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Business and Personal.

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HINTS TO CORRESPONDENTS.

HINTS TO CORRESPONDENTS.

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 This is for our information and not for publication.

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

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

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

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

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

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.

(7092) C. E. B. asks how to make a paste or glue that will answer to paste a photograph or lithograph on glass, and not to show the paste, and how to treat same. A. To mount prints take 4 ounces gelatine and soak half an hour in cold water, then place in a glass jar, adding 16 ounces of water; put the jar in a large dish of warm water and dissolve the gelatine, add a small quantity of glycerine, say 1 ounce. When dissolved pour into a shallow tray. Have your prints rolled on a roller, albumen side out; take the print by the corners and pass rapidly through the gelatine, taking great care to avoid air bubbles. Hang up with clips to dry; when dry squeeze carefully on to the wet glass. The better the quality of glass, the finer the effect.

(7093) G. G. W. asks for a copper polish to be used for cleaning the work board in a saloon. Until lately I have been able to buy a polish that answered all requirements, but am unable to get it at present. It was a powder of a reddish cast and required no rubbing whatever. Could you give me an idea as to its composition? Have tried bichromate potash and pumice stone and got nearly the same action, but it stained the hands. A. Rub the metal with rottenstone and sweet oil, then rub off with a piece of cotton fiannel, and polish with soft leather. A solution of oxalic acid rnbbed over tarnished brass soon removes the tarnish, rendering the metal bright. The acid must be washed off with water. and the brass rubbed with whiting and soft leather. A mixture of muriatic acid and alum dissolved in water imparts a golden color to brass articles that are steeped in it for a few seconds. The red powder you mention is

(7094) S. F. asks: Will you please a constant reader of your valuable paper by answering the following question? Is there a cement that is insoluble; in other words, a cement that will not liquefy with heat? A. The following are formulas for fireproof cements. Our correspondent fails to give the use to which the cement is to be put, which is necessary to give a formula which will apply. 1. Iron filings, 140 parts; hydraulic formed into a paste with vinegar, and then applied. The cement is left to dry slowly before heating. 2. Iron filings, 180 parts; lime, 45; common salt, 8. These are worked into a paste with strong vinegar. The cement must be perfectly dry before being heated. By heating it becomes stone hard. 3. Linseed or almond meal, mixed to a paste with milk, lime water, or starch paste, resists a temperature of 500° Fah. (260° C.) 4. Clay is puddled with water, and to it is added the greatest poseible quantity of sand, which has been passed through a hair sieve; the whole is worked up in the hands, and applied in coats more or less thick on vessels needing protection from the direct action of the fire. 5. 1 part of sifted manganese peroxide, 1 part pulverized zinc white, sufficient commercial soluble glass to form a thin paste. To be used immediately. Becomes very hard, and presents a complete resistance to red heat and boiling water. 6. As a coating for glass vessels, to protect them from injury during exposure to fire, pipe clay and horse dung are made into a paste with water. This composition is applied by spreading it on paper; it is used by pipe makers and will stand the extreme heat of their furnaces for twenty-four hours without damage. 7. Shredded tow or plumbago is substituted for the horse dung. 8. Clay, 5 Burner. See Gas light burner.
parts; iron filings, 1 part; and linseed oil varnish q. s. to Cabinet, thread, J. S. Armstrong.

mix. 9. 10 parts common clay dried and pulverized; 4 parts iron filings; 1 part common salt; 1 part borax; 2 parts manganese peroxide.

