Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

AN INQUIRY ANSWERED.

H. W. Johns M'f'g Co., 87 Maiden Lane, New York.

MY DEAR SIRS. I have replied to inclosed letter from Mr. Good as follows, and perhaps you would be interested to know it:

"I have had Johns' Asbestos Paint upon the outside work of my house in exposed positions for four years, and after that time there is no chalky appearance, it does not rub off, has not worn or lost its color or brightness, and is in no need as yet of renewing. The paint is yet in good order. Some lead and oil paint on other parts of the house no more exposed than the Asbestos Paint, has been renewed twice, and the last coat is now worse looking than the four-year-old Asbestos Paint. The roof of my piazza, painted in stripes of red and green of Johns' paints three years ago, is still bright and fresh and in good order." HENRY STEWART,
Formerly Editor *American Agriculturist.*

Elm Boards Wanted.—C. Ledig, 13 Peck Slip, N. Y.

Attention, Patentees.—A Good, Practical Invention Wanted for Introduction. Address C. M. H., Room 31, 157 Broadway, New York.

For Belt Studs, Belt Hooks, Belt Couplers, Belt Punches, Baxter Wrenches, write Greene, Tweed & Co., N. Y.

Type Writer Wanted; good and cheap. Penfield Block Co., Lockport, N. Y.

Wanted.—Manufacturers of Lubricants addresses. Box 777, Bradford, Pa. Wm. J. McDougall.

List of 3,000 responsible Farmers in Penn., New Jersey Md., and Va., *selected.* Mailed on receipt of $2. *Farmers Register*, 2623 Warnock St., Philadelphia, Pa.

"Little Giant" Engines and Boilers, users say, are "the best ever made." Madison Machine Co., 406, 408 Broadway, New York.

Valuable Patent for Sale; price low. Address A. B., Post Office Box 2032, Philadelphia, Pa.

Our goods rank first for quality, safety, and durability. Please compare them with any other make, and if not found better and cheaper, quality considered, we will bear the expenses of the trial. Lehigh Valley Emery Wheel Co., Lehighton, Pa.

Granville Hydraulic Elevator Co., 1193 B'way, N. Y.

The *Mining Record*, devoted to mining, contains the latest rehable reports from all the mines, with perfect reports of the Mining Stock Market. Subscription, $4 yearly. Sample copies free. A. R. Chisolm, Proprietor, 61 Broadway, New York.

For Leather, Rubber, or Cotton Belting, Linen Hose or Rubber Hose, write Greene, Tweed & Co., New York.

To Stop Leaks in Boiler Tubes, use Quinn's Pat. Ferrules. Address S. M. Co., So. Newmarket, N. H.

Light and Fine Machinery and Tools to Order. Lathe catalogue for stamp. Edward O. Chase, Newark, N. J.

Malleable and Gray Iron Castings to order, by Capital City Malleable Iron Co., Albany, N. Y.

For Power & Economy, Alcott's Turbine, Mt. Holly, N. J.

Combination Roll and Rubber Co., 27 Barclay St., N. Y. Wringer Rolls and Moulded Goods Specialties.

Send for Pamphlet of Compilation of Tests of Turbine Water Wheels. Barber, Keiser & Co., Allentown, Pa.

Presses & Dies (fruit cans) Ayar Mach. Wks., Salem, N.J.

Latest Improved Diamond Drills. Send for circular to M. C. Bullock, 80 to 88 Market St., Chicago, Ill.

Wood-Working Machinery of Improved Design and Workmanship. Cordesman, Egan & Co., Cincinnati, O.

"How to Keep Boilers Clean," and other valuable information for steam users and engineers. Book of sixty-four pages, published by Jas. F. Hotchkiss, 84 John St., New York, mailed free to any address.

Supplement Catalogue.—Persons in pursuit of information on any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free. The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, limited, Erie, Pa.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

Corrugated Wrought Iron for Tires on Traction Engines, etc. Sole mfrs., H. Lloyd, Son & Co., Pittsb'g, Pa.

Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other Can Tools. E. W. Bliss, Brooklyn, N. Y.

Improved Skinner Portable Engines. Erie, Pa.

