ported from standards a tits four corners in such a way that the bed proper may be raised or lowered as desired while over the bed, and also supported by the standards is a frame carrying glass panes, preventing insects from falling on the bed, the form of the standards and frame being designed to thoroughly protect the bed against ac cess of insects.

FOLDING BED. - Frank A. Cooper. Brooklyn, N. Y. In upright folding beds this invention affords a construction according to which the "action" is contained entirely in the body of the bed, leaving the casing unobstructed except by the brace rods strengthening the wings and preventing them from spreading. The bed has a weighted folding head rest, the head portion having a pendulum or swinging weight when needed. There are cam grooves in the side rails to receive rollers carried by the brace rod, whereby the bed body is pivoted or hung in thecasing, and a removable end wall for each cam groove admits of the body being readily connected with or disconnected from the casing, the removable ends serving as stops limiting the outward movement of the bed when down.

BEDSTEAD FASTENING. - Edwin F. Tilley, New York City. This invention provides a simple form of fastening device for each corner of the mattress frame, to be fitted between and rigidly secured to the contiguous ends of the end and side rails, each device having a block slidably connecting with a corresponding body portion. By means of this device the sections of the bedstead may be easily and securely connected without inconvenience arising from the uneven ness of the parts or from the unequal expansion or contraction of the metals. Either section of the fastening is adjustable on the other, not only enabling the fastening to be adjusted for non-uniformity of the post, but also to change the position of the side rail if desired.

LAMP BURNER. - George A. Bodee. New York City. To facilitate lighting the wick of a lamp without having to remove the chimney, this invention provides a burner in which the section of the burner on which the bottom of the chimney rests is formed with a horizontally swinging portion, which may be swung down when the match is to be applied to the wick, a spring holding the swinging section in closed

### Designs.

PLUMBER'S TRAP. - Fredrick Kirch ner, Brooklyn, N. Y. The body of this trap is tapering, being widest at the top and finished off at the bottom with the usual cap, the leading feature of the design consisting in the shape of the body.

Note.-Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date

## NEW BOOKS, ETC.

UNITED STATES GEOLOGICAL SURVEY REPORTS. Mineral Resources, Metallic Products and Coal. Charles D. Walcott, Director. David T. Day, Chief of Division. Washington: Government Printing Office.

In acknowledging receipt of vols. xxvi, xxvii, xxviii, the Director's Report, the volume on Economic Geology and Hydrography, and two volumes on Mineral Resources, of this splendid series of works published by the government, we cannot refrain from expressing, as we have heretofore done repeatedly, our high appreciation of the thorough and painstaking manner in which the work is carried on, and the skill and technical knowledge displayed, as well as our admiration of the luxurious volumes themselves, with their handsome print, wide margins and wealth of beautiful illustrations. The division of Mineral Resources, etc., under the charge of Mr. Day, now occupies two handsome quarto volumes, instead of the single octavo volume required annually previous to 1894, and it is not too much to say that from no other source can so much information be obtained on this great subject as from this series of volumes, commenced in 1883, the last two volumes covering the year 1895. The great scope of the work is realized when it is remembered that it includes metals, fuels, structural materials, abrasives chemical materials, pigments, etc., while under "miscellaneous" are classified precious stones, mica, asphaltum, asbestos, mineral waters, etc., the principal treatment in each of the more important subjects being by recognized high authorities in each department. For instance, iron ores are written about by John Birkinbine; the iron and steel industries by James M. Swank; copper, lead and zinc by Charles Kirchhoff; petroleum, coke, natural gas, and manganese by Joseph D. Weeks; coal, abrasives, etc. by Edward W. Parker; stone by William C. Day; cement by Spencer B. Newberry; precious stones by George F. Kunz; and mineral waters by Albert C. Peale. The distribution, availability and product, in these sevral lines of the country's resources, together with the varying causes most generally affecting the demand, are set forth in these volumes from an independent standpoint, quite unaffected by the interests of dealers or prowhich gives especial value to the figures and explanations.

#### CARBIDE OF CALCIUM AND ACETYLENE. Paris, France: J. B. Balliere et Fils.

This book is an enlargement of a series of popular lectures on acetylene by M. Jules Lefevre, of the University of Nantes. As a resume of the experiments which have been tried with this gas and of its practical applications. it is quite complete. The opening chapters describe the various electrical furnaces used in the manufacture of calcium carhide, the different factories where it is made etc.; while the latter part of the book is given up to the properties of acetylene in both the liquid and gaseous states, its employment for lighting and as a motive power, and its probable use in the future. The author does not think it will supplant ordinary lighting gas entirely, but that its general vogue will be between that of this gas and of the electric light. Owing to the ease and safety with which the gas may now be produced, as well as to the small expense, it will in time be used considerably for lighting small buildings where an isolated plant

### Business and Personal.

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

Marine Iron Works. Chicago. Catalogue free. F'ormining engines. J. S. Mundy, Newark, N. J

"U. S." Metal Polish. Indianapolis. Samples free. Gasoline Brazing Forge, Turner Brass Works, Chicago Yankee Notions. Waterbury Button Co., Waterb'y, Ct. Handle & Spoke Mchy, Ober Lathe Co., Chagrin Falls, O. Improved Bicycle Machinery of every description. he Garvin Machine Co., Spring and Varick Sts., N. Y. Concrete Houses — cheaper than brick, superior to stone. "Ransome," 757 Monadnock Block, Chicago.

