Correspondence

Petroleum Gas for Engines.

MESSRS. EDITORS:—I propose to drive the engines in the oil regions by combustion of the gas arising at the mouth of the well, conveying it by a tube to the bottom of a tank of water under a tubular boiler, and inflaming this gas as it arises at the surface. The advantages of this plan will be, I think, these: No explosions from a volume of gas diffused in the atmosphere coming in contact with the furnaces; complete control of the amount of heat, which may be cut off in a moment, and as immediately re-applied, and an accumulation of force—the gas accumulating in the holders when the engine is not running; economy in the use of combustible material now wasted.

I propose to drive the machinery of a saw-mill, where there is but a small quantity of water but plenty of fall, by an overshot wheel with a drum beneath it, both covered by a band, to which the buckets shall be attached. In this case the weight of the water would act much longer than in the ordinary wheel.

I have read your paper for some years and have never met any suggestions of this kind. If in any way valuable I hope you will notice it in your next issue. W. S. H.

New York, March 4, 1865.

[Both good suggestions, but neither of them new. The plan of a water wheel, the same as a grain elevator reversed, has been a favorite one of ours for a small stream with great fall. In this situation we cannot see why it should not be a cheap, economical and efficient motor.—EDS.

Raw Pork and Tape-Worms.

MESSRS. EDITORS:—In your paper of Nov. 19th I noticed an article entitled "Beware of Raw Pork," and giving as the reason for the caution:—"Fortunately the tape-worm is very rare, but when it does occur, it is caused by eating raw pork."

Here in California the tape-worm is very common, and I should judge that two or three persons out of every hundred adults are troubled with them. All ages and both sexes, from 14 years and upward, and people of all classes and nationalities, are equally subject to them, so far as my observation extends. As for being caused by eating raw pork, that is about the last thing to which an intelligent observer who had resided any length of time in this southern part of California would attribute it. Many of the persons here who have a tape-worm have never eaten a mouthful of raw pork nor raw flesh of any kind. Not only this, but *herbivorous animals*—sheep, deer, antelopes, and neat cattle—after being killed, are frequently found with one or more tape-worms in the intestines. I once killed an antelope that had a tape-worm. In taking out the entrails, the small intestine was torn or cut, discovering the parasite still alive. Through this opening I drew out several yards of the worm. On inquiring of butchers who are reliable and observing men, I find also that they have frequently seen tape-worms in sheep and beef cattle.

Having been familiar with these facts for some time, it is difficult for me to understand how your Atlantic physicians could have adopted the theory stated by you. COLBERT A. CANFIELD, M. D.

Monterey, Cala., Dec. 26, 1864.

The Problem of Two Wheels.

MESSRS. EDITORS:—I noticed in your paper some time since a "Problem of Two Wheels," upon which, however, I had not bestowed much thought until I saw a reply in your last number. Your correspondent says that:—"The periphery of each wheel will, in rolling, require to travel a distance equal to twice that which the center moves," etc. A point in the circumference of a rolling wheel (rolling on a plane) generates a cycloid, and while the center of the wheel travels a distance equal to the circumference, a point in the periphery travels over the arc of a cycloid. Now the arc of a cycloid is proved by the higher mathematics to be four times the diameter of the generating circle. The distances passed over by the center and a point in the circumference of the wheel will therefore be to each other in the ratio of 3.14159 to 4. But this does not affect your correspondent's conclusions, and with regard to the motion of the two wheels I think he is right. For if two equal weights move over the same vertical space, impelled by gravity, one will perform precisely the same amount of work as the other, whatever may be their velocities. In the case under consideration, the work generated by the wheels in rolling down the plane, with the exception of the small amount necessary to overcome the rolling friction, is absorbed in imparting motion to the wheels, and will be given out when they come to a state of rest. As their weights are equal and the spaces passed over also equal, the amount of work accumulated will be equal. When the wheels roll along the horizontal plane, this accumulated work is used in overcoming the resistances, and, if the resistances encountered by each wheel are equal, both will come to rest at the same distance from the point of starting. As, however, more work is absorbed in imparting the rotary motion, and therefore less in imparting rectilinear motion to the wheel with the iron periphery than to the other, the former will reach the horizontal plane with less velocity and encounter less resistance from the air than the latter, and if the velocities be high enough for this difference to be appreciable, the former will be found to roll further than the latter along the horizontal plane. W. A. A.

