RECENTLY PATENTED INVENTIONS. Of Interest to Farmers.

HEAT-REGULATOR .- C. F. RUKES, Springfield, Mo. In this case when the temperature in the burner exceeds a predetermined value, the bars will expand, bowing further outward, thus extending the lazytongs which will move the valve lever, decreasing the supply of fuel. Should the incubator become too cool, the bars will contract, thus shortening the lazytongs and move the lever in the opposite direction, to increase the supply of fuel.

STALK-CUTTER.—F. P. CHAPA, Eva, Texas. In operation the machine is driven through the field between adjacent rows of stalks which are severed by the engagement of the sharp edge of the blade therewith. The rear the invention, and date of this paper. end of each of the blades is curved outwardly, so that should a stalk be pushed outwardly by the inclined portion of the blade, it will be engaged by the outwardly bent portion. Means permit the side members of the frame to yield inwardly, should they or the blades engage unyielding objects. The arrangement of blades also permits their easy removal for sharpening or inserting new blades.

FERTILIZER-DISTRIBUTER.—J. K. GOUR-DIN, Pineville, S. C. In this case the invention pertains particularly to an improved arrangement of means for discharging fertilizer from the hopper, and to improved means for effecting the broadcast distribution of the fertilizer after discharge from the hopper. Means provide for adapting the machine for distributing fine, coarse, or lumpy, and also for distributing cotton seed.

Of General Interest.

ATTACHMENT FOR TOBACCO-PIPES .-W. E. FRAZEE, Perham, Minn. The object of the invention is to provide a device inexpensive to manufacture, which will cause the to-bacco in the pipe to burn slowly and evenly in the wind, and which will obviate the danger of burning ashes being blown back into the face of the smoker.

ATTACHMENT FOR ANIMAL-TRAPS.-M. GRAVATT, Port Royal, Va. This invention has reference to attachments for use in animal traps, and more particularly such as are adapted to be used as securing means for holding saplings or the like, to which traps have been attached, in bent positions until released by the struggles of the animals caught in the traps.

COMBINED RACK AND HOLDER.-O. M. HARDING, Winona, Miss. The purpose here is to provide a construction which affords a compact, neat filing cabinet which is portable, that may be placed upon a desk or table for convenient service, which affords separate receptacles for letters, stationery materials and other desk furniture, and provides separate supports for rubber stamps that may be a part of the desk equipment.

SIGN .- J. IGELSTROEM, Massillon, Ohio. The sign is of pyramidal form and adapted to be supported upon the counter or in the show window of a store, or suspended from a chandelier or other fixture, the object being to produce a sign that may be shipped or transported flat and occupy the minimum space, but which may be readily folded to present advertising matter to persons viewing the sign from any direction.

GUN-SIGHT.—G. M. WANEE, Red Bluff, Cal. The invention relates more particularly to covered or tubular sights. An object is to provide a sight which will not only permit the operator to see the entire object at which he is shooting, but will also permit him to take a fine sight of any special part thereof. It can be readily taken apart for cleaning or reversing of the partition.

Prime Movers and Their Accessories.

PACKING - RING EXPANDER. — W. H. RICHARDSON, Brunswick, Ga. This practical device will afford convenient and easily operrated means, that may be readily engaged with a split resilient packing ring, and by adjustment thereof quickly and evenly expand the engaged ring, so that it may be slipped upon the periphery of a piston, and when in place be released for its sliding introduction into the channel it is to be seated in.

Railways and Their Accessories.

RAILROAD - CROSSING. — G. P. KEITH, Rochester, Ind. The crossing can be quickly and conveniently adapted for use in connection with an adjacent railroad crossing, without one interfering with the other, since the rails of one crossing are elevated above the rails of the other, an opening of sufficient width being provided in the upper track to enable trains to pass upon the lower track.

Pertaining to Vehicles.

SPEED-RECORDER.-G. A. LEE. New York. This recorder is more especially designed for use on automobiles and other vehicles, and is arranged to graphically produce and display to the occupant of the vehicle, the speed at the time, and to form a permanent record of the speed of the vehicle while the latter is running, the record showing the time, mileage, and speed per hour.

BOLSTER AND STANDARD FOR WAGONS. -C. M. SHOTWELL, Fossil, Wyo. The invention is an improvement in bolsters, and the object is to provide adjustable standards which

may be arranged to fit different widths of beds or of articles carried on the bolster or which may be inclined with respect to the bolster for supporting hopper shaped beds and the like.

TIRE-PROTECTOR. — G. C. HOSKIN, Le Mars, Iowa. An object in this invention is to provide a flexible tire protector constructed to obviate any danger of the tires becoming punctured by sharp stones, nails, glass, or the like, Further, to provide a protector that eliminates all danger of skidding on slippery roads or pavements, and which increases the tractive efficiency of the driving wheels.

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



me sending a sketch and description may rescertain our opinion free whether an ion is probably patentable. Communicaticity confidential. HANDROIK on Patents ee. Oldest agency for securing patents. Into taken through Munn & Co. receive notice, without charge, in the

illustrated weekly. Largest dir-y scientific journal. Terms, \$8 a oths, \$1. Sold by all newsdealers. MUNN & CO. 36 1 Broadway, New York Branch Office, 456 F St., Washington, D. C.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending February 23, 1909,

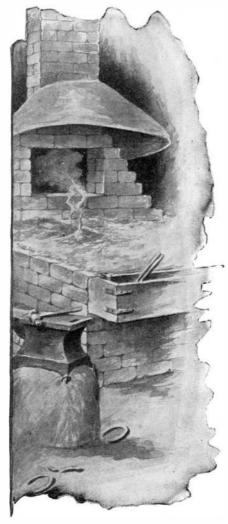
AND EACH BEARING THAT DATE

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

Acid converting catechin into a catechu		-
tannic, Osborne & Schupp	913,426	۵.
Advertising device, J. W. Phelps	913,048	Cı
Air conduit, hot, W. W. Hapold	913.284	Cı
Air, gas, etc., device for drying, O. Tou-		Cı
zimsky	913,325	Ct
Amusement device. I Kirslfv	913,511	Ct
Anchor, T. Downie	913,367	Cı Cı
Anchor, ship's, Hingley & Fletcher	913,292	Ci
Ankle support and protector H. J. Collis	913,042	Cı Çı
Antislipping device, C. J. Marius	913,411	Çι
Armature coils, device for use in making,	010 100	C1
J. F. Card	913,103	0,
Attaching and releasing device, D. B. Rus-	010,120	C
sell	913,673	Cz
W. M. Railey	913.250	C2 C2
Automobile rear axle transmission mechan-		D
ism, M. L. Williams	913,084	D
Automobile wheel, E. S. Lea	913,522	Di
Awning operating device, W. Nehring	913,424	D
Bag holding appliance, W F. Twombly	913,586	Di
Rasin and tran. catch. J. R. Williams	913.338	D
Bath or basin waste, H. M. Weaver	913,077	_
Acid, converting catechin into a catechu tannic, Osborne & Schupp	912,990	Do
fving dry cell. H. R. Ramev	913,563	Do
Bearing, antifriction, G. Matta	913,529	Do
Beet blocker, C. Canutson	912,987	Do
Relt firemen's T E Smith	913,380	Ď
Binder, loose leaf, A. B. Underwood	913,073	Do
Binder, loose leaf, C. H. Mann	913,527	Do
Blast apparatus, E. L. Thompson	913,322	D
Boat propeller, E. Daniel	913,624	D
Boiler check valve clean-out, J. R. Martin.	913,023	Di
Boller compound, H. R. Young	913,606	Dı
Boilers, apparatus for producing circulation	310,000	D
in steam, V. Andrioli	913,347	D
Bolt blank threading and turning machine,	913.520	D
Bolt extractor, G. D. Morrison	913,226	D
Boring, turning, and facing machine, E. B.	012 212	D Ei
Bottle cauping machine, Adriance & Calleson	913,182	
Sellew Bottle capping machine, Adriance & Calleson Bottle draining and box cleaning device, combined, Noethig & Bourgo. Bowl, flush, B. G. Butler. Bowl, separator, G. Butler. Box, R. A. Robbins. Box cover press, H. Vial. Box lid holder, T. F. Manley. Brace. See Post brace. Brass polishing device, C. E. Merrill. Breast drill, Smith & McGregor. Bridle winker strap, T. J. Steen Brush making machine, J. E. Snevely. Brush, Coth, C. L. Alexander. Brush tooth, C. L. Alexander. Brush trimming and cleaning machine, H. D. J. Lebherz. A. W. Lori.	010 544	El El
Rowl flush R C Rutler	913,044	E
Bowl, separator, G. Webster	913,079	E
Box, R. A. Robbins	913,054	E
Box lid holder. T. F. Manley	913.021	
Brace. See Post brace.	010 414	E
Brass polishing device, C. E. Merrill	913,414	E
Bridle winker strap, T. J. Steen	913,577	E
Brush, C. Petersen	913,304	E
Brush making machine, J. E. Shevely	913,314	E
Brush trimming and cleaning machine, H.	010,101	E
J. Lebherz	913,523	E
Bucket, milliow, A. W. Hart	913,319	E
Bucket, wheelbarrow hoisting, A. Smith	913,241	E
Buckle, N. Koster	913,645	El
Brush trimming and cleaning machine, H. J. Lebherz. Bucket, minnow, A. W. Hart. Bucket, scoop gaging, G. L. Stuebner. Bucket, wheelbarrow hoisting, A. Smith Buckie, N. Koster. Bull rings, manufacturing, C. P. Showell. Bung, W. H. Gerald. Buoy, ring, H. F. Busch. Burglar alarm, C. G. Munsell. Burner vaporizer, C. Helnrichsdorff. Cable conveyer hoist, B. C. Riblet. Cable terminal, F. B. Cook. Calculating appliance, G. W. Evans-Cross. Cam closing machine blank feed mechanism,	913,637	El
Buoy, ring, H. F. Busch	913,617	
Burgiar alarm, C. G. Munsell	913,669	E
Cable conveyer hoist. B. C. Riblet	913,288	Eı
Cable terminal, F. B. Cook	913,264	E
Calculating appliance, G. W. Evans-Cross	913,483	Εı
Can closing machine blank feed mechanism,	910,000	E
O. Dempewolf		1
	913,628	73.
Smith	913,628	E
Smith Can stoppers, implement for applying and	913,628 913,065	Eı
Smith Can stoppers, implement for applying and removing. F. Westerbeck	913,628	E: E: E:
Smith Can stoppers, implement for applying and removing. F. Westerbeck	913,628 913,065 913,336 913,656	E: E: E:
Smith Can stoppers, implement for applying and removing, F. Westerbeck	913,628 913,065 913,336	
Smith Can stoppers, implement for applying and removing, F. Westerbeck	913,628 913,065 913,336 913,656 913,371 913,143	E
Smith Can stoppers, implement for applying and removing, F. Westerbeck	913,628 913,065 913,336 913,656 913,371 913,143 913,142	
Smith Can stoppers, implement for applying and removing, F. Westerbeck Capsules with liquefied gas, appliance for charging, P. Giron Car axle box lid, H. C. Gamage Liven Car bolster reinforcing construction, F. L. Irwin Car construction box, Irwin & Tesseyman Car coupling, J. Kelso Car coupling, McConway & Kelso913,229,	913,628 913,065 913,336 913,656 913,371 913,143 913,142 913,213 913,230	
Smith Can stoppers, implement for applying and removing, F. Westerbeck Capsules with liquefied gas, appliance for charging, P. Giron Car axle box lid, H. C. Gamage Liven Car bolster reinforcing construction, F. L. Irwin Car construction box, Irwin & Tesseyman Car coupling, J. Kelso Car coupling, McConway & Kelso913,229,	913,628 913,065 913,336 913,656 913,371 913,143 913,142 913,213 913,230	
Smith Can stoppers, implement for applying and removing, F. Westerbeck Capsules with liquefied gas, appliance for charging, P. Giron Car axle box lid, H. C. Gamage Car bolster reinforcing construction, F. L. Irwin Car construction box, Irwin & Tesseyman Car coupling, J. Kelso Car coupling, McConway & Kelso913,229, Car, dump, A. Campbell913,357, Car rack W. B. McCarthy	913,628 913,065 913,336 913,656 913,371 913,143 913,213 913,230 913,258 913,228	
Smith Can stoppers, implement for applying and removing, F. Westerbeck Capsules with liquefied gas, appliance for charging, P. Giron Car axle box lid, H. C. Gamage Car bolster reinforcing construction, F. L. Irwin Car construction box, Irwin & Tesseyman Car coupling, J. Kelso Car coupling, McConway & Kelso913,229, Car, dump, A. Campbell913,357, Car rack W. B. McCarthy	913,628 913,065 913,336 913,656 913,371 913,143 913,213 913,230 913,258 913,228	
Smith Can stoppers, implement for applying and removing, F. Westerbeck Capsules with liquefied gas, appliance for charging, P. Giron Car axle box lid, H. C. Gamage Liven Car bolster reinforcing construction, F. L. Irwin Car construction box, Irwin & Tesseyman Car coupling, J. Kelso Car coupling, McConway & Kelso913,229,	913,628 913,065 913,336 913,656 913,371 913,143 913,213 913,230 913,258 913,228	