Clark & Heald Machine Co. See adv., p. 62.

Ajax Metals for Locomotive Boxes, Journal Bearings, etc. Sold in ingots or castings. See adv., p. 61.

Draughtsman's Sensitive Paper. T. H. McCollin, Phila., Pa.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 60.

Skinner's Chuck. Universal, and Eccentric. See p. 61.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 77.

The Sweetland Chuck. See illus. adv., p. 73.

Electric Lights.—Thomson Houston System of the Arc type. Estimates given and contracts made. 631 Arch, Phil.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Also manufacturers of Soloman's Parallel Vise, Taylor. Stiles & Co., Riegelsville, N.J.

Peck's Patent Drop Press. See adv., page 94.

For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Co., Buffalo, N. Y.

The Brown Automatic Cut-off Engine; unexcelled for workmanship, economy, and durability. Write for information. C. H. Brown & Co., Fitchburg, Mass.

Ball's Variable Cut-off Engine. See adv., page 92.

The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 15,000 Crank Shafts, and 10,000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free.

Diamond Engineer, J. Dickinson, 64 Nassau St., N.Y.

The Improved Hydraulic Jacks. Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Paragon School Desk Extension Slides. See adv. p. 93.

Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, M'f'rs, 23d St., above Race, Phila., Pa.

Brass & Copper in sheets, wire & blanks. See ad. p. 94.

Geiser's Patent Grain Thrasher, Peerless, Portable, and Traction Engine. Geiser Mfg. Co., Waynesboro, Pa.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 93.

For the manufacture of metallic shells, cups, ferrules, blanks, and any and all kinds of small press and stamped work in copper, brass, zinc, iron, or tin, address C. J. Godfrey & Son, Union City, Conn. The manufacture of small wares, notions, and novelties in the above line, a specialty. See advertisement on page 93.

Supplee Steam Engine. See adv. p. 93.

Magic Lanterns and Stereopticons of all kinds and prices. Views illustrating every subject for public exhibitions, Sunday schools, colleges, and home entertainment. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., New York.

New Economizer Portable Engine. See illus. adv. p. 95.

Sewing Machines and Gun Machinery in Variety. The Pratt & Whitney Co., Hartford, Conn.

Saw Mill Machinery. Stearns Mfg. Co. See p. 93.

For Shafts, Pulleys, or Hangers, call and see stock kept at 79 Liberty St., N. Y. Wm. Sellers & Co.

Wm. Sellers & Co., Phila., have introduced a new injector, worked by a single motion of a lever.

Lightning Screw Plates and Labor-saving Tools, p. 93.

Notes & Queries

HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from $1 to $5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

TO OUR CORRESPONDENTS.—The destruction of our old offices by fire January 31, 1882, caused the loss of a considerable number of inquiries from correspondents and of our replies thereto, which we had in hand for publication. Those of our friends who find their inquiries neglected will know from the above the reason why; and they will oblige the editor by repeating their inquiries without delay.

(1) J. W. L. asks: Will the result be the same in hardening steel either by a charcoal fire or by illuminating coal gas? Process; 100 twist drills packed close in a 1½ inch wrought iron tube, one end left open to the fire; to be heated exactly the same temperature in both cases, and to be cooled in sperm oil. A. Yes; if heated to the same temperature they can only be uniformly heated with gas by using great care. A better mode of heating is in a metal bath of proper composition, and kept at uniform temperature above the fusing point.

(2) F. P. H. asks: What is the best form of engine for aeronautical experiments? A. Direct acting; working parts light; made of steel or gun metal. It should be accurately balanced, and run at high velocity.

(3) B. C. writes: On burning white (letter) paper on an earthenware dish a dark thick substance is left. Will you please let us know of what it is composed? A. Carbonaceous matters and ash or mineral matters. The latter vary with different papers. Usually this part of the residue consists chiefly of talc or soapstone (silicate of magnesia), clay (silicate of alumina) and sulphate of alumina. By heating the mass to redness for a few minutes in contact with air the black carbonaceous matter burns away, the mineral portion alone remaining. Talc, clay, and alum compositions are used in weighting and sizing the paper, hence their presence in the ash.