(7095) H. J. F. asks: 1. If I build dynamo illustrated in Supplement, No. 600, twice the size given, what will the production be? A. The power of a dynamo should vary with the fifth or sixth power of its lineal dimensions. The power of dynamos of lineal ratio 1:2 should be 1:32 or 1:64. It would be safer to take the mean, say 1:48. 2. I wish to build a 25 light dynamo what type would you recommend? A. The bipolar dram armature type such as given in our Supplement, Nos. 600 and 865. The latter for 75 lamps is highly re commended. 3. Can I obain drawings in detail of either an Edison or Westinghouse dynamo of about 25 or 50 lights? A. The nearest we have is the SCIENTIFIC AMERICAN dynamo in Supplement. No. 865, just alluded to. 4. I wish to make a voltmeter. Can you furnish me a SUPPLEMENT describing same? A. See our SUPPLEMENT, Nos. 353, 552, 556; for alternating current see Nos. 668, 734,933. 5. Can I remould carbons by first pulverizing and adding a solution to make a paste and then baking them A. The manufacture of moulded carbons is described in our Supplement. No.

(7096) W. C. asks what calcium tungstate is that is used for X ray fluorscopes. A. It is a white somewhat crystalline or granular salt, made by heating together sodium tungstate and a calcium salt, such as calcium chloride. By treatment of the cooled mass with water the sodium salt formed is dissolved, leaving the insoluble calcium tungstate. Its formula is CaWO4.

(7097) B. M. asks how the copper deposit on carbon stick is put on. Can the same be done with graphite? If so, how? A. It is put on by electric deposition, just as any article is copper plated. The same cannot be done with loose graphite, on account of the impossibility of avoiding "electrolytic soldering" or joining of the particles by the copper deposit.

(7098) A. B. W. asks how to arrange to operate an ordinary 3 inch electric elevator bell from a motor circuit. The elevator is run by an electric motor using a 500 volt circuit and it is desired to take off about 5 volts of this current to operate the bell; will this be practical? If so, how can I construct a simple, inexpensive, and efficient resistance box, which I suppose is ne cessary for the bell circuit? How much resistance will be required, and of what material? A. The best plan is to take off the current in shunt. By testing find two portions of the circuit sufficiently removed from each other to work the bell satisfactorily, if its line terminals are connected thereto There will be no trouble in finding such points unless the line from street to motor is very short. A resistance box on so high a voltage is not advisable. If this cannot be done, the resistance can easily be calculated.

TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

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JANUARY 12, 1897,

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

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TEents.] 575,240 575,227 575,237 575,237 575,237 575,237 575,237 575,044 575,237 575,043 575,144 575,037 575,152 575,164 575,075 575,164 575,075 575,165 575,165 575,165 575,165 575,165 575,165	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, J. J. Waldner. Engline indicator, steam, C. H. Bedell. Engline stopping apparatus, G. W. Brown. Espalier wall, W. Busche. Extension table, W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Fered water heating apparatus, C. J. Brown. Fenge making machine, picket, C. L. Horras. Fence post, A. M. Smith. Fence post, A. W. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. See Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Tho mos on. File, etter, C. H. W. ley Filling device, F. Rossbach-Rousset. Firearm, magazine. S. N. McClean. Firearms, slide and hook for sling straps of, Perkins & Johnson. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, Fire hydrant, C. E. Loetzer. Float, phantom, L. S. Hinckley. Flue cleaner, J. J. Brennan. Fly paper, sticky, F. V. Wightman et al. Frunace. See Downdraught furnace. Incinerating furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Gas generating apparatus, acetylene, L. S. Buffington. Gas, incandescent, R. Moscheles. 575.261 to Gas incandescent, R. Moscheles. 575.261 to Gas incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Vlolet.	575.11 574.93 575.22 574.93 575.00 574.93 575.00
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TE. ents.] 575,240 575,227 575,287 575,287 575,287 575,287 575,287 575,104 575,018 575,104 575,104 575,105 575,104 575,105	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, See Moure. Rotary engine. Engline indicator, steam, C. H. Bedell. Engine stopping apparatus, G. W. Brown. Espalier wall, W. Busche. Extension table, W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Feed water heating apparatus, C. J. Brown. Fenge making machine, picket, C. L. Horras. Fence post, A. M. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. See Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Tho mos on. File, etter, C. H. W. ley Filling device, F. Rossbach-Rousset. Firearm, magazine. S. N. McClean. Firearms, slide and hook for sling straps of, Per- kins & Johnson. Fire extinguisher, automatic, E. Livingston. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, Frender, See Downdraught furnace. Incinerat- ing furnace. Fernace. See Downdraught furnace. Incinerat- ing furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Gas generating apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Gas generating apparatus, acetylene, L. S. Buff- ington. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas fixture, E. A. C. Kaysel. Gas generating apparatus, J. E. Miller. Globe or shade holder, E. P. Gleason. Gas incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent, R. Moscheles.	575.11 576.21 574.93 575.02 574.93 574.93 574.93 574.93 575.02 575.03 575.02 575.03
TE. ents.] 575,240 575,287 575,287 575,287 575,287 575,083 575,083 575,083 575,083 575,186 575,288 574,980 574,980	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, J. J. Waldner. Engline indicator, steam, C. H. Bedell. Engine indicator, steam, C. H. Bedell. Engine indicator, steam, C. H. Bedell. Engine stopping apparatus, G. W. Brown. Extension table. W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Feed water heating apparatus, C. J. Brown. Feed water heating apparatus, C. J. Brown. Fence post, A. Marble. Fence post, A. W. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. See Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Thompson. File, etter, C. H. W. ley Filling device, F. Rossbach-Rousset. Firearm, magazine, S. N. McClean. Firearms, slide and book for sling straps of, Perkins & Johnson. Fire extinguisher, automatic, E. Livingston. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire hydrant, C. E. Loetzer. Moot, phantom, L. S. Hinckley. Filue cleaner, J. J. Brennan. Fiy paper, sticky, F. V. Wightman et al. Frunace. See Downdraught furnace. Incinerat ing furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Game apparatus, J. G. Kiah. Gas generating apparatus, acetylene, L. S. Buff. ington. Gas, incandescent, R. Moscheles	575.12 576.22
