CATEATS.

ns desiring to file a caveat can have the papers prepared in the shortest time by sending a sketch and description of the invention. The Government fee for a caveat, under the new law, is \$10. A pam of advice regarding applications for patents and caveats printed in English and German, 18 furnished gratis on applica tion by mail. Address MUNN & CO., No. 37 Park Row, New York.

ASSIGNMENTS OF PATENTS.

Assignments of patents, and agreements between patentees and manufacturers are carefully prepared and placed upon the records at the Patent Office. Address MUNN & CO., at the Scientific American

Patent Agency, No. 37 Park Row New York.

It would require many columns to detail all the ways in which inventors or patentees may be served at our offices. We cordially invite all who have anything to do with Patent property or inventions to call at our extensive offices, No. 37 Park Row, New York, wherean ns regarding the rights of patentees will be cheerfully an

Communications and remittances by mall, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 P

REJECTED APPLICATIONS.

We are prepared to undertake the investigation and pros rejected cases on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opp rtunities for the examination and comparison of references, models, drawings documents. &c. Our success in the prosecution of rejected cases has een very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have pros cuted are invited to correspond with us on the subject, giving a brief story of the case, inclosing the official letters, &c.

FOREIGN PATENTS.

We are very extensively engaged in the preparation and securing of patents in the arious European countries. For the transaction of this business we have offices at Nos. 66 Chancery lane, London 29 Boulevard St. Martin, Paris ; aud 26 Rue des Eperonniers, Brus sels. We think we can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through the Scientific American Patent Agency, No. 37 Park Row, New York.

Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Any one can take out a patent there.

Circulars of information concerning the proper course to be pursued in obtaining patents in foreign countries through our Agency, the requirements of different Government Patent Offices, &c., may d gratis upon application at our principal office. No. 37 Park Row. New York. or any of our branch offices.



- A., of N. Y .- No dependance for accuracy can be placed upon the common reports which have been published respecting the difficulties of cutting a canal at Vicksburgh. It would therefore be out of place for us to discuss any question of engineer ing based upon such reports.
- H. S., of Pa.-There is no formula by which an inventor can regulate the sale of rights under his patent so as to secure equa and exact justice to all purchasers. We can suggest no fixed rule olnt. We think as a general rule that purchasers get the
- A. H., of N. Y .- If Mr. Miller's patent was granted in 5 it will not expire until 1869. Patents issued in 1855were granted for fourteen years.
- E. M., of Mo.-Your method of bleaching wax, so far as low, is new and patentable. There are no establishments in this vicinity, with which we are acquainted, where wax is bleached as a special part of the business.
- T. H. M., of Pa.-Alcohol is a solvent of castor oil and with it forms a clear solution, but with olive oil it forms a milky so-lution. The alcoholic castor oil solution, colored with alkanet root, forms a tricopherous for the hair.
- S. N.. of Ill.-A correspondent whose letter is published on page 182, Vol. VI. (new series) of the Scientific American, states that the nitro-muriate of platinum is employed to form a dead black on brass, such as the eye-pieces of telescopes.
- Any good treatise on photography will give you information respecting the strength of solutions for developing the impressions.
- S. C. C., Jr., of Mass. and J. A. M., of Pa.—Your communs on aerostation have been received.
- S. B. L., of R. I.—Corliss & Co., of Providence, R. I., will no doubt construct an air whistle for you, of the size you desire, to be ated with an air pump.
- W. H. F., of Iowa.—We recommend you to get a good millwright to select the engine and boiler foryour grist mill respectable engineering establishment will build you a boilerand gine of the best quality, if a sufficient sum is paid for them
- H. W., of Pa.—The cement for stopping sand-holes in iron castings is made by mixing one part of flowers of sulphur and two parts of sal-ammoniac with eighty parts of coarsely-powdered iron turnings. Sufficient water is used to make this compound into a thick paste; it is used as soon as it is made, and the holes are plugged tight with it. This cement ultimately becomes as hard a the metal itself.
- . T. V., of N. Y.—Gumboge (commonly called gamboge) is a yellow gum sold by all dealers in artists' materials. It is em ployed as a water olor in painting, and for coloring lacquers of

