Business and Personal.

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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 This is for our information and not for publication.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.

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.

Minerals sent for examination should be distinctly marked or labeled.

(5427) C. H. — Answer by Professor Riley.—The peculiar masses described by you are, from the description, not determinable with absolute certainty. It is possible that the description might apply to a variety of forms of fresh water larvæ, such as an aggregation of egg masses of some crustacean, or, more likely, a fresh water polyzoan, or some form of fresh water sponge. Fresh water sponges are of gelatinous structure, and lack almost entirely the silicious filaments which form the spongy substance of most salt water species. This would, therefore, in a measure correspond with the description of your correspondent, but more particularly since they develop what are known as winter buds or gemmules, viz., small oval bodies surrounded by a shell of silicious structure, similar to the sponge structure of the larger species. On the drying up of ponds, on the approach of winter, the chief spongy mass disintegrates and disappears; but these buds or circular masses survive the winter or the drought and develop under more favorable conditions of renewed moisture on recurring summer. The eggs of frogs are frequently discovered in similar masses, and being more or less surrounded and inclosed by a jellyphenomena described. If more accurate determination is desired, it can be readily furnished if the circular bodies makes imple motor (Supplement, No. 641), and wind it mentioned be forwarded for examination.

you consider it safe to pile about 600 tons of pig iron in a space of 60 feet by 6 feet within 3 feet of the foundations of a five-story factory building, the three npper stories running light machinery? The building is built on would be the best size? A. Yes. 3. What horse power filled-in ground, and is piled throughout its 600 feet in length. A. The space occupied is 360 square feet and the load one and six-tenths tons to the square foot, not an unsafe load for the ground. As you say the factory is on piles throughout its length, the piling, if properly done, should carry the pressure of the walls of the building far below the influence of compression by the load of iron not in contact with the building. If the filling in is clean earth or sand, no harm can come from the load as

of the following phenomenon: Pine Bluff, Ark., Sept. 29.-A tremendous rain poured down here this evening, and with it came millions of small frogs. They got into

A. Address Edison Lamp Co., Harrison, N. J. 3. What
many stores, and the principal streets in the business size plates shall I use?

A. Address Edison Lamp Co., Harrison, N. J. 3. What
Diagnost Constitution of the principal streets in the business size plates shall I use?

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A. Address Edison Lamp Co., Harrison, N. J. 3. What Diagnost Constitution of the plates of the pla

difficult to walk. A. The appearance of frogs and other small animals during heavy rain storms may be due to two sources, either lifted from shallow ponds or marshes of the storm, or that the excessive rain has driven them from their burrows and hiding places to the surface of the ground. If in the above statement the animals were really frogs, they may have fallen as stated. If they were toads, they were probably driven from their holes by the rain. We think the millions would be nearer the truth if much divided.

(5430) J. C. asks: 1. Can carbon be obtained absolutely pure in its elementary state? If not, why? Charcoal, even diamond, is not pure carbon, because it leaves ashes after burning. Can CO₂ be decomposed, leaving the carbon in the elementary state? A. Diamond is almost pure. It is impossible for man ever to get anything absolutely pure. His best is an approximation. CO2 can be decomposed by heated magnesium, sodium, or potassium. 2. How is the carbon of electric arc lamp prepared? Leave any ashes in the lamp after burning? Is it analogous to ordinary combustion? A. Various methods are used. The powdered charcoal or carbon is mixed with sirup and water or other agglutinant, is moulded and baked. It produces ashes, and slowly burns. 3. The astronomers say that comets belong to the solar system; if this is correct, why don't they revolve around the sun, like planets? Where are the centers of their orbits? Does any come really cross the orb of any planet, or is it simply theory? A. Comets and their orbits are still mysteries. They undoubtedly enter the planetary area. 4. Are the tides of the oceans due to the attraction of the moon. Is this a theory or determined fact? A. Though a theory, it is without the least doubt a true one. 5. Can the phosphate from bones be extracted without boiling (as in making soup)? If I grind the bones to fine powder, and then throw over boiling water (as in making tea or coffee), can I obtain a solution of phosphate for making soup? If not, is there any other way without boiling? A. Bone phosphate is insoluble in water. For fertilizing purposes it is made soluble by treatment with acid. 6. If any food substance, such as beans, or any starch compounds, is burnt ac cidentally upon the bottom of the pot, what shall I use to send you catalogues with lowest N. Y. City prices. No takeoff the burning flavor from the remainder? A. You cannot remove the flavor. You should use a double sauce pan or water bath.