TE. ents.] 575,240 575,227 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,337	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, J. J. Waldner. Engline indicator, steam, C. H. Bedell. Engine indicator, steam, C. H. Bedell. Engine indicator, steam, C. H. Bedell. Engine stopping apparatus, G. W. Brown. Extension table. W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Feed water heating apparatus, C. J. Brown. Feed water heating apparatus, C. J. Brown. Fence post, A. Marble. Fence post, A. W. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. See Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Thompson. File, etter, C. H. W. ley Filling device, F. Rossbach-Rousset. Firearm, magazine, S. N. McClean. Firearms, slide and book for sling straps of, Perkins & Johnson. Fire extinguisher, automatic, E. Livingston. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire hydrant, C. E. Loetzer. Moot, phantom, L. S. Hinckley. Filue cleaner, J. J. Brennan. Fiy paper, sticky, F. V. Wightman et al. Frunace. See Downdraught furnace. Incinerat ing furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Game apparatus, J. G. Kiah. Gas generating apparatus, acetylene, L. S. Buff. ington. Gas, incandescent, R. Moscheles	575.12 576.22
TE. ents.] 575,240 575,227 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,236 575,144 575,237 575,145 575,146 575,147 575,216 575,147 575,216 575,147 575,216 575,147 575	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, J. J. Waldner. Engline indicator, steam, C. H. Bedell. Engine indicator, steam, C. H. Bedell. Engine indicator, steam, C. H. Bedell. Engine stopping apparatus, G. W. Brown. Extension table. W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Feed water heating apparatus, C. J. Brown. Feed water heating apparatus, C. J. Brown. Fence post, A. Marble. Fence post, A. W. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. See Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Thompson. File, etter, C. H. W. ley Filling device, F. Rossbach-Rousset. Firearm, magazine, S. N. McClean. Firearms, slide and book for sling straps of, Perkins & Johnson. Fire extinguisher, automatic, E. Livingston. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire hydrant, C. E. Loetzer. Moot, phantom, L. S. Hinckley. Filue cleaner, J. J. Brennan. Fiy paper, sticky, F. V. Wightman et al. Frunace. See Downdraught furnace. Incinerat ing furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Game apparatus, J. G. Kiah. Gas generating apparatus, acetylene, L. S. Buff. ington. Gas, incandescent, R. Moscheles	575.12 576.22
TE. ents.] 575,240 575,227 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,337	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, J. J. Waldner. Engline indicator, Steam, C. H. Bedell. Engline stopping apparatus, G. W. Brown. Espalier wall, W. Busche. Extension table. W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Feed water heating apparatus, C. J. Brown. Feenge making machine, picket, C. L. Horras. Fence post, A. Marbil. Fence post, A. W. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. Bee Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Thompson. File, etter, C. H. W. ley. Filling device, F. Rossbach-Bousset. Firearm, magazine. S. N. McClean. Firearms, slide and book for sling straps of, Perkins & Johnson. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, Fire head, J. Brennan. Fire paper, sticky, F. V. Wightman et al. Frunace. See Downdraught furnace. Incinerating furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Gas generating apparatus, acetylene, L. S. Buffington. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gas incandescent mantles, making, R. Alexander et al. Gas light b	575.12 574.93 575.23 574.93 574.93 574.93 574.93 574.93 575.02
