

scribed of a curved or bowed back round for the seat whether the same be placed between or in rear of the front legs of the chair, as and for the purposes herein set forth.

52,489.—Machine for Felting Hat Bodies.—Cyprien Faure (assignor to himself and C. Francis Bates), New York City:

I claim the box, A, with the longitudinally slotted table, A', in combination with the longitudinally slotted plank, B, and with a suitable roller or rollers, the whole constructed and operating substantially as and for the purpose described.

[The object of this invention is to produce a machine which performs the operation of felting hats in imitation of the ordinary hand process.]

52,490.—Method of Treating Gold Ores.—Halvor Halvorson, North Cambridge, Mass., assignors to himself and Wm. T. Eustis, assignors to themselves and Levi L. Cushing, Jr.

I claim the treatment of gold and silver bearing pyritous ores in the manner and for the purposes herein described.

52,491.—Curriers' Scourer.—John Hankey (assignors to himself and Henry Muller), North Cambridge, Mass.;

I claim the improved curriers' scourer as made with the metallic socket piece combined and arranged with the handle and the stone, and with the handle provided with the adjusting screws, and the recesses for reception of their heads, substantially as described.

52,492.—Sash Locks.—James Hollingsworth (assignors to C. M. Henderson), Chicago, Ill.:

I claim, First, The application of the jaws, B B', to a plate, A, having a projecting rim, a, for the purpose of forming a space between the surface of said plate and the jaws to receive the pins, h, and springs, g, substantially as described.

Second, The stud, b, in combination with the cup shaped plate, A, and jaws, B B', substantially as described.

52,493.—Machine for Reducing or Pointing Wires.—Orrin L. Hopson, and Eli J. Manville, Waterbury, and Heeman P. Brooks, Walcottville, Conn., assignors to Orrin L. Hopson, Waterbury, and Heenan P. Brooks, Walcottville, Conn.:

I claim, First, a series of toggle blocks, k, mounted substantially as specified, in combination with the die, l, shaft, b, and jaw, e, substantially as and for the purpose set forth.

Second, We claim the combination of the blocks m, and screws, l, with the toggle blocks, k, and die, l, as and for the purposes specified.

Third, We claim the spring n, fitted as specified in combination with the toggle blocks, k, and die, l, as specified.

Fourth, We claim the jaw, d, on the center, e, carrying half the divided die, l, at one end in combination with the adjusting screw, g, applied to the opposite end of the jaw, d, as and for the purposes specified.

Fifth, We claim the cylinder or pin, o, in combination with the jaw, d, and toggle or cam blocks, k, for the purposes and as specified.

52,494.—Bolt Heading Machine.—Lancelot Kirkup, Brooklyn, N. Y., assignor by mesne assignment to The Bolt Rivet and Spike Co., New York City:

We claim, First, The arrangement of two die carrying disks, one on either end of the frame, B, in combination with suitable punchers, H, with a yoke, I, and eccentric, n, or their equivalents, constructed and operating substantially as and for the purpose specified.

Second, The troughs, L, in combination with the die carrying disks, A, arranged substantially as and for the purpose specified.

52,495.—Hay and Cotton Press.—Marquis D. Moore, (assignor to himself and Samuel Bromburg, Brooklyn, N. Y.):

I claim the toggle levers, constructed as herein described and conical windlasses in combination with the two inclined extensions or end pieces c, c, as and for the purposes herein specified.

52,496.—Rotary Plow.—David Myers (assignors to himself and Wm. H. Kretsinger), Chicago, Ill.:

I claim the employment of a series of rings in combination with the revolving cylinder, F, and shovels, a, arranged and operating substantially as and for the purposes herein shown and described.

52,497.—Door Guard.—Noah C. Perry and George S. Gladding, Chester, Conn., assignors to Jeremy W. Bliss, Hartford Conn.

We claim as a new and useful article of manufacture a door guard, substantially in the manner as and for the purpose described.