Machinery manufacturers, attention! Concrete and nortar mixing mills. Exclusive rights for sale. some," 757 Monadnock Block, Chicago.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

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

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



#### HINTS TO CORRESPONDENTS.

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

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

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

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

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7250) O. S. writes: I have a Ruhmkorff coil for one-half inch jump spark, made by the Varley Duplex Magnet Company. 1. What battery, of the lightest weight and least bulk will give the best spark this coil is good for? A. The kind of battery to be used with your coil depends on the work it is to do. If it is to be used for lighting gas, three to four Leclanche cells ought to work it. If you want it for more frequent use, the battery should be of the bichroma's sort, and two to three cells are sufficient. 2. The condenser ought to be of what square feet surface? In measuring the surface of a condenser, will the ends be counted or only the tinfoil between the oiled paper? A. If your coil is a Ruhmkorff coil, you will find the condenser in the box underthe coil. The tinfoil for a condenser is measured only between the paraffined paper. The ends which project have little effect. Condensers vary greatly in size. If you need to make a condenser for your coil, you will probably require sixty sheets of tinfoil 5×7 inches. 3. Would it be possible to get sparks at various points from one coil by having different return wires and breaking circuits in the return wire? A. Yes; in using a sparking coil for gas lighting this is the way it is done. The gas pipe answers for the return wire.

(7251) W. M. says: Will you kindly give me some information regarding a formula for a black dip for brass in which ammonia and copper are used? We have an acid dip which is used for this purpose, but believe the other would be more desirable. A. Dissolve in 4% fluid ounces of ammonia 1/2 ounce of copper carbonate, stirring constantly while dissolving. Add 16 pint of water. The article should be suspended in this solution by brass or copper wires for a short time.

(7252) A. A. U. writes: I have the eight light dynamo and a motor of about the same size. Its field is wound with No. 18 wire, 20 pounds, and the armature with No. 16, two layers, 2 pounds. The dynamo and motor are about 100 feet apart on a No. 8 copper wire circuit. The dynamo has No. 12 on the field and is to 500 or 800 pounds pressure? Also best style valve to connected in series. How much resistance ought I to have to start my motor with? I intend to use the strokes per minute is allowable. Poppet valves are in motor to run a lathe. A. A resistance of about 15 ohms general use and are the best for high pressures. will be required. It should be put in series with the field of the motor. Run the wire from the dynamo, through the resistance, to field, to armsture, and thence back to dynamo.

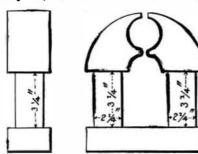
(7253) H. R. K. writes: Permit me to ask for information regarding the famous eight light dyago. Made the machine exactly as described in your cuits? A. For 110 volts wind your new armature with No. 24 A. W. G. wire, 25 turns in each of the 24 coils. The same field can be used with an external resistance of 750 ohms. 2. Could I not use it as it is by putting lamps in circuit with it? A. The machine can be run without rewinding by using an external resistance, either of lamps or wire, equal to or a little more than that of the machine itself. A resistance box is more convenient than a lamp resistance

(7254) P. C. S. writes: I am making an long. The primary wire will carry about 8 to 10 amperes obtained. 2. Can the chloro-platinite of potash and and the insulation is tested to 2,000 volts. It has about 100 turns, and is run from an alternating current dynamo. photo stock dealers? A. New York dealers can supply The secondary is about 12 lb. of No. 32, well insulated. you,

mary (in volts and amperes) to get the maximum effect econdary and longest spark? P. S.—How could I get the current from a 50 volt 1.5 ampere alternating current? If by atransformer, how would it be made? A. If a direct current from a battery is used, 4 to 6 cells of bichromate plunge battery, 1 to 2 quart cells, will answer for your coil. You need to be able to vary the current so as to learn, by experiment, how to get the best spark for any purpose, and the longest spark is not always the best. With a direct current your primary will take about 4-6 amperes and 10-55 volts. With an alternating current you will need a "choking" coil, rather than a transformer. This must be adjusted to the circuit in which it is to be used. The engineers of the system from which you draw your current could probably specify your choking coil for you. See SUPPLEMENT, No. 1124.