(4) G. W. S. asks: Can you give a receipt for plating metals—anything that will change the color of brass to imitate silver? A. You will find direction for plating brass, etc., in SUPPLEMENT, No. 310.

(5) E. M. E. asks why smokestacks of ships are somewhat inclined backward, while it is not so on steamboats, locomotives, etc. I have found no one yet to give me a satisfactory explanation. A. It is a mere fancy of the builders to make the ship look more "rakish."

(6) C. C. asks: Why are oscillating engines not more generally used? A. Because of unequal wear and somewhat complicated valve gear.

(7) J. B. B. asks whether we consider the so-called granite and marblized ware now so commonly sold as a safe article to use for culinary purposes. A. According to recent tests by our health authorities these enamels do not appear to be unwholesome; and are not liable to contaminate food cooked in contact with them.

(8) F. M. L. asks: Has any means been devised of using as fuel the siftings, dust, etc., of coal mines? If so, what is the device? A. Yes; they are burned successfully on some of the locomotives of the Pennsylvania Railroad, by a patent apparatus or arrangement. We cannot give you the details.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

A. H. J.—It is not meteoric—but consists chiefly of augite and quartz—possibly carrying a little zinc and silver.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

January 24, 1882,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 261 Broadway, corner of Warren Street, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

Agitator or egg beater, G. W. Richardson 252,800
Amalgamator and concentrator, A. Oliver 252,793
Animal trap, F. Winslow 252,852
Arch bars, machine for bending and punching, C. G. Cross 252,741
Augers, countersink attachment for, C. W. Cutter 252,650
Axle box, carriage, F. A. Carnes 252,733
Bag fastener, T. Sanford 252,804
Bag holder, F. Allen 252,640
Ball trap for billiard tables, F. Saunders 252,805
Battery. See Voltaic battery.
Bed bottom, C. H. Fitch 252,654
Bed bottom, spring, O. S. & W. S. Foster 252,601
Bed bottom, spring, M. A. Hunt 252,772
Bed bottom spring, T. A. & W. H. Rhodes 252,701
Bed lounge, J. L. Newton 252,791
Bicycle, J. E. Richard 252,624
Bird cage feed cup, J. Maxheimer 252,611
Bitters, alterative and tonic, D. W. Edwards 252,652
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Boiler furnace, J. Gerber 252,656
Bolts, manufacture of, C. Hall 252,661
Book, manifold copying, J. R. Carter 252,646
Box. See Axle box. Letter box. Post office lock box. Toy money box.
Bracelet stock, die for striking up, Keller & Frey. 252,676
Bracket. See Lantern bracket.
Brake. See Car brake.
Brick and mould, angle, J. F. Edwards 252,747
Brick and tile machine, A. Wehlann 252,636
Burner. See Gas burner. Hydrocarbon burner. Vapor burner.
Butter cutter, J. Porsch, Jr. 252,698
Button hole cutting machine, C. E. Langmaid 252,781
Button setting instrument, G. W. Prentice 252,699
Calender for cloth and other fabrics, Sarfert & Vollert 252,625
Canister or store can, D. F. Goodyear 252,759
Car, T. L. Wilson 252,830
Car brake, C. Higham 252,662
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Car coupling, C. L. Horack 252,767
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Car for railways, wrecking and construction, L. K. Jewett 252,672
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Car, stock, I. Kitsee 252,777
Car wheel, J. V. Dinsmore 252,745
Cars, heating and ventilating, M. D. Fitzgerald 252,752
Cars, ventilating, M. C. Jones 252,673
Carding machine, J. Wall 252,821
Carpet fastener and stair rod securer, combined stair, C. D. Stone 252,850
Carpet fastener, stair, M. Krickl 252,680
Carrier. See Thrashing machine straw carrier.
Case. See Piano case.
Chandelier, drop light, J. Trigge 252,709
Chain, drive, C. H. Low 252,609
Chinoline, preparation of, Pickhardt & Endemann 252,846, 252,847
Cigar holder, W. J. Fitzgerald 252,753
Cigarette machine, E. Side 252,811
Clamp, A. Kraiss 252,779
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Clay, lawning and cleaning, S. G. Phillips 252,796
Clock movement, A. E. Hotchkiss 252,668
Coffee, compound for flavoring, F. Broz 252,723
Coke crusher J. R. Davis 252,743
Comb, V. W. Wilson 252,856
Corn sheller B. A. Adams 252,594
Corset clasp, W. F. Gilbert 252,756
Counter stiffeners, treating hide in the manufacture of, W. H. Metcalf 252,688
Coupling. See Car coupling. Cultivator beam coupling. Pipe coupling. Shaft coupling.
Crib and table, interconvertible, S. S. Burr 252,730
Crusher. See Coke crusher. Quartz crusher.
Crushing sugar, salt, etc., device for, E. P. Chesbro 252,738
Cuffholder, false, G. A. McIntire 252,789
Cultivator, A. Gump 252,837
Cultivator beam coupling, J. T. Hamilton 252,763
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Cultivator, wheel, P. F. Wells 252,637
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Curtain fixture, Darling & Griswold 252,742
Curtain fixture, H. S. Wing 252,851
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Die. See Pipe die.
Digger. See Potato digger.
Draught equalizer, J. Horrigan 252,667
Draught equalizer, J. Sebastian 252,810