Cars and other venicles, pedar guard for	Donos stratakon ala	
Carbid manufacture of silicon F J Tone 013 394	Fence stretcher clamp, woven wire, W. Hopper	913,385
Cars and other vehicles, pedal guard for motor, A. J. Last. 913,406 Carbid, manufacture of silicon, F. J. Tone. 913,324 Carbureter, W. Eckert. 912,998, 912,999 Carbureter, Bertrand & Goubillon 913,456	Fence stretcher, wire, W. HopperFerrule, plumber's, J. R. Donnelly File, paper, C. Spiro. Films device for receiving poorly	913,384 913,366 913 316
Slaughter, Jr. 913,313 Card, sample, Cohen & Waish 913,282 Carline reinforcing construction, F. L. Irwin 913,141 Carpet and linoleum stretcher, Nordgren &	C. R. Uebelmesser. Fire alarm, automatic, O. B. Johnson. Fire escape, K. G. Feyma.	913,146 913,117
Carpet and linoleum stretcher, Nordgren & Jones	herd Noten & Shep-	
	Fireproof building construction, C. Collins, reissue	12,922
Carriage, baby, C. F. Thayer. 912,071 Carriage body, J. C. Moon. 913,534 Carriage body, S. A. Moore. 913,537 Carriage, collapsible or folding, R. Fleisch 912,072	Fireproof covering, A. O. Brigance. Fireproof partition, W. Orr. Fish artificial bait, B. F. Burke. Fishing hook, gang, S. R. Sutton. Flaking machine, E. M. Lawrence. Filer, F. H. Martin. Floor, P. Langauth	913,464 913,152
шаш 918.481	Fishing hook, gang, S. R. Sutton	913,102 913,440 913,018
Carriage, folding, A. J. Adams	Flier, F. H. Martin. Floor, P. Langguth.	913,646 913,519
Cash register, indicator, and recorder, J. F.	Flue cleaner, E. B. Barnhill	913,675
Parker	Froit or leg attachment for use in swim- ning, C. W. Hill. Form, dress, C. A. Ufford. Fruit stoning machine, J. H. Smith.	913,382
Cereal products, reducing disk machine for the manufacture of, H. D. Perky 913,671	Form, dress, C. A. Ufford	913,329 913,571
Chain, drive, W. M. Butler. 913,618 Chair, J. J. Sherman, Jr. 913,062 Chair and stand, combined drying, L.	Frying device, J. Renner	
Schreiber		
Check-marking apparatus, Marston & Cum-	B. W. Head	913,507
mings 913,299	Gage, multiple, G. O. Hammer	913,641
Churn, W. J. Snow	Garbage receptacle, P. W. Nicola. Gas burner, J. Du Ross. Gas burner baffle, J. Schirra. Gas element electrode, E. W. Jungner. Gas captage J. F. Dettersen.	913,477
Circuit controller, S. Holland	Gas element electrode, E. W. Jungner Gas engine, J. E. Patterson	913,390 913,156
	Gas engine, rotary, J. E. Friend	913,635
Clothes line prop and tightener, O. R. Olson. 913,548 Clothes rack, A. D. Daniel. 913,106 Clutch, P. A. Geary. 913,279 Clutch, Freeman & Neuteboom. 913,370	Gas producer, J. A. Waldburger. Gases into liquids, apparatus for introduc- ing, S. P. A. Wenstrom. Gaseous fluid under pressure, device for de- livering, C. A. Claffin. Gate, W. A. Ford. Gate, W. P. Sowers. Gate, W. P. Sowers. Gate stop, water, G. E. Kellar. Gear, reversing, A. N. Woods. Gear, transmission, Howald & McGeorge. Gear, variable speed, G. J. Dallison.	913,596
Clutch, Freeman & Neuteboom	Gaseous find under pressure, device for de- livering, C. A. Claffin	913,260
tort for the distillation of, T. Parker 913,552	Gate, P. H. Wilson	913,120
Coal tipple, J. S. Pates. 913,505 Cock, angle, Heiniger & Vallance 913,287 Coffee mill, W. W. Dryden 913,475 Coin controlled mechanism, J. C. Fredell 913,278 Coin controlled mechanism, J. C. Fredell 913,278 From Fig. 20	Gate, H. K. Tabler	913,581
Coin controlled mechanism, J. C. Fredell 913,278 Coin repository, B. vom Eigen913,629, 913,630	Gear, reversing, A. N. Woods	913,445
Coln repository, B. vom Eigen913,629, 913,630 Collar supporter, J. W. Schloss	Gear, variable speed, G. J. Dallison Gearing, R. Milne	913,623 913,417
Composite pipe, J. T. Langford	Gearing, R. Milne	913,652 913,190
Composition of matter, R. Rumbel 913,565 Concrete block molding mold, A. Evenstad 913,116 Concrete construction, reinforced, E. F. Wil-	Glass-blowing apparatus, A. J. Bates Graphophone attachment, H. C. Kelly. Grate, J. S. Wood. Greenhouse construction, E. F. Kurowski Grinding mechine, H. B. Nichols.	913,508 913,341
concrete or other prastic material, appa-	Greenhouse construction, E. F. Kurowski Grinding machine, H. B. Nichols Gun_action slide lock, take down, F. D.	913.217 913,543
ratus for use in building structures of, D. Morgan	Peltier	913,047
D. Morgan 913,538 Concrete wall construction mold, G. Taubert 913,441 Concrete work, reinforcing bar for, E. C. Woodward	Peltier Gun, barrel recoil, Koch & Hayn Gun turret alarm device, J. L. Hall	913,493
Woodward	Hair cutting device, A. Lancellotte	913,061
Cone shaper, edible, L. L. Westling	Harrow, F. Germon	913.639 913.256
Cone shaper, edible, L. L. Westling. 913,597 Cooking utensil, R. M. Austin. 913,450 Coop, poultry, H. W. Burgett. 913,101 Core making apparatus, J. R. Davies. 913,270 Cork compound and making same, J. J. C.	Harrow, F. Germon. Harrow, cultivating, J. Bradford. Harvester, C. M. McCormick	913,422 913,067
	Hat pin, ornamental safety, S. J. Jacobsen. Heater, E. B. Raymond	913,643 913,672
Corn husking apparatus, W. B. Havens 913,130 Corset, apparel, D. Kops 913,404	Hoor	913.068
Cotton channer, T. H. Ellis	Heating apparatus, electric, F. Conrad Heating device, electric, C. Aalborg	912,994 912,985
Cotton chopper, J. W. Garrett.913,373Cotton chopper, D. H. Callahan.913,468Cotton chopper, Hogan & Knetsch.913,659	Heating system, hot water, A. E. Crow- hurst	913,364
Counter measure, computing, F. I. Goodenow 913.124 Cow milker, F. M. Devore	McKeown '	913,033
plane, mechanism for raising, Heym &	Hog waterer, automatic, C. Pelmulder Hoisting apparatus, F. W. Lovell. Horse feeding device, E. M. Rand. Hose coupling, C. H. Chapman	913.020 913.305
Crosm concretor W. C. Hentmann 012 006	Hose coupling, detachable. Beraud & Achee.	943.351
Cream separator, W. C. Hardmann. 913,398 Creasing machine, J. F. Cleary. 913,361 Crop handling machine, J. B. Schuman. 913,438 Cultivator, E. Biss. 913,461 Current indicator, electric, F. N. Conant. 913,105 Current apparatus, undulating, F. Cedergen. 913,104 Curtein packbode bolder.	Hose supporter, F. F. Knothe	913,294 913,478
Crop handling machine, J. B. Schuman 913,438 Cultivator, E. Biss 913,461	Index guide, etc., J. H. Kand	913,162
Current indicator, electric, F. N. Conant 913,105 Current apparatus, undulating, F. Cedergen. 913,104	Insulator, disk, L. Steinberger	913.205
Curtain and shade holder, window, A. Logsdon 913,019 don 913,019 Curtain pole, F. Wukmanic 913,344 Cuttery, A. Grah 913,207 Cutter and shredder, J. J. Farquer 913,485 Cycle ammonia power or refrigerating apparating app	Insulator mold, C. C. Johnson	913,212
Cuttery A. Grah 913,207	Iodin compounds of fats, manufacture of	913,070
Cycle ammonia power or refrigerating apparatus, continuous, J. Robson	tron, extracting, C. G. P. de Laval Iron or steel, solution for treatment of, A.	913,405
	Hayes	$913.657 \\ 913.296$
R. Walker	Hayes Ironing press, F. Krapp Jack, wire stretcher, and post puller, lifting, L. T. & T. H. Goolsby Jar closure, J. L. Kivlan Journal box, railway, E. G. Caughey Journal box waste supporting attachment, R. A. Billingham	913,281
Densimeter, A. Muntzing	Jar closure, J. L. Kivlan	913,214
Detinning, Fernberger & Murray		913,300
Distance finder, J. G. R. Lilliendahl 913,526	Journal box waste supporting attachment, R. A. Billingham	913,458
Distributer, W. H. Sanders 913,169	Journal box waste supporting attachment, R. A. Billingham Jury and jury frame for facilitating ortho- pedic treatment, G. W. Haas	913,458 913,127
Distributer, W. H. Sanders. 913,169 Door, L. C. Dalhousie. 913,269 Door closing and checking device, A. H.	Jury and jury frame for facilitating ortho- pedic treatment, G. W. Haas Knife handle, Putnam & Livingston Lace fastener, W. H. Schweitzer	913,127 913,161 913,568
State Stat	Jury and jury frame for facilitating ortho- pedic treatment, G. W. Haas Knife handle, Putnam & Livingston Lace fastener, W. H. Schweitzer Ladders, steps, trestles, etc., adjustable foot for. G. Bartlett	913,127 913,161 913,568 913,452
Distributer, W. H. Sanders. 913,169	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas	913,127 913,161 913,568 913,452 913,209 913,173
Door hanger, J. W. McQueen. 913,150 Door hanger, G. Lane. 913,261 Door hanger, sliding, W. W. Clark. 913,261 Door hanger, sliding, A. Jenson. 913,660 Door, etc., latch and lock, F. G. Marbach. 913,409	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas	913,127 913,161 913,568 913,452 913,209 913,173
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff. Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz.	913,127 913,161 913,568 913,452 913,209 913,173 913,016 913,308 913,088 913,584 913,18
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston Lace fastener, W. H. Schweitzer Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings Lamp, incandescent gas, H. E. Woods Lamp, socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner	913,127 913,161 913,568 913,452 913,209 913,173 913,016 913,308 913,088 913,584 913,518
Door hanger, J. W. McQueen. 913,150 Door hanger, G. Lane 913,518 Door hanger, Siding, W. W. Clark 913,261 Door hanger, sliding, W. W. Clark 913,261 Door hanger, sliding, A. Jenson. 913,409 Door, etc., latch and lock, F. G. Marbach 913,409 Door securer, W. Minderlein. 913,223 Doors, gates etc., engaging mechanism for, F. G. Marbach 913,410 Dough mixing and kneading machine, G. J. Hicks 913,133 Drain tile trimmer, A. Connor. 913,620	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston	913,127 913,161 913,568 913,452 913,209 913,173 913,016 913,308 913,584 913,18 913,594 913,365 913,490
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston Lace fastener, W. H. Schweitzer Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings Lamp, incandescent gas, H. E. Woods Lamp, incandescent gas, H. E. Woods Last, A. G. Fitz Lathe driving center, B. Wehner Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble Line setting and casting machine, H. Degener Linotype and other type casting machine.	913,127 913,161 913,568 913,452 913,209 913,173 913,088 913,088 913,184 913,118 913,594 913,694 913,627
Door hanger, J. W. McQueen. 913,150	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson. Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff. Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lewer mechanism, J. F. S. Goble. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehleisen. Load lifting and releasing device, M. C. Myers	913,127 913,161 913,568 913,452 913,209 913,173 913,016 913,308 913,584 913,18 913,584 913,365 913,594 913,627 913,627
Door hanger, J. W. McQueen. 913,150	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson. Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff. Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lewer mechanism, J. F. S. Goble. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehleisen. Load lifting and releasing device, M. C. Myers	913,127 913,161 913,568 913,452 913,209 913,173 913,016 913,308 913,584 913,18 913,584 913,365 913,594 913,627 913,627
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locom filling-detecting mechanism, R. Bur-	913,127 913,161 913,568 913,452 913,209 913,173 913,088 913,088 913,584 913,18 913,584 913,562 913,490 913,627 913,447 913,540 913,459 913,540 913,540 913,560 913,391
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings Lamp, incandescent gas, H. E. Woods Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line settling and casting machine, H. Degener Linotype and other type casting machine, H. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess	913,127 913,161 913,568 913,452 913,209 913,173 913,016 913,088 913.584 913.584 913.365 913,560 913,627 913,447 913,459 913,560 913,560
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fritz Lathe driving center, B. Wehner. Lewer mechanism, J. F. S. Goble. Lever mechanism, J. F. S. Goble. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehleisen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom pick finder mechanism, B. F. Mc-	913,127 913,161 913,568 913,452 913,209 913,173 913,016 913,308 913,584 913,584 913,584 913,594 913,462 913,462 913,470 913,470 913,459 913,490 913,459 913,490
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lewer mechanism, J. F. S. Goble. Lever mechanism, J. F. S. Goble. Line settling and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehleisen. Load lifting and releasing device, M. C. Myers Lock, V. Billy Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell Loom filling-detecting mechanism, R. Burgess Loom pick finder mechanism, B. F. McGuiness Loom selvage motion, J. Belavance Loom selvage motion, J. Belavance	913,127 913,161 913,568 913,452 913,173 913,173 913,173 913,088 913,584 913,584 913,584 913,594 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,365
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehleisen. Lodd lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom setvage motion, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail handling annarsus, D. E. Compilin.	913,127 913,161 913,568 913,452 913,209 913,173 913,088 913,088 913,584 913,594 913,185 913,490 913,457 913,457 913,457 913,457 913,457 913,457 913,457 913,457 913,457 913,196
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line settling and casting machine, Albrecht & Muehleisen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom pick finder mechanism, B. F. Mc Guiness Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Mail pouch handling apparatus, W. A.	913,127 913,161 913,568 913,209 913,173 913,173 913,173 913,088 913,584 913,594 913,185 913,490 913,490 913,457 913,457 913,560 913,491 913,667 913,967 913,095 913,095 913,095 913,095 913,114 912,996 913,471
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Billy Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom, pick finder mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Halnes.	913,127 913,161 913,568 913,209 913,173 913,173 913,088 913,088 913,594 913,185 913,490 913,627 913,459 913,459 913,459 913,540 913,391 913,667 913,391 913,667 913,391 913,667 913,391
Door hanger, J. W. McCueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lewen mechanism, J. F. S. Goble. Lever mechanism, J. F. S. Goble. Line settling and casting machine, H. Degener Linotype and other type casting machine, H. Degener Linotype and other type casting machine, Muchelssen. Load lifting and releasing device, M. C. Myers Lock, V. Billy Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell Loom filling-detecting mechanism, R. Burgess Loom pick finder mechanism, P. Mactourey Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin Mail handling apparatus, D. E. Coughlin Mail handling apparatus, W. A. Loomis March seff, M. R. Keller Match seff, M. R. Keller Match seff, M. R. Keller	913,127 913,161 913,568 913,452 913,173 913,173 913,173 913,088 913,584 913,584 913,594 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,471