52,498.—Heel-polishing Machine.—James M. Thompson, Stoneham, Mass., and L. D. Tripp, Lynn, Mass., assignor to S. D. Tripp:

First, We claim the loose disk, D, placed at one end of the rotating polishing shaft, C, in connection, with the gage, E, substantially as and for the purpose specified.

Second, In connection with the polishing shaft, C, the frame or bar, G, suspended by a spring, H, from an upright, A, or other fixture, and provided with a rotating disk, J, in which a sliding plate, K, is fitted, having the boot or shoe attached substantially as and for the purpose set forth.

Third, The supplemental shaft, F, in combination with the polishing shaft, C, and the frame or bar, G, provided with the disk, J, containing the sliding plate, K, substantially as and for the purpose specified.

[The object of this invention is to obtain a new and useful device for polishing the edges of the soles of boots and shoes, one which may be manipulated with the greatest facility, and perform its work in an expeditious and perfect manner, and be capable of being adjusted to operate upon soles of greater or less thickness.]

52,499.—Heel-polishing Machine.—James M. Thompson, Stoneham, Mass., and S. D. Tripp, Lynn, Mass., assignors to S. D. Tripp:

We claim the revolving block, D, placed loosely on the driving shaft, C, and provided with polishing stones or wheels, E E', driven from such shaft, all arranged substantially as and for the purpose herein set forth.

[This invention relates to a new and improved mode of arranging the polishing stones or wheels of a heel-polishing machine, whereby either of the stones or wheels—two being used—may, by a very simple manipulation, be placed or adjusted in the necessary position to have the heel of the boot or shoe applied to it.]

52,500.—Planter and Seeder.—Horace H. Webster (assignor to himself and Sylvester Davis), Claremont, N. H.:

First, I claim the combination of a corn planter and seed drill, substantially as herein described.

Second, My device for raising the plows and covers from the ground and lowering them thereto, substantially as set forth.

Third, The various V, notched wheels, V, and cog wheels, E, constructed, combined and arranged substantially as described.

52,501.—Car Brake.—W. E. Wilcox (assignor to himself and Luther Moses), Cleveland, Ohio:

First, I claim the arrangement of a steam cylinder with the horse couplings and friction wheels, when arranged and combined in the manner herein specified and for the purposes set forth.

Second, I also claim the construction of the horse couplings, when arranged and combined with car brakes operated by straw, as herein described and for the purposes set forth.

Third, I also claim the friction wheels to be placed between or on either side of the car wheels, as herein described and for the purposes set forth.

52,502.—Machine for Welding the Ends of Railroad Rails.—Hugh Baines, Manchester, Eng., residing temporarily in Canada:

I claim the means herein set forth for applying steel braces to the ends of rails and railway points, that is to say, the devices desig-

nated by the figures 1, 2, 3, and the plunger or die, S, the said devices being operated substantially as shown.

52,503.—Mode of Securing Photographic Pictures on Ceramic Ware, Etc.—J. B. Obernetter, Munich, Kingdom of Bavaria:

I claim the herein-described process of producing photographic pictures on ceramic articles, including glass, to be burnt in as set forth.

52,504.—Combined Sword and Pistol.—August Rauh, Solingen, Westphalia, Prussia:

I claim the combination with the sword blade and its handle of a many-chambered rotating cylinder and fixed barrel, when the base pin for the cylinder is formed of the blade stock and the several parts are arranged and operated as hereinbefore described.

Second, I also claim the constructing and arranging the breech plate, n, so as to constitute also a hammer supporter during the loading operations, substantially as described.

52,505.—Self-winding Watch.—F. Robert Theurer (assignor to Charles Aubens & Co.), Chaux de Fonds, Switzerland:

I claim actuating the winding mechanism of the watch by the movement of the cover, substantially as herein set forth.