> (5431) C. A. B., Iowa, writes: 1. While riding in the river bottom one day this fall, I noticed that the corn on one side of the road was badly frozen, while that on the other side was comparatively unharmed. Quality of ground seemed to be the same in both fields, and the elevation of the frozen field was a trifle greate than the other. Should judge not more than four or five feet. What caused this phenomenon? A. The causes tending to produce frost in certain fields or localities cannot be exactly defined. Unequal radiation in places near together or a slight difference in elevation may make just enough difference in radiation between adjacent fields to produce frost in one and not in the other. In the case cited the difference of a few feetelevation probably allowed the ground fog to be drifted toward the low land by the slow movement of the air, and thus protect it from loss of heat by radiation, while the higher field would be covered by a clearer surface atmosphere, which would increase radiation to the frost line of temperature. 2. Can you tell me how to remove wheels and collars from shafts, upon which they have been shrunken, without injury to either of them? A. If convenient to heat the shaft and wheel or collar to a low red, or possibly a black heat, just below the red and slowly cool it, so as not to injure the parts, the shaft may often be driven out of a wheel or collar without injury.

(5432) G. H. L. writes: 1. I noticed in to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of a recent issue of Scientific American, a query by E. F. P. (No. 5377), in which he asks why a current of 1,800 volts taken from a primary battery would not have the same effect on the human body as a current of the same number of volts taken from a dynamo. Now, what interests me is, supposing a circuit breaker making and breaking the circuit many times per second were put in the battery line and both terminals grasped, what would be the effect? A. An interrupted current is much more severe on the human system than a steady one. The circuit breaker would greatly increase its severity. 2. How would you advise a person without necessary funds, in terested in scientific researches (especially electrical), both experimental and inventive, to get an education in that line? Would such a person be able to procure a situation in some prominent laboratory? A. Go into an electric light station, work at anything to start, and then work up Laboratory positions are hard to get.

(5433) M. C. asks whether a common filar micrometer could be used on a telescope with equatorial mounting not driven by a clockwork attachment. A. Good work can be done with a filar micrometer, even without any screw movement, by a little practice with the eye in transiting objects for both position and dis tance. It is in common use on simple equatorial mount ings, which, when provided with tangent screws and handles, makes micrometrical work a pleasure.

(5434) F. M. M. writes: 1. I want to for current from ? cells storage battery, to be charged (5428) Hercules, New Haven, asks: Do with 8 gravities. Should I use coalist the lift so, what number, and how muchon field and armature, with 8 gravities. Should I use coarser wire in winding? respectively? A. Make no change. 2. Would 12 plates to each cell, each plate 8×10, be large enough, or what would above two cells develop in motor? A. 1/8 horse

> (5435) Subscriber writes: You recently published an invention for a cockroach trap. Permit me to suggest a more simple and effective mode for the nui-Use empty wine bottles with the smallest quantity of wine remaining in them. These pests are hardly able to get out. The fumes of the wine are too much for them. I have seen bottles of them thrown overboard.