(7255) J. S., Montreal, writes: A question has arisen as to which of the following methods would be the best and cheanest for making a wall or division to prevent the transmission of heat or cold. To build the wall with a double air space, that is, with an outer and inner wall some distance apart and a thinner wall intermediate between them empty, but for the air. Or, to build a wall of the same material, leaving the same distance between the outer and inner walls, but leaving no middle wall, the whole interspace being filled with cork cuttings or shavings. A. The three-wall system, inclosing two air spaces, makes the best insulation, but not the cheapest. The three walls, in order to have the proper stability, must make a very thick and expensive exterior wall. The wide space and double wall will be very effective for insulation, if the filling can be properly packed so as to stay in place. The trouble with such filling is its disposition to settte and pack, leaving open spaces. The cost of either method of insulation is, we think, greater than the double wall with narrow clear air space, with a lining of asphalt paper on the inner surface, with 11/4 inch furring and lath and plaster. This constitutes a double air space with an airtight barrier.

(7256) O. T. writes: I have a casting for a dynamo, a sketch of which I inclose. Could you



tell me what sizes and how much wire I should use for the armature and fields for a 50 or 52 volt current (shunt winding) and how many amperes could I get from same; also speed required? Can you give any information in regard to winding of armature, as number of sections and turns on same? A. On the field wind 400 turns of No. 24 wire, B. & S., 200 turns on each side. Make the armature with 16 sections. Wind 20 turns in each section-No. 12 B. & S.

(7257) E. S. H., Illinois, writes: 1. What is your opinion or that of experts regarding the use of castor oil in a locomotive boiler? The water deposits a very salty substance wherever a leak appears and foams very badly; the use of the oil, however, effectually calms the foaming or priming, for it is probably more priming, as great quantities of water were carried over with the steam; so the engine could not be hurried at all. Is it likely to generate a dangerous gas? The water eats the iron very fast. Will the oil prevent that? It is used about a teaspoonful every day. A. Castor oil in boilers produces an effect similar to that of other vegetable oils, in gathering the lime and magnesia salts into cakes or nodules. It may answe the purpose for which it is used, if applied in very small quantities. We advise, if oil is used at all, that the cheaper mineral oil, as kerosene, is preferable. The oil in boilers does not generate a dangerous gas, unless, owing to low water, some part of the tubes or shell is subjected to a heat that will generate a gas by decomposing the oil. The oil will partially neutralize any acid quality in the water. The water of your district contains sulphate of lime and magnesia, and the separation of the sulphur in the form of sulphuric acid, and its action on the iron, is probably cause of the eating away of the iron. For this, we advise use of caustic or sal soda in small quantities, instead of the oil. 2. Again, what would be the highest speed practicable to run a simple plunger pump 3/4 inches diameter, maximum stroke 2 inches, pumping a light engine oil at from zero use. A. For the short stroke pump at high pressure, 75

(7258) J. R. D. writes: 1. Give formula of solution used in making solder adhere to copper wire when making joints. A. To a sufficient quantity of hydrochloric (muriatic) acid, add zinc in small pieces, so long as it will dissolve. The resulting liquid is zinc chloride, and is used for soldering tin, copper, lead and namo described in the Supplement quite a long while | brass. 2. Can an electric motor (costing about \$1) be wired so as to run reversible? If so, how can this be paper, but now want to use it as a motor on a 110 volt done? A. The motor will turn in the opposite direction circuit. 1. What size wire shall I use on a new armature if the direction of the current in the armature circuit is core of same size, and how shall I arrange the field cir- reversed. In so simple a motor run by a battery any reversing switch will answer your purpose.

> (7259) A. C. S. says: 1. Please give the full formula for the printing-out plantinotype process. The SUPPLEMENT, No. 1139, gives the following:

Chloroplatinite solution..... 116 min. Iron ...... 120 '

but does not state the amount of the 10 per cent solution of sodio-chloride of piatinum to add to the above. A Add about 10 minims to begin with of last named solunduction coil with a core 1% in. in diameter and 15 in. tion, and increase amount until the requisite brilliancy is the sodio chloride of platinum be obtained from the

# About what kind of a current should I use in the pri- INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

NOVEMBER 23, 1897,

AND EACH BEARING THAT DATE. [See note at end of list about copies of these patents.]

