voted to the fungi of forage plants. Several pages are tion should be made to have every object in front of cylopædia Britannica, 9th edition. The size is deduced devoted to the bibliography of the subject, 175 cuts are contained in the text, while an adequate index terminates the work.

ECLECTIC PHYSICAL GEOGRAPHY. By Russell Hinman. Cincinnati and New York: Van Antwerp, Bragg & Co. Pp. vi, 382. Price \$1.

The general subjects of physical geography, the earth, the atmosphere, the sea, the land, weather and climate the various forms of life and its distribution, are well treated in this little work. It is illustrated by maps, charts, and general illustrations, amounting to 149, and presents a very attractive appearance. It is designed largely for educational purposes, but can be read with benefit by many long out of school, as giving an abstract of the present treatment of this subject. It is supplied with an index.

STUDIES IN CRITICISM. By Florence Trail. New York: Worthington Company, 747 Broadway. Pp. 328.

Our limitations do not permit us to give any idea of this work. Literature, religion, genius, morality, and art are all treated in it. It displays great merit, and one of our objects in saying so little about it is that no adequate notice can be contained in anything like the space at our disposal.

ENTOMOLOGY FOR BEGINNERS, FOR THE USE OF YOUNG FOLKS, FRUIT GROWRRS, FARMERS, AND GARDEN-ERS. By A. S. Packard, M.D., Ph.D. New York: Henry Holt & Com-pany. 1888. Pp. xvi, 367.

This work, although the title states it to be for "young folks, fruit growers," etc., is reaffy, so far as the limits of its size permit, a full treatise on general entomology. The structure of insects, their actions, and the performance of the general functions of life are given elaborately, together with their growth and metamorphosis. Their classification follows, being preceded by the surface. For other methods and further details, a synopsis and tabular view of the orders. Insect architecture and the insects injurious and beneficial to agri- furnish for \$2. culture are next spoken or. A large portion of the work, including aboutone hundred pages, is devoted to directions for collecting, preserving and rearing insects, their dissection, and to the cutting and mounting of sections. This represents a somewhat neglected subject, for a treatise on which a demand has long existed. The entomologist's library is systematically treated, the bibliography being divided into classes. A glossary and index close the work, which is illustrated by nearly



## HINTS TO CORRESPONDENTS.

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

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

Inquiries not answered in reasonable time should be rejeated; 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.

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

Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of

Minerals sent for examination should be distinctly marked or labeled.

- (1) E. J. B.-Powers & Weightman, of Philadelphia, are the only makers of quinine in quantity in this country, and are probably the largest manufacturers in the world.
- (2) M. L. W. asks: Whether a driven well (small iron tube), with a force pump, can be used where you have to go down 40 feet for water? A. As ordinarily constructed, it could not. By digging down at the surface so as to have your pump cylinder fifteen feet from the surface, water could be pumped from it.
- (3) E. H. B.—To bleach ivory handles of steel tools, protect the steel with a coat of wax or paraffin, and set the handles in a solution of chloride of lime 1 part, water 4 parts, for a day, more or less then wash the handles with clean warm water, wipe and dry. If satisfactory, warm the metal part and wipe off the wax or paraffin. Another way is to dip from 1 to 3 hours, wash, wipe, and dry. If the handles are not very dark, the latter way is preferable. For Dynamo-Electric Machinery, \$5. The subject of dypolishing the steel points, use putty powder (oxide namo construction still has to be treated empirically, stain the handles.
- (4) A. S. M. asks how to restore daguerreotypes. A. Daguerreotypes do not fade, but become stained if much exposed to air and dampness. Propably yours are stained. To clean daguerreotypes according to P. C. Duchochois, take hold of the daguerreotype with pinchers by one corner, and, keeping the plate level, cover it with a solution of potassium cyanide (one part to twenty-five of water), and if the picture be much stained, heat it moderately with an alcohol lamp for fifteen or twenty seconds, when the solution is thrown off and the plate rinsed. This done, flow the plate with clear water, heat it as before, and holding it then almost vertically, dry it: in commencing, heat it at one of the upper corners and dry the water by blowing upon it toward the opposite corner. The whole operation should be quickly done, and the plate not too strongly heated, especially when covered with cyanide, otherwise the image might be obliterated. daguerreotypes may be dusted with a fine camel's hair They may be copied in the camera, but every precau-

the daguerreotype covered with black to avoid reflections. The camera box and tripod, as well as the lens the thickness of soap bubble films, and from the varitube, should be protected with a black cloth

(5) M. H. F. asks for a formula of a hydrokinone developer:

No. 1. Water..... 10 oz. Sulphite sodium crystals chem. pure... 2 oz. Hvdrokinone.....

Dissolve in the order named, using, if possible, disbottle or in a dark place. It will retain its strength for a year or more. No. 2.

Water ...... Carbonate of potash...... 2 oz. Carbonate of soda..... 1 oz.

The weights are based on 437 grains to the ounce Put in the graduate two drachms of No. 1 and one and a half drachms of No. 2, then fill up to three ounces with water. If the developer works too slowly, add one drachm additional of No. 2. This will develop several plates in succession. When through, pour the developer into a separate bottle, filtering it through cotton, and preserve for use on future plates, adding a little fresh developer to it.