Draught equalizer, C. L. Spencer 252,813
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Drill and countersink combined, W. H. Southwick 252,704
Earring, H. G. Mackinney 252,610
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Electric lighting system, M. G. Farmer 252,836
Electric machine, short circuiting switch for dynamo, W. Hochhausen 252,663
Electric machines, polarity protector for dynamo, W. Hochhausen 252,665
Electric signaling apparatus, Pickford & Gregory. 252,797
Elevator, H. Roberts 252,801
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Evaporating salt brine, McBean & Watson 252,612
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Fan, C. Strickrodt 252,706
Farm engine boilers, fire box attachment for, H. Gillett (r) 10,016
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Fence, electric wire, J. H. Connelly 252,599
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Fence, wire, E. Ruane 252,702
Filter, water, A. Bell 252,718
Fire alarm, automatic, I. Kitsee 252,677
Fire annihilator, I. Kitsee 252,678
Firearm, breech-loading, H. Scott 252,703
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Fire escape, Williams & Rundle 252,829
Fire kindler, E. E. Glaskin 252,757
Foot protector, W. Klein 252,778
Frame. See Lounge frame. Mosquito bar frame.
Fruit drier, domestic, J. B. Sweetland 252,815
Fruit jar cover, G. H. Brown 252,721
Furnace. See Boiler furnace.
Gauge. See Water gauge.
Galvanic pad, L. Hechinger 252,765
Gas burner, electrical, J. Redding 252,848
Gas for preserving food, preparing, E. R. McCall. 252,787
Gas lighting, electric, J. Redding 252,849
Gate, W. O. Stickler 252,629
Gelatine and glue from animal refuse or offal, manufacture of, A. J. Huet 252,771
Glove fastening, S. Montgomery 252,617
Grain header, J. W. & A. B. Jory 252,776
Grain separator and cleaner, D. Salisbury 252,803
Grate, J. Kraupa 252,606
Grinding and reducing grain, etc., mill for, J. Stevens 252,705
Guard. See Spinning machine thread guard.
Hame staple, C. Lange 252,780
Handle. See Plow handle.
Harrow and seed sower combined, sulky, A. C. Scarr 252,806
Harrow evener, H. H. Fischer 252,751
Harvester, W. N. Whiteley 252,826
Harvesting machine, L. H. Lee 252,681
Harvesting machine, C. M. Young 252,854
Heel trimming machine, Tyler & Stone 252,819
Hinge, spring, H. Howson 252,770
Hoisting and conveying apparatus, F. A. Clarkson 252,740
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Homologues of phenol, naphthol, and resorcin, manufacture of the higher, A. Liebmann 252,782
Hoof protector, J. M. Goodman 252,758
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Hoop cutting machine, L. Holt 252,666
Hopper, feed, J. R. Walsh 252,633
Horseshoe, J. B. Finch 252,750
Hydrocarbon burner, liquid, A. S. Munger 252,618
Insulator for telegraph wires, C. L. Gore 252,857
Ironing table and clothes bars combined, H. Keeler 252,675
Jug, J. Cook 252,649
Knob attachment, B. H. Lockwood 252,682
Lamp and generator, combined electric, E. Morey 252,691
Lamp, electric, H. S. Maxim 252,840
Lamp, gas, C. W. Muchall 252,692
Lantern, A. L. Baron *et al.* 252,642
Lantern bracket, W. M. Phelps 252,697
Lathe, engine, G. A. Gray, Jr. 252,760
Lathing, metallic, A. Knisely 252,679
Lead by the old Dutch process, corroding house for the manufacture of white, W. H. Wetherill 252,823
Leading staff for bulls, S. M. Wells 252,638
Leaf and plant, artificial, C. I. Hahn 252,762
Letter box, street, T. McLaughlin 252,842
Lever, steam, J. B. Collin 252,598
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Lubricant, W. Parkinson 252,696
Magneto-electric machine, W. Hochhausen 252,664
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Metallic fastener, G. W. McGill 252,685
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Motion, device for converting, J. W. Anderson 252,831
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Musical instrument, automatic, J. McTammany, Jr. 252,614
Musical instrument, mechanical, Morris & Brott 252,844
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Nut lock, Beamer & Richardson 252,716
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Nut lock, B. F. Click 252,647
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Oxidizing lead bullion containing precious metals, apparatus for and process of, J. Tunbridge 252,817
Pad. See Galvanic pad.
Parer, apple, F. W. Hudson 252,670
Pea shelling machine, F. Molint 252,616
Piano case, J. & J. P. Becker 252,717
Pin jewel holder, F. Gundorph 252,660
Pipe coupling, J. C. Githens 252,657
Pipe cutter, C. Fenton 252,749
Pipe die, drain, W. L. Ogden 252,693
Pipe gripe, W. B. Tatro 252,632
Planter and fertilizer distributer, corn, W. Cassill 252,736
Planter corn, L. Scofield 252,808
Planter, cotton, Byers & Dorser 252,732
Planter, cotton and corn, J. M. Turley 252,818
Planter, seed, J. W. Robertson 252,802
Plow attachment, R. Updike 252,820
Plow handle, W. P. Brown 252,722
Plow handles, bending, G. C. Avery 252,712
Plow, sulky, H. Miller 252,615
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Potato digger, J. J. Meierdircks 252,687
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Pump, G. S. Bartlett 252,643