Delaware Literary Institute, Franklin, N. Y., Feb. 27, 1865.

Loss of Heat in the Steam Engine.

MESSRS. EDITORS:—In our present modes of converting heat into mechanical power, and vice versa, it seems that one of two facts must exist. Either that our present modes of converting heat into power by mechanical means are very defective, or else there must be some error in the tables set down for the reconversion of mechanical power into heat. There is an irreconcilable disparity between the two processes. For instance, according to Joule's equivalent, the heat expended in raising the temperature of one pound of water one degree is equivalent to the mechanical work of raising the same weight of water 772 feet. Now taking this as a basis, let us see how much power there is in a pound of coal. Some boilers evaporate as high as 12 pounds of water for each pound of coal. It requires not less than 1,000° of heat to evaporate each pound of water—making 12,000° of heat given out by one pound of coal in evaporating 12 pounds of water. Now if we multiply these 12,000° of heat by Joule's equivalent for one degree, we have 12,000° multiplied by 772 foot-pounds, which gives 9,264,000 foot pounds—which reduced to horse-power is 4½ horse-power per hour for each pound of coal. Few engines give a better result than one horse-power for two pounds of coal; or, in other words, few engines give a better result than $\frac{1}{9}$th part of the above indicated power of fuel.

Joule's equivalent may be correct; if so, it does not seem possible that we are always to continue to use fuel on so wasteful a plan, and it looks quite improbable that we must remain content for all time with a fragment only. A few bushels of coal used on the basis of Joule's equivalent would indeed work wonders.

The same amount of power can be derived from a degree of heat expended on water to form steam as though the degree of heat were expended on atmospheric air. The idea that a degree of heat expended on air gives four times the effect that it does on water is fallacious. This I hope to conclusively substantiate in a future article. F. A. MORLEY.

New York, March 8, 1865.

[It is not claimed that a *degree* of heat expended on air will give four times the effect that it does on water, but that a *unit* of heat will. The quantity of heat that will raise the temperature of a pound of water one degree will raise the temperature of a pound of air four degrees. Still we shall be pleased to see our correspondent's argument.—EDS.

Burgh's Rules for the Steam Engine.

MESSRS. EDITORS:—Please correct the error in regard to "Burgh's Rules" recently noticed in the SCIENTIFIC AMERICAN. The notice stated that the price is $2 by mail, free of postage. The application for free copies, *postage paid*, is becoming quite a nuisance, and I fear that those who have paid $2 will imagine they have been swindled. I presume the balance of the demand—certainly the entire demand created by that notice—will be for free copies. The demand promises to be unprecedented, and thus far one man has sent about half money enough to pay postage. All others have preferred free postage.

HENRY C. BAIRD.

Philadelphia, March 9, 1865.

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week; the claims may be found in the official list:—

Riveting Buttons to Cloth.—This invention consists in constructing an automatic machine for riveting buttons to cloth or other material, whereby the cloth is pierced to receive the body of the rivet and the various movements and operations necessary to feed the rivet and the button, and insert the rivet in the cloth and through the center of the button, and clinch them together are performed automatically. W. J. Gordon, of Philadelphia, is the inventor.

Improved Padlock.—This invention consists in providing a padlock with a series of tumblers, having hooks at each side of them, and arranged in such a relation with the eye of the shackle that each tumbler, in unlocking the lock, will required to be moved in a certain position relatively with the eye, in order to release the shackle, a slight deviation from this position rendering it impossible to withdraw the shackle. The object of the invention is to obtain a padlock of simple and economical construction which cannot be readily picked or illegitimately opened. Edward Coyle, of Albany, N. Y., is the inventor.

Gas Stove.—This invention relates to a stove for heating apartments, cooking, etc., by gas, such as is used for illuminating purposes. The invention consists in the employment of a gas-chamber or reservoir in connection with a combined air and gas receiver and a series of flues, all arranged and combined in such a manner as to insure the perfect combustion of all the gas which passes into the stove and the radiation of all the heat generated by said combustion. The stove is very simple in construction and may be afforded at a moderate cost, and will prove an economical heat-diffusing device. Luther Erving, New York city, is the inventor.