Air brake F A Figh	
Air brake, J. W. Winters	593,996 594,228
Air brake, F. A. Fish. Air brake, J. W. Winters. Air brake apparatus, pressure indicator for. & Hutchins. Alarm. See Burglar alarm.	594,033
Ammonium carbonate, apparatus for maki	ng, W. 594,100
Bag frame machine, Ochse & Goerk Bag handle, H. F. Jonas	594,142 594,176
Bagging machine, F. L. Furbush Bail ear, bucket, J. Anderson Balance assay and chemical F. W. Thomy	594,134 594,340
Ammonium carbonate, apparatus for maki Sanders. Axle box, F. A. Surth. Bag frame machine, Ochse & Goerk. Bag handle, H. F. Jonas. Bagging machine, F. L. Furbush. Bail ear, bucket, J. Anderson. Balance, assay and chemical, F. W. Thomber of the same state of the same state of the same state. Barrel purifying apparatus, C. Haefner. Battery. See Electric battery. Storage ondary battery.	594,204 sledue, 594,056
Barrel filling åpparatus, C. Haefner Barrel purifying apparatus, Yarnold & Eng Battery. See Electric battery. Storage ondary battery. Bean picking machine, M. A. Lohr. Bedstead, metallic, A. W. Hompe. Belt, A. G. Frothingham. Belt, flanged, L. C. Trent. Belt shipper, T. R. Almond. Bevel, adjustable, J. F. Cress. Bicycle brake, A. W. Jucch. Bicycle brake, A. W. Jucch. Bicycle brake, A. W. Jucch. Bicycle frame, S. B. Hill. Bicycle handle bars, detachable handle S. Copeland. Bicycle bade support, F. S. Youngman. Bicycle shade support, F. S. Youngman. Bicycle track, W. F. Crossley. Bicycle wheel, G. R. Odean. Bicycle shade support, F. S. Youngman. Bicycle track, W. F. Crossley. Botte, Collapsible life, W. F. Foord. Boller heater, stand, F. V. Winters. Botte, Collapsible life, W. F. Foord. Boller heater, stand, F. V. Winters. Botte, Collapsible life, W. F. Foord. Bolt tapping and drilling machine, W. A. 7 Bolting cloth clean, means for keeping mes. F. G. Gauntt. Book, check, E. S. Lowe Book rest, automatic rotating, W. E. Fulle Book, separable, F. H. Gilson. Bootte, non-refillable, E. A. Foster. Bottle, non-refillable, E. A. Foster. Bottle, non-refillable, G. W. Maytham. Bottle, non-refillable, G. W. Mytham. Bottle, non-refillable, G. M. White. Brazing apparatus, J. C. Dupee. Brush, stove polishing, H. L. Hanson. Buckle, C. F. Nicholson. Buckle, Wright & McClure. Burglar alarm, automatic electric, J. W. man. Burner. See gas burner, Lamp burner.	or sec-
Bedstead, metallic, A. W. Hompe Belt, A. G. Frothingham	594,016 594,201
Belt, fianged, L. C. Trent Belt shipper, T. R. Almond Beyel, adjustable, J. F. Cress	594,220 594,187 593,987
Bicycle brake, A. W. Duck. Bicycle brake, J. W. Jacobs.	594,234 594,018
Bicycle frame, S. B. Hill Bicycle handle bars, detachable handle	594,136 for, J.
S. Copeland.  Bicycle parcel carrier, F. J. Boehm.	594,231 593,978
Bicycle track, W. F. Crossley	594,331
Bicycles, extensible pedal lever for, E. B. B. Welles B. Welles B. W. F. Foord	& G. E. 594,047
Boiler heater, stand, F. V. Winters Boiler safety plug, steam, C. J. Cole	594,166 5,14,230
Bolt tapping and drilling machine, W. A. T Bolting cloth clean, means for keeping mes F. C. Gauntt	imms 594,044 hes of,
Book, check, E. S. Lowe Book rest, automatic rotating, W. E. Fulle	594,089 r 594,151
Book, separable, F. H. Gilson Boot or shoe lining, W. Sutcliffe Bottle, S. F. Fraser	594,203 594,299 593,999
Bottle, A. A. Freeman	594,242 594,(173
Bottle, non-refillable, G. W. Maytham Bottle, non-refillable, D. & J. E. O'Donnell	594,116
Bottle, non-refillable, G. Turrell Bottles, construction of non-refillable,	C. H. 594,301
Bow instrument bridge, M. W. White Brazing apparatus, J. C. Dupee	594,129 594,345
Brush, stove polishing, H. L. Hanson Bucket, milk, W. J. Walsh Buckle, C. F. Nicholson	594,154 594,127 594,271
Buckle, Wright & McClure Burglar alarm, automatic electric, J. W.	594,308 Baugh-
man Burner. See gas burner, Lamp burner. leum burner.	Petro-
leum burner.  Bushing, sheave roller, A. J. Q. Knowlton Butter, preserving, A. Nimmo.  Cabinet, clothing, L. Blumenkranz.  Cables into underground conduits appear	594,357 594,272 594,272
feeding, W. H. Johnston Cake turner, pan. J. Heberling. Camera, kinetographic, N. Nelson Camera, photographic, O'Leary & Kull	594,205 594,094 594,120
Can. See Oil can. Can opener, C. W. Haight	594,079
Canceling machine, stamp, F. E. Martin	594,029 miner's
combined, C. S. McCready	594,354 594,359
Car coupling, A. J. Beard	594,069 594,082
Car, freight, L. C. Kendall	594,022 594,103
Loebs	594,027 594,311