- (6) J. R.—For oxidizing silver. Dip the clean silver article in a solution of sulphide of potassium (liver of sulphur), 2 drachms to a pint of water. Heat this solution to a temperature of 175° Fah. Immerse for a few seconds only. When the article become blue black. For a velvet black, dip the article. previous to oxidizing, in a solution of mercurous nitrate and water and rinse. Then dip in the sulphide solution as above. For a brown shade, oxidize in the potassium sulphide as above, then dip in a liquid composed of 10 parts blue vitriol and 5 parts salam moniac to 100 parts vinegar. After oxidation brush with a scratch brush very lightly, to brighten and variegate see "Techno-Chemical Receipt Book," which we can
- (7) A. C. W. asks: Whether there is or is not a theory explaining the elliptical orbits of the planets. A. You will find articles in Scientific AMERICAN SUPPLEMENT, Nos. 226, 267, 573, on planets, their orbits, and theory of formation. Also see "Newcomb's Popular Astronomy," which we can mail for **\$2.50.**
- (8) F. B. S. writes: I have made a small urnace for melting cast iron on the forge to blow with the bellows, and have had no trouble whatever in melting the iron. Can melt 20 lb. in 20 minutes, and it takes about 20 minutes to get the furnace hot. I have succeeded easily in making small, light castings, but cannot make a thick, chunky casting like a post maul or a dumh bell without leaving a sank hole in the npper side. The mould fills up all right, but sinks down afterward. I use all scrap iron, and swing the furusce off by a crane, and pour directly from furnace into mould. Can you suggest a remedy? I am a long way from any foundry. A. Make what foundry men call a riser at the highest points in the flask, to carry off air quickly and allow a surplus of metal to flow up, and from which the shrinkage takes metal to fill. It is made like the gate or sprue that you pour into. For a dumb bell you should have two, about 34 in. diameter. Possibly you do not have the cope or top part of the flask deep enough to give pressure to the metal. The month of the gate should be 3 or 4 inches above the top of the pattern. You will gain much valuable information from "American Foundry Practice," by West, which we can mail for \$2.50.
- (9) S. L. P.—You cannot anneal wire practically and satisfactorily by electricity. The cheap est way is to anneal the whole bundle in an oven or muffle at a very low red heat, so as not to burn the outside layers, as is done at the wire works. If the wire is very small, passing it through a red hot muffle or iron pipe from the reel, or the flame of a series of flat wick lamps, would accomplish your purpose. The new lead plating is called kalamein. It is the tinning process, with a mixture of lead and tin, or solder; about 2 parts lead to 1 part tin.
- (10) L. R. D. Lightning rods well grounded are a protection. Ground bone is applied directly to the soil, being sown broadcast like grass seed. 500 to 1,000 lb. per acre may be used. Sometimes it is mixed with wood ashes, 15 to 30 bushels of the latter being applied per acre.
- (11) E. M. C. asks: Is there any rule or table printed by which I can calculate the size of wire for the field magnets and armature of a dynamo to properly run a lamp or set of lamps 42 volts 1.3 the handle in a saturated solution of alum in water for amperes 16 C. P. A. We refer you for general points of dynamo construction to Silvanus Thompson's no final formula having been deduced
  - (12) J. S. J. writes: I see in SCIENTIFIC AMERICAN of September 1 an article on vegetable wax. Can you state in your correspondence column what color the wax is, and the price in this country? A. Vegetable waxes resemble beeswax, but are rather lighter in color. There are many kinds. Japan wax cells for 25 cents a pound.
  - (13) G. L. asks (1) for a method of preparing cider, so it will remain sweet. A. Dip a stick in melted sulphur, set it on fire and hold in a half filled barrel; then agitate it and complete filling. 2. A furniture polish, suitable for hard oil fluish. A. Melt beeswax and add turpentine until it possesses the consistency of honey on cooling. Apply with a rag, and plenty of rubbing.
- (14) M. J. S. writes: Works on chemistry state that: It has been estimated that a liter of hydrogen or any other gas contains 1024 molecules. Please tell me how the shove is shown or where I can find the brush, but not touched with the fingers nor rubbed with information. A. You will find the subject treated in any hard material. They are very easily scratched. the appendix to Thompson & Tait's Physics. Also in the article "Atoms," by J. Clerk-Maxwell, in the En-

- (15) G. W. O. asks for the process of refining tin and lead, as he has to make a quantity of solder in his business. A. You probably melt your metals at too high a temperature. Keep the heat low and spread some powdered charcoal over the surface.
- (16) L. S. asks: What is the most simple, economical and practical way of opaqueing the backtilled water. This solution should be kept in a yellow grounds on negatives of furniture so as give prints showing only the object on the clear paper? A. We have successfully opaqued negatives with a brush, using Gihon's specially prepared opaque, which can be had from dealers in photographic materials. It dries quickly and flows readily from a very fine camel's hair brush. To get a white background when making the photograph, cover the wall and floor with white sheets. calcimined with lime, then use a magnesium flash light to illuminate the shadows. In this way the furniture will appear clear cut as desired, and it is much easier than using opaque. Also use plates with creamy thick films and of ordinary sensitiveness
  - (17) J. S. asks for a corn plaster such as are sold in drug stores. A. Spread common adhesive plaster upon buckskin, cut into disks and punch circular holes in each. For plaster use 1 part isinglass, water 10 parts, tincture of benzoin 2 parts, apply in one or more coats, allowing it to dry between applications.