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Pump vacuum, H. Goebel 252,658
Punching machine feeding device, F. Marggraff .. 252,786
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Railway switch, A. E. McDonald 252,684
Reaping machine, J. Harris 252,764
Refrigerating apparatus, J. T. Reed 252,622
Refrigerating apparatus, dynamic dry air, E. Hill 252,766
Refrigerator, J. McMurtry 252,613
Regulator. See Pressure regulator.
Reservoir, portable distributing, D. R. Miller 252,690
Ring. See Earring.
Road engine, H. H. Bridenthal 252,720
Roller mill, C. Gates 252,755
Rotary steam engine, Hyden & Larson 252,773
Saw mill, circular, C. J. L. Meyer 252,689
Saws, machine for brazing band, J. F. Komp 252,605
Scale platform support, W. E. Sellock 252,627
Scraper, foot, R. B. Hough 252,669
Screw cutting die stocks, pipe cutting attachment for, A. H. Jarecki 252,671
Screw wrench, J. H. & F. L. Coes 252,597
Seams of sheet metal cans, closing the, G. H. Perkins 252,795
Separator. See Grain separator.
Sewing machine work basket, J. L. Parkinson 252,695
Shaft coupling, J. H. Riddle 252,700
Sheller. See Corn sheller.
Shoe, G. H. Bass 252,715
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Shutter worker, T. N. Lupton 252,784
Sign, E. Grah (r) 10,014
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Snow shovel, C. A. Way 252,822
Soap slotting machine, J. Atkiss 252,711
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Sole and heel protector, comb'd in, W. T. Schenck 252,626
Spinning machine thread guard, E. S. Stimpson ... 252,814
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Staples, machine for inserting and clinching, G. W. McGill 252,841
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Steam boiler, T. McDonough 252,788
Steam boiler, W. R. Michener 252,843
Steel for watch springs, preparing, Watson & Wilison 252,635
Stereotype plate holder, A. Overend 252,694
Stone, apparatus or means for turning or shaping, Brunton & Trier 252,728
Stone dressing machinery, Brunton & Trier .252,724, 252,725
Stone, turning or shaping, Brunton & Trier..252,726, 252,727
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Sugar centrifugal machine, S. M. Lillie 252,783
Sugar mill, C. G. Johnsen 252,774
Swinging and sliding gate, M. F. Caltrider 252,596
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Telegraphic cables, vulcanizing India-rubber and gutta percha coverings and coatings of, H. A. Clark 252,739
Telegraphic signal boxes, automatic time recorder for, H. W. Pope 252,798
Telephone, compound, G. L. Anders 252,641
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Toy scales, Kyser & Rex 252,608
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Water gauge, J. Cook 252,648
Wheel. See Car wheel.
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Ore, machinery for reducing, J. Taylor, New York city.
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Pneumatic brake, G. Westinghouse, Jr., Pittsburg, Pa.
Pump, C. W. Cooper, New York city.
Sewing machine, D. H. Campbell, Pawtucket, R. I.
Ships' cargoes, unloading, C. B. Meserole, New Rochelle, N. Y.
Spring bed bottom, E. T. Slayton, St. Paul, Minn.
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Steam pumping engine, W. D. Hooker, St. Louis, Mo.
Stove, Detroit Stove Works Company, Detroit, Mich.