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lewen mechanism, J. F. S. Goble. Lever mechanism, J. F. S. Goble. Line settling and casting machine, H. Degener Linotype and other type casting machine, H. Degener Linotype and other type casting machine, Muchelssen. Load lifting and releasing device, M. C. Myers Lock, V. Billy Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell Loom filling-detecting mechanism, R. Burgess Loom pick finder mechanism, P. Mactourey Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin Mail handling apparatus, D. E. Coughlin Mail handling apparatus, W. A. Loomis March seff, M. R. Keller Match seff, M. R. Keller Match seff, M. R. Keller	913,127 913,161 913,568 913,452 913,173 913,173 913,173 913,088 913,584 913,584 913,594 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,459 913,471
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson. Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff. Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, H. Degener Linotype and other type casting machine, M. G. Myers Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom pick finder mechanism, B. F. Mc Guiness Loom selvage motion, J. Belavance Loom suttle mechanism, D. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Haines. Match serving box, J. Hercann Measuring last tape, G. E. Belcher Measuring last tape, G. E. Belcher Meachsnie's case. W. F. Shrum	913,127 913,161 913,562 913,209 913,173 913,173 913,088 913,088 913,594 913,189 913,185 913,490 913,452 913,454 913,453 913,454 913,453 913,196 913,391 913,196 913,391 913,196 913,391 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom fliling-detecting mechanism, R. Burgess Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marsker, land, H. N. Randall Massage apparatus, M. A. Haines. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher. Measuring roll, non-recount fabric, W. W. Birneick Mechanica movement, J. D. A. Johnson Medchanica movement, J. D. A. Johnson	913,127 913,161 913,563 913,452 913,209 913,173 913,088 913,088 913,594 913,195 913,490 913,452 913,447 913,454 913,456 913,391 913,196 913,490 913,490 913,490 913,491 913,491 913,196 913,491
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, H. Degener Linotype and other type casting machine, Moreon to the following the follo	913,127 913,161 913,563 913,452 913,209 913,173 913,088 913,088 913,594 913,195 913,490 913,452 913,447 913,454 913,456 913,391 913,196 913,490 913,490 913,490 913,491 913,491 913,196 913,491
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehleisen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom fliling-detecting mechanism, R. Burgess Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail handling apparatus, D. E. Coughlin. Mail houlder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marsker, land, H. N. Randall Massage apparatus, M. A. Haines. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher. Measuring roll, non-recount fabric, W. W. Birneick Mechanica movement, J. D. A. Johnson Medchanica electrolytically, precipitating, A.	913,127 913,161 913,568 913,209 913,173 913,173 913,088 913,584 913,594 913,185 913,490 913,455 913,447 913,459 913,365 913,391 913,391 913,391 913,667 913,235 913,490 913,391 913,553 913,196 913,391 913,667 913,490 913,490 913,490 913,491
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Halnes. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher Metallorating roll, non-recount fabric, W. W. Birnelock Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krautschneider Metallic structure, P. M. Wege. Metallucgical process, G. Moore.	913,127 913,161 913,563 913,452 913,209 913,173 913,088 913,088 913,594 913,185 913,490 913,490 913,447 913,456 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,471 913,667 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,394 913,394 913,394 913,454
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Halnes. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher Metallorating roll, non-recount fabric, W. W. Birnelock Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krautschneider Metallic structure, P. M. Wege. Metallucgical process, G. Moore.	913,127 913,161 913,563 913,452 913,209 913,173 913,088 913,088 913,594 913,185 913,490 913,490 913,447 913,456 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,471 913,667 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,394 913,394 913,394 913,454
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Halnes. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher Metallorating roll, non-recount fabric, W. W. Birnelock Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krautschneider Metallic structure, P. M. Wege. Metallucgical process, G. Moore.	913,127 913,161 913,563 913,452 913,209 913,173 913,088 913,088 913,594 913,185 913,490 913,490 913,447 913,456 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,471 913,667 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,394 913,394 913,394 913,454
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Halnes. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher Metallorating roll, non-recount fabric, W. W. Birnelock Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krautschneider Metallic structure, P. M. Wege. Metallucgical process, G. Moore.	913,127 913,161 913,563 913,452 913,209 913,173 913,088 913,088 913,594 913,185 913,490 913,490 913,447 913,456 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,471 913,667 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,394 913,394 913,394 913,454
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric arc, W. R. Ridings. Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Halnes. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher Metallorating roll, non-recount fabric, W. W. Birnelock Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krautschneider Metallic structure, P. M. Wege. Metallucgical process, G. Moore.	913,127 913,161 913,563 913,452 913,209 913,173 913,088 913,088 913,594 913,185 913,490 913,490 913,447 913,456 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,471 913,667 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,394 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,394 913,394 913,394 913,454
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom fliling-detecting mechanism, R. Burgess Loom pick finder mechanism, B. F. McGuiness Loom shuttle mechanism, P. Martourey Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marsker, land, H. N. Randall Massage apparatus, M. A. Haines. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher. Measuring last tape, G. E. Belcher. Measuring roll, non-recount fabric, W. W. Elinsiock Mechanical movement, J. D. A. Johnson Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krauschneider Metal bars by twisting, machine for cutting, H. H. Jensen Metallic structure, P. M. Wege. Metallic supparatus, S. Griffith Molding apparatus, S. Griffith Molding apparatus, S. Griffith Molding apparatus, S. Griffith Molding apparatus,	913,127 913,161 913,568 913,209 913,173 913,173 913,173 913,173 913,173 913,184 913,594 913,185 913,490 913,459 913,459 913,459 913,391 913,196 913,391 913,667 913,391 913,114 913,235 913,417 913,665 913,391 913,196 913,391 913,417 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,454 913,555 913,414 913,414 913,414 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,515 913,414 913,515 913,414 913,515 913,414 913,515 913,515 913,414 913,515 913,515 913,416 913,515 913,515 913,416 913,515 913
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, incandescent gas, H. E. Woods. Lamp socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon sliee squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom filling-detecting mechanism, R. Burgess Loom selvage motion, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Halnes. Match safe, M. B. Keller Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher Measuring roll, non-recount fabric, W. W. Hirnslock Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krautschneider Metal bars by twisting, machine for cutting, H. H. Jensen Metalic structure, P. M. Wege. Metallurgical process, G. Moore. Milk cooler, W. Mitcham Milk, Pasteurizing, J. Willmann Mine, submarine, K. Klauber. Molding apparatus, S. Griffith Molding apparatus, S. Griffith Molding machine, J. T. Brern, second. Mop and brush fabric making machine, L. Stocker Motor system control, E. Gruenfeldt.	913,127 913,161 913,565 913,209 913,173 913,173 913,173 913,173 913,184 913,184 913,594 913,185 913,490 913,459 913,459 913,459 913,301 913,301 913,301 913,301 913,301 913,301 913,301 913,459 913,301 913,471 913,665 913,471 913,454 913,134 913,135
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom fliling-detecting mechanism, R. Burgess Loom pick finder mechanism, B. F. McGuiness Loom shuttle mechanism, P. Martourey Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Haines. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher. Measuring last tape, G. E. Belcher. Measuring roll, non-recount fabric, W. W. Elinsiock Mechanical movement, J. D. A. Johnson Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krauschneider Metal bars by twisting, machine for cutting, H. H. Jensen Metallic structure, P. M. Wege. Metallic submarine, M. C. Leon. Milk, Pasteurizing, J. T. Brers, second. Mood J. L. Sackett Molding apparatus, S. Griffith Molding apparatus, S. Griffith Molding apparatus, S. Griffi	913,127 913,161 913,562 913,209 913,173 913,163 913,173 913,173 913,173 913,178 913,594 913,394 913,3627 913,454 913,459 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,191 913,192 913,394 913,135 913,418 913,196 913,196 913,196 913,196 913,196 913,197 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehlelsen. Load lifting and releasing device, M. C. Myers Lock, V. Bily Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom fliling-detecting mechanism, R. Burgess Loom pick finder mechanism, B. F. McGuiness Loom shuttle mechanism, P. Martourey Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marker, land, H. N. Randall Massage apparatus, M. A. Haines. Match safe, M. B. Keller Match serving box, J. Herr.ann Measuring last tape, G. E. Belcher. Measuring last tape, G. E. Belcher. Measuring roll, non-recount fabric, W. W. Elinsiock Mechanical movement, J. D. A. Johnson Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krauschneider Metal bars by twisting, machine for cutting, H. H. Jensen Metallic structure, P. M. Wege. Metallic submarine, M. C. Leon. Milk, Pasteurizing, J. T. Brers, second. Mood J. L. Sackett Molding apparatus, S. Griffith Molding apparatus, S. Griffith Molding apparatus, S. Griffi	913,127 913,161 913,562 913,209 913,173 913,163 913,173 913,173 913,173 913,178 913,594 913,394 913,3627 913,454 913,459 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,191 913,192 913,394 913,135 913,418 913,196 913,196 913,196 913,196 913,196 913,197 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198 913,198
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehleisen. Load lifting and releasing device, M. C. Myers Lock, V. Billy Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom fliling-detecting mechanism, R. Burgess Loom selvage motion, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marsker, land, H. N. Randall Massage apparatus, M. A. Haines. Match safe, M. B. Keller Match serving box, J. Hernann Measuring last tape, G. E. Belcher. Measuring roll, non-recount fabric, W. W. Brinelock Mechanical movement, J. D. A. Johnson Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krautschneider Metal bars by twisting, machine for cutting, H. H. Jensen Metalls electrolytically, precipitating, A. Ramen Metallic structure, P. M. Wege. Metallurgical process, G. Moore. Milk cooler, W. Mitcham Milk, Pasteurizing, J. T. Brent, second. Mop and brush fabric making machine, L. Stocker Motor system control, E. Gruenfeldt. Motors, operating alternating current, R. D. Morshon Mover, lawn, A. L. Le Vine. Needle, C. V. Reeder Nut, lock, C. H. Stall. Nut lock, S. H. Coleman	913,127 913,161 913,562 913,209 913,173 913,161 913,363 913,173 913,173 913,173 913,194 913,490 913,452 913,454 913,459 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,191 913,191 913,192 913,391 913,193 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194
Door hanger, J. W. McQueen	Jury and jury frame for facilitating orthopedic treatment, G. W. Haas. Knife handle, Putnam & Livingston. Lace fastener, W. H. Schweitzer. Ladders, steps, trestles, etc., adjustable foot for, G. Bartlett Lamp, arc, C. A. B. Halvorson, Jr. Lamp burner, R. A. Sommerville Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, electric, I. Ladoff Lamp, socket keys, cam for, G. B. Thomas. Last, A. G. Fitz Lathe driving center, B. Wehner. Lemon slice squeezing device, C. Doll. Lever mechanism, J. F. S. Goble. Line setting and casting machine, H. Degener Linotype and other type casting machine, Albrecht & Muehleisen. Load lifting and releasing device, M. C. Myers Lock, V. Billy Lock pin, V. V. Pittman Locomotive pilot, Justis & Littrell. Loom fliling-detecting mechanism, R. Burgess Loom selvage motion, J. Belavance. Loom shuttle mechanism, P. Martourey. Lubricator, W. E. Parr Mail chute, L. Ehrlich Mail handling apparatus, D. E. Coughlin. Mail holder, M. Cooper Mail pouch handling apparatus, W. A. Loomis Marsker, land, H. N. Randall Massage apparatus, M. A. Haines. Match safe, M. B. Keller Match serving box, J. Hernann Measuring last tape, G. E. Belcher. Measuring roll, non-recount fabric, W. W. Brinelock Mechanical movement, J. D. A. Johnson Mechanic's case, W. F. Shrum Medical apparatus for injecting purposes, K. Krautschneider Metal bars by twisting, machine for cutting, H. H. Jensen Metalls electrolytically, precipitating, A. Ramen Metallic structure, P. M. Wege. Metallurgical process, G. Moore. Milk cooler, W. Mitcham Milk, Pasteurizing, J. T. Brent, second. Mop and brush fabric making machine, L. Stocker Motor system control, E. Gruenfeldt. Motors, operating alternating current, R. D. Morshon Mover, lawn, A. L. Le Vine. Needle, C. V. Reeder Nut, lock, C. H. Stall. Nut lock, S. H. Coleman	913,127 913,161 913,562 913,209 913,173 913,161 913,363 913,173 913,173 913,173 913,194 913,490 913,452 913,454 913,459 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,391 913,196 913,191 913,191 913,192 913,391 913,193 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194 913,194