## TO INVENTORS.

## INDEX OF INVENTIONS

## AND EACH BEARING THAT DATE.

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		390,028	_
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			C
	enders, etc., P. Frantzen		ď
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	den		i
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			ŧ
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Mothe		390,026	1
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	ne, J. Morts		3
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Tailet case.		200 178	l l
	, <b>B</b> . J. Davy		1
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cylopædia Britannica, 9th edition. The size is deduced	Chain links, manufacture of tubular coverings for, J. G. Ward	900 000
from the electric relations of zinc and copper, from the thickness of soap bubble films, and from the vari-	Chair. See Barber's chair. Reclining chair. Check or card case, A. M. Clark	
ations from Boyle's law shown by gases.	Chopper. See Cotton chopper.	
(15) G. W. O. asks for the process of re- fining tin and lead, as he has to make a quantity of	Churn, J. M. & O. A. Crandell Cigar cutter, F. C. Miller Cigar machine, C. L. Driefer	390,134
solder in his business. A. You probably melt your metals at too high a temperature. Keep the heat low	Cigar making machine, C. L. Driefer	
and spread some powdered charcoal over the surface.	Cigar wrappers, machine for cutting, O. Hammer- stein	<b>3</b> 90 <b>,1</b> 6 <b>7</b>
(16) L. S. asks: What is the most simple, economical and practical way of opaqueing the back-	Cigar wrapping and finishing machine, C. L. Driefer.	
grounds on negatives of furniture so as give prints showing only the object on the clear paper? A. We	Cigarettes with tobacco wrappers, manufacturing,	
have successfully opaqued negatives with a brush, using	H. F. Riedel	389,975
Gihon's specially prepared opaque, which can be had from dealers in photographic materials. It dries	Cleaner. See Boiler tube cleaner. Clevis, plow, J. D. Binford	389,999
quickly and flows readily from a very fine camel's hair brush. To get a white background when making the	Clock key, A. M. Lane	
photograph, cover the wall and floor with white sheets,	Clothes drier, J. H. Evans	990,120
calcimined with lime, then use a magnesium flash light to illuminate the shadows. In this way the furniture	D. Anderson	
will appear clear cut as desired, and it is much easier than using opaque. Also use plates with creamy thick	Core entil, E. H. & C. Morgani	390,185
films and of ordinary sensitiveness.	Cork extractor, C. & E. H. Morgan	390,183
(17) J. S. asks for a corn plaster such as are sold in drug stores. A. Spread common adhesive	Corset, E. Glass	390,162
plaster upon buckskin, cut into disks and punch circular	Cotton chopper, E. J. Schuman	
holes in each. For plaster use 1 part isinglass, water 10 parts, tincture of benzoin 2 parts, apply in one or	Coupling. See Car coupling. Thill coupling. Crutch attachment, W. J. Donald	
more coats, allowing it to dry between applications.	Culf holder, C. F. Perry	390.007
MO INVENTOR	Cultivator and harrow, combined, J. P. Howe Curtain attachment, window, Searles & Caldwell	
TO INVENTORS.  An experience of forty years, and the preparation of	Cutter. See Band cutter. Cigar cutter. Paper cutter. Tobacco cutter. Wall paper cutter.	
more than one hundred thousand applications for pa- tents at home and abroad, enable us to understand the	Date indicator, H. J. Meixell	389,972
laws and practice on both continents, and to passess unequaled facilities for procuring patents everywhere. A	Door securer, A. J. Longenecker  Draught regulator, E. T. Van Hecke:	
synopsis of the patent laws of the United States and all	Drier. See Clothes drier. Drill. See Corn drill. Ratchet drill.	
foreign countries may be had on application, and persons contemplating the securing of patents, either at home or	Drilling machine, center, A. Whitney	
abroad, are invited to write to this office for prices, which are low, in accordance with the times and our ex-	Dust collector, C. N. Smith	390.100
tensive facilities for conducting the business. Address MUNN & CO. office SCIENTIFIC AMERICAN, 361 Broad-	Dynamometrical governor, Hurdle & Steiger	389,928
way, New York.	Electric current indicator, P. B. Delany	
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United States were Granted	Electric storage system, W. H. McDonald Electric wires and street railways, elevated	
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September 25, 1888,	F. Silliman Elevator, C. W. Baldwin	
AND EACH BEARING THAT DATE.	Elevator, C. R. Otis	390,033
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	Embossing machine, J. M. Baker Engine. See Motor engine. Rotary engine.	389,949
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Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto  Extractor. See Cork extractor.  Fanning mill, J. C. Risser  Farm gate, J. P. Irwin  Feed water heater, coil, Pratt & Walnwright  Felt goods, device for hardening, J. & D. Pendergast  Fence, B. F. Newcomb  Fence tightener, wire, E. Warner  Fender and andiron. T. Hipwell  Fifth wheel. E. Storm  File, bill and letter, P. Meyer  File cutting machine. J. F. French  Fiter, oil, L. C. Atwood.  Fire alarm, C. H. Shaffer  Fire extinguisher for the stoves of railway cars, D. R. Galeher  Fireplace and damper, S. Shaw  Fire screen, F. Rudolph  Floor clamp, C. W. Boettner  Folding table, A. B. Jones	390,092 389,977 390,127 389,900 \$90,094 390,186 390,020 390,042 390,042 390,043 390,192 389,192 389,192 389,924 390,040 389,919