(5436) F. R. asks: 1. How many cells (5429) E. R. P. writes for explanation of storage battery will be required to light eight sixteen candle power twenty volt lamps? A. Eleven cells in series. 2. Where can the lamps be obtained and price?

part of the town were so covered with them that it was gravity batteries in which the copper and zinc each bas an active surface of eighteen inches do for forming and charging? A. Yes. 5. Can storage batteries be charged in sets of say three? If so, how many gravity cells will by a tornado or waterspout, and distributed along the path it take? A. Yes; charge with five cells of gravity to two of storage, all in series

(5437) N. F. Library, Newton, Kans, aks if water can be lifted from the bottom of a well 100 feet deep, 85 feet of water in it, by putting a check valve every 16 feet in the pipe, a foot valve at the bottom of pipe, the pipe filled with water. Or is it possible to lift it over 33 feet? A. The check valves are of no value in adding to the lift of the pump, but rather a hindrance, by their weight. Water in solid column can only be lifted possibly 33 feet, but practically about 28 feet from the pump bucket.

TO INVENTORS.

An experience of forty-four 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 beth 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 person 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, 381 Broadway, New York.

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October 10, 1893,

AND EACH BEARING THAT DATE.

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9 33	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord.	506,614 506,632 506,649 506,336
9934568	F. Davies. Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index, J. Thorne.	506,614 506,632 506,649
14 19 19 13 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index J. Thorne. Index J. Thorne. Indicator. See Speed indicator. Indicator lock, W. F. Litteil. Indurating and waterproofing articles, S. R. Stradies	506,614 506,632 506,649 506,336 506,247 506,464 506,566
99 33 4 5 6 8 8 1 5 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 6 7 1 5 7 1 5 6 7 1 5 6 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index, J. Thorne. Indicator. See Speed indicator. Indicator lock, W. F. Littell. Indurating and waterproofing articles, S. R. Hrading apparatus, O. E. O. Hoell. Injector, oli, F. H. Cornell.	506,614 506,632 506,649 506,336 506,247 506,566 506,566 506,647 506,623 506,368 506,418
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4 89 83 4 85 88 88 84 7 15 16 77 15 11 18 19 19	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hole, N. T. Peddycord. Hole, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index J. Thorne. Indicator: See Speed indicator. Indicator: See Speed indicator. Indicator lock, W. F. Littell. Indurating and waterproofing articles, S. R. Aradiey. Inhaling apparatus, O. E. O. Hoell. Injector, oll, F. H. Cornell. Injector, oll, F. H. Cornell. Instand and attachments, W. C. Eldridge. Iron. See Sad Iron. Ironing board, Tracy & Graham. Ironing board, Tracy & Graham. Ironing machine, H. L. Gee Jack. See Ricycle Jack. Jewel setting, Bippart & Theberath. Joint. See Pipe Joint.	506,647 506,632 506,649 506,336 506,247 506,566 506,338 506,488 506,488 506,488 506,488 506,488 506,488
4 99 34 56 8 8 14 17 15 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16 17 16	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index J. Thorne. Indicator: See Speed indicator. Indicator: See Speed indicator. Indicator lock, W. F. Littell.	506,632 506,638 506,366 506,366 506,247 506,464 506,566 506,418 506,480 506,423 506,423 506,621 506,621 506,338 506,338 506,338 506,338