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, April 15, to Wednesday, April 22, 1863 :

J. F. R., of N. Y., \$45; R. K., of Mass., \$46; L. R., of N. Y., \$20; J. P. H., of D. C., \$20; H. F., of Ohio, \$45; F. C. P., of N. Y., \$16; N. P. O., of N. Y., \$20; D. H., of N. Y., \$20; J. B. R., of N. Y., \$20; D. N. D., of N. J., \$46; W. L. R., of Mass., \$16; J. I., of Ohio, \$25; M. S., of Pa., \$12; A. M. B., of Mich., \$16; A. W. S., of Mass., \$25; M. M. & Co., of Ind., \$16; N. B., of Ind., \$25; J. J. R., of V., \$16; A. C., of Pa., \$15; J. De R., of Ohio, \$16; G. N. D., of Ky., \$25; G. W. H., of Iowa, \$16; W. & T., of Mass., \$25; T. S. D., of N. J., \$250; W. & C., of N. H., \$28; G. W. D., of N. Y., \$25; J. F. J. G., of N.Y., \$25; W. W., of Mich., \$20; J. McK., of N. Y., \$31; J. P. T., of N.Y., \$61; W. J. S., of Ohio, \$20; J. T., of N.Y., \$20; G. A. D. of Cal., \$20; F. W. G., of N.Y., \$20; G. & V., of N.Y., \$45; W. G. C., of N.Y., \$59; J. W. D., of Conn., \$20; A. F. W., of N. Y., \$25; C. C. S., of Ill., \$25; C. & T., of Conn., \$25; J. S. C., of Mich., \$15; R. H., of N. Y., \$16; C. & T., of Conn., \$25; J. S. C., of Mich., \$10; R. H., of N. Y., \$10; N. E. S., of Ind., \$25; E. R. S., of Mich., \$10; G. W. H., of N.Y., \$15; P. K., of Conn., \$20; G. C. R., of N. Y., \$20; M. P. L., of Maine, \$45; D. B. H., of N.Y., \$20; J. F. H., of N. Y., \$16; B. F. B., of N.Y., \$20; C. F. T., of N. Y., \$16; N. A. B., of N.Y., \$45; H. B. J., of N.J., \$20; C. L. A., of N. Y., \$10; A. & W., of N. Y., \$12; T. E., of R. I., \$25; J. M., of Ky., \$26; M. & H., of Ill., \$25; G. W. G., of Ill., \$25; D. R., of N. Y., \$16; N. Z. P., of Ill., \$25; W. J. S., of Ohio, \$25; A. & H., of N. Y., \$16; N. Z. P., of R. I., \$30; G. H., of N. Y., \$15; G. E. H., of N. Y., \$25; S. W. D., of N. Y., \$10; P. & B., of Mass., \$25; H. & S., of Pa., \$25; T. O., of Mass., \$21; A. H., of Iowa, \$26; B. K., of Mo., \$15; J. G., of Ill., \$25; W. S. P., of Mich., \$250; W. F. R., of N. Y., \$16; ., \$16; G. B. F., of Ill., \$30; T. W., of Mass., \$17; W M., of N. Y., \$25.

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and inform us the amount, and how it was sent, whether by mail or ex

Specifications and drawings and models belonging to

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Wednesday, April 15, to Wednesday, April 22, 1863:—
R. K., of Mass.; J. McK., of N. Y.; J. P. T., of N. Y.; C. F. T., of N. Y.; W. G. C., of N. Y.; C. L. A., of N. Y.; A.F. W., of N. Y.; A. and W., of N. Y.; W. M., of N. Y.; T. O., of Mass.; H. S., of Pa.; D. E. B., of Pa.; J. I., of Ohlo; T. E., of R. I.; C. C. S., of Ill.; J. M., of Ky.; A. W. S., of Mass.; N. E. S., of Iowa; M. and H. of Ill.; N. S., of Ind.; N. Z. P., of Ill.; C. and T. of Conn.; C. M. L., of N. H.; J. K. H., of Ind.; A. and H., of Mass. (2 cases); H. and S., of Pa.; W. and C., of N. H.; C. St. J., of Mass.; P. and S., of N. Y.; G. B. F., of Ill.; G. W. D., of N. Y.; G. N. D., of Ky.; S. and F., of R. I.; J. G., of Il.; G. E. H., of N. Y.; A. H., of Iowa; G. W. G., of Ill.; J. F. J. G., of N. Y.; A. C. F., of N. Y.