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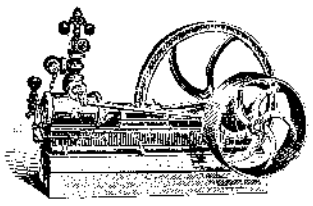

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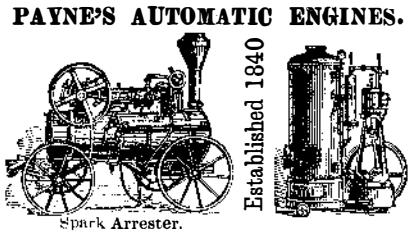

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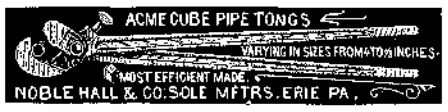

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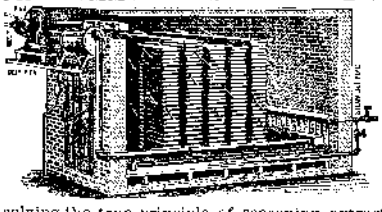

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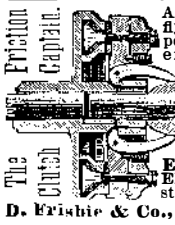

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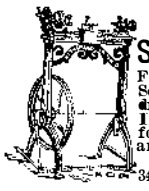

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Send money by Post Office Money Order, or Registered Letter. We will send the watch C. O. D. if Two Dollars is sent on account the balance can be paid at the Express Office when the watch is delivered. Let us hear from you with an order.

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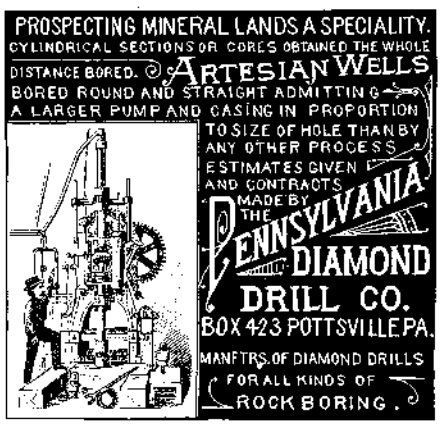

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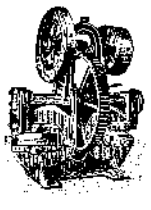

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