TE. ents.] 575,240 575,227 575,287 575,287 575,287 575,287 575,287 575,287 575,194 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,044 575,046 575,048	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, J. J. Waldner. Engline indicator, Steam, C. H. Bedell. Engline stopping apparatus, G. W. Brown. Espalier wall, W. Busche. Extension table. W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Feed water heating apparatus, C. J. Brown. Feenge making machine, picket, C. L. Horras. Fence post, A. Marbil. Fence post, A. W. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. Bee Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Thompson. File, etter, C. H. W. ley. Filling device, F. Rossbach-Bousset. Firearm, magazine. S. N. McClean. Firearms, slide and book for sling straps of, Perkins & Johnson. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, Fire head, J. Brennan. Fire paper, sticky, F. V. Wightman et al. Frunace. See Downdraught furnace. Incinerating furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Gas generating apparatus, acetylene, L. S. Buffington. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gas incandescent mantles, making, R. Alexander et al. Gas light b	575.12 574.93 575.23 574.93 574.93 574.93 574.93 574.93 575.02
TE. ents.] 575,240 575,227 575,237 575,237 575,237 575,237 575,237 575,237 575,237 575,236 575,144 575,237 575,144 575,237 575,144 575,039 575,044 575,039 575,044 575,039 575,044 575,039 575,142 575,132 575,143 575,144 575,236 575,237 575,237	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, J. J. Waldner. Engline indicator, Steam, C. H. Bedell. Engline stopping apparatus, G. W. Brown. Espalier wall, W. Busche. Extension table. W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Feed water heating apparatus, C. J. Brown. Feenge making machine, picket, C. L. Horras. Fence post, A. Marbil. Fence post, A. W. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. Bee Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Thompson. File, etter, C. H. W. ley. Filling device, F. Rossbach-Bousset. Firearm, magazine. S. N. McClean. Firearms, slide and book for sling straps of, Perkins & Johnson. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, Fire head, J. Brennan. Fire paper, sticky, F. V. Wightman et al. Frunace. See Downdraught furnace. Incinerating furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Gas generating apparatus, acetylene, L. S. Buffington. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gas incandescent mantles, making, R. Alexander et al. Gas light b	575.12 574.93 575.23 574.93 574.93 574.93 574.93 574.93 575.02
TE	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engine: See Beer engine. Rotary engine. Engine indicator, J. J. Waldner. Engine indicator, steam, C. H. Bedeil. Engine istopping apparatus, G. W. Brown Espalier wall, W. Busche. Extension table. W. H. Mays. Extractor. See Sump extractor. Festensing table. W. H. Mays. Extractor. See Sump extractor. Festensing table. W. H. Mays. Extractor. See Sump extractor. Festensing table. W. H. Mays. Extractor. See Sump extractor. Festensing table. W. H. Mays. Fentensing table. W. H. Mays. Fifth wheel. W. L. Hawes. Filling device. F. Rossbach-Rousset. Firearm, magazine. S. N. McClean. Fire extinguisher, automatic. E. Livingston. Fire extinguisher, automatic. E. Livingston. Fire extinguishers, aprinkler head for automatic, V. Lapham. Fire hydrant. C. E. Loetzer. Filoat. phantom, L. S. Hinckley. Filue cleaner, J. J. Brennan. Fire pydrant. C. E. Loetzer. Filoat. phantom, L. S. Hinckley. Filue