Combustion Pump.—This invention is an improvement on that class of pumps or water elevators in which, by the combustion of a hydro-carbon liquid, a vacuum is produced whereby the water or other liquid is caused to rise through the suction pipe and to discharge at the desired point. The invention consists in the use of steam combined with the hydrocarbon liquid in the interior of the reservoir or chamber, in which the vacuum is to be produced in such a manner that, by the condensation of the steam, the intensity of the vacuum is considerably increased and the raising or elevating of the water is materially facilitated. The water from which the steam is to be formed is placed in a shallow pan over a similar pan containing the hydrocarbon liquids in such a manner that the heat evolved by the construction of the hydrocarbon liquid volatilizes the water and a sufficient quantity of steam is obtained to produce the desired result. The hydrocarbon liquid is measured by means of a bell-shaped or other vessel or spout attached to the supply tube, and it is ignited by introducing into said spout, after the pan in the interior of the reservoir has been filled, a small quantity of hydrocarbon liquid, and lighting the same, so that it runs into the reservoirs while burning, and ignites that portion of the liquid in the pan. The gaseous products of combustion are allowed to escape through the reservoir pipe, which is provided with a hinged drop valve fitting into a cavity filled with liquid in such a manner that, so soon as the gases have escaped, the valve can be dropped and an air-tight joint is obtained, whereby the operation of the apparatus is not disturbed. Thomas J. Linton, of Providence, R. I., is the inventor.

Machine for Gathering Quicksilver.—The water running off from amalgamators contains a large quantity of quicksilver mixed with the rock in a fine spray, and this quantity of quicksilver has hith-

erto been considered a mere waste. The object of this present invention is to collect this quicksilver and bring it to such a state that it can be used again and again. The invention consists in a vat provided with an amalgamated bottom and with a series of slats which do not extend close down to the bottom of the vat in combination with an agitator, or without, in such a manner that the water let into the vat at one side has to pass through all the spaces left between the slats and bottom before it is allowed to discharge through apertures in the opposite side of said vat, and during its passage under the slats the quicksilver is compelled to come in contact with the amalgamated surface of the bottom, and thereby it is caused to gather, so that it can be readily scooped out and used again and again in the amalgamating process or for other purposes. By the use of an agitator moving between the slats, and by imparting to the vat a reciprocating motion the process of gathering the quicksilver can be materially facilitated. M. B. Dodge, No. 21 Broad street, New York, is the inventor.

Self-centering Chuck.—This invention consists in the employment of wedge-shaped jaws fitted into the head of the chuck and acted on by a spring which has a tendency to force said jaws out in combination with inclined diverging ways and with a screw cap, in such a manner that by unscrewing the cap the jaws will open, and by screwing the cap down the cap jaws close concentrically, and a rod or tool placed between is centered without loss of time. In order to prevent the jaws from dropping out of their ways, these outer edges are spread or expanded and fitted in corresponding cavities at the outer ends of their ways. A chuck is thus produced which is easily operated, and which is not liable to get out of order. T. H. Worrall, of Manchester, N. H., is the inventor.

Smoking Pipe.—This invention consists in constructing a connection or bracket for a pipe which shall have a socket in one part for receiving the stem and in the other the bowl of the pipe, and at the same time have a chamber or cup for receiving the nicotine from the smoke before it reaches the stem of the pipe; to effect this the cup is made with a neck which fits into a socket directly under the bowl, the communication to it being through a small tube set in the bottom of the bowl. This neck has a slot cut in its side which, by turning the cup, is made to correspond with a tube leading to the stem of the pipe. By this arrangement the smoke on reaching the neck of the cup becomes somewhat cooler, and the nicotine falls therefrom to the bottom of the cup, and then passes through a small tube to the stem, and there is no possibility of drawing the nicotine up into the stem. The pipe, as a whole, is a very neat and pretty article and seems to answer the ends for which it is designed. The inventor of the above is Robert Nagler, of No. 40 John street (*Belletristic Journal* office), New York, who may be addressed for the purchase of the patent or patent rights.