Alarm. See Fire alarm. Rallway alarm.         389,910           Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto  Extractor. See Cork extractor.  Fanning mill, J. C. Risser  Farm gate, J. P. Irwin  Feed water heater, coli, Pratt & Walnwright  Felt goods, device for hardening, J. & D. Pendergast  Fence, B. F. Newcomb  Fence, B. F. Newcomb  Fence tightener, wire, E. Warner  Fender and andiron, T. Hipwell  Filth wheel. E. Storm  File, bill and letter, P. Meyer  File cutting machine. J. F. French  Filter, oil, L. C. Atwood  Fire alarm, C. H. Shaffer  Fire extinguisher for the stoves of railway cars  D. R. Galeher  Fireplace and damper, S. Shaw  Fire screen, F. Rudolph  Floor clamp, C. W. Boettner  Folding table, A. B. Jones  Frame. See Window frame  Fruit box, R. E. Morey	390,092 389,977 390,127 389,900 \$90,094 390,042 390,042 390,042 390,043 390,149 380,175 380,149 380,140 389,919 380,173 390,140 389,919 390,173 390,125
Alarm. See Fire alarm. Rallway alarm.         Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto  Extractor. See Cork extractor.  Fanning mill, J. C. Risser  Farm gate, J. P. Irwin  Feed water heater, coli, Pratt & Walnwright  Felt goods, device for hardening, J. & D. Pendergast  Fence, B. F. Newcomb  Fence tightener, wire, E. Warner  Fender and andiron, T. Hipwell  Fifth wheel. E. Storm  File, bill and letter, P. Meyer  File cutting machine. J. F. French  Fire alarm, C. H. Shaffer  Fire extinguisher for the stoves of railway cars, D. R. Galeher  Fireplace and damper, S. Shaw  Fire screen, F. Rudolph  Folding table, A. B. Jones  Frame. See Window frame  Fruit gatherer, F. A. Hall  Fruit gatherer, W. Watson	390,092 389,977 390,127 389,900 390,094 390,094 390,096 390,020 390,105 390,075 390,193 389,194 390,140 389,919 389,919 380,173 390,175 390,175 390,175 390,175 390,175 390,175 390,175 390,175 390,175 390,175 390,175
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto.  Extractor. See Cork extractor.  Fanning mill, J. C. Risser	390,092 389,977 390,127 389,500 \$90,094 390,042 390,042 390,042 390,042 390,042 390,149 390,175 390,149 389,919 389,919 389,1173 390,125 390,166 390,106
Alarm. See Fire alarm. Rallway alarm.         389,910           Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto  Extractor. See Cork extractor.  Fanning mill, J. C. Risser  Farm gate, J. P. Irwin  Feed water heater, coli, Pratt & Walnwright  Felt goods, device for hardening, J. & D. Pendergast  Fence, B. F. Newcomb  Fence tightener, wire, E. Warner  Fender and andiron, T. Hipwell  Fifth wheel. E. Storm  File, bill and letter, P. Meyer.  File cutting machine. J. F. French  Filter, oil, L. C. Atwood  Fire alarm, C. H. Shaffer  Fire extinguisher for the stoves of railway cars  D. R. Galeher  Fireplace and damper, S. Shaw  Fire screen, F. Rudolph  Folding table, A. B. Jones  Frame. See Window frame.  Fruit gatherer, F. A. Hall  Fruit gatherer, F. A. Hall  Fruit gatherer, F. A. Hall  Fruit gatherer, W. Watson  Fuel, apparatus for burning liquid, C. Qvarnstrom  Furnace. See Hot air furnace  Galvanometer, I. W. Chisholm	390,092 389,977 390,127 389,900 \$90,094 390,096 390,042 390,042 390,042 390,043 390,149 380,149 380,149 380,140 389,014 389,019 380,173 390,165 390,106 390,096 390,096
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto.  Extractor. See Cork extractor.  Fanning mill, J. C. Risser  Farm gate, J. P. Irwin  Feed water heater, coli, Pratt & Walnwright  Felt goods, device for hardening, J. & D. Pendergast  Fence, B. F. Newcomb  Fence, B. F. Newcomb  Fence tightener, wire, E. Warner  Fender and andiron, T. Hipwell  Fifth wheel. E. Storm  File, bill and letter, P. Meyer  File cutting machine. J. F. French  Fiter, oil, L. C. Atwood  Fire alarm, C. H. Shaffer  Fire extinguisher for the stoves of railway cars, D. R. Galeher  Firelace and damper, S. Shaw  Fire screen, F. Rudolph  Flooding table, A. B. Jones  Frame. See Window frame  Fruit gatherer, F. A. Hall  Fruit gatherer, W. Watson  Fuel, apparatus for burning liquid, C. Qvarnstrom  Furnace. See Hot air furnace.  Galvanometer, I. W. Chisholm  Garment stay, E. K. Warren  Garment stay, E. K. Warren  Garment supporter, J. H. Bennett	390,092 389,977 390,127 389,900 \$90,094 390,020 390,042 390,042 390,043 390,149 390,175 390,149 389,919 389,173 390,173 390,173 390,166 390,106 390,066 390,066
Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto  Extractor. See Cork extractor.  Fanning mill, J. C. Risser  Farm gate, J. P. Irwin  Feed water heater, coli, Pratt & Walnwright  Felt goods, device for hardening, J. & D. Pendergast.  Fence, B. F. Newcomb  Fence tight ener, wire, E. Warner  Fender and andiron, T. Hipwell  Fifth wheel. E. Storm  File, bill and letter, P. Meyer  File cutting machine. J. F. French  Filter, oil, L. C. Atwood  Fire alarm, C. H. Shaffer  Fire extinguisher for the stoves of railway cars.  D. R. Galeher  Fireplace and damper, S. Shaw  Fire excreen, F. Rudolph  Folding table, A. B. Jones  Fruit gatherer, W. Watson  Fruit gatherer, F. A. Hall  Fruit gatherer, F. A. Hall  Fruit gatherer, F. A. Hall  Fruit gatherer, F. W. Watson  Fuel, apparatus for burning liquid, C. Qvarnstrom  Strom  Garment stay, E. K. Warren  Garment supporter, J. H. Bennett  Gas burner, atmospheric, H. J. Bell	390,082 389,977 390,127 389,900 390,094 390,046 390,046 390,045 390,045 390,149 390,149 390,140 389,919 390,140 389,919 390,135 390,166 390,086 390,086 390,086 390,086 390,086 390,086
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence, B. F. Newcomb Fence tightener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Filer, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Fireplace and damper, S. Shaw Fireplace and damper, S. Shaw Fireplace and damper, S. Shaw Fireplace window frame Fruit gatherer, F. A. Hall Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, atmospheric, H. J. Bell Gas overnor or pressure regulator, W. H. Brad-	390,092 389,977 390,127 389,900 390,094 390,046 390,020 390,135 390,075 390,179 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,166 390,066