Four-fifths of a Blacksmith's Troubles



come from a faulty fire. How does **your** fire burn? Is it sometimes hot and sometimes not? Does it come up very fast and then lose its heat? Is the red flame edged with blue? Is the coke formed dark-colored and crumbling? Do you have trouble making good solid welds? Then—

You're Using the Wrong Coal

Try these simple tests on the coal you are now using:

- 1—Take several pieces the size of your fist and crack them open. If little white scales or brown deposits appear between the layers, they are sulphur. It is bad for any iron or steel, and absolutely prevents making good weld. Smithing Coal contains no such white scales or brown deposits, because it is practically free from sulphur.
- 2-Look at the coke formed around the edge of the fire. If it is not solid and of a clear gray color, the coal contains a large quantity of dirt. Webster Smithing Coal forms a clear gray coke, of even grain, which when burned over, makes a hot, steady fire.
- 3-A blue edge around the flame indicates a large amount of the injurious sulphur. Webster Smithing Coal being practically free from sulphur, makes a pure red and yellow flame.
- 4—Look closely at your coal-pile and see how many pieces of dull gray slate you can pick out, just from the surface of the pile. Slate is not coal. It will not burn itself, and it keeps even the coal with which it is mixed from burning freely. Webster Smithing Coal is not slate. It is pure Coal.
- 5—If your fire is hot in spots, or for a short time, and then "drops out"—the coal is low in heat efficiency—is not adapted to smithing. Webster Smithing Coal maintains a high, clear heat for a remarkably long time, because it is all pure heat-giving coal, specially selected and specially prepared for smithing.