Hay Rake and Loader.—The improvements in this hay-raking and loading machine, consist, first, in a wedge-shaped device situated at the top of the elevator, for clearing the hay from the elevating fingers when it arrives at the point from which it drops into the hay wagon; and, secondly, in an improved manner of suspending and holding each tooth of the rake so that, by a sliding vertical movement, they may readily pass obstructions, or accommodate themselves to any uneven surfaces of ground; and, thirdly, in combining and using, in connection with the rake teeth, a circular guard board, to prevent hay from escaping the elevating fingers by working through between the rake teeth, and also prevent hay from clogging and obstructing the rake teeth. William A. Duncan, of Syracuse, N. Y., is the inventor.

Well Borer.—This invention consists in the arrangement of an oscillating lever which has its fulcrum on a pivot secured in an upright post and which is provided with a roller at about the middle of its length to operate in combination with the rope from which the borer is suspended, and with a windlass and tappet wheel, in such a manner that when the rope, after having been wound round the windlass, is drawn through under the roller in the oscillating lever and over a pulley in the top of the upright post, any up-and-down motion imparted to the roller in the oscillating lever, produces twice as much motion of the drill; that is to say, if the roller be depressed an inch, the drill rises two inches, and *vice versa*, and by these means the hight of the stroke is doubled. A double gear is attached to the windlass and a hand crank to the pinion. By means of this crank the drill is easily raised or lowered, according to the pleasure of the operator, whether the machine is in motion or not, and the danger of breaking the drill is avoided, which arises either from too large an accumulation of drillings in the well or from the fact of the drill getting into bad openings in the rock. Furthermore, the hight of the stroke can be adjusted to a fraction of an inch. For the purpose of holding the drill when the joints are loosened, a pair of shears are applied to the platform which are locked together by a catch, so that they hold securely all the weight below against any accident. Two windlasses are combined with the boring machine, one to contain the drill rope, and intended to be worked by a belt from the main or fly-wheel shaftof the machine, and the other to contain the bucket rope, and intended to be operated by hand, and a double windlass being applied in combination with a stirrup catching over pins projecting from the sides of the upright post in such a manner that the drill can be readily raised and the drill hole bored out at any moment. Walter Hyde, of 769 Broadway, New York, is the inventor.

Machine for Cutting Stay Bolts, etc.—The numerous stay bolts in the fire-box sheets of steam boilers are usually cut off, after their ends are screwed to their proper place, by a cold chisel and hammer. This method of cutting them off is slow and expensive work, and the rest of the bolt is usually injured by reason of the jamming of the thread, so as to require trimming before it can be again inserted in the sheet. Besides this, that portion of the bolt which enters the sheets and the sheets themselves are subjected to injurious strains by the old method, owing to the successive and violent blows of the workman in cutting off the bolt, and the bolts are thereby often loosened in their holes, and the holes altered in their outline, whereby it becomes necessary, in riveting them upon the sheets, to subject the bolts to an excessive amount of hammering which is injurious to them. This invention provides against these injurious tendencies and the disadvantages of the present method of doing this sort of work by means of a tool composed of an annular stock, whose base is to rest upon or over the fire-box sheet, and whose sides are slotted to receive a cutting tool having its head pivoted to the side of the stock. The tool is held to the work by a clasp sleeve. Joseph Renshaw, of Michigan city, Ind., is the inventor.

Machine for Cleaning, Hulling, and Polishing Rice, etc.—This invention consists in the employment of two cones, one inside the other and revolving in opposite directions or in the same direction and with different velocities (in contradistinction to two cylinders), said cones being provided with suitable rubbing surfaces arranged in such a manner that either one or both can be adjusted in a longitudinal direction, and the rubbing surfaces can thereby set closer together or further apart, as may be desired, to suit the operation to be performed. The rubbing surfaces consist of a series of short pieces of wire set endwise into movable frames, or of brushes or stones or other suitable material secured in said frames, in such a manner that each rubbing surface can be adjusted independent of the others whenever it is desirable or necessary, and different rubbing surfaces applied to the same cylinders or cones by removing one set of frames and substituting therefore another set. Chas. E. Rowan, 131 Seventh street, Brooklyn (E. D.), N. Y., is the inventor.