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb. Fence tightener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer. File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fireplace and damper, S. Shaw Fire extinguisher for the stoves of railway cars. D. R. Galeher Fireplace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Fuel, apparatus for burning liquid, C. Qvarnstrom Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm Garment supporter, J. H. Bennett Gas burner, atmospheric, H. J. Bell Gas burner, incandescent, H. J. Bell Gas licandescents, manufacture of, H. J. Bell	390,092 389,977 390,127 389,900 390,094 390,046 390,046 390,045 390,0149 390,149 390,149 390,140 389,919 390,140 389,919 390,173 390,166 390,086 390,086 390,086 390,086 390,086 390,086 390,086
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast. Fence, B. F. Newcomb Fence tightener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Fire larm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Firelace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom strom Strom Strom Garment stay, E. K. Warren Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, incandescent, H. J. Bell Gas governor or pressure regulator, W. H. Bradley Gas lincandescents, manufacture of, H. J. Bell Gas extended Gate. See Car gate. Farm gate Gate. See Car gate. Farm gate	390,082 389,977 390,127 389,900 390,094 390,046 390,046 390,020 390,145 390,149 390,140 389,919 390,140 389,918 390,166 390,066
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto	390,092 389,977 390,127 389,900 \$90,094 390,042 390,042 390,043 390,043 390,043 390,049 389,019 389,192 389,116 390,166 390,166 390,166 390,166 390,066 390,066 \$90,066
Alarm. See Fire alarm. Rallway alarm.  Allorys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto  Extractor. See Cork extractor.  Fanning mill, J. C. Risser  Farm gate, J. P. Irwin  Feed water heater, coil, Pratt & Walnwright  Felt goods, device for hardening, J. & D. Pendergast  Fence, B. F. Newcomb  Fence tightener, wire, E. Warner  Fender and andiron, T. Hipwell  Fifth wheel. E. Storm  File, bill and letter, P. Meyer  File cutting machine. J. F. French  Fitter, oil, L. C. Atwood  Fire extinguisher for the stoves of railway cars.  D. R. Galeher  Fireplace and damper, S. Shaw  Fire extinguisher for the stoves of railway cars.  D. R. Galeher  Fireplace and damper, S. Shaw  Fire screen, F. Rudolph  Folding table, A. B. Jones  Fruit gatherer, W. Watson  Fruit gatherer, F. A. Hall  Fruit gatherer, F. A. Hall  Fruit gatherer, F. W. Watson  Fuel, apparatus for burning liquid, C. Qvarnstrom  See Hot air furnace.  Galvanometer, I. W. Chisholm  Garment stap, E. K. Warren  Garment supporter, J. H. Bennett  Gas burner, atmospheric, H. J. Bell  Gas burner, incandescent, H. J. Bell  Gas burner, incandescent, H. J. Bell  Gas incandescents, manufacture of, H. J. Bell  Gate, D. E. Helton  Gearing, F. H. Richards  Grader, road, F. Baldwin  Grain separator, A. C. Newton	390,092 389,977 390,127 389,900 \$90,094 390,042 390,042 390,043 390,075 390,175 390,175 390,149 390,140 389,919 380,124 390,166 390,066 390,066 390,066 390,066 390,066 390,066 390,066 390,067 389,918 389,918 389,918 389,918
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Feit goods, device for hardening, J. & D. Pendergast. Fence, B. F. Newcomb Fence tightener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm. File, bill and letter, P. Meyer. File cutting machine. J. F. French. Fiter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars, D. R. Galeher Fireplace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, incandescent, H. J. Bell Gas dovernor or pressure regulator, W. H. Bradley Gas lincandescents, manufacture of, H. J. Bell Gas governor or pressure regulator, W. H. Bradley Gate, See Cargate, Farm gate. Gate, W. P. Elliott Gate, D. E. Helton Gearlng, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grard, See Keyhole guard. Snow guard.	390,092 389,977 390,127 389,900 390,094 390,094 390,018 390,020 390,019 390,193 389,919 380,193 390,196 390,196 390,196 390,196 390,196 390,196 390,196 390,196 390,196 390,196 390,096
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt xoods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence tightener, wire, E. Warner Fender and andiron. T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Fireplace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Strom Fuel, apparatus for burning liquid, C. Qvarnstrom Garment supporter, J. H. Bennett Gas burner, atmospheric, H. J. Bell Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas licandescents, manufacture of, H. J. Bell Gas licandescents, manufacture of, H. J. Bell Gate, D. E. Helton Gearing, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grate, C. Sahler Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof	390,092 389,977 390,127 389,900 \$90,094 390,196 390,015 390,015 390,015 390,016 390,140 389,919 390,140 389,919 390,140 390,166 390,066 390,066 390,066 \$90,066
Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coil, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast. Fence, B. F. Newcomb Fence tight ener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. B. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Firelace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Fruit gatherer, F. A. Hall Fruit gatherer, F. A. Hall Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Strom Garment stay, E. K. Warren Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas governor or pressure regulator, W. H. Bradley Gael Incandescents, manufacture of, H. J. Bell. Gate. See Car gate. Farm gate. Gate, D. E. Helton Gearlog, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grate, C. Sahler Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof Hanger. See Eaves trough banger Harness trimming, D. J. Regan	390,092 389,977 390,127 389,900 390,094 390,094 390,040 390,045 390,015 390,015 390,194 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,155 390,166 390,066 390,066 390,066 390,066 390,066 390,066 390,066 390,066 390,066 390,066 390,066 390,066 390,066