52,506.—Flax-spinning Machine.—Levi Skeels, Worthington, Ohio:

I claim, First, The arrangement of vibratory slit holder, F, f, notched feeder, G, g, spring finger, H, and stud, for detaching and feeding for card the flax, substantially as set forth.

Second, In combination with the above-claimed feeding mechanism, I claim the clamp, J, J', constructed and operating as set forth.

Third, The described arrangement of clamp, J, J', and yielding rest, L, for the purpose explained.

52,507.—Shingle Mill.—Thos. H. Cox, Nashville, Tenn.:

First, I claim the combination of the saw, B, rising and falling bed, M, pitman, L, and crank wheel, I, as and for the purposes specified.

Second, The combination and relative arrangement of the shafts, R, R, pinions, Q, Q, slides, N, N, racks, i, l, ratchet toothed wheels, T, T, and fixed pawls, V, V, for setting the bolt, as explained.

Third, In combination with the before-named shafts, R, R, pinions, Q, Q, and racks, i, l, I further claim the eccentric, S, and slotted plates, K, I, arranged to operate as and for the purposes set forth.

Fourth, I also claim the combination of the lever, O, spring, P, toothed segment, a, sliding toothed dog, h, and fixed dog, h, arranged to operate as and for the purposes specified.

52,508.—Tweezer.—Even Kooms, Funkstown, Md.:

First, I claim the cup or dish-formed fire iron or tweezer, constructed in the manner described, for the purpose of allowing the cinders to flow away from the air-discharge openings and for the purpose of preventing the same from flowing out against the brick work, substantially as described.

Second, I also claim the use of the conical weighted plug, constructed as and for the purposes herein described.

REISSUES.

2,166.—Self-mousing Hook.—The Middletown Tool Company, Middletown, Conn., assignees by mesne assignments of J. R. Henshaw. Patented Oct. 26, 1858:

We claim locating the spring of a snap hook, substantially as shown and described, so as to act upon points intermediate between the ends and hook proper, in combination with forming recesses for holding the spring, as set forth.

2,167.—Tool.—The Washoe Tool Company, New York City, assignees of H. L. Lowman. Patented June 6, 1865:

We claim an elliptical socket the opposite sides of which are parallel to each other, and elongated in the line of its axis, in combination with one or more projecting arms or bree merging by curved lines into the socketed head, substantially as described and represented.

DESIGNS.

2,259 to 2,262.—Fabric Trimming.—Thomas Merry (assignor to Samuel Needham), Philadelphia, Pa. Four patents.



N. H. B., of Me.—Iron is converted into steel by absorbing from 1 to 1 1/2 per cent of carbon. The iron is placed in an air-tight vessel along with a little pulverized charcoal, and kept at a white heat for a long time—from 2 1/2 hours to 3 days.

R. O., of Mass.—The United States \$10 gold piece weighs 258 grains, 900 parts in 1,000 being gold. A grain is the same in Troy and avoirdupois weight—480 grains make an ounce Troy, and 437 1/2 an ounce avoirdupois.

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J. H. W., of Pa.—The experiments at Fairmount Water-works took place in 1860. No doubt Mr. Birkenbine, Chief Engineer of water works, will give you all the information. The challenge referred to is all we know of the matter. We have no information respecting Gardisall's Technical Dictionary.

McJ. G., of Ohio.—Why will not red lead answer to protect your iron hoops from rust? It is the cheapest and simplest substance we know of.

W. M. C., of R. I.—The subject of cone pulleys has been fully treated of in the SCIENTIFIC AMERICAN. In Vol. II, new series, page 33, and in Vol. XI, page 69, you will find the information sought.

J. G. C.—The milling is done by a tool sold in all tool stores. It consists of a small steel wheel cut with the teeth and set in a jaw. When held against the work the wheel revolves and leaves the indentations which constitute the milling.

C. C. M., of Ill.—Any good force pump will raise water 345 feet. The larger you have your pipe the less friction will there be from the water passing through it; and in so long a pipe the friction consumes a large proportion of the power.

