Beler..... 608,540
Gas engine, J. J. Hart..... 608,298
Gas from kerosene, etc., by means of wicks, general..... 608,394
Gas generator, acetylene, H. J. Bell..... 608,541
Gas generator, acetylene, Keith & Byrne..... 608,460
Gas generator, acetylene, Powers & Reynolds..... 608,270
Gases, capsule or container for containing compressed or liquefied, E. Sterne..... 608,349
Gate. See Farm gate. Fence gate. Mine gate.
Gate, E. J. Hickox..... 608,330
Gate, A. Hines..... 608,331
Gate, M. K. Lewis..... 608,465
Gem setting, G. W. Dover..... 608,362
Generator. See Gas generator. Steam generator.
Glass articles, reheating and finishing machine for, Kay & Adams..... 608,427
Glass press, G. B. Lamb..... 608,284
Glove, boxing, W. G. Wood..... 608,344
Grain conveyer driving mechanism, J. Morrell..... 608,263
Grain feeder and conveyer, B. S. Constant..... 608,180
Grate, Norton & Neemes..... 608,215
Grinding machine, J. E. Harvey..... 608,285
Guitar, P. Benson..... 608,279
Handle. See Pruning shears handle. Satchel handle.
Hanger. See Clothes line hanger. Skirt hanger.
Harrow truck, disk, F. E. Alshouse..... 608,167
Harvester and hecker, corn, J. Tjossem..... 608,492
Harvester, grain, Farrall & Pridmore..... 608,325
Hat fastener, J. J. Soldan..... 608,529
Hat or bonnet pin guide and protector, K. J. Pees..... 608,219
Hay rack, B. Tanner..... 608,310
Headlight lamp, electric, H. P. Wellman..... 608,497
Headlights, operating signal curtains on locomotive, W. J. Pugh..... 608,559
Hears attachment, M. M. Guiley..... 608,519
Heater. See Electric heater. Water heater.
Heating and drying system, C. C. Barbour..... 608,546
Heating by electricity, system for, J. F. McElroy..... 608,211
Heating furnace, E. Norton..... 608,264
Hinge and door check, combined, F. & H. F. Keil..... 608,374
Hinge mirror, C. W. Judson..... 608,459
Hosiery and conveying apparatus for extruding, etc., P. N. Jonte..... 608,405
Hook. See Bale or box hook. Fish hook.
Hub attaching device, G. W. Emerick..... 608,364
Hydrocarbon burner, J. Johnston..... 608,290

(Continued on page 110)