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence tightener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Fireplace and damper, S. Shaw Fire screen, F. Rudolph Foor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, atmospheric, H. J. Bell Gas burner, incandescent, H. J. Bell Gas povernor or pressure regulator, W. H. Bradley Gas lncandescents, manufacture of, H. J. Bell Gaste, D. E. Helton Gearing, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grate, C. Sahler Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof Hanger. See Eaves trough banger. Harness trimming, D. J. Regan Harrow and pulverizer, Spitler & Plugle Harrow, rotary, T. C. Cook	390,092 389,977 390,127 389,900 389,900 390,094 390,096 390,020 389,091 389,092 389,924 390,040 390,140 390,140 390,140 390,140 390,146 390,066
Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast. Fence, B. F. Newcomb. Fence tightener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer. File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher. Fireplace and damper, S. Shaw Fire screen, F. Rudolph Folding table, A. B. Jones Frame. See Window frame. Fruit gatherer, F. A. Hall Fruit gatherer, F. A. Hall Fruit gatherer, F. A. Hall Fruit gatherer, F. W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom.  See Hot air furnace. Galvanometer, I. W. Chisholm Garment stap, E. K. Warren Garment supporter, J. H. Bennett Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas lincandescents, manufacture of, H. J. Bell Gas locandescents, manufacture of, H. J. Bell Gate. See Cargate. Farm gate. Gate. See Cargate. Farm gate. Gate. D. E. Helton Gearlng, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grate, C. Sahler Gund. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof Hanger. See Eaves trough banger. Harrow, rotary. T. C. Cook Harrow and pulverizer, Spitler & Plugle Harrow and pulverizer, Spitler & Plugle Harrow tooth, J. Brinkerhoff Harvester, W. Russell	390,092 389,977 390,127 389,900 \$90,094 390,042 390,048 390,049 390,049 390,149 390,149 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,165 390,066 390,066 390,066 390,064 390,097 390,198
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence tightener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm Fille, bill and letter, P. Meyer File cutting machine. J. F. French Fiiter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Fireplace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Strom Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas governor or pressure regulator, W. H. Bradley Gae lincandescents, manufacture of, H. J. Bell Gate. See Car gate. Farm gate. Gate, D. E. Helton Gearing, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grade, C. Sahler Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Guard. See Keyhole guard. Snow guard. Gun, magazine, J. Schulhof Harvester platforms, carrier for, M. Dew Harvester, W. Russell Harvester, w.	390,092 389,977 390,127 389,900 390,094 390,094 390,094 390,095 390,075 390,075 390,193 389,919 389,919 389,193 390,196 390,096
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence, B. F. Newcomb Fence, B. F. Newcomb Filte, coli, L. C. Risser Filte, bill and letter, P. Meyer File, bill and letter, P. Meyer. File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Fireplace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm Garment stay, E. K. Warren Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, atmospheric, H. J. Bell Gas burner, incandescent, H. J. Bell Gas povernor or pressure regulator, W. H. Bradley Gas incandescents, manufacture of, H. J. Bell Gas incandescents, manufacture of, H. J. Bell Gate, D. E. Helton Gearlng, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grate, C. Sahler Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof Hanger. See Eaves trough hanger. Harness trimming, D. J. Regan Harrow and pulverizer, Spitler & Plngle Harrow tooth, J. Brinkerhoff Harvester, self-blnding, Pitkin & Steward	390,092 389,977 390,127 389,900 390,196 390,094 390,196 390,096 390,192 389,924 390,040 390,140 390,140 390,140 390,166 390,066
Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coil, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast. Fence, B. F. Newcomb Fence tight ener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. B. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire extinguisher for the stoves of railway cars. D. R. Galeher Firelace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Strom Garment stay, E. K. Warren Garment stay, E. K. Warren Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, incandescent, H. J. Bell. Gas burner, incandescent, H. J. Bell. Gas governor or pressure regulator, W. H. Bradley Gael Incandescents, manufacture of, H. J. Bell. Gate. See Car gate. Farm gate. Gate, D. E. Helton Gearlog, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grate, C. Sahler Gund. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof Hanger. See Eaves trough hanger. Harrow and pulverizer, Spitler & Pingle Harrow tooth, J. Brinkerhoff Harrow tooth, J. Brinkerhoff Harrow tooth, J. Brinkerhoff Harrow tooth, J. Brinkerhoff Harvester, self-blinding, Pitkin & Steward Hat sweat band, J. W. Gosling Hay loader, G. L. McNutt	390,092 389,977 390,127 389,900 390,094 390,096 390,096 390,016 390,140 390,140 380,166 390,066 390,066 390,066 390,064 390,066 380,980 380,198