4 9984588888475667787189 9995	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gilbs. Hinge, trunk, H. W. Gilbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index J. Thorne. Indicator: See Speed indicator. Indicator: See Speed indicator. Indicator lock, W. F. Littell.	506,632 506,632 506,632 506,484 506,566 506,623 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480
4 9993456883475667737189 999588 78 23	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index, J. Thorne. Indicator. See Speed indicator. Indicator lock, W. F. Litteil. Indurating and waterproofing articles, S. R. Bradiey. Inhaling apparatus, O. E. O. Hoell. Injector, oll, F. H. Cornell. Injector, oll, F. H. Cornell. Instand and attachments, W. C. Eldridge. Iron. See Sad iron. Ironing board, Tracy & Graham. Ironing machine. H. L. Gee Jack. See Riegele Jack. Jewel setting. Hippart & Theberath. Joint. See Pipe Joint. Knob attachment, D. Clark. Lacing hooks, machine for setting, J. J. Norwell. Ladder, T. B. Bennett. Ladde for handling moiter steel, etc., F. Morris. Lamp, pocket, G. C. Goffman. Lamp or burner, G. Barthel. Lamps, dioptric appliance forstreet, A. Nieuwen-	506,632 506,632 506,632 506,484 506,566 506,623 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480 506,480
4 99934 558 8 8 14 7 5 6 7 7 7 7 7 7 8 9 9 9 15 8 7 8 2	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index. J. Thorne. Indicator. See Speed indicator. Indicator lock, W. F. Littell. Indurating and waterproofing articles, S. R. Bradley. Inhaling apparatus, O. E. O. Hoell. Injector, oll, F. H. Cornell. Injector, oll, F. H. Cornell. Instand and attachments, W. C. Eldridge. Iron. See Sad Iron. Ironing board, Tracy & Graham. Ironing machine. H. L. Gee Jack. See Ricycle Jack. Jewel setting, Hippart & Theberath. Joint. See Fipe Joint. Knob attachment, D. Clark. Lacing hooks, machine for setting, J. J. Norwell. Ladder, T. B. Bennett. Lamp, electric arc, C. Hoffmann. Lamp or burner, G. Barthel. Lamp, pocket, G. C. Card. Lamps, dioptric appliance forstreet, A. Nieuwen- luys. Lather board cutting machine, J. M. Watson Lever or clamp, bilding, S. C. Reed.	506,632 506,632 506,632 506,484 506,386 506,486 506,418 506,388 506,418 506,428 506,333 506,428 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,333 506,33
4 99934568834756675139 99558 78 28 8 1 82	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hinge, trunk, H. W. Gibbs. Hitching weight, A. P. Watson. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hydraulic press, F. Blomberg. Index. J. Thorne. Indicator. See Speed indicator. Indicator lock, W. F. Littell. Indurating and waterproofing articles, S. R. Bradiey. Inhaling apparatus, O. E. O. Hoell. Injector, oll, F. H. Cornell. Injector, oll, F. H. Cornell. Instand and attachments, W. C. Eldridge. Iron. See Sad iron. Ironing board, Tracy & Graham. Ironing machine. H. L. Gee Jack. See Ricycle Jack. Jewel setting, Bippart & Theberath. Joint. See Fipe Joint. Knob attachment, D. Clark. Lacing hooks, machine for setting, J. J. Norwell. Ladder, T. B. Bennett. Ladle for handling molten steel, etc., F. Morris. Lamp, electric arc, C. Hoffmann. Lamp, pocket, G. C. Card. Lamps, dioptric appliance forstreet, A. Nieuwenhuss. Instee, puller, M. C. Henley. Leather board cutting machine, J. M. Watson Lever or clamp, binding, S. C. Reed. Light. See Electric light. Lock. See Indicator lock. Nut lock. Puzzle Lock. See Indicator lock. Nut lock. Puzzle Lock. Sea Bockwith.	506,614 506,632 506,645 506,646 506,566 506,647 506,647 506,647 506,233 506,412 506,233 506,422 506,623 506,422 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,623 506,62