On Silvering Surfaces of Glass.

[From the British Journal of Photography.]

The advantages of being able to produce reflecting surfaces are often very great, and it is desirable that the photographer should know how to produce them. On the Continent silvered specula are in many instances taking the place of the more costly achromatic object glasses of the telescope; and we have seen a large photograph of the moon, produced by a glass mirror silvered by one of the methods about to be described, which could not have been surpassed by an achromatic lens. All our astronomical and scientific readers are aware of the powers of such silvered specula, but only few, perhaps, know how the silvering is effected.

The first process is that of Mr. Bird. The mirror or speculum to be silvered is suspended, face downward, in a silver bath prepared thus:—A large flat shallow vessel of glass or porcelain is provided to contain the solution. 750 grains of nitrate of silver are dissolved in six ounces of distilled water, and to this is added pure liquid ammonia, drop by drop, until the precipitate which is thrown down is redissolved. 2 ounces of caustic potash are dissolved in fifty ounces, by measure, of rain water; and fifteen ounces of this solution are added to the ammoniacal solution, when a brown-black precipitate will be produced. Ammonia is again added, drop by drop, until this precipitate is just redissolved; and 29 ounces of distilled water are then added to the whole. To this mixture is again added, drop by drop, stirring with a glass rod, a strong solution of nitrate of silver, until a precipitate, which does not redissolve, begins to be formed.

Previous to immersing the speculum, one part, by weight, of powdered milk sugar to ten parts, by measure, of distilled water must be prepared in a separate vessel, and filtered until a clear solution is obtained. Then, to ten parts, by measure, of the silvering solution must be added one part, by measure, of the milk sugar solution and, finally, fifty ounces of the compound solution will be sufficient to silver a speculum nine inches in diameter.

As the success of the process depends greatly on the glass surface being made chemically clean previous to immersion in the bath, the utmost pains must be taken to accomplish this object. The surface is first covered with thick whiting cream free from grit, which, when dry, is rubbed off with the purest cotton wool. The surface is then wetted entirely with dilute nitric acid, and afterwards thoroughly washed with distilled water poured over it; and, last of all, the piece of coated glass is suspended in a flat vessel containing alcohol, where it remains until the bath is ready to receive it.

To facilitate the suspending, a circular block of wood is very firmly cemented to the back of the speculum with marine glue or pitch, and three pins inserted at equal distances round the margin, to which strings may be fastened. On lowering it into the bath care must be taken that no air bubbles intervene, that the speculum be not deeper in the liquid than half its thickness, and that a depth of two inches, at least, intervene between the face of the speculum and the bottom of the vessel. In ten minutes after immersion a metallic film will be seen forming on the glass, and in an hour or two a compact silver coating will be laid over the whole surface.

The speculum should remain in the bath for four hours, by which time the process is completed; it is then carefully removed, copiously washed with distilled water, and placed on its edge to dry.

It is now ready for polishing. To accomplish this, rub the surface gently, first with a clean pad of fine cotton wool, and afterwards with a similar pad covered over with cotton velvet which has been charged with fine rouge. The surface will, under this treatment, acquire a polish of intense brilliancy, quite free from any scratches. The method employed by our correspondent is as follows:—