B. & Co., of Tenn.—We should not give an opinion in regard to the best lime kiln without a practical trial; and this we are not prepared to make.

J. F. D., of Pa.—The pressure on the top and bottom of a boiler is not the same, it being greatest at the bottom, by reason of the weight of the water.

S. R.—Shafting running at right angles by belts is not new. Many examples can be seen in this city.

H. M. C.—Patents are granted in England to the first applicant, who need not be the inventor.

O. S., of Ohio.—In filling a barometer tube with mercury there is considerable difficulty in obtaining a perfect vacuum. A small portion of pure mercury is boiled in the tube, and when this is cooled another portion is added and boiled; and so on until the tube is full. When the tube is filled it is inverted in a vessel of pure mercury.

D. C. L., of La.—Beeswax is bleached by exposing it in thin sheets to the sun, wind, and rain, frequently changing the surface thus exposed by remelting the wax and again reducing it to thin flakes.

S. D. E. says:—"A strange phenomenon took place here last week. An artist took a picture of a child (an ambrotype), and when he developed it there appeared in the background the head of a youth about sixteen years old. He cannot account for it, as he says the plate was a new one, never used before. I think he must be mistaken. I think he redeveloped the outlines of an old picture. Will you please let me know how it could or did occur. I want to clear up some superstitious notions in this place. Anything but superstition for me." ANS.—Your theory is correct. The plate was an old one, not absolutely clean when used. The redevelopment of an old picture in this way some times occurs in photography.

J. C. W. asks:—"How much ought a man to get for the exclusive right of a patent on perpetual motion, if he should be fortunate enough to invent it?" As much as he can.

J. F. B., of Ohio.—Iron is a better conductor of electricity than water.

R. F. W., of N. Y.—The specimen which you sent is quartz.

H. B. H.—The Patent Office Report for 1851 was not illustrated.

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Die Unterscheidungen haben eine Bedeutung, die Erfindern das Verhalten angibt, um sich ihre Patente zu sichern, herauszugeben, und verabsolgen solche gratis an beizustellen. Erfinder, welche nicht mit der englischen Sprache bekannt sind, können ihre Mittheilungen in der deutschen Sprache machen. Stützen von Erfindungen mit kurzen, deutlich geschriebenen Beschreibungen beliebe man zu adressiren an: Munn & Co., 37 Park Row, New-York. Auf der Office wird deutsch gesprochen. Dasselbst ist zu haben: Die Patent-Gesetze der Vereinigten Staaten, nebst den Regeln und der Geschäftsordnung der Patent-Office und Anleitungen für den Erfinder, um sich Patente zu sichern, in den Vereinigten Staaten sowohl als in Europa. Ferner Verfügungen aus den Patent-Gesetzen fremder Länder und darauf bezügliche Nachrichten; ebenfalls nützliche Hülfs für Erfinder und solche, welche patentesachen wollen. Preis 20 Cts., bei Post 25 Cts.

**Automatic Stop Governor.**

The best steam engine that can be constructed, as regards proportion, design, and workmanship, runs very defectively unless it has a good governor. Where the load on it constantly varies, the speed will be at one time high, or at another low, if some measures are not taken to regulate the quantity of steam admitted to the cylinder.