RATES OF ADVERTISING.

Twenty-five Cents per line for each and everyingertion.nav. blein advance. To etable all to understand how to compute the amount they must send in when they wish advertisements inserted, we will explain that ten words average one line. Engravings will not be admitted into our advertising columns; and, as heretofore, the publish. ers reserve to themselves the right to reject any advertisement they

Proposals for rifle cannon.

PROPOSALS WIll be received at this office until 4 octook P. M., and the received at this office until 4 octook P. M., on the 2d day of MAY next, for the manufacture and delivery of thirty CAST-IRON SIEGE RIPLE CANNON of the caliber of four and a half inches. These cannon weigh, when finished, about 3570 pounds. They are to be made in strict conformity to the drawing which will be furnished, and which may be seen at any United States Arsenill. They are to be cast hollow and cooled from the interior. They are to be cast hollow and cooled from the interior. They are to be cast hollow and cooled from the interior. They are to be cast hollow and cooled from the interior. They are to be subject to the regular United States inspection and proof, and none are to be received or paid for, but such as are accepted by the Inspector, whose decision as to the reception or rejection of any of them is to be final and conclusive.

Bidders will state the time they propose to deliver the first cannon, and the number they will deliver, weekly, thereafter. They will also state where they propose to manufacture them, and the price, per pound, for the finished cannon, delivered at the place of shipment nearest to the foundry where cast.

No bid will be entertained except from regular founders, evidence of which, and of their ability to fulfill a contract, if swarded to them, must accompany the bids, unless the bidder is known to this office.

Any bidder obtaining a contract will be required to enter into bonds with no less than two sureties, in the penal sum of \$5,000 for the faithfulfulfilment of his contract util all respects.

The right is reserved to reject any or all bids if the prices are deemed too high, or if, for any cause, it is not thought for the public interest to accept them. Proposals will be sealed and addressed to "Brig. Gen. J. W. Ribley, Chief of Ordnance, Washington, D. C.," and will be indorsed "Proposals for 3/Aucs W. RIPLEY, and will be indorsed "Proposals for 1/4-inch Rifle Cannon."

Brig.-Gen. and Chiefor Ord

GUTTA-PERCHA CEMENT ROOFING.—THIS ROOFING is fire and water-proof—costs only about one-third as much
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le adapted to oid shingle roof as well as to new roofs, and answer
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READY ROOFING.—THIS ARTICLE IS MADE OF LEADI RUUFING.—THIS ARTICLE IS MADE (
Lithethickest woren fabric ever used for roofing, invented a
manufactured expressly for our own use. (See page 176 of the curent volume of the SCHENIFIEC AMERICAN for full description.) Ne
no coating of cement to be spread upon the surface after being nai
upon the roof-boards, as every other kind of roofing does. It co
less than half the price of tin, is far more durable, and is eas
applied by any one. READY ROOFING COMPANY, 73 Maiden Lai
New York.

STEAM AND WATER GAGES, GLASS TUBES, PAT-ENT gage-cocks whistles and engine counters for sale; also in-dicators for ascertaining the working horse-power of steam engines, heat gages and signal goings for steamboats. E. BROWN, 311 Wal-nut street, Philadelphia, Pa.

WOOD-WORKING MACHINERY, DESIGNED FOR the manufacture of cars, carriages, sash, blinds, doors, moldings, patterns, piano-forte and cabinet work, a gricultural implements, packing boxes, lumber, \$t.c. Made by RICHARDSON, MERIAM & CO., Worrester, Mass

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the Conservatoire of Arts and Industry, Paris, and MM. Armengaud the younger and Amourous (Cittl Engineers, Re-written and arranged) with additional matter and plates, selections from and examples of the most useful and generally employed mechanism of the day. By the most useful and generally employed mechanism of the day. By the most useful and generally employed mechanism of the day. By the Most of the Colonies and Su woodenus. 410, 2700.