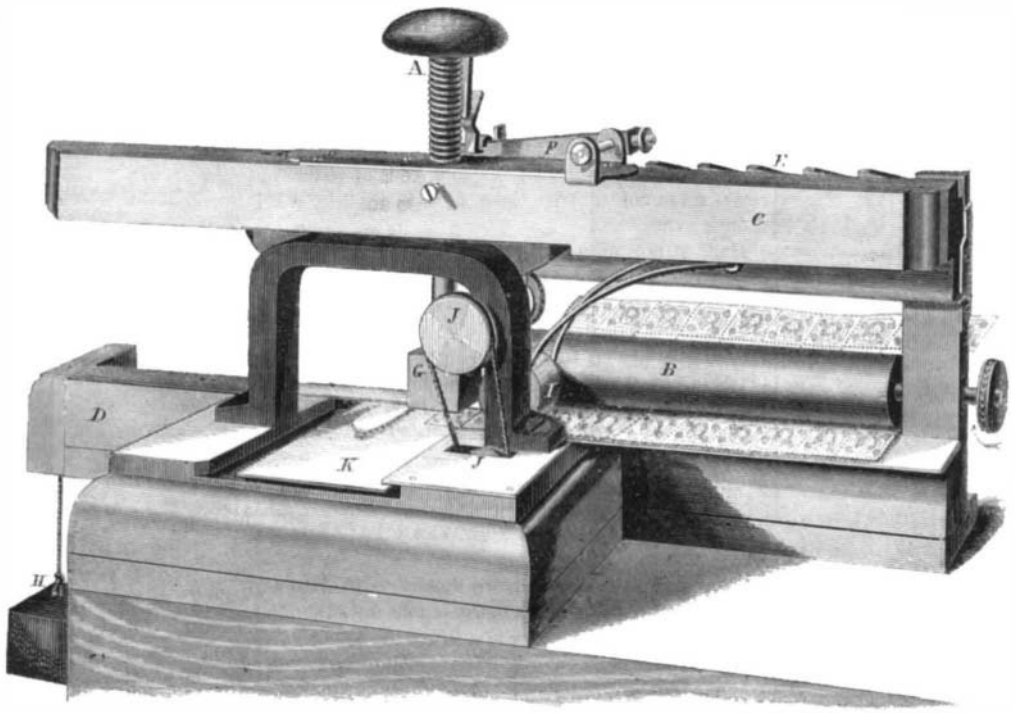
Make a solution of ammonio nitrate of silver, of the strength of three grains to the ounce. Render it very slightly turbid by excess of nitrate of silver, and then filter it. Just before using add to each ounce of the foregoing solution two and a-half grains of Rochelle salts.

Having scrupulously cleaned the glass intended to be silvered, place it in a convenient vessel about one inch from the bottom, supported on three little cones of white wax. The glass plate may be suspended; but in that case there is more difficulty in avoiding vibration, the absence of which is essential to success Expose to a northern light, or any other subdued light, and in about two hours the deposit of silver will be sufficiently thick. It must now be carefully removed, washed, and dried.

In the processes which we have detailed, when the surface next the glass is to be used as the reflector the glass side should be cleaned by nitric acid if the state of its surface so require; and the silvered side should receive a protecting coating of a good tough black varnish.

Machine for Applying Stamps.

Some months ago a photographer wrote a letter to the SCIENTIFIC AMERICAN, saying that a machine for applying stamps to *Carte de Visites* or other pictures, would be a very useful thing, and that one was much wanted by professional men. The inventor of the machine here illustrated has taken the hint thrown out, and in this engraving the means he has adopted to secure the end are shown. By a simple downward motion of the hand on the knob, A, the stamps are affixed as rapidly as the movement can be kept up, or the cards fed in. The stamps are inserted in the sheet, as shown at the roller, B. Below this roller there is another one, and the sheet is held between both; these rollers set in the carriage, C, which is made to slide in the frame, D, by a very simple arrangement. It is this. There is a rack, E, in the carriage which is held stationary (while the stamp is being stuck on) by the pawl, F; when the knob moves upward, after the stamp has been fastened by the block, G, this pawl is lifted and the carriage is drawn along the frame by means of the weight, H, at the end, thus carrying the stamp with it and presenting another to the action of the block, G.



SMITH'S MACHINE FOR APPLYING STAMPS.

Provision for moistening the stamps is made by the roll, I; this presses the sheet on a roller below which runs in a little tank of water, said under roll being operated by the pulleys, J.

When all the stamps on one row have been affixed, a new strip is presented by turning the rollers, B, in the direction of the arrow. The stamps are detached from the sheet by withdrawing the card, shown at K.

Thus all the requisite features in a machine of this class are provided for, and in its operation it answers the purpose. One of them, we are told, has been for some time used by Meade Brothers, this city. The machine is about two and a half times larger than the engraving. These machines can be used for applying stamps to labels, packages, envelopes, match boxes, or for any purpose where stamps are used. The inventor will sell State or shop rights to manufacture, and samples