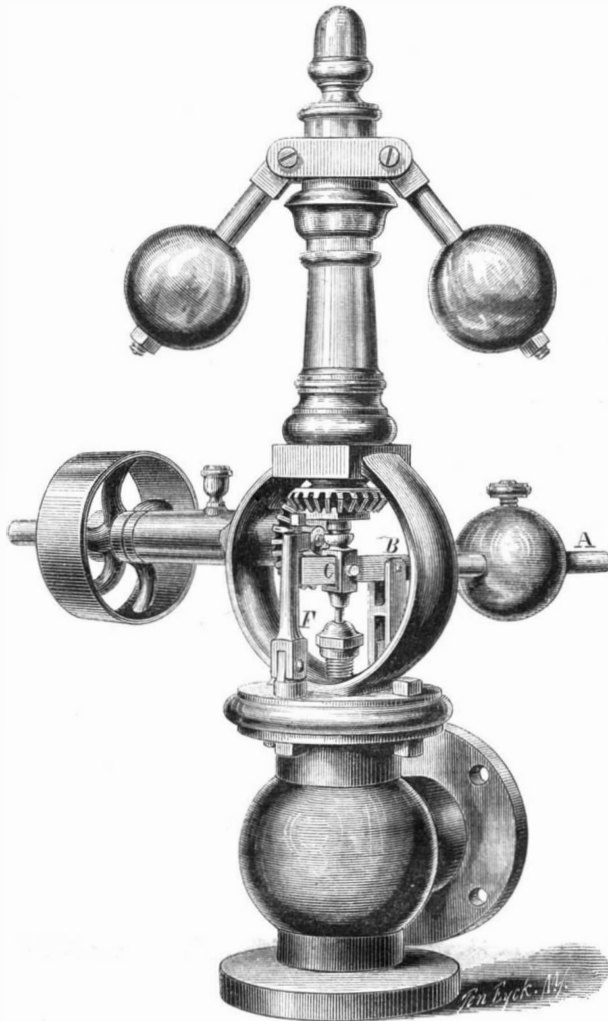
In these engravings we illustrate a new self-acting governor which not only regulates the flow of steam to the cylinder, but also serves as a stop-motion in case of emergency when the engineer is not close to the throttle valve. The ends are obtained by the construction of the valve, and the mechanism which operates it.

By referring to the engraving in Fig. 1, a weighted lever, A, may be seen. This lever has its fulcrum at B, and connects with the throttle valve stem by a square socket, C, in which it is free to move up or down. This weighted lever is provided to take up the lost motion, in the joints and pins of the governor arms, and to partially balance the valve, thus rendering it easy to move, and very sensitive to the action of the arms, so that any change in the load of the engine, whether an increase or decrease, is instantly felt at the throttle valve, and more or less steam admitted, as may be required. The balls tend to depress the valve, while the weighted lever tends to raise it, so that as the velocity of the arms changes, the valve always follows them, and therefore acts instantly as before stated.

Fig. 2 shows the valve. This valve is a hollow cylinder, A, with four guiding wings, B, and three seats acting on four seats in the chamber, C. It is thus made for these reasons—being hollow and having clearance between the seats (as given by the guiding wings), it is balanced so soon as it is slightly raised from the seat, for the steam presses both on the inside and outside of it. So long as the engine runs regularly, or at a uniform velocity, the valve floats in steam, and plays between the seats, D D and E E. If a belt breaks, however, or it is desired to stop the engine from any part of the building, a wire or line, led from any room, communicates with the weighted lever and raises the valve, so that its seats close the openings at D, and shuts off the steam from the engine, thereby stopping it at once.

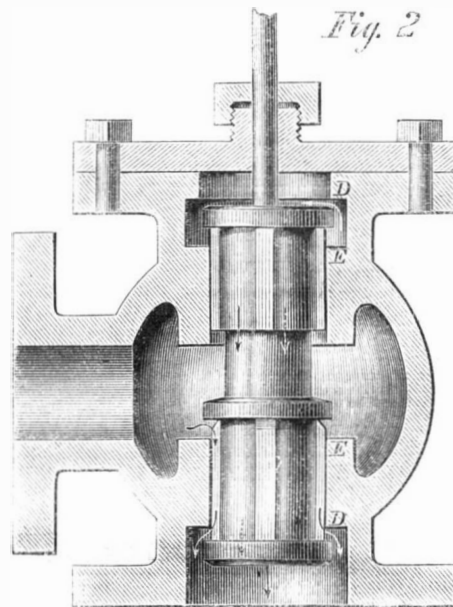
weighted lever also furnishes a medium for regulating the speed of the engine.