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The Intersection of Cyfinders and Cones: Plate XVII. The Intersection of University of Cones: Plate XVII. The Intersection of the Cones. Plate XVII. The Intersection of the Cones. Plate XVII. The Intersection of which are considered to the Cones. Plate XVII. The Intersection of surfaces—applications to stop-cockes: Plate XVIII. The Intersection of surfaces and plate and plate and p

TO INVENTORS.—THE UNDERSIGNED HAS GOOD facilities at his place of business in this city to sell a really valuable and merchantable article secured by patent. He might be disposed to advance some capital, and to manufacture the same, if necessary. Address HERMAN J. ROSENCRANZ (care of J. SCOTT).

DON'T FORGET, SUPERIOR DOUBLE SAW-BENCH-ES, \$55. Circulars sent. C. P. S. WARDWELL, Lake Village,

CALORIC ENGINE WANTED—SECOND-HAND— Suitable for working a small pump. Address Box 1,470, New York Post-office, stating power, and how long it has been in use.

10,00 gallons each. Any one having such, which they will offer cheap, will find a purchaser by addressing P. C., Box 3,488, New York Post Office.

TO PERSONS ENGAGED IN MANUFACTURING ARTICLES used in Woolen Mills.—I desire to obtain theaddress of all persons engaged in manufacturing articles used in Woolen Mills, such as Reed makers, Shuttle-makers, Bobbin makers, Picker makers, Comb-makers, &c. ; also manufacturers of Patent Oil-cans, Patent Temples, Patent Heddles and all other patented articles used or connected with Woolen Mills. Parties interested plraset ake notice and send their business card to THOMAS STIBES, Dealer in Manufacturers' Supplies, Wooster, Ohio.

TISH'S LAMP-HEATING ATTACHMENTS—FORFAMLLY cooking purposes; for nursery and sick room; for barbershops and restaraunts. Adapted to kerosene or gas. A fully illustrained pamphilet will be sent by mail free. Agents wanted. Who
RUSBELL, agent, 559 Broadway, New York. We Will remove to
206 Pearl street on May 1st.

DEAF! DEAF! ARTIFICIAL EARS FOR THE DEAF.

Send for a descriptive pamphlet to E. HAHLAM, 82 John street.

18 3**

OFFICE OF THE SIGNAL OFFICER.

WASHINGTON, D. C., April 11, 1863.

Sealed Proposals will be received at this Office until 4 o'clock, P. M., on the 30th day of April, 1863, for furnishing to the Signal Department the following articles:

300 Three hundred Telescopes, complete.
200 Two hundred Marine Glasses, do.
250 Two hundred and fifty Compasses.
40 Forty Telescopes, extra size, with stands.
The first delivery to be made about the 16th day of June, 1863, or as soon thereafter as Government may direct: the balance to be delivered on or before the let day of August, 1863.

A bond, with good and sufficient security, will be required.
Proposals from disloyal persons, or where the bidder is not present to respond to his bid. will not be considered.
The names of firms should be stated in full, with the precise address of each member of the firm.
All bids to be accompanied by two guarantees, and directed to Signal Equipments."

Form of Guarantee.

We. —, of the country of Guarantee.

Equipments."

Form of Guarantee.

We, of the county of ____, and State of ____, do hereby guarantee that ____ is able to fulfill the contract in accordance with the terms of his proposition, and that should his proposition be accepted he will at once enter into a contract in accordance therewith. Should the contract be awarded to him we are prepared to become his securities.

Should the contract upon at a contract to each bid.)

(This guarantee must be appended to each bid.)

The responsibility of the guarantors must be shown by the official criticate of the clerk of the nearest district court, or of the United listes District Attorney.

States District Attorney.

The right is reserved to reject all proposals if the prices are deemed too high, or if, for any cause, it is not deemed for the public interest to accept them.

Models will be on exhibition at the office of the Signal Officer for fifteen (15) days from date.

BUREAU OF ORDNANCE.

Washington City, April 1, 1863.