It pays a blacksmith to use Webster Smithing Coal. Pays him in dollars saved on his coal bills. Pays by avoiding all those fire troubles and welding troubles which commonly spoil his work and ruffle his temper. Pays him in the quality and quickness of his work.

Webster Smithing Coal is mined in Cambria County, Pennsylvania, right in the heart of the region noted for high grade smithing coal. It is especially adapted for forge use, and its superiority for this purpose is easily shown by comparing it with any other coal. Webster Smithing Coal may be obtained from local coal dealers at points in the United States and Canada in bags, in bulk or car load lots. Write for prices and further particulars, and remember-

It pays every Blacksmith wherever located to use Webster Smithing Coal

PENNSYLVANIA COAL & COKE COMPANY

Boston, 141 Milk Street

T. H. WATKINS, Receiver Whitehall Building, New York

Philadelphia, Land Title Building

Nut lock, G. M. Holman 913,501
Oar lock, C. Bestman 913,450
Office and store furniture, fixtures, etc., fireproof covering for, L. Barg 913,091
Oil can for olistone boxes, C. B. Cex 913,298
Oil separator, A. E. Embree 913,000
Ordnance recoil check, L. M. Fuller 913,488
Ore, cement, mid general pulverizing mill,
A. Tregening 913,258
Ores, smelting, J. T. Carrick 913,655
Ores, smelting, J. T. Carrick 913,655
Orenting mechanism, C. H. Pope 913,061
Oven, cellapsible, W. E. Shan Hiltyn
Oven screen and mat, A. McNulty 913,148
Package binder, Miller & Painter 913,031
Package fastener, W. M. Cleaveland 913,469
Packing, shaft, R. Ljungstrøm 913,407
Paper board manufacturing apparatus, and tiply, H. C. Herr 913,007
Paper can, sanitary waste, M. K. Miller, 913,532
Paner making machine, J. W. Packer, 913,670
Paper making machine reel belt tightener, J. W. Packer 913,670
Parenaking mechanism, H. C. Herr 913,008
Pastnerizing apparatus, A. A. Pindstofte, 913,231
Paste applying mechanism, 11. C. Herr 913,008
Pastnerizing apparatus, A. A. Pindstofte, 913,252
Piano actuating mechanism, autopneumatics, R. H. Fischer 913,009
Percolator, J. R. Holley 913,233
Piano actuating mechanism, autopneumatics, R. H. Fischer 913,378
Piano stune sheet attachment, automatic, A. J. Hebart 913,378
Planos, means for preventing interference in assembling self-playing, E. C. Hiscock, 913,137 Plane tune sheet attachment, automatic, A.
J. Hebart 913,000
Planos, means for preventing interference in
assembling self-playing, E. C. Hiscock. 913,137
Picture hanger, F. Greene. 913,125
Picture machine reel, moving, C. R. Lebelmesser 913,328

can be used to operate 9 inch and 11 inc Star Screw Cutting Lathes. which are invaluable for light manufacturing purposes, or for the tool room, laboratory or school work. The superior merits of our Lathes are commended wherever they are used. Catalogue "IF" explains. **Engine and Foot Lathes** MACHINE SHOP OUTFITS, TOOLS AND SUPPLIES. BEST MATERIALS. BEST WORKMANSHIP. CATALOGUE FREE SEBASTIAN LATHE CO., 120 Culvert St., Cincinnati. O. Foot and Power and Turret Lathes, Plan-ers, Shapers, and Drill Presses. SHEPARD LATHE CO., 133 W. 2d St. Cincinnati, O. THE (LIPPER (LIP Its triangular shape prevents entangling and gives three times the capacity of any other Clip for attaching papers together. Best & Cheapest. All Stationers. CLIPPER MFG. CO., New York City Send 10c. for sample box of 100; or 20c. for clips and desk tray. WIRELESS TELEGRAPHY.—ITS PROgress and Present Condition are well discussed in SCIENTIFIC AMERICAN SUPPLEMENTS 14-25, 14-26, 14-27, 13-56, 13-58, 13-59, 13-53, 13-51, 13-27, 13-28, 14-31, Price 10 cents each, by mail. Munn & Co., 361 Broadway, New York City, and all newscealers. 0 Pipe Cutting and Threading Machine

Belt or Foot Power Sash lock, adjustable ventuacing,
& Booth
Sash lock, gravity. F. Bogenberger.
Sash weight, C. M. Couklin.
Saw, crosscut, E. J. Barnes.
Saw handle, F. L. Blomquist.
Saw leveling and stretching machine, N. L.
Botten Saw leveling and stretching machine, N. L.
Botten
Sawing device, J. Weber
Sawmill nigger, J. A. Gillard
Scale, G. W. Cope
Scale, automatic weighing, Linden & Rockwell Sled, J. D. Bohanan Sleigh, boh, R. Pintsch
Sele, shee, R. C. Ross
Sound box, G. Osten
Selent Select Selec
 Gardner
 913,372

 Spark plug, II, F. Parker
 913,045

 Spark plug, C. Bateholts
 913,453

 Spark plug, F. II. Weinhauer
 913,595

 Spindle appurtenance, I. E. Palmer
 913,034

 Spinning and twisting machine, retary ring,
 0. T. Atherten
 913,654
 C. T. Atherten. 913,654
Spinning apparatus, yarn, A. E. Rhoades. 913,164
Spinning apparatus, yarn, A. E. Rhoades. 913,164
Speeling or winding machine attachment, G.
A. Metcalf. 913,416
Spring. See Vehicle spring.
Stairway, fireproof, F. A. Winslew. 913,087
Stand, S. S. Eccleston. 913,110
Staple driver, K. G. Kafer. 913,014
Station indicator, T. R. Clark. 912,992
Steam engine, J. F. Chuse. 912,991
Steam generator, T. G. Aldrich. 913,249
Steam generator, F. N. Tilten. 913,442
Steam superheater, E. H. Fester. 913,277

Our Improved Method of

VISHING FLOORS



FLOOR CRACK FILLER AND FINISHES Sanitary, inexpensive and simple to apply.
A SAMPLE showing how (while they last), and descriptive matter FREE.
Write now

GRIPPIN MFG. CO.



Learn Automobile Engineering \$ 10

FREE ILLUSTRATED PAMPHLET—SEND FOR IT.

WE POSITIVELY OAN TEACH BY MAIL.

Our system includes Working Models as well is Lessons, Chart and Book.
Learn the Gasolene Engine and Magneto—For Auto ®wners, Launch ®wners, You will play with our working models like a boy with a toy and the more you play the clearer the subject is to year. A 1. INFAE was the first and supply man in America.

Dyke's Correspondence School of Motoring, 801 Bank Commerce Building, St. Louis, Mo.

GAS ENGINE DETAILS .- A VALUAble and fully illustrated article on this subject is contained in SUPPLEMENT No. 1292. Price 10 cents. For sale by Munn & Co. and all newsdealers.



LAWN, FARM AND POULTRY FENCES, GATES, ETC. Highest Grade. All Work Guaranteed. Large Illustrated Catalog and Special Prices FREE, Dwiggins Wire Fence Co., 87 Dwiggins Ave., Anderson, Ind



IRON AND WIRE FENCES

OATALOC FREE HIGH GRADE FOR POST HICH CRADE FOR ALL ENTERPRISE FOUNDRY AND FENCE COMPANY

434 South Senate Avenue Indianapolis, Ind.

Classified Advertisements

Advertising in this column is 75 cents a line. No less than four nor more than ten lines accepted. Count seven words to the line. All orders must be accompanied by a remittance. Further information sent on

READ THIS COLUMN CAREFULLY .- You will find read This Column Carrett, LLY.—you will monimize 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. There is no charge for this service. In every case it is necessary to give the number of the inquiry.

Where manufacturers do our respond promptly the Where manufacturers do not respond promptly the inquiry may be repeated.

MUNN & CO.

BUSINESS OPPORTUNITIES.

WE WANT TO ATTRACT THE ATTENTION of a successful man, capable of business management and unlimited executive ability, with knowledge for directing sales department and willing and able to grass the fundamental principles of the mechanical rubber business. The rubber industry is developing faster than men are being developed for it, and you know what this means and its value toyou. This company is one of the largest and most progressive in the United States All communications strictly confidential. Address Rubber, Box 773, New York.

inquiry No. 8868.-Wanted to buy nickeloid for buttons.

MAKE \$250 TO \$500 PER MONTH.—I will teach you the Real Estate Business by mail and appoint you my Special Representative. I handle real estate on the coperative plan and need you, no matter where you are located or what business you are in. A splendid opportunity for men without cabital to become independent. Let me send you my free book, For further particulars address Herbert Hurd. President Gray Realty Co., 175 Reliance Building, Kansas City, Mo.

Inquiry No. SS77.-For manufacturers of convex glass for pictures.

\$5.75 PAID FOR CERTAIN 1853 QUARTERS.—Keep all money coined before 1875 and send 10 cents at once for a set of two coin and stamp value books, size 4x7. It may mean your fortune, C.Z. Clarke & Co... Le Roy, N.Y.

Inquiry No. SSS5. - For manufacturers of the "Mysterious Ball" like that of Mr. Lepere's-a man in a ball.

PATENTS FOR SALE.

CANADIAN PATEINT FOR SALE, No. 116,059. Hand power wood saw machine (deuble cut 20 to rick a day). Easy work for boy or man. Address Kimura, P. O. Box 9, Port Blakley, Wash.

Inquiry No. 8889.-Wanted to buy a machine which breaks and divides approof stones.

PARTNERS WANTED.

PARTNER WANTED. — Who can furnish money to construct an airship as per my patent No. 303.631. For particulars address William Rumble, 1302 Crotona Avenue, New York.

Inquiry No. 8894.-For manufacturers of an automatic camera for making photographs on pin trays, etc.

HELP WANTED.

MENWANTED QUICKLY by big Chicago mail order bouse to distribute catalogues, advertise, etc. \$25 a week, \$60 expense allowance first month. No experience required. Manager, Dept. 73, 385 Wabash Ave., Chicago

Inquiry No. 8897.—For the manufacturers of the "Lid on" can opener.

WANTED BY COTTON MACHINE BUILDERS.—
Energetic, reliable, practical man, who understands
cotton spinning and manufacturing. One preferred
with good technical education who has had experience
as master mechanic, and thoroughly understands power
plants and electricity. Address Cotton, Box 773, N. Y.

Inquiry No. 8903. - For firms dealing in motor cars to suit Indian climate.