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4 9983456883475667671399 9958 78 28 8 11 8200 000 90045572 556955798 4 2779 00 7 82002 054663	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hitching, weight, A. P. Watson. Hoe, N. T. Peddycord. Hoe, N. T. Peddycord. Hoe, N. T. Peddycord. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hollow articles, apparatus for forming or shaping, F. Moorfield. Index, J. Thorne. Indicator. See Speed indicator. Indicator lock, W. F. Littell. Indurating and waterproofing articles, S. R. Hadley. Indicator lock, W. F. Littell. Indurating and waterproofing articles, S. R. Inhaling apparatus, O. E. O. Hoell. Injector, oll, F. H. Cornell. Injector, Oll, H. Gee Jack. See Ricycle Jack. Jewel setting, Bippart & Theberath. Joint. See Fley foll. Lack, G. E. Pipp joint. Ladder, T. B. Bennett. Lamp, electric arc, C. Hoffmann. Lamp, electric arc, C. Hoffmann. Lamp, pocket, G. C. Card. Lamps, dioptric appliance forstreet, A. Nieuwenhus, Injector, D. Barthell. Lamps, dioptric appliance forstreet, A. Nieuwenhus, Injector, D. Barthell. Lock, G. A. Beckwith. Lock Sea Ilock. Lock, G. A. Beckwith. Lock Nut, R. Kirkpatil, et al. Lock, Sea Indicator lock. Nut lock. Puzzle lock. Seal lock. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et	506.634 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506
4 999345883475887371399 99958 78 23 8 1 8220 00 99045722 566057798 4 2779 06 7 82202 051463 2000	Heel, detachable, M. Wise. Hinge, trunk, H. W. Gibbs. Hitching, weight, A. P. Watson. Hoe, N. T. Peddycord. Hoe, N. T. Peddycord. Hoe, N. T. Peddycord. Hoe, N. T. Peddycord. Hollow articles, apparatus for forming or shaping, F. Moorfield. Hollow articles, apparatus for forming or shaping, F. Moorfield. Index, J. Thorne. Indicator. See Speed indicator. Indicator lock, W. F. Littell. Indurating and waterproofing articles, S. R. Hadley. Indicator lock, W. F. Littell. Indurating and waterproofing articles, S. R. Inhaling apparatus, O. E. O. Hoell. Injector, oll, F. H. Cornell. Injector, Oll, H. Gee Jack. See Ricycle Jack. Jewel setting, Bippart & Theberath. Joint. See Fley foll. Lack, G. E. Pipp joint. Ladder, T. B. Bennett. Lamp, electric arc, C. Hoffmann. Lamp, electric arc, C. Hoffmann. Lamp, pocket, G. C. Card. Lamps, dioptric appliance forstreet, A. Nieuwenhus, Injector, D. Barthell. Lamps, dioptric appliance forstreet, A. Nieuwenhus, Injector, D. Barthell. Lock, G. A. Beckwith. Lock Sea Ilock. Lock, G. A. Beckwith. Lock Nut, R. Kirkpatil, et al. Lock, Sea Indicator lock. Nut lock. Puzzle lock. Seal lock. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et al. Lock, G. A. Beckwith. Lock nut, R. Kirkpatil, et	506.634 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506.632 506
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Phosphate separator and disintegrator, G. Guild. Photographer's changing and developing box, J. F. Snapp	506,591 508,343	7
Picture support, P. Lindemeyer, Jr	506,343 506,225 506,366 506,599 506,637	7
Pipe joint, expansion, W. A. Pearson. Pipes, composition of matter for water, Bedbury	506,335	1
J. Sharpe	506,356 506,557 506,531	7
Planter and fartilizer distributor combined I	506,580 506,251 506,462	1
Planter, check row corn, J. C. Benedict. Planter fertilizer distributer, T. W. Sample. Plow, G. A. Kelly. Plow, bedding, M. T. Hancock. Plow, cultivator gang, A. S. Seeley.	300.333	7
Plow, rotary, N. H. Roberts	506,443 506,420 506,603	1