This Bureau is desirous of ascertaining whether rified cannon can be made of wrought iron of sufficient and uniferm endurance and economy to warrant their being preferred to game of cast iron only, or of cast iron attengthened with wroughtiron.

Proposals will therefore be received from any manufacturers of forged iron, to furnish a finished gun, or a block of metal from which the same may be finished.

The said gun, when finished, to weigh about 10,000 pounds, to be made into a gun throwing a projectile of 100 pounds, as used in cast iron rified cannon of like weight, to be fired 1,000 times with service charges of the same weight and kind of powder as used in the Parrott 100-pounder, viz: 10 pounds of No. 7, without bursting or wearing in such a manufer as to cause apprehensions of bursting.

The quality of mean, price, and other terms, are to be stated clearly in the proposals forwarded.

The Bureau reserves the right to itself of accepting or rejecting any of the proposals.

The time for receiving the proposals is limited to sixty days from date; and proposals will only be received from persons actually engaged in the fabrication of wrought iron.

JOHN A. DAHLEGREN, Chief of Bureau.

ORDNANCE OFFICE,

PROPOSALS will be received at this office until A cycleck P.M. on the 30th of APRIL, 1863, for furnishing six hundred Wrought-iron Beams for Rails of Chassis of Sea-coast Carriages.

These beams are to be made after the following specifications:—
These beams are to be made after the following specifications:—
The art for barbette carriages is a rolled wrought-iron beam, similar in appearance to the "I"-shaped beams used in the construction of fire-proof buildings. It is required to be straight and smooth on its surface, and free from flaws, imperfect welds, blisters and cinder streaks. The outer surfaces of the two flanges are planes, parallel to each other, and stright angles to the web. The web joins the two flanges along their middle time, the state of the project equally on each side, and must be without bends or corrugations.

Length of rail.

Length of rail.

Dinensions of reales.

Length of rail.

Length of rail.

Depth between outer surfaces of flanges.

15 inches.

Width of flanges.

5375 "
Thickness of flanges at outer edge.

75 inch.

Thickness of web.

These beams will be inspected after the following rules:—

They are to be made of good tough well-worked clear iron, the absence of which qualities (generally indicated by roughness of surface, and by checks and more marked roughness atong the edges of the flanges), as also flaws, or bad welds, blisters and streaks of cinder will cause their rejection.

heir rejection.
are to be of the required dimensions and square at the They are to be straight and free from short bends in the flange

No bids will be entertained carried by the manufacture of iron, evidence of which must accompany, when manufacture of iron, evidence of which must accompany, and bid.

Each party obtaining a contract will be required to enter into bonds, with proper sureties for its faithful fulfillment; and the transfer of the quarter to another party will cause its entire forfeiture. The right is reserved to reject all proposals if the prices are deeped too high, or, if for any cause; it is not deemed for the public interest to accept them.

Froposals will be sealed and addressed to "GENERAL J. W. RIPLEY, Chief of Ordnance, Washington, D. C.," and will be indorsed "Proposals for Wrought-Iron Beams." JAS. W. RIPLEY, 163

Brigadier-General, Chief of Ordnance.

WANTED.—A SECOND-HAND ENGINE LATHE that will swing 48 inches over ways. Short ways preferred. The price must be low. Address MACHINIST, Box 167, Houghting, Mich.

UN SCREWS! GUN SCREWS!!—THE SUBSCRI-bers have on hand and are manufacturing gun screws which they will warrant to fit "Spring field" Gages. They also solicitorders for gun screws to fit other gages. Samples can be seen at our store, No. 74 Beek man street, New York. FELLOWS, HOFFMAN & CO.

TOW TO GET THE NEW YORK DAILY SUN, WITH the postage paid, for one cent I get your postmaster or store-keeper to receive 20 cents each from 15 persons, and remit it (\$3), and we willsend him 15 copies of The Sun, postage paid, for 20 days. More money will pay for a longer time. MOSES 8, BEACH, Proprietor of The Sun, corner of Fulton and Nassau streets, New York. M. B.—The Weekly Sun is only 50 cents a Year.

A VALUABLE WORK FOR INVENTORS, PATENTEES AND MANUFACTURERS.