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast. Fence, B. F. Newcomb. Fence tightener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer. File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire extinguisher for the stoves of railway cars. D. R. Galeher. Fireplace and damper, S. Shaw Fire screen, F. Rudolph Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom.  Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm Garment stap, E. K. Warren Garment supporter, J. H. Bennett Gas burner, atmospheric, H. J. Bell Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas lincandescents, manufacture of, H. J. Bell Gate, W. P. Elliott Gate, D. E. Helton Gearing, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grate, C. Sahler Gund. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof Harrow, rotary, T. C. Cook Harrow and pulverizer, Spitler & Plingle Harrow tooth, J. Brinkerhoff Harvester platforms, carrier for, M. Dew Hat sweat band, J. W. Gosling Hat sweat band, J. W. Gosling Hat laweat band, J. W. Gosling Hat laweat and,	390,092 389,977 390,127 389,900 \$90,094 390,042 390,048 390,049 390,049 390,149 390,149 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,106 390,066 390,066 390,066 390,064 390,074 390,124 390,097 390,124 390,097 390,124 390,097 390,124 390,097 390,124 390,097 390,124 390,097 390,124 390,097 390,124 390,097 390,141 390,099 390,141 390,099 390,141 390,099 390,141 390,099
Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence tight ener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Fiiter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars, D. R. Galeher Fireplace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom strom Strom Garment stay, E. K. Warren Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, atmospheric, H. J. Bell Gas governor or pressure regulator, W. H. Bradley Gas lincandescents, manufacture of, H. J. Bell Gas governor or pressure regulator, W. H. Bradley Gate, D. E. Helton Gearlor, F. H. Richards Grader, road, F. Baldwin Grate, C. Sahler Gund, automatic machine, B. Burton Gun, automatic machine, Carrier for, M. Dew Harrow tooth, J. Brinkerhoff Harrow and pulverizer, Spitler & Plngle Harrow tooth, J. Brinkerhoff Harvester platforms, carrier for, M. Dew Harrow tooth, J. Brinkerhoff Harveste	390,082 389,977 390,127 389,900 390,094 390,046 390,046 390,045 390,0149 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,140 390,166 390,066 389,937
Alarm. See Fire alarm. Rallway alarm.  Alloys, obtaining manganese, O. M. Thowless. 389,910 Animal trap, W. C. Hooker. 380,021 Armature, dynamo, Meyers & Coward. 383,834 Axle box for carriages, M. Guiet. 389,232 Axle box for carriages, M. Guiet. 389,229 Axle skein, Fulton & Viele. 390,121 Bait spoon, H. Loftle. 390,028 Band cutter and feeder, combined, J. N. Schmeltzer. 389,861 Barber's chair, adjustable, E. Berninghaus. 320,059 Barometers or other instruments, indicating mechanism for, I. Joseph. 389,967 Battery. See Secondary battery. Binding strap, J. W. Mansfield. 389,331 Bleaching fiber, Smith & Nicolle. 389,348 Bleaching strap, J. W. Mansfield. 389,388 Block. See Building block. Board. See Center board. Ironing board. Boat. See Life boat. Boiler. See Steam boiler. Tubular boiler. Boiler, J. Leightham. 389,969 Boiler tube cleaner, N. Blanchard. 389,969 Boller tube cleaner, N. Blanchard. 389,060 Book leveler, W. M. Kinnard. 389,969 Books, binding clamp for receipt, Noel & Maurer. 389,852 Books, binding clamp for receipt, Noel & Maurer. 389,852 Books, binding clamp for receipt, Noel & Maurer. 389,853 Bottles, Capsule for, C. Cheswright. 389,954 Box. See Axle box. Frult box. Letter box. Watch movement box. Brake. See Vehicle brake. Brick machine, R. A. Willett. 390,105 Bridge, S. A. Buchanan 389,351 Bridge, Graw, R. A. Sawyier 389,351 Bridge, Graw, R. A. Sawyier 389,351 Bridge, draw, R. A. Sawyier 389,351 Bridge, draw, R. A. Sawyier 389,351 Bridge, draw, R. A. Sawyier 389,351 Buggy top, L. E. Duvall 389,357 Buildings, waterproof structure in, F. T. Whalen. 390,105 Burner. See Gas burner. Lamp burner. Button making machine, F. M. Leavitt 390,126 Car coupling, F. M. Rariden. 390,055 Car coupling, J. T. Wilson. 390,055 Car date, steke and socket for fat, T. J. Vaughan. 390,055 Car date, steke and socket for fat, T. J. Vaughan. 389,351 Carburetor, Ruckle & Wolters. 390,055 Car warmer, street, G. A. Beach. 390,055 Card marters, protector for, J. A. Miller. 390,055 Card marters, protector for, J. A. Miller. 390,055	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Feit goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence ight ener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Filter, oil, L. C. Atwood Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Firelace and damper, S. Shaw Fire screen, F. Rudolph Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm Garment stay, E. K. Warren Gas burner, atmospheric, H. J. Bell Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas povernor or pressure regulator, W. H. Bradley Gas lncandescents, manufacture of, H. J. Bell Gate, D. E. Helton Gearing, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grare, C. Sahler Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof Harrow tooth, J. Brinkerhoff Hartoning	390,092 389,977 390,127 389,900 389,900 390,198 390,198 390,199 389,191 389,193 380,173 390,178 390,166 390,066
Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast. Fence, B. F. Newcomb. Fence tight ener, wire, E. Warner. Fender and andiron, T. Hipwell. Fifth wheel. E. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French. Filiter, oil, L. C. Atwood. Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher. Fireplace and damper, S. Shaw. Fire screen, F. Rudolph. Floor clamp, C. W. Boettner. Folding table, A. B. Jones Frame. See Window frame. Fruit gatherer, F. A. Hall. Fruit gatherer, F. A. Hall. Fruit gatherer, F. W. Watson. Fuel, apparatus for burning liquid, C. Qvarnstrom. Furnace. See Hot air furnace. Galvanometer, I. W. Chisholm. Garment stay, E. K. Warren Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas lincandescents, manufacture of, H. J. Bell Gate. See Cargate. Farm gate. Gate. See Eaves trough hanger. Harrow rotary. T. C. Cook. Harrow tooth, J. Brinkerhoff. Harvester, self-binding, Pitkin & Steward. Harvester platforms. carrier for, M. Dew. Har	390,092 389,977 390,127 389,900 \$90,094 390,042 390,042 390,043 390,149 390,149 380,149 380,149 380,140 380,140 380,140 380,140 380,166 390,066
Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless. 389,301 Animal trap, W. C. Hooker. 380,021 Armatuze, dynamo, Meyers & Coward. 383,834 Axle box for carriages, M. Guiet. 389,328 Axle lubricator, W. C. Joslin. 389,229 Axle skein, Fulton & Viele. 380,121 Bait spoon, H. Loftle. 380,121 Batt spoon, H. Loftle. 380,232 Band cutter and feeder, combined, J. N. Schmeitzer. 380,089 Barometers or other instruments, indicating mechanism for, I. Joseph. 389,367 Battery. See Secondary battery. Binding strap, J. W. Mansfield. 389,381 Bleaching fiber, Smith & Nicolle. 389,383 Bleaching fiber, Smith & Nicolle. 389,388 Block. See Building block. Board. See Center board. Ironing board. Book. See Life boat. Boller. J. Leightham. 389,388 Block see Life boat. Boller. J. Leightham. 389,389 Bolier tube cleaner, N. Blanchard. 380,000 Book leveler, W. M. Kinnard. 380,303 Book rest, A. R. Byrkit. 389,352 Books, binding clamp for receipt, Noel & Maurer. 389,365 Bottle, J. Canan. 389,365 Bottle, J. Canan. 389,365 Bottle, J. Canan. 389,365 Bottle, Capsule for, C. Cheswright. 389,354 Box. See Axle box. Fruit box. Letter box. Watch movement box. Brake. See Vehicle brake. Brick machine, R. A. Willett. 390,110 Bridge, S. A. Buchanan 389,351 Bridge, Graw, R. A. Sawyier 389,361 Bridge, Graw, R. A. Sawyier 389,361 Bridge, draw, R. A. Sawyier 389,361 Buggt ytop, L. B. Duvall 389,361 Buggt ytop, L. B. Duvall 389,361 Buggt ytop, L. B. Duvall 389,361 Can heading machine, F. M. Leavitt. 390,105 Car coupling, F. M. Rariden 390,005 Car coupling, J. T. Wilson. 390,362 Car heaters, protector for, J. A. Miller. 390,105 Car coupling, W. Bunch 390,363 Car heaters, protector for, J. A. Miller. 390,393 Car stake and socket for fiat, T. J. Vaughan. 390,393 Car heaters, protector for, J. A. Miller. 390,393 Car tealing machines, electr	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coli, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence tight ener, wire, E. Warner Fender and andiron, T. Hipwell Fifth wheel. E. Storm File, bill and letter, P. Meyer File cutting machine. J. F. French Fire larm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Firelace and damper, S. Shaw Fire screen, F. Rudolph Floor clamp, C. W. Boettner Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, F. A. Hall Fruit gatherer, W. Watson Fuel, apparatus for burning liquid, C. Qvarnstrom strom strom strom garment stay, E. K. Warren Garment stay, E. K. Warren Garment stay, E. K. Warren Garment supporter, J. H. Bennett Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas governor or pressure regulator, W. H. Bradley Gas lincandescents, manufacture of, H. J. Bell Gate. See Car gate. Farm gate. Gate, W. P. Eillott Gate, D. E. Helton Gearing, F. H. Richards Grader, road, F. Baldwin Grain separator, A. C. Newton Grate, C. Sahler Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof Hanger. See Eaves trough hanger. Harrow and pulverizer, Spitler & Pingle Harrow tooth, J. Brinkerhoff Harvester platforms, carrier for, M. Dew Harvester, W. Russell Hat sweat band, J. W. Gosling Hay loader, G. L. McNutt Head rest, H. H. Parkhill Heater. See Fee dwater heater. Hot air and hot water heater. Heating apparatus, C. T. Johns & A. Hat sweat band, J. W. Gosling Hat loader, G. L. McNutt Head rest, H. H. Parkhill Heater. See Cuff holder. Newholder. Paper holder. Paper holder. Paper holder. Paper holder. Re in holder. Paper holder. Paper holder. Re in holder.	390,082 389,977 390,127 389,900 390,194 390,194 390,194 390,195 390,195 390,196 389,992 390,198 389,992
Alarm. See Fire alarm. Rallway alarm. Alloys, obtaining manganese, O. M. Thowless	Engines, igniting apparatus for gas or oil motor, N. A. Otto Extractor. See Cork extractor. Fanning mill, J. C. Risser Farm gate, J. P. Irwin Feed water heater, coil, Pratt & Walnwright Felt goods, device for hardening, J. & D. Pendergast Fence, B. F. Newcomb Fence tightener, wire, E. Warner Fender and andiron. T. Hipwell Fifth wheel. B. Storm File, bill and letter, P. Meyer. File cutting machine. J. F. French Filter, oil, L. C. Atwood. Fire alarm, C. H. Shaffer Fire extinguisher for the stoves of railway cars. D. R. Galeher Fireplace and damper, S. Shaw Fireplace and damper, S. Shaw Fire screen, F. Rudolph Folor clamp, C. W. Boettner. Folding table, A. B. Jones Frame. See Window frame. Fruit box, R. E. Morey Fruit gatherer, W. Watson Full, apparatus for burning liquid, C. Qvarnstrom Strom Furnace. See Hot air furnace Galvanometer, I. W. Chisholm Garment supporter, J. H. Bennett Gas burner, atmospheric, H. J. Bell Gas burner, incandescent, H. J. Bell Gas burner, incandescent, H. J. Bell Gas povernor or pressure regulator, W. H. Bradley.  Gas incandescents, manufacture of, H. J. Bell Gate. See Cargate. Farm gate. Gate. See Cargate. Show guard. Gun, automatic machine, B. Burton Guard. See Keyhole guard. Snow guard. Gun, automatic machine, B. Burton Gun, magazine, J. Schulhof. Hanger, See Eaves trough hanger. Harrow and pulverizer, Spitler & Pingle Harrow tooth, J. Brinkerhoff Harrow tooth, J. Brinkerhoff Harrow tooth, J. Brinkerhoff Harvester, w. Russell Hat sweat band, J. W. Gosling Hat sweat band, J. W. Gosling Hat sweat band, J. W. Gosling Hat conformator and stretcher, combined, H. Lyons Hat sweat band, J. W. Gosling Hat loader, G. I. McNutt Heed rest, H. H. Parkhill Heater. See Feed water heater. Hot air and hot water heater. Heating device, W. Voxel Heel filing machine, A. K. Washburn Hinge, spring, W	390,092 389,977 390,127 389,900 390,094 390,096 390,096 390,097 389,910 389,919 389,140 389,019 389,140 389,019 389,166 390,066 389,987 390,110 389,987 390,198 389,987 390,198 389,987 390,198 389,987 390,198 389,988 389,988 389,988 389,988