Camera photographic, O'Leary & Kull. Can. See Oil can. Can Opener, C. W. Haight. Can or jar closure, W. H. Burnett. Canceling machine, stamp, F. E. Martin. Candlestick, cap crimper, and fuse cutter, combined, C. S. McCready Car bearing adjuster, C. W. Greenamyer. Car coupling, J. S. Bartley. Car coupling, J. B. Bartley. Car catensjon step, railway, G. W. Hessle Car, freight, L. C. Kendaly, C. W. Greenamyer. Car seat head rest, J. B. Strauss. Carriage and chair, combination baby, Loebs. Carriage and chair, combination baby, Carriage, motor, R. E. Oids. Caster, D. Hunt. Caster, D. Hunt. Casting composite or other car wheels, E. inson.	594,338 594,293 594,017
Casting composite or other car wheels, E. inson	R. Rob-
Inson Casting machine, ingot, J. Illingworth Cement, C. F. Lawton. Chain, bicycle, H. Harrington. Chains, manufacture of bicycle, H. Harrin Check, cash, J. D. Gibbs. Check protector, G. W. Beebe. Chimney top draft regulator, B. B. Lewis. Chuck, screw machine, E. V. Gauthier. Churn, J. H. Poulte.	594,113 594,010
Chains, manufacture of bicycle, H. Harris Check, cash, J. D. Gibbs	ngton 594,009 594,244 594,319
Chimney top draft regulator, B. B. Lewis. Chuck, screw machine, E. V. Gauthier	594,257 594,077
Churn, J. H. Poulter	594,034 pringer 594,126
Churn, J. H. Poulter. Circuit controller, automatic, C. W. Price Ciamp or fastening device for lines, C. C. S. Clipper or shears, grape or flower, T. J. Fo Clock base, W. H. Wright. Cock, right and left hand stop and was Smith. Cocks valves, etc. lock for stop. Cline & F	rde 594,072 594,309
Smith Cocks. valves, etc, lock for stop, Cline & F Cog wheel, ball bearing roller, F. L. Higgi Collar and cravat. L. Frankenstein.	.594,161, 594,162 arrell 594,229
Collar and cravat. L. Frankenstein Comb. See Currycomb. Self cleaning co	18 594,110 593,998 nb.
Collar and crayat. L. Frankenstein. Comb. See Currycomb. Self cleaning collaboration control of the Combination control of the Coping or shearing machine, hydraulic, F. Jeffenes.	594,208
Jefferes. Corset, A. M. King. Corset, E. A. & R. A. Warren. Cotton compressor, A. T. Snodgrass. Coupling for pump rods, etc., Thompson	504.010
	594,019 594,177 594,164
Cotton compressor, A. T. Snodgrass Coupling for pump rods, etc., Thompson	594,019 594,177 594,164 594,125
Cotton compressor, A. T. Snodgrass. Coupling for pump rods, etc., Thompson bott. Cradle, folding, H. H. Homer. Crane, traveling, S. T. Wellman et al.	594,019 594,177 594,164 594,125
Cotton compressor, A. T. Snodgrass Coupling for pump rods, etc., Thompson bott. Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet, hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder. Cuff bolder, J. A. Pugh	594,019 594,177 594,164 594,125
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or nedde, P. A. Skriver Cue tip fastener, N. B. Wilder. Cuff holder, J. A. Pugh. Cultivator, com. P. Jarvis. Current systems, regulation of alternatin	594,019 594,172 594,164 594,125 & Ab 594,043 594,040 594,040 594,160 594,180 594,180 594,254
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or nedde, P. A. Skriver Cue tip fastener, N. B. Wilder. Cuff holder, J. A. Pugh. Cultivator, com. P. Jarvis. Current systems, regulation of alternatin	594,019 594,172 594,164 594,125 & Ab 594,043 594,040 594,040 594,160 594,180 594,180 594,254
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or nedde, P. A. Skriver Cue tip fastener, N. B. Wilder. Cuff holder, J. A. Pugh. Cultivator, com. P. Jarvis. Current systems, regulation of alternatin	594,019 594,172 594,164 594,125 & Ab 594,043 594,040 594,040 594,160 594,180 594,180 594,254
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder Cuffholder, J. A. Pugh Cultivator, corn, P. Jarvis Current systems, regulation of alternatir Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh Cuepndor, M. C. Merker Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish Desk standard, school, W. C. Hood.	594,017 594,107 594,104 594,015 594,015 594,015 594,105 594,105 594,105 594,125 594,125 594,125 594,218 594,218 594,218 594,218 594,218 594,218 594,218
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder Cuffholder, J. A. Pugh Cultivator, corn, P. Jarvis Current systems, regulation of alternatir Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh Cuepndor, M. C. Merker Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish Desk standard, school, W. C. Hood.	594,017 594,107 594,104 594,015 594,015 594,015 594,105 594,105 594,105 594,125 594,125 594,125 594,218 594,218 594,218 594,218 594,218 594,218 594,218