cleaner, J. J. Brennan. Fire pydrant. C. E. Loetzer. Firense, shell, A. Nobel. Game apparatus, I. K. Hinckley. Filue cleaner, J. J. Brennan. Fire pydrant. C. E. Loetzer. Firense, shell, A. Nobel. Game apparatus, J. G. Kiah. Gas incandescent mantles, making, R. Alexander et al. Gas incandescent mantles, making, R. Alexander et al. Gas incandescent, R. Moscheles. Jigton. Gas, incandescent mantles,	575.11 576.21 5774.93 5774.93 5774.93 5774.93 5774.93 5774.93 5775.21 5775.21 5775.21 5775.22 5775.23 5775.23 5775.23 5775.23 5775.23 5775.23 5775.24 5775.25 5775.25 5775.25 5775.25 5775.26 5775.27 5775.
TE	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engine: See Beer engine. Rotary engine. Engine indicator, J. J. Waldner. Engine indicator, steam, C. H. Bedeil. Engine istopping apparatus, G. W. Brown Espalier wall, W. Busche. Extension table. W. H. Mays. Extractor. See Sump extractor. Festensing table. W. H. Mays. Extractor. See Sump extractor. Festensing table. W. H. Mays. Extractor. See Sump extractor. Festensing table. W. H. Mays. Extractor. See Sump extractor. Festensing table. W. H. Mays. Fentensing table. W. H. Mays. Fifth wheel. W. L. Hawes. Filling device. F. Rossbach-Rousset. Firearm, magazine. S. N. McClean. Fire extinguisher, automatic. E. Livingston. Fire extinguisher, automatic. E. Livingston. Fire extinguishers, aprinkler head for automatic, V. Lapham. Fire hydrant. C. E. Loetzer. Filoat. phantom, L. S. Hinckley. Filue cleaner, J. J. Brennan. Fire pydrant. C. E. Loetzer. Filoat. phantom, L. S. Hinckley. Filue cleaner, J. J. Brennan. Fire pydrant. C. E. Loetzer. Firense, shell, A. Nobel. Game apparatus, I. K. Hinckley. Filue cleaner, J. J. Brennan. Fire pydrant. C. E. Loetzer. Firense, shell, A. Nobel. Game apparatus, J. G. Kiah. Gas incandescent mantles, making, R. Alexander et al. Gas incandescent mantles, making, R. Alexander et al. Gas incandescent, R. Moscheles. Jigton. Gas, incandescent mantles,	575.11 576.21 5774.93 5774.93 5774.93 5774.93 5774.93 5774.93 5775.21 5775.21 5775.21 5775.22 5775.23 5775.23 5775.23 5775.23 5775.23 5775.23 5775.24 5775.25 5775.25 5775.25 5775.25 5775.26 5775.27 5775.
TE	Elevator. See Cotton elevator. Embroidering machine, E. & R. Cornely. Engline. See Beer engine. Rotary engine. Engline indicator, J. J. Waldner. Engline indicator, Steam, C. H. Bedell. Engline stopping apparatus, G. W. Brown. Espalier wall, W. Busche. Extension table. W. H. Mays. Extractor. See Sump extractor. Fastening, G. A. Holmes. Feed water heating apparatus, C. J. Brown. Feenge making machine, picket, C. L. Horras. Fence post, A. Marbil. Fence post, A. W. Smith. Fehce stay, J. M. Moore. Fence, wire, Hagaman & Cary. Fender. Bee Car fender. Fifth wheel, W. L. Hawes. Fifth wheel, W. L. Hawes. Fifth wheel, A. W. Johnson. File, F. E. Thompson. File, etter, C. H. W. ley. Filling device, F. Rossbach-Bousset. Firearm, magazine. S. N. McClean. Firearms, slide and book for sling straps of, Perkins & Johnson. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, V. Lapham. Fire extinguisher, sprinkler head for automatic, Fire head, J. Brennan. Fire paper, sticky, F. V. Wightman et al. Frunace. See Downdraught furnace. Incinerating furnace. Furnace grate bar, Allen & Tibbitts. Fuse, shell, A. Nobel. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Game apparatus, J. G. Kiah. Gas generating apparatus, acetylene, L. S. Buffington. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gas, incandescent mantles, making, R. Alexander et al. Gas light burner, incandescent, R. Violet. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gate, R. Garrard. Gas producer, R. L. Morgan. Gas incandescent mantles, making, R. Alexander et al. Gas light b	575.11 576.21 5774.93 5774.93 5774.93 5774.93 5774.93 5774.93 5775.21 5775.21 5775.21 5775.22 5775.23 5775.23 5775.23 5775.23 5775.23 5775.23 5775.24 5775.25 5775.25 5775.25 5775.26 5775.27 5775.26 5775.27 5775.