STAMPS AND COINS.

WE BUY U.S. and foreign coins many dates and denominations; premiums up to \$5,800. Also every kind of used stamps. Particulars free. May be worth many dollars, perhaps fortune to you. Money and Stamp Brokerage Co., 150 Nassau St., E 23, New York.

Inquiry No. 8904.—Wanted to buy new or second hand machinery for making "bow type," mouse and rattrap springs and wire parts, single machine or full outsit.

LISTS OF MANUFACTURERS.

COMPLETE LISTS of manufacturers in all lines supplied at short notice at moderate rates. Small and special lists compiled to order at various prices. Estimates should be obtained in advance. Address Munn & Co., List Department, Box 773, New York.

Inquiry No. 8908.-For a dealer intapesand cords for Venetian blinds.

A LIST OF 1.500 mining and consulting engineers on cards. A very valuable list for circularizing, etc. Price \$15.00. Address Munn & Co., List Department, Box 773, New York.

Inquiry No. 8909.—For a machine to paint shade or blind rollers.

MISCELLANEOUS.

UNITARIAN LITERATURE, including sermons and weekly publications, sent free. on application to Miss Peck, 106 George Street, Providence, R. I.

Inquiry No. 8911. Wanted to buy steamatter's tools and screw-cutting lathes.

Inquiry No. 8918.-For manufacturers of "Wydt's Electro-Catalytic Sparking Plug."

Inquiry No. S920.—For a still for extracting alcohol from saw dust.

Inquiry No. S921.-For the manufacturers of gilt paper.

Inquiry No. \$922.—Wanted the address of Worthington Boiler Co.

Inquiry No. \$926.—Wanted to buy a tree digger of steel plates which are forced down beside the tree and locked in position.

Inquiry No. 8927.—Wanted to buy an apparatus for sterilizing water at the tap by an ozonizer.

Inquiry No. 8928.—For the manufacturers of a steam rotary excavator as described in the Scientific American of December 12, 1838, page 347.

Inquiry No. 8929.—For makers of automatic gates that can be opened without the driver of a vehiclegetting out.

Inquiry No. 8931.—For parties who manufacture the Western Stump Borer for boring stumps.

Inquiry No. \$934.—Wanted to buy seal and book of blank stock certificate. Inquiry No. 893(i.—Wanted machinery used to spin or wrap paper pencils in the manner that paper pencils are made.

Inquiry No. 8940.—Wanted to buy machine or ender for rounding angle iron, flatiron and round end

Inquiry No. 8941.—For manufacturers of machinery for making fly screens.

Inquiry No. 3942.—Wanted to buy apparatus to emble anyone with rheumatism or other causes to bold a penholder.

Inquiry No. 8943.—Wanted a portable hand machine for breaking stones for installing read surface. To be worked by two or three men.

Inquiry No. 8944.-For the address of the manufacturers of the king or lever collar button.

Inquiry No. \$947.—For the manufacturers of a nachine to compel deep breathing called "Pneumaxe

Inquiry No. 8948.—For manufacturers of gearing, noiseless or otherwise, suitable for speed of 3,000 to 4,000 r. p. m. for wheels 5 inches diameter.

Inquiry No. 8949.—For manufacturers of a suction or vacuum street sweeper.

Inquiry No. 8950.—For manufacturers of machinery for the production of Coquito, Palm, Babosa and Mame seed or nuts.

Inquiry No. 8951.—For manufacturers of machinery for making milk bottle sanitary fiber caps.

Inquiry No. 8952.—For firms making apparatus for using oil for fuel under a steam boiler instead of coal.

913,330 913,149 913,208

Steam trap, G. M. Hilger
Steam trap, J. J. & J. W. Kelly.
Steam utilizing system, exhaust, Y. Wadagaki
Stove, A. McNulty
Stove antirust compound, C. F. Green.
Stove damper, gas and gasolene, G. E.
Davis
Stove grate, J. Jefferson
Stove hood, A. Brouillet
Stove, vanor, Savage & Chapman.
Strapping machine, W. M. Kidney.
Street sweeper, F. A. Bishop.
Strip serving apparatus, E. L. Brownson.
Surveyor's target, G. T. Stephenson.
Swing, scoot, E. K. Hood
Switch and stand for pressing irons, automatic, F. E. Emery
Switch and stand for pressing irons, automatic electromagnetic, F. E. Emery.
Switch mechanism and actuating means
therefor, J. C. Phillips
Switch stand, Reinoehl & Long
Switch stand, Reinoehl & Long
Switch Stand, F. C. Anderson
Swivel, H. M. Rounds
Tahle lock, pedestal extension, W. DickinSon
Tapping die, G. Ermold 913,397 913,400 913,614 912,069

 $9_{13}, 6_{12}$ $9_{13}, 6_{37}$

913,607

Table lock, pedestal extension, W. Dickinson.

Tapping die, G. Ermold
Target, H. M. Stern
Tea strainer, C. S. Rollins
Telegraph transmitting machine, J. C. J.
Alderson
Telephone call mechanism, W. E. Zahst.
Telephone exchange details, call distributing, S. H. Browne
'relephone exchange system, G. Bahcock.
Telephony, multiplex, M. C. A. Latour.
Tellurian, L. H. Van Syckle
Temperature annunciator, N. D. Wyman
Threshing machine level attachment, A. Ferguson 913,180

Threshing machine lever attachment, A. Ferguson
Throw out mechanism, A. J. Ford 913,206
Throw out mechanism, A. J. Ford 913,117
Ticket, transportation, E. A. Denham 913,107
Tie and rail fustener, Eells & Anderson 913,236
Titting gate, E. Sample 913,434
Tire, T. Midgley 913,220
Tire detachable securing means, J. Baker, 913,231 to 913,254
Tire grip tread, pneumatic, W. P. Shattuck 913,674

Tire grip tread, pneumatic, W. P. Shatuck
Tire repairer, rubber, T. M. Padgett.
Tire, vehicle, W. A. Koneman
Tongs, clinker, W. W. Church.
Tool, combination, R. F. Bird
Tool, percussively operated band, G.
Wood
Tool, smoothening, C. R. Uebelmesser.

913,327 913,210 913,611

913,531

913,155 Trolley w Moran Trolley wire banger, insulating, L. W. Moran
Trolley wire turnbuckle, H. S. Ollson.
Truck frame, reinforced, L. G. Woods.
Truck, lateral motion car. E. C. Washhurn.
Truck, locomotive tender, W. L. Austin.
Truck, railway, S. E. Hitt
Truck wheel fender, car. H. W. Bodendieck.
Truing gage, Wandrip & Pone
Tuble drying apparatus, J. R. Harbeck
Tumbler lock, L. F. Dahl
Turbine blade, P. Emden
Turbine poverning apparatus, steam, H. F.
Fullagar
Turn table, Hunter, Aleelev & Holt
Type bar and bearing therefor, A. W. Chanberlain
Type casting machine, Nuernberger & Rettig
Type setting and distributing machine, E.
Mirus
Typewiter ston device E. R. Cram.

Type casting machine, trype setting and distributing machine, trypewriter stop device, F. B. Cram. 913,362
Typewriter stop device, F. B. Cram. 913,938
Typewriting machine, C. S. Nickerson. 913,938, 913,039
Typewriting machine, W. J. Barron. 913,039
Typewriting machine, W. J. Barron. 913,215
Typewriting machine, W. J. Barron. 913,215
Typewriting machine, W. J. Barron. 913,215

Typographic machine key mechanism. F. H. Richards 913,306, Umbrella holder lock. J. C. Rackus. Vacuum gage, mercury. A. B. Hohmann. Valve, M. R. Greenlee Valve, C. H. Foster Valve, automatic tank. W. H. Parton. Valve, hlow-off. H. Kieren. Valve control. L. A. Frayer Valve, flushing. G. A. Brown. Valve for grain separators. C. J. H. Grant. Valve for paper pulp conduits, G. W. Kimhall. Valve for water closets, supply. A. C. Einstein.

Valve for paper pulp conduits, G. W. Kimball
Valve for water closets, supply, A. C. Einstein
Stein
Valve mixing and regulating. C. J. Lake 913,479
Valve, mixing and regulating. C. J. Lake 913,513
Valve, mixing and regulating. C. J. Lake 913,513
Valve, top. F. Cachin 913,358
Valve, stop. F. Cachin 913,227
Valve, etc., machine for facing. T. B.
Williams 913,085
Vallt, burial. P. F. Deht 912,997
Vegetable grater, H. Arnstein 913,187
Vehicle attachment. C. A. Zachow 913,608
Vehicle axle spindle. L. Burg 913,100
Vehicle axle spindle. L. Burg 913,100
Vehicle cushioning device, Carpenter & Kisselle 912,988
Vehicle safety strap and bracket, motor, E.
Gruenfeldt
Vehicle shock absorber. C. M. Kentzinger, 913,297
Vehicle shock absorber. C. M. Kentzinger, 913,396
Vehicle spring, Carpenter & Kisselle 912,988
Vehicle spring, Carpenter & Kisselle 913,247
Vehicle starter. O. David 913,668
Vehicle starter. O. David 913,665
Vehicle steering mechanism, motor, E. R.
Halsey 913,494
Vehicle wheel. T. Midgley 913,3494

Vehicle steering mechanism, motor, E. Halsey
Vehicle suspension, Ratault & Gardy
Vehicle suspension, Ratault & Gardy
Vehicle wheel, T. Midgley
Vending apparatus, N. J. Matthews.
Vending apparatus, E. W. Lindgren
Vending machine, N. N. Neher
Ventilator, Sturtz & Igel
Ventilator, Sturtz & Igel
Ventilator, M. Ashcroft
Vessel, donhle walled. A. Aschenbrenner
Vessel, fluid propelled. C. J. Lake
Wagon box, W. F. Rodebaugh
Wagon brake, automatic, J. C. Dunham
Wagon brake, automatic, W. E. Woods,
Wagon hoister and dumner S. M. Smart
Wall mold, conrete, L. Rang
Warp twisting-in machine, G. Liller
Washbowl, sanitary, C. F. Tollzien

Important Books

Industrial Alcohol

ITS MANUFACTURE AND USES

A Practical Treatise based on Dr. MAX MAERCKER'S 'Introduction to Distillation" as revised by Drs. DEL-BRUCK and LANGE. Comprising Raw Materials, Malting, Mashing and Yeast Preparation, Fermentation. Distillation, Rectification and Purification of Alcohol. Alcoholometry, the Value and Significance of a Tax-Free Alcohol, Methods of Denaturing, Its Utilization for Light, Heat and Power Production, a Statistical Review and the United States Law.