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder Cuffholder, J. A. Pugh Cultivator, corn, P. Jarvis Current systems, regulation of alternatir Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh Cuepndor, M. C. Merker Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish Desk standard, school, W. C. Hood.	594,017 594,107 594,104 594,015 594,015 594,015 594,105 594,105 594,105 594,125 594,125 594,125 594,218 594,218 594,218 594,218 594,218 594,218 594,218
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder Cuffholder, J. A. Pugh Cultivator, corn, P. Jarvis Current systems, regulation of alternatir Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh Cuepndor, M. C. Merker Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish Desk standard, school, W. C. Hood.	594,017 594,107 594,104 594,015 594,015 594,015 594,105 594,105 594,105 594,125 594,125 594,125 594,218 594,218 594,218 594,218 594,218 594,218 594,218
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder Cuffholder, J. A. Pugh Cultivator, corn, P. Jarvis Current systems, regulation of alternatir Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh Cuepndor, M. C. Merker Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish Desk standard, school, W. C. Hood.	594,017 594,107 594,104 594,015 594,015 594,015 594,105 594,105 594,105 594,125 594,125 594,125 594,218 594,218 594,218 594,218 594,218 594,218 594,218
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder Cuffholder, J. A. Pugh Cultivator, corn, P. Jarvis Current systems, regulation of alternatir Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh Cuepndor, M. C. Merker Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish Desk standard, school, W. C. Hood.	594,017 594,107 594,104 594,015 594,015 594,015 594,105 594,105 594,105 594,125 594,125 594,125 594,218 594,218 594,218 594,218 594,218 594,218 594,218
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder Cuffholder, J. A. Pugh Cultivator, corn, P. Jarvis Current systems, regulation of alternatir Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh Cuepndor, M. C. Merker Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish Desk standard, school, W. C. Hood.	594,017 594,107 594,104 594,015 594,015 594,015 594,105 594,105 594,105 594,125 594,125 594,125 594,218 594,218 594,218 594,218 594,218 594,218 594,218
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder Cuffholder, J. A. Pugh Cultivator, corn, P. Jarvis Current systems, regulation of alternatir Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh Cuepndor, M. C. Merker Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish Desk standard, school, W. C. Hood.	594,017 594,107 594,104 594,015 594,015 594,015 594,105 594,105 594,105 594,125 594,125 594,125 594,218 594,218 594,218 594,218 594,218 594,218 594,218
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, F. A. Skriver Cue tip fastener, N. B. Wilder. Cuff holder, J. A. Pugh. Cultivator, corn. P. Jarvis. Current systems, regulation of alternatis Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh. Cuspidor, M. C. Merker. Custer. See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Dien See Screw thread rolling die. Dien See Screw thread rolling die. Door observation opening, J. Elwood. Door stop and check, J. H. Coffman. Doubletree, D. L. Miller. Drawing knife, combination, J. M. Posey. Drier for semifluid material, J. Hundhaus Drill socket, J. D. Cox, Jr. Drip trough, J. W. Merry Dye, blue-red tetrazo, Rudolph & Herbat Dye, mixed sulfur, H. R. Vidal Dye, sulfur, D. G. Williams Electric cable, J. D. Gould. Electric time switch, A. B. Williams. Electric time switch, A. B. Richer, M. D. S. Williams. Electric time switch, A. B. Richer, M. D. S. P. C. Steinmetz. Description of, F. L. Emery.	594,043 594,173 594,185 584,043 594,043 594,043 594,043 594,195 594,185 594,185 594,185 594,186 594,187
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, F. A. Skriver Cue tip fastener, N. B. Wilder. Cuff holder, J. A. Pugh. Cultivator, corn. P. Jarvis. Current systems, regulation of alternatis Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh. Cuspidor, M. C. Merker. Custer. See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Dien See Screw thread rolling die. Dien See Screw thread rolling die. Door observation opening, J. Elwood. Door stop and check, J. H. Coffman. Doubletree, D. L. Miller. Drawing knife, combination, J. M. Posey. Drier for semifluid material, J. Hundhaus Drill socket, J. D. Cox, Jr. Drip trough, J. W. Merry Dye, blue-red tetrazo, Rudolph & Herbat Dye, mixed sulfur, H. R. Vidal Dye, sulfur, D. G. Williams Electric cable, J. D. Gould. Electric time switch, A. B. Williams. Electric time switch, A. B. Richer, M. D. S. Williams. Electric time switch, A. B. Richer, M. D. S. P. C. Steinmetz. Description of, F. L. Emery.	594,043 594,173 594,185 584,043 594,043 594,043 594,043 594,195 594,185 594,185 594,185 594,186 594,187