The publishers of the Scientific American have just prepared, with much care, a pamphlet of information about Patents and the Patent Laws, which ought to be in the hands of every inventor and patentee, and also of maulacturers who use patented inventions. The character of this useful work will be better understood after reading the following synopsis of its contents:—

The complete Patent Law Amendment Act of 1861—Practical Instructions to Inventors, how to obtain Letters Patent, also about Models—Designs—Caveats—Trade-marks—Assignments—Revenue Tax—Extensions—Inverferences—Infringements—Appeals—Revisues of Defective Patents—Validity of Patents—Abandonment of Inventions—Best Mode of Introducing them—Importance of the Specification—Who are entitled to Patents—What will prevent the Granting of a Patent—Patents in Canada and European Patents—Schedule of Patent Fees; also a variety of miscellaneous items on patent law questions.

tions.

It has been the design of the publishers to not only furnish, in convenient form for preservation, a synopsis of the PATENT Law and PRACTICS, but also to answer a great variety of questions which have been put to them from time to time during their practice of upwards of secenteenyears, which replies are not accessible in any other form. The publishers will promptly forward the pamphiet by mail, on receipf of six cents in postage stamps.

Address MUNN & CO., Publishers of the SCIERTIFIC AMERICAN, No. 37 Park Row, New York.

FAN BLOWERS—DIMPFEL'S, ALDEN'S, McKENZIE'S and others, for Steamboats, Iron Works, Founderies, Smith Shops, Jewelers, &c., on hand forsale by LEACH BROTHERS, Liberty street, New York.

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RON PLANERS, ENGINE LATHES, DRILLS AND other machinists' tools, also three and four spindle Drills of superior quality, on hand and finishing, for sale low. For description and price address NEW HAVEN MANUFACTURING COMPANY, New listers, Conn.

EXCELSIOR MOWER AND REAPER—THE BEST IN use—the patent for sale or lease. A fortune can be made by building these machines. Territories for sale. Send for a circular and you will get all the particulars. ROBERT BRYSON, Schenectady, N. Y.

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PLATINA! PLATINA!!—FOR USES OF CHEMISTS, Dentists, Gunsmiths, Electro-platers, Telegraph Batteries, Acid Manufacturers, &c. SUTTON & RAYNOR, 748 Broadway, New York. 17 48

TNVENTIONS AND THEIR RESULTS,"—A NEW book just published. Send four-stamps (12 cents), and procure a sepecimen copy, and agency. Agents wanted everywhere to solicit orders. Address HARRIS BRO'S, Box 302, Boston, Mass. 17 tf

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DAMPER REGULATORS.—GUARANTEED TO EFof power. For sale by the subscribers, who have as ablished their exclusive right to manufacture damper regulators, using disphragms
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formation given, by addressing CLARES PATENT STRAM AND FIRE
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16 25*

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well, and you have got it up very neatly." Maguifes 25 diameter
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cents. The "S. WOODWARD MICROSCOPE." 38 cents.
one each of the three kinds for \$1. All free of postage.
Address T. EDWIN KING, Box 330, Boston, Mass.

TOR SALE.—STEAM ENGINE, 16-INCH BORE, TWO feet stroke, with Judson governor, boiler of sufficient capacity for same with fire-box, chimney pipes and pump complete, but little used, Also a large gear-cutting engine to cut bevel, spur or spiral gears; one compound planer; one shaping machine, a few ragne takes and planers; one slotting machine, all of excellent quality. Also, stationary engines, 6, 7 and 8-inch born, 16-inch stroke; 10,220, 1222, 13224, 13224, and 16:36. Portable engines from 3 to 10 horse, power. Shafting, pulleys, &c., made promptly to order. Address OlnCinnati, Machine Works, corner Front and Lawrence atreets, Cincinnati, Ohio.