By JOHN K. BRACHVOGEL, M.E. 528 Pages 105 Illustrations Price \$4.00

Experimental Science

By GEORGE M. HOPKINS

Revised and Greatly Enlarged. 2 Octavo Volumes. 1,100 Pages. 900 Illustrations Cloth Bound, Postpaid, \$5.00

Owing to the amount of new matter added the book ts now published in two volumes, handsomely bound in buckram. Of the additions which have been made, among the most important are: A full illustrated description of ½ H. P. Electric Motor, prepared expressly for this edition of "Experimental Science": chapters on Alternating-current Machinery, and clear. concise Explanations of Wireless Telegraphy and Telephony, Electrical Measuring Instruments, the Flectric Clock, the Telegraphone. High Tension Currents, the Nernst, Lamp, and methods of measuring the heat of the stars No other work contains such a fund of trustworthy up-No other work contains such a fund of trustworthy upto-date scientific information, presented in a clear and simple style. Send for descriptive circular.

The Scientific American Cyclopedia of Receipts, Notes and Queries

15.000 RECEIPTS

Price \$5.00 in cloth

This splendid work contains a careful compilation of the most useful Receipts and Replies given in the Notes and Queries of correspondents as published in the SCIENTIFIC AMERICAN during the past sixty years

Over Fifteen Thousand selected receipts are here collected, nearly every branch of the useful arts being represented. It is by far the most comprehensive volume of the kind ever placed before the public.

Modern Plumbing Illustrated

By R. M. STARBUCK

Price \$4.00

A COMPREHENSIVE and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments, and Public Build ings, etc. The very latest and most approved methods in all branches of sanitary installation are given. Adopted by the United States Government in its sanitary work in Cuba, Porto Rico, and the Philippines, and by the principal boards of health of the United States and Canada. 300 pages; 55 full-

Modern American Lathe Practice

By OSCAR E. PERRIGO, M.E.

Price \$2.50

A COMPLETE book of 400 pages on The Modern American Lathe. Its development from the earliest times up to the present day; its modern ferm as constructed by up-to-date builders; its general and special classes of work; the quantity of its output, and its marvelous accuracy.

Modern Steam Engineering in Theory and Practice

By GARDNER D. HISCOX, M.E.

Price \$3.00

THIS is a complete and practical work of 487 pages, dealing with the care and management of Boilers, Engines, Pumps, Superheated Steam, Refrigerating Machinery, Dynamos, Motors, Elevators, Air-Compressors, and all other branches with which the modern Engineer must be familiar.

Nearly Two Hundred Questions with their Answers on Steam and Electrical Engineering likely to be asked by the Examining Board are included. These if studied by you will help you to procure a license. It is fully illustrated with detail engravings, not to be found elsewhere.

Punches, Dies and Tools for Manufacturing in Presses By JOSEPH V. WOODWORTH

Price \$4.00

A PRACTICAL work of 500 pages fully illustrated by nearly 700 engravings, being an encyclopedia of Die Making, Punch Making, Die Sinking, Sheet Metal Working, and Making of Special Tools, Sub-Presses, Devices and Mechanical Combinations for Punching, Cutting, Bending, Forming, Piercing, Drawing, Compressing and Assembling Sheet Metal Parts, and also Articles of other Materials in Ma-chine Tools. Two Hundred and Ten Processes are clearly described and fully illustrated.

A special circular describing these books sent on request.

o Any of these books sent prepaid on receipt of price.

MUNN & CO., 913,323 Publishers,





Cooper's is the original and only genuine "Spring NeedleKnit" Underwear. You will probably have many other kinds shown you, but if you will examine Cooper's closely you will promptly decide in its favor. It is the most elastic, comfortable and durable underwear made.

The importance of thorough workmanship in underwear for menshouldnot be overlooked. There are no imperfections in Cooper's. The wonderful Spring Needle fabric is flawless, and in addition each garment is stayed at points of strain, rendering it strong, sightly and serviceable.

Try Cooper's. It is the Underwear of character and quality.

Made in Union suits and two-piece suits

in all sizes, weights and colors. Ask to see our new silk lisles. Get the genuine. COOPER MFG. CO.. Bennington, Vt.

A Clean Shave

Your new blades all need stropping before using. Not one in ten comes sharp enough for a clean shave.

Why scrape your face with dull blades, or continue to throw away money for new ones, when the Gaylor Automatic Stropper will resharpen all your dull blades in a few moments, giving them a hairsplitting edge-betterthan new. The motion is automatic, no practice required, a child can use it. It is the only stropper in the world that successfully sharpens double-edge blades.

In case with barbers' genuine Horse Hide Strop, \$2.00 Order through your dealer. Or will send postpaid on receipt of price. Be sure to state for what make of Blade. Money willingly refunded if not entirely satisfactory. Write for descriptive circular. Agents wanted.

-L. B. GAYLOR, Allston, Mass.



CONCRETE HOUSES CostLess Than Wood

More hundsome than Brick, Durable as granite. A Pettyjohn §35.00 cenerate block machine, sand, gravel and cement are all that is needed. Simple, easy unid quick. We furnish full matructions. Save money for yourself or thake money by selling blocks.

Write for catalog and suggestions THE PETTYJOHN CO., 615 N. Sixth Street, Terre Haute, Ind.





Wizard Repeating LIQUID PISTOL

ered Holster, 10c. 361 Broadway, New York PARKER, STEARNS & CO., 226 South Street, Dept. 6, New York

EDISON

EDISON

POST CARDS Shown on the Screen

Brilliantly and in Natural Colors by means of our Post-Card Project Of, a low priced, efficient instrument. Entirely different from the cheap, unsatisfactory tops offered by other makers. We also make



The College Projector,

a large powerful instrument for showing both lantern slides and post-cards, engravings, etc. In use at Harvard, Connell, University of Pennsylvania, Leland Stanford and by U. S. Government. Send for list, of Pojectors, Stereopticons. 40,000 aides for sale or rent.

WILLIAMS, BROWN & EARLE 918 Chestnut Street PHILADELPHIA, PA.

INVERNESS, SCOTLAND

Notice to Manufacturers and Patentees

Eligible Sites for Factories and Works

NTERPRISING firms are directed to the Royal Burgh of Inverness (population about 25,000) which is situated at the mouth of the River Ness, and has unrivaled advantages as a Trade Center. Regular and cheap communication with the principal ports of the United Kingdom, and the Continent by rail and sea. Direct communication with West of Scotland by the Caledonian Canal. Low competitive rates on freight, Excellent harbor accommodation. Ample water supply. Electric energy. Cheap coal gas. Labor plentiful. Climate mild. Local rates and taxes are among the lowest in Great Britain. Every encouragement and facility given to manufacturous by the Municipal Carlotter of the contract o facility given to manufacturers by the Municipality. Apply for full information to the Town Clerk, Inverness, Scotland.

AGENTS \$4.00 PER DAY SURE

It will surprise you to know how much money you can make handling our bookkeeping and shorthand courses.

Cheapest and best courses ever devised. Every home a prospective customer. Agents make big money on each sale and can make several sales a day. Credit given; also exclusive territory. Experience unnecessary. Write today for full particulars.

W. L. MUSICK CO., Dept. J, St. Louis, No.

Wanted Specialties

If you have a patented article to be cast in Brass or Aluminum and can market same, we will make it for you on contract or royalty. Will offer you good paying proposition. ::::: Send description.

THE IDEAL BRONZE CO., Cleveland, Ohio





JAGER Marine 4-Cycle Engines

Skillfully designed and well built. Single lever control, combining automatic carburettor with spark advance. Develops wide speed range and reliability under most trying conditions Sizes 3 to 60 h. p. Send for catalog. CHAS. J. JAGER CO.

281 Franklin, cor. Batterymarch St. Boston, Mass.



Inexpensive Cleanliness

If you have gas, a Humphrey Instantaneous Water Heater will give you steaming hot water in any quantity, at any minute day or night, at less cost than by any other method. Moderate in cost, no expense for repairs. Bathing means health. Write to-day for our 30 days' trial offer and 'ree booklet.

HUMPHREY CO.

HUMPHREY CO. Dept. 423



I Leading Law School in Correspondence lastruction. Established 1892.

Prepares for the bar.
Three Courses: College, Post-Graduate and Business Law. Method of instruction combines theory and practice. Approved bar.

Classes begins and month. Sand Scanden and college.

Classes begin each month. Send for catalog giving rules for admission to the bar of the several States. Chicago CorrespondenceSchool of Law



WRITE FOR BEST BUGGY OFFER

olumbus Carriage & Harness Co-tation C83 Columbus, O.

DIE MODELS SPECIAL WORK TOOLS MACHINERY NATIONAL STAMPING AND ELECTRIC WORKS
153-159 S. Jefferson Street, Chicago, Ill.



PSU USE GRINDSTONES P

If so we can supply you. All sizes mounted and unmounted, always kept in stock. Remember, we make a kept in stock. Rememoer, we make a specialty of selecting stones for all special purposes. Send for catalogue "1" The CLEVELAND STONE CO. 2d Floor. Wilshire. Cleveland, O.

DESIGNS.

Padro F Hugher	20.000
Badge, F. Hughes	00,000
Bottle, R. B. Annis	
Chair. L. Killian	39.845
Crumb scraper. A. N. Lattin	39,839
Electrolier, street, R. Chartrey	39,841
Forks, spoons, and similar articles, handle	
for, T. B. Lashar	39,835
	39,83G
Spoon, fork, or similar article, H. L. Wal-	
lace	39.837
Spoon, fork, or sinlilar article, S. Stohr	39,838
Spoons, forks, or similar articles, handle for,	
J. H. Harmstone	39,834
Talking machine cabinet, J. C. English.	
39,842,	
Trimming, W. Helbig 39,846,	39,847

TRADE MARKS.