Pot. See Coffee pot. Press. See Hydramlic press. Printing machine, wad, C. R. Richards. Printing press paper folding machine attachment. T. C. De xter. Propeller, N. Wagener. Pulpit or rostrum, D. C. Eberhart. Pulverizing machine, G. S. Emerick. Pump, L. Nasi Pump, automatic railway, H. D. Layman. Puzzle lock for pocketbooks, etc., J. Meyer. Rack. See Harness rack. Railway brake, T. H. Allen. Railway carriages, metallic under frame for, G. W. Ettenger. Railway, elevated, J. N. Valley.	506,374 506,392	1
Propeller, N. Wagener Pulpit or rostrum, D. C. Eberhart Pulverizing machine, G. S. Emerick. Pump, L. Nasi	506,572 506,588 506,364 506,533	
Pump, automatic railway, H. D. Layman	506,241 506,325 506,298	I
Railway carriages, metallic under frame for, G. W. Ettenger. Railway, elevated, J. N. Valley. Railway frogs, etc., foot guard for, W. A. Brown-	506,652 506,570	
Railway point and signal apparatus, interlocking, W. G. Scott. Railway switch Kuhn & Klitache	506,413 506,266 506,437	\
Railway switch, automatic, J. H. Quimby	506,606	1
Railway switch, safety seir-closing, D. T. McIn- tyre. Railway trolley, electric, G. H. Benjamin. Railway trolley support. electric, J. M. Andersen. Raisen seeding device, W. S. Scales. Rake, W. Klinker. Refrigerator, G. G. Hackett. Register. See Cash register. Fare register. Rein ring, A. S. Smeal. Ring. See Rein ring.	506,617 506,340 506,597 506,593] () []
Register. See Cash register. Fare register. Rein ring, A. S. Smeal. Ring. See Rein ring.	506,380	1
Roasting furnace, A. H. Keller Roll holder camera, R. J. De Barril Rope clamp, C. E. Pugsley Rod is no M. E. Pugsley	506,511 506,210 506,441	ו
Sash holder, A. James. Saw filing machine, Ginter & Strous. Saw handle, J. W. Miller.	506,318 506,222 506,245	j
Ring. See Rein ring. Roaster. See Peanut roaster. Roasting furnace, A. H. Keller. Roll holder camera, R. J. De Barril. Rope clamp, C. E. Pugsley. Sad iron, M. F. & J. H. Potts. Sash holder, A. James. Saw Bing machine, Ginter & Strous. Saw handle, J. W. Miller. Saw machine, drag, E. A. Smith. Saw. miter, T. E. King. Scaffold, portable, I. Smith. Scraper, wheeled, P. Deevy. Seal lock, J. Dowling. Seam for uniting or ornamenting fabrics, G. D. Munsing.	506,433 506,561 506,212	1
Seam for uniting or ornamenting fabrics, G. D. Munsing. Separator. See Phosphate separator. Sewer basin trap. W. E. Sefton. Sewing machine, G. D. Munsing. Sewing machine, L. Muther.	506.525	1
Sewing machine, L. Onderdonk	506,538	8
Sewing machine feeding mechanism, C. McNell Sewing machine feeding mechanism, R. J. Woodward. Shade or curtain hanger, G. E. Bonney	506,532 506,455 506,301	7
Sewing machine reeding mechanism, K. J. Wood- ward. Shade or curtain hanger, G. E. Bonney. Shaft tip, wagon, C. A. Eisenhart. Shafts, buggy, L. De Cally. Shears, Oberle & Faller. Shoe fastening, J. N. Schwander. Shot or powder gauge and shell holder, J. A. R. Fillott.	506,211 506,211 506,371 506,341	8
Shotor powder gauge and shell holder, J. A. R. Elliott. Shutter and curtain, window, J. O'Donnell	506,425 506,537 506,333	2
Sifter, ash. D. B. Sanford. Sirup beating and mixing machine, J. Werner Skate, R. Weigand	506,263 506,384 506,574	1
Shotor power gauge and shell noder, J. A. R. Enlott. Shutter and curtain, window, J. O'Donnell. Shutter, window, T. Gaskins. Sifter, ash, D. B. Sanford. Sirup beating and mixing machine, J. Werner. Skate, H. Weigand. Snow, clearing streets or railway tracks from, Healy & Cundell. Snow gas-heated furnace for liquefying, Healy & Cundell. Snow melting machine, Healy & Cundell. Snow melting machines, pilot shoe for, Healy & Cundell.	506,497 506,498 506,499	
Snow melting machines, pilot shoe for, Healy & Cundell Sole channeling machine, F. J. Freese	506,500 506,631 506,542	
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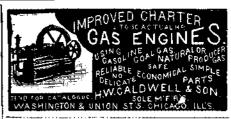
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