i.,	Journal box for engine trucks, O. Pound. Journal, lubricating axie, J. T. Richards. Kuitting machine picker operating mechanism, L. N. D. Williams. Kuitting machine web needle, G. F. Sturgess	575,273 575,171
3	L. N. D. Williams	575,191 575,012 575,222
	Ladder and hose to wer, extension, C. F. Ekman. Ladder, flexible, T. W. Keithley. Ladder truck, W. Wright. Lamp, K. M. Dixon	575,246 575,193 575,056
	mone	575,119 575,221 574,906
	Lamp, electric arc, R. O. Hood. Lamps, illuminant for incandescent, A. De Lodyguine. Lasting machine J & G. Ferguson	575,002 575,029
	guine Lasting machine, J. & G. Ferguson. Lathe, turret, G. C. Bardons et al. Letter box, H. Benham Lightning protection for electric circuits, system of, A. Wurts.	575,094 575,048
5		574,978 575,042
,	Lock. See Rottle lock. Vehicle seat lock.	575,028
	Lock, T. D. Wallace. Locomotive, electric, W. L. Silvey. Locomotives, device for adjusting counterbal- ance springs of, W. J. A. Makibbin. Loom shed forming mechanism, Raliton & Draper Loom shuttle check, J. H. Northrop. Loom stop motion, J. H. Northrop. Loom takeup mechanism, E. W. Davenport. Lubricating device, A. G. Allen.	575,138 575,314 575,123 575,309
	Loom shed forming mechanism, Raiko n & Draper Loom shuttle check, J. H. Northrop Loom stop motion, J. H. Northrop	575,309 575,306 575,307 575,297
7	Lubricating device, A. G. Allen. Lubricator, F. D. Ferney. Mail box, combined stamp canceling, postmark-	575,237 575,141 575,030
3	Mandolin, guitar or banto, E. Simon	575,004 575,071
1	Match case and lighter, H. L. Buxton. Match dipping machine, W. E. Williams. Measure, convertible, H. E. Atteberry.	575,071 574,981 574,976 575,020
3	Measuring glass and holder, self leveling graduating, J. F. Lehmann. Measuring quantities of solid material, slide device for, L. Schiff	575,033 575,174
1	Menthol compound, Weller & Jensen Meter. See Electric meter. Moistening and sealing envelops, etc., device for,	574,966
1	A.W.Eddy	574,892 575,214
3	ing and disc barging, Croskey & Locke Mould. See Ice cream mould. Moulder's apparatus, H. V. Moore. Moulding machine, H. Beeg Motor. See Spring motor.	575,304 575,022
3	Motor. See Spring motor. Music book holder, R. Alden Nail feeding chuck, B. S. Atwood	574,869 575,198 575,261
1	Music book holder, R. Alden. Nail feeding chuck, B. S. Atwood. Nut lock, V. A. & P. F. Laue. Nut lock, Nicodemus & Guisinger. Oil thereon, apparatns for calming seas by distributing, A. J. Van Beek. Operating table, Lamkin & Shipley. Orthopedical appliance, W. Autenrieth. Package, sealed, O. S. Fellows. Padlock, W. F. Trosst.	575,268 575,268
ָט •	operating table, Lamkin & Shipley. Orthopedical appliance, W. Autenrieth.	575,203 574,999 575,199 575,060
3	Orthopedical appliance, W. Autenrieth	574,961 575,062
5	Huewe & Emmes. Paper cutting machine, E. J. Armstrong. Paper registering mechanism, T. C. Dexter. Paraphenetidin compound, H. Baum.	575,239 575,291 575,150 574,874
3 7 8	Pendulum escapement, A. Dardenne	574,874 574,984 574,943
9	Leroy.	575,034 575,151 574,879
В	Photographic plate dipper, H. L. Chenery Piano attachment, electrically operated, E. J.	
2	Simpkins. Plcture frame and album, combined, C. Wiediger Pln. See Clevis pin. Upholstering pin. Pipe cleaner, J. J. Snyder.	574,978 574,956 575,286
4	Picture Iraine and anothin, combined, C. Wiediger Pin. See Clevis pin. Upholstering pin. Pipe cleaner, J. J. Snyder Pipe jointing holder, E. Newman. Piston and valve gear, combined working, F. Lamplough Pitron T. Bagen	574,915 575,008
2	Planer for woodcuts and electroplates, M. P.	F#4 000
6	Renna. Planimeter, B. E. Chollar. Planter, Breen & Brace. Planter check row attachment, seed, J. F. Win- chell.	575,101 575,289
4	chell. Planter, potato, A. I. Mereness, Planter, seed, R. M. Phillips. Plow attachment, P. E. Graham Plow or cultivator, R. A. Ray. Pneumatic dispatch tu be and carrier therefor, C.	575,268 574,937 575,233
6	Plow or cultivator, R. A. Ray. Pneumatic dispatch tu be and carrier therefor, C. F. Pike.	575,169 574,938
9 0 5	F. Pike Pocket guard, watch, W. N. Offutt. Post. See Fence Post. Press. See Baling press. Press, Raymond & Fogg.	575,126
600	Propulsion of vessels, F. O. Slanker	575,158 575,178