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Improved Patent Governor

All our readers are so familiar with the uses to which the invention herewith illustrated is applied, that we forbear any comments upon this branch of the subject and proceed at once to describe the apparatus, which in its arrangement and design is both novel and praiseworthy. The column, A, has the hollow spherical head, B, attached to a tube running through the center of the column connected at the bottom with the crown gear, C. This case contains a rod which has a shoulder on it in which the ends of the levers, D, work. The clutch, E, is secured to with the upper or lower gear and thus rotates the

are two stationary inuts, J, which can be set at any desired point. The pulley, K, transmits power from the engine to the whole apparatus through the bevel gear, L. These are the principal details of the apparatus. The operation of them will be understood by referring to the annexed description :-

When the balls are revolved they maintain a position whose distance from the column is proportioned to the speed at which they travel; as they rise or fall by an increase or decrease in the number of the revolutions, the clutch is thrown into communication

tery with the object to be coated. The battery being set in action with weak sulphuric acid and water, the deposit of metal takes place without further trouble. If the article is to be coated with silver, then a solution of cyanide of silver is used, and a silver plate, instead of the copper-salt and plate mentioned. Every metal can be thus deposited from its solution when the proper salt of the metal is employed. If the object to be coated is metal, nothing but absolute cleanliness is necessary; but if the object be wax, plaster-cast, wood, &c., then it must be brushed over with fine black lead, in order to make the electric fluid travel, all objects except metals being non-conductors. Beginners should commence with small objects, as a little experience is necessary to lead to satisfactory results. - Septimus Piesse.



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To the Inventor!

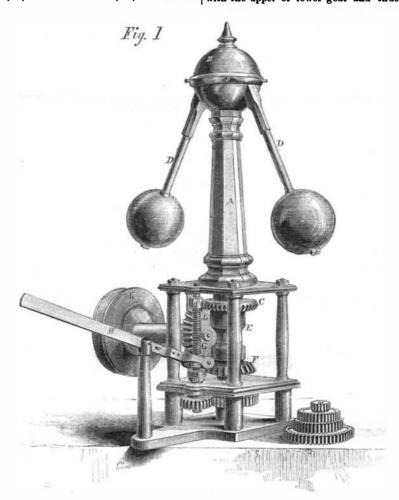
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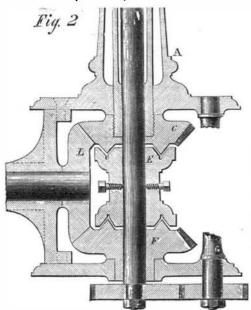
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HOWELL'S PATENT GOVERNOR,

the rod just mentioned by set-screws. In either end | gear connecting with the screw shaft. As the screw of the clutch there is a V-shaped groove which is accurately fitted to corresponding projections on the gear, C and F, (see Fig. 2).



Below the two standard plates on which the ma chinery is placed may be seen a spur wheel connecting with a pinion; this wheel is keyed on to the same rod that carries the clutch and operates, through the pinion just mentioned, the screw shaft. G. The lever, H, is jointed to the upright, and the forked end of it connects with a nut working on the screw shaft. At either end of the screw shaft

shaft moves in obedience to the machinery, the nut in the lever runs up and depresses the opposite end of the same, which is in connection with the steam or throttle valve. The whole duty of the balls is exerted on the friction clutch; the motion is very slight, as the distance between the clutch and the gears it drives is only one-sixteenth of an inch. The gears placed at the side of the machine are intended to accelerate the speed of the screw shaft as may be desirable. This is a necessary feature and it strikes us that if the screw shaft itself had a quicker pitch on it the apparatus would be still more effectual. As it is, when properly made, it must be a sensitive governor, and we are assured that it gives great satisfaction in the navy yard at Portsmouth, N. H., where it is now used. This governor was patented on Dec. 23, 1862, by John S. Howell, of Portsmouth, N. H., and further information can be had by addressing him at that place

Electro-metallurgy.

This term is applied to the art of depositing metals upon one another, or upon non-metallic bodiesimportant invention, which dates from about the year 1840. At the present time numerous persons are engaged in this business in Sheffield, Birmingham, and London. The simplest mode of operating is to employ in one cell Smee's or Daniel's battery, for the purpose of generating the electric force; then to have a second vessel, of a size sufficient to hold the article to be coated with metal. If it be intended to coat the object with copper, then this vessel must be filled with a saturated solution of sulphate of copper, and a sheet of copper placed into it. This is connected by a wire to the copper of the battery, another wire is made to connect the sinc of the bat-