	Beer, Yale Brewing Co	72,81
	Belting, hose, and machinery packings,	
	Revere Rubber Co	72,80
	Blood puritier, II. H. Hvams	72.813
	Bug and roach destroyer, C. Fiebert Calcium carbid, American Carbolite Co	72.793
	Calcium carbid, American Carbolite Co	72,782
	Canned and dlied fruits and canned vege-	
	tables. Griffin & Skelley Co	72,79
	Canned salmon and oysters, A. Booth & Co	72.778
	Card, block, and picture games, Rice &	=0.00
	Hutchins	72,82
	Chemicals and medicines, certain, Drs. Hoag	EO 01/
	& Turbin Remedy Co.	72.81
	Chocolate, H. O. Wilbur & Sons	72.813
	Cigars, Garcia & Vega	72.82
	Cigars, Patterson & Hoffman	
	Coffee, Geiger-Tinney Co	72.79
	Coffee, Johnson Bros	72.79
	Complexion group Pice Mills Co	72.82
	Complexion cream. Piso Co	72.78
	Cotton damask, Rosemary Manufacturing	12,10
	Co	72.82
	Cotton napkins, Rosemary Manufacturing	12.02
	Co	72.82
	Cough drops. E. Ellsworth	72.79
	Dish washing machines, Z. S. & C. L. Randle-	12,10
	man	72.82
	Enamel coatings, G. H. Baker	72,81
	Filing cases, letter and document, Stephen	-,-,-
	Greene Co	72.82
	Flour and cornmeal, wheat, Allen & Wheeler	
	Co	72,78
	Flour, wheat, Philip H. Postel Milling Co.,	
	72,803,	72.80
	Hats and caps of cloth, wool, felt, fur, and	
	straw, Sarnoff Bros	72.81
	Insulating material containing cork, Arm-	
	strong Cork Co	72,78
ı	Logs. lumber, staves, and headings, Lucas	
	E. Moore Stave Co	72,79
	Mantles, incandescent gas, Block Light Co	72.78
	Mezzani and spaghetti, S. Blum	72,78
	Milk sugar nowdered Milk Rv.Plofuets Co.	-72.80

LABELS.

"Banner Varnishes," for varnishes, Banner	
Varnish Co	14.674
Varnish Co	
Gum Co.	14.670
"Crest." for flour, W. M. Farless	14.666
"Earl's Antol." for a remedy for alcohol-	-1,00-
Gum Co. "Crest," for flour, W. M. Farless "Earl's Antol," for a remedy for alcoholism J. E. Earl	14,667
"Glendair," for teas, E. C. Mathewson	14.664
"Golden Bath Salve," for a salve, I.	,
Jardezewski	14.671
"Josh Giddings," for cigars, Moehle Litho-	,
graphic Co	14,661
graphic Co	
Paper & Twine Co	14.677
"Nestons" for a non-interior ting hererage	
L. G. Volkmar	14 663
"Perfection Bed Cover." for bed covers or	- 1,0-
L. G. Volkmar "Perfection Bed Cover." for bed covers or spreads, C. L. Christman	14.676
"Pinola Oil," for a liniment, A. J. Barber.	14,672
"Pioneer Cigar Stogies," for stogies, A. Hur-	
witz	14.662
"Sun-Flower Medicine," for a medicine, G.	
Larcieri	14,669
"The Chester." for cigars, Chester Cigar Co.	14.660
"The Green Carton." for IInvaiian pine-	
apple in slices, J. M. Chapman	14,665
'Vassar Violet," for perfumery, J. D.	
Sauter	14,673
"Vigor Ferina," for a medicinal prepara- tion. Tirico Pharmacal Co	
tion, Tirico Pharmacal Co	14,668
"Wanamaker Water-Spot Proof Silks," for	
piece silk goods, J. Wanamaker	14,675
	- 1

PRINTS.

"Jack-The-Giant Killer," for wheat break-	-	
fast food, Cream of Wheat Co	2,427	
"School Days." for wheat breakfast food, Cream of Wheat Co	0 100	1
tream of wheat Co	2,428	
"The American Lady," for corsets. American Lady Corset Co	2,429	1

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, provided the name and number of the patent desired and the date be given. Address Munn & Co., 361 Broadway, New York.

Canadian patents may now be obtained by the inventors for any of the inventions named in the foregoing list. For terms and further particulars addre. Munn & Co., 361 Broadway, New York.

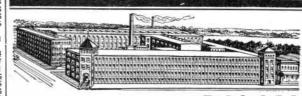


Figure the Saving

on that concrete job of yours when it is built with

EDISON Portland Cement

Every barrel of "Edison" (376 lbs. net) contains 10%, or 37.6 lbs. more cement, or mineral glue, than a barrel of any other brand—every bag (94 lbs.) gives you 9.4 lbs. more cerrenting material than a bag of any other brand—because

Uniformly 10% Finest Ground in the World.

Write us for catalog showing who specifies Edison Portland Cement, and where used.

EDISON PORTLAND CEMENT CO.

GENERAL SALES OFFICE:

932 ST. JAMES BUILDING, NEW YORK

WANTED -1.A BORAT TRIAN at \$4.00 per diem. A commettive examination will be held at the Navy Yard, Brooklyn. N. V., March 5. 1888, to fill the above position. For application and further information acress "COMMANDANT," Navy Yard, Brooklyn, N. Y

LET US BE YOUR FACTORY
STAMPINGS, MODELS, EXPERT WORK
THE GLOBE MACHINE AND STAMPING CO.
370 Hamilton St., Cleveland, O.

Corliss Engines, Brewers' Machinery. THE VILTER MFG.CO., 899 Clinton St., Milwaukee, Wis.

MODELS & EXPERIMENTAL WORK.

Inventions developed. Special Machinery.

E. V. BAILLARD. 24 Frankfort Street. New York.

RUBBER PARKER, STEARNS & CO., 228-229 South Str. t, New York

HOEFT & COMPANY
Die Makers, Medel Makers, Machinery Builders, Punch Presses,
Light and Heavy Stampings. 120 Michigan St., Chicago, Ill., U.S.A. COMPANY

MODELS CHICAGO MODEL WORKS

Experimental & Model Work

WATCHMAKING

We teach it thoroughly in as many months as it formerly took years. Does away with tedious appren-ticeslip. Money earned while studying. Positions se-cured. Easy terms. Seni for cataleg. ST. LOUIS WATCHMAKING SCHOOL, St. Louis, Mo.

MASON'S NEW PAT, WHIP HOIST for Gutrigger hoists. Faster than Elevators, and Greet from teams. Saves handling at less expen

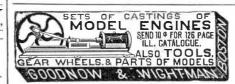
Manfd. by VOLNEY W. MASON & CO., Inc. Providence, R. I., U. S. A.

Magical Apparatus. Grand Book Catalogue. Over 700 engravings 25c, Parlor Tricks Catalogue, free. MARTINKA & CO., Mfrs., 493 Sixth Ave., New York



Telegraphy

strong tree. Wonderful
suconatic teacher. 5 stvice
supp. OMNIGHAPH
Ou. Dept. 52, 89 Cort.
landt St., New York.



MOORE Special Machinery, Dies, Tools, Models Metal Specialties, Inventions perfected & CO. Indian and Franklia Streets, Chicago, U. S. A.

DRYING MACHINES For Steamed Rice Paddy i dn y ther granu. S. E. WORRELL, Hannibal, Mo., U.S. A.

SMALL HOUSE NUMBER of AMERICAN HOMES AND GARDENS

HE artistic and inexpensive house is the chief demand of the home seeker of to-day. For that reason the April, 1909, number of American Homes and Gardens will be a SPECIAL reason the April, 1909, mun SMALL HOUSE NUMBER.

SMALL HOUSE NUMBER.

This issue will contain a vast amount of valuable information for the prospective home builder. It will tell him how to select a country site, how the various rooms of the house should be planned; the style of architecture in which the house should be designed; the material of which it may be built; the kind of plumbing fixtures to be used; the heating system to be selected; the choice of the hangings for the walls, doors and windows; appropriate furniture for the home; the interior decoration of the home; and the layingout of the grounds surrounding the house, as well as the planting of them.

THE ARTISTIC EXPRESSION OF THE SMALL HOUSE is well explained in an article by Francis Durando Nichols, illustrated with fifty engravings showing exterior and interior views and floor plans of a group of model houses of small size and small cost.

PLUMBING FOR A SMALL COUNTRY HOUSE! by John A Gode is a new important subject.

PLUMBING FOR A SMALL COUNTRY HOUSE' by John A. Gade, is a very important subject. No part of a house needs greater attention than the laundry, kitchen and bath room. Hence the economic and convenient placing of the plumbing fixtures, the kind touse, and the cost of the same are matters of interest to all prospective home builders.

THE MAKING OF AN IRIS GARDEN, by Samuel Howe, is an illustrated article showing how a np or lowland can be developed and transformed into a beautiful iris garden.

DECOR ATIVE FEATURES IN THE SMALL HOME, by Alice M. Kellogg, presents in a brief way with ten illustrations artistic schemes of covering the floors and walls of the house. harmonious and appropriate hangings for the doors and windows, with numerous suggestions for the decorating of the various rooms of the house.

A GROUP OF MODEL MOTOR HOUSES FOR THE SMALL COUNTRY PLACE, by Ralph de Martin, forms two pages of illustrations and sets forth the best designs for a small motor house suitable for the accommodation of one motor car and with sufficient space for a work bench.

HOME-MADE NOVELTIES FOR THE COUNTRY HOUSE, by Mabel Tuke Priestman, treats of onversion of unlikely things into useful articles, and the illustrations show the results.

THE EVOLUTION OF THE SMALL HOUSE PLAN, by Joy Wheeler Dow, is an important article by a well-known architect on the economic planning of a small house, costing from .2,500 to \$8,000. The plan and the arrangement of the rooms is the first thought given to the house and is one in which the layman should be most interested.

A FORMAL GARDEN AND PERGOLA, DESIGNED BY AN AMATEUR, by Alexander R. Holliday, informs the reader how an amateur planned and laid out his garden and how he built his pergola. Illustrated with plans and scale drawings.

PROPER FURNITURE FOR THE SMALL HOUSE, by Esther Singleton, with illustrations showing the artistic and appropriate furniture for the house, and the proper position in which it is to be placed, together with an accurate treatment of the fireplace and mautel.

THE USE OF CONCRETE IN THE BUILDING OF A SMALL COUNTRY HOUSE, by Benjamin Howes, is a timely and comparatively new subject, and is one in which much interest is shown at the present moment. The article is profusely illustrated with fifty engravings showing exterior and interior views and floor plans of small houses of various styles of architecture in which concrete is used with

THE HEATING APPARATUS FOR THE SMALL COUNTRY HOUSE, by Allyn Frogner, is the title of an article treating in a practical manner one of the most important features of a small country house. How to heat and what is the cost? That is a question which has been well answered for the three respective systems of hot air, steam heat and hot water.

PROBLEMS IN PLANNING THE GROUNDS OF A SMALL COUNTRY PLACE, by Charles D. Lay. Mr. Lay has explained in a very concise form how the grounds around a small country place may be planted at a very low cost, and enumerates the best and most effective shrubs and plants to be used. This SMALL HOUSE NUMBER will contain 165 illustrations covering 52 pages, which will be

inclosed in a striking colored cover.

The price will be fifty cents. Those now subscribing for American Homes and Gardens for the year will receive it at the regular rate. Subscription price \$3.00 a year.

MUNN & COMPANY, Publishers, 361 Broadway, New York City