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cuch plastener, N. Wilder. Cuch plastener, N. Wilder. Cuch plastener, N. Pugh. Cultivator, corn, P. Jarvis. Current systems, regulation of alternatis Steinmets. J. Lee. Currycomb, R. G. Tombaugh. Cuspidor, M. C. Merker. Cutter. See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood Detachable handle, universal, B. Rivett. Die. See Screw thread rolling die. Dien cleaner, A. Insinger. Door observation opening, J. Elwood. Door stop and check, J. H. Coffman. Doubletree, D. L. Miller. Drawing knife, combination, J. M. Poesy. Drier for semifilid material, J. Hundhaus Drill socket, J. D. Cox, Jr. Drip trough, J. W. Merry Dye, blue-red tetrazo, Rudolph & Herbah Dye, mixed sulfur, H. R. Vidal. Dye, thiazin, H. R. Vidal. Dye, sulfur, H. R. Vidal. Dye, thiazin,	594,013 594,177 594,177 594,177 594,177 594,175 594,125 584,015 594,015 594,180 594,025 594,254 594,025 594,218 594,177 594,124 594,025 594,128 594,127 594,128 594,128 594,128 594,127 594,128 594,128 594,128 594,128 594,128 594,128 594,128 594,128 594,128 594,128 594,128 594,128 594,128
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder. Cuf holder, J. A. Pugh. Cultivator, corn. P. Jarvis. Current systems, regulation of alternatis Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh. Cuspidor, M. C. Merker. Cutter. See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Dien	594,043 594,174 594,125 584,125 584,043 594,043 594,043 594,165 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,187 594,184 594,287 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,188 594,187 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188
Cradle, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder. Cuf holder, J. A. Pugh. Cultivator, corn. P. Jarvis. Current systems, regulation of alternatis Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh. Cuspidor, M. C. Merker. Cutter. See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Dien	594,043 594,174 594,125 584,125 584,043 594,043 594,043 594,165 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,187 594,184 594,287 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,188 594,187 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188
Crade, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder. Cuf holder, J. A. Pugh. Cultivator, corn. P. Jarvis. Current systems, regulation of alternatis Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh. Cuspador, M. C. Merker. Cutter. See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Die. See Screw thread rolling die. Dien See Screw thread rolling die. Dior observation opening, J. Elwood. Door fastener, sliding, P. Farwell. Door observation opening, J. Elwood. Door stop and check, J. H. Coffman. Doubletree, D. L. Miller. Drawing knife, combination, J. M. Posey. Drier for semifitud material, J. Hundhaus Drill socket, J. D. Cox. Jr. Drip trough, J. W. Merry. Dye, blue-red tetrazo, Rudolph & Herbat Dye, mixed sulfur, H. R. Vidal. Dye, thiazin, H. R. Vidal. Dye, minazin, H. R. Vidal. Dye, thiazin, H. R. Steinmetz. Electric cable, J. D. Gould. Electric switch, A. C. Brockies. Elevator or travelling cars, means for recoperation of, F. L. Emery. Singine antifreezing attachment, A. H. R. Engines, balancing of steam or like motiv. E. O. Schlick. Envelope, W. McNaul. Excavating apparatus, trench, H. Nettelt Fan J. Jeffreys.	594,043 594,174 594,125 584,125 584,043 594,043 594,043 594,165 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,185 594,187 594,184 594,287 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,187 594,188 594,187 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188 594,188