574	Paller. See Spike and bolt pimer. Pulley, T. Corscaden. Pulley, sheet metal, T. Corscaden. Pump actuating mechanism, M. Herrmann. Pump, air force, W. E. Karns. Pumpling rigging, oil well, J. N. Maher. Puzzle, C. H. Robinson. Race tracks, starter's gate for, J. Schmidt. Rail joint, W. Robinson.	575,106 575,107 575,200
6	Pump, air force, W. E. Karns Pumping rigging, oil well, J. N. Maher Puzzle, C. H. Robinson.	575,117 575,122 575,276
424	Race tracks, starter's gate for, J. Schmidt Rail joint, W. Robinson Railway, electric, L. Dion	575,130 574,942 575,063
4	Railway, electric, L. Dion. Railway, electric, G. W. C. Lomb. Railway rail joint or coupling, A. W. Clemo. Railway signaling system, N. Henquin. Railway switch, F. Flanagan. Rails seeding machine, E. Sutherland.	575,303 575,149 575,065
476		
539	Ref. See Clothes line reel. Refrigerator, G. Wilkinson. Regulator. See Electric current regulator. Repeater, W. M. Chapman. Rheostat, and reversing switch, combined, Fiske	574,975 575,025
2	Rheostat and reversing switch, combined, Fiske & Smith. Ring. See Hat packing ring.	574,896
294	& Smith. Ring. See Hat packing ring. Rivet feeding mechanism, J. Temler. Riveting machines, self, feeding arrangement for, J. Temler. Rope clamp. W. Hegel. Rotary engine, M. Matson. Roving clamp. A. E. Rhoades. Sad Iron beater, S. Arleth. Safe M. Mosler.	575,136 575,135
2	Rope clamp. W. Hegel. Rotary engine, M. Matson. Roving clamp, A. E. Rhoades.	575,064 575,124 575,310
3	Sad Iron heater, S. Arleth Safe, M. Mosler Sanding machine, L. Welker	575,196 575,306 575,187
1430	Saponaceous products from petroleum, manufac- ture of, C. Weygang. Sash fastener, J. Blasius.	575,189 574,876
19	Sad Iron heater, S. Arleth Safe, M. Mosler Sanding machine, L. Welker Sanding machine, L. Welker Saponaceons products from petroleum, manufac- ture of, C. Weygang. Sash fastener, J. Blasius. Saw flining device, M. J. Wilson. Scale, computing, B. F. Brough. Scale, computing, J. H. Swihart. Scale, price and weighing, J. H. Swihart. Scene oscope, Foster & Daniels. Screen. See Window screen. Serew thread cutting device, P. M. Wiebe. Seal for bottles or flasks, G. W. Snyder. Seed crusher and distributer, cotton, J. W. Cooper.	575,143 575,076 575,077
2317	Scenoscope, Foster & Daniels. Screen. See Window screen. Screw thread cutting device. P. M. Wiebe.	575,153 575,085
1177	Seal for bottles or flasks, G. W. Snyder Seed crusher and distributer, cotton, J. W. Cooper	575,011 574,882
13	Cooper. Separator. See Cream separator. Sewing machine attachment, L. Moyer. Shirt protector, W. Lloyd. Shovel bandle, W. H. Johnson. Sieving apparatus, J. A Lefferts. Signal. See Electric signal.	574,929 574,921
33	Shovel handle, W. H. Johnson Sieving apparatus, J. A. Lefferts Signal. See Blectric signal.	575,243 575,302
)6 29 31	Sink cleaner, Atwater & Eichler	574,872 575,279
25 53 51	Slicer, vegetable, W. T. Whyte. Snow plow for street railways, Billings & Collins.	. 574,971 . 574,875
11 13 10	Solar and transit instrument, J. B. Davis. Soldering machine, O. S. Fellows. Sounding apparatus, automatic ejectric marine, J. F. Babcock. Social machine, E. Carll.	575,215 575,061
57)4	J. F. Babcock. Sowing machine, E. Croll. Spike and bolt puller, P. J. Furlong. Spindle, A. Gartner Spindle, A. Schold. 57405 to 5	575,099 574,883 575,226 574,900
14 15 24	Spindle, A. Gartner	574,900 574,960 575,060
4	Stap le making and driving machine, P. A. Coupa Static generator, A. J. Gawne. Steam boiler, R. D. Kinney.	1 575,290 . 575,231 . 575,118
21 97 27	Spindle, A. Gartner Spindle, A. Scheid	. 575,061 . 575,110 . 575,154
17 12 16	Stove, Rothlisberger & Graichen. Stove, M. & W. N. Stehle	. 575,041 . 575,179 . 575,179
16 20 36	Stove, Rothlisberger & Graichen. Stove, M. & W. N. Stehle. Stove attachment, vapor burning, W. A. Way. Stove burner, gas, A. E. Detwiler	, 575,052 574,895
37 58		. 575,185 . 575,177 . 575,132
85 01	Switch. See Electric quick break switch. Electrical knife switch. Railway switch. Switch and signal apparatus, interlocking mech	
50 75 70	Switch and signal apparatus, interlocking mechanism for G. Koenig Swivel leader holder, G. F. & F. Breitstein Table. See Extension table. Operating table. Tailor's chalk and holder, C. Ress Tank. See Water tadk Telegraph printing B. Hoffmann.	. 575,120 . 575,205
87 36 12		. 575,275 . 574,994
14	Lorephone, o. o. Gona	. 014,50