This valve and governor is the subject of three patents, all secured through the Scientific American Patent Agency, the last one bearing date November 21, 1865.



thick that common scissors (which are always dull) slip over it without producing any effect. To obviate these troubles, the instrument shown herewith has been devised. It has great power, combined with unerring uniformity in the shape of the cut, so that any unskilled person can trim the lamp properly. The instrument consists of a lever, A, fastened to a frame, B, by a joint, C. The lever has a jaw at D, which is armed with a cutter, E, as in Fig. 2, where the parts are shown bottom up, to exhibit them to better advantage. It is easy to see that when the lever is pressed by the hand, as illustrated in the engraving, the parts will be brought together; the cutter will be forced up against the wick, held between it and the back part of the frame (as at F), and so cut off exactly the right shape; the cutter being slightly rounded to secure that desideratum.

The instrument can be applied to any lamp, and, as may be seen will work to great advantage. A patent was allowed through the Scientific American Patent Agency last November. For further information address W. R. Brooks, Boston, Mass.

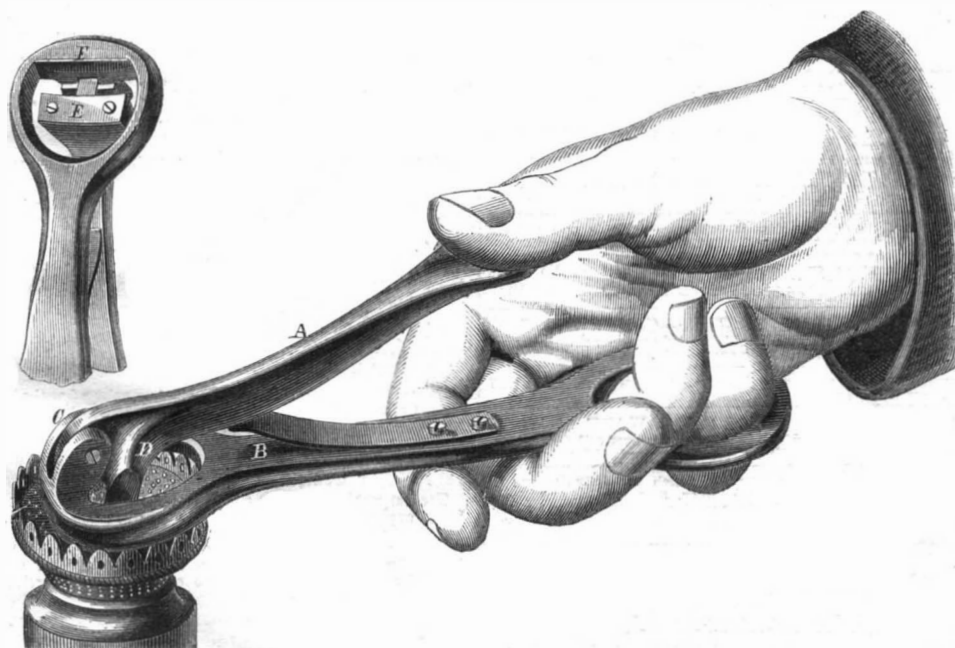


**GARDNER & ROBERTSON'S AUTOMATIC STOP GOVERNOR.**

The inventors and manufacturers are Messrs. Gardner & Robertson, of Quincy, Ill. For further information address them at that place.

**Kerosene Lamp Trimmer.**

All persons who use kerosene lamps know that it is a difficult matter to trim the wicks properly, with-



**BROOKS'S KEROSENE LAMP TRIMMER.**

The standard, F, in Fig. 1, has a set screw in the top which regulates the amount of opening or the degree to which the valve closes, so that the engine may be wholly stopped or slowed down to any degree. The

out some experience, and that in any event the top of the wick is likely to be jagged and not of the proper shape, unless the person cutting has considerable manual dexterity. Moreover, the wick is so



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