Crane, traveling, S. T. Wellman et al. Crane block or N. R. Wilder. Cutter, S. R. Wellman, S. Merker. Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Dish cleaner, A. Insinger. Door fastener, sliding, P. Farwell. Door observation opening, J. Elwood. Door stop and check, J. H. Coffman. Doubletree, D. L. Miller. Drawing knife, combination, J. M. Posey. Drier for semifluid material, J. Hundhaus Drill socket, J. D. Cox, Jr. Drip trough, J. W. Merry. Drye, blue-red tetrazo, Rudolph & Herbat Dye, mixed sulfur, H. R. Vidal Dye, thiazin, H. R. Vidal Electric cable, J. D. Gould. Electric cable, J. D. Gould. Electric time switch, A. B. Williams. Elevator or traveling cars, means for re- operation of, F. L. Emery. Engine antifreezing attachment, A. H. R. Engines, balancing of steam or like motive E. O. Schlick. Envelope, W. H. Eaton. Envelope, W. McNaul. Excavating apparatus, trench, H. Nettelf Fan, J. Jeffreys. Feed, automatic boiler, C. F. Murray Fence, wire, G. D. Lockwood. Filter, water, H. F. Risch. Filter escape, M. S. Lodewick.	594,043 594,043 594,043 594,043 594,043 594,043 594,043 594,105 594,105 594,105 594,105 594,125 594,125 594,125 594,127 594,284 594,287
Crane, traveling, S. T. Wellman et al. Crane block or N. R. Wilder. Cutter, S. R. Wellman, S. Merker. Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Dish cleaner, A. Insinger. Door fastener, sliding, P. Farwell. Door observation opening, J. Elwood. Door stop and check, J. H. Coffman. Doubletree, D. L. Miller. Drawing knife, combination, J. M. Posey. Drier for semifluid material, J. Hundhaus Drill socket, J. D. Cox, Jr. Drip trough, J. W. Merry. Drye, blue-red tetrazo, Rudolph & Herbat Dye, mixed sulfur, H. R. Vidal Dye, thiazin, H. R. Vidal Electric cable, J. D. Gould. Electric cable, J. D. Gould. Electric time switch, A. B. Williams. Elevator or traveling cars, means for re- operation of, F. L. Emery. Engine antifreezing attachment, A. H. R. Engines, balancing of steam or like motive E. O. Schlick. Envelope, W. H. Eaton. Envelope, W. McNaul. Excavating apparatus, trench, H. Nettelf Fan, J. Jeffreys. Feed, automatic boiler, C. F. Murray Fence, wire, G. D. Lockwood. Filter, water, H. F. Risch. Filter escape, M. S. Lodewick.	594,043 594,043 594,043 594,043 594,043 594,043 594,043 594,105 594,105 594,105 594,105 594,125 594,125 594,125 594,127 594,284 594,287
Crane, traveling, S. T. Wellman et al. Crane block or N. R. Wilder. Cutter, S. R. Wellman, S. Merker. Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Cutter, See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Dish cleaner, A. Insinger. Door fastener, sliding, P. Farwell. Door observation opening, J. Elwood. Door stop and check, J. H. Coffman. Doubletree, D. L. Miller. Drawing knife, combination, J. M. Posey. Drier for semifluid material, J. Hundhaus Drill socket, J. D. Cox, Jr. Drip trough, J. W. Merry. Drye, blue-red tetrazo, Rudolph & Herbat Dye, mixed sulfur, H. R. Vidal Dye, thiazin, H. R. Vidal Electric cable, J. D. Gould. Electric cable, J. D. Gould. Electric time switch, A. B. Williams. Elevator or traveling cars, means for re- operation of, F. L. Emery. Engine antifreezing attachment, A. H. R. Engines, balancing of steam or like motive E. O. Schlick. Envelope, W. H. Eaton. Envelope, W. McNaul. Excavating apparatus, trench, H. Nettelf Fan, J. Jeffreys. Feed, automatic boiler, C. F. Murray Fence, wire, G. D. Lockwood. Filter, water, H. F. Risch. Filter escape, M. S. Lodewick.	594,043 594,043 594,043 594,043 594,043 594,043 594,043 594,105 594,105 594,105 594,105 594,125 594,125 594,125 594,127 594,284 594,287
Crade, folding, H. H. Homer Crane, traveling, S. T. Wellman et al. Crochet hook or needle, P. A. Skriver Cue tip fastener, N. B. Wilder. Cuf holder, J. A. Pugh. Cultivator, corn. P. Jarvis. Current systems, regulation of alternatis Steinmetz. Currycomb, R. J. Lee. Currycomb, R. G. Tombaugh. Cuspador, M. C. Merker. Cutter. See Flue cutter. Straw cutter. Designs, transferring, W. R. Fish. Desk standard, school, W. C. Hood. Detachable handle, universal, E. Rivett. Die. See Screw thread rolling die. Die. See Screw thread rolling die. Dien See Screw thread rolling die. Dior observation opening, J. Elwood. Door fastener, sliding, P. Farwell. Door observation opening, J. Elwood. Door stop and check, J. H. Coffman. Doubletree, D. L. Miller. Drawing knife, combination, J. M. Posey. Drier for semifitud material, J. Hundhaus Drill socket, J. D. Cox. Jr. Drip trough, J. W. Merry. Dye, blue-red tetrazo, Rudolph & Herbat Dye, mixed sulfur, H. R. Vidal. Dye, thiazin, H. R. Vidal. Dye, minazin, H. R. Vidal. Dye, thiazin, H. R. Steinmetz. Electric cable, J. D. Gould. Electric switch, A. C. Brockies. Elevator or travelling cars, means for recoperation of, F. L. Emery. Singine antifreezing attachment, A. H. R. Engines, balancing of steam or like motiv. E. O. Schlick. Envelope, W. McNaul. Excavating apparatus, trench, H. Nettelt Fan J. Jeffreys.	594,043 594,043 594,043 594,043 594,043 594,043 594,195 594,195 594,195 594,195 594,195 594,195 594,195 594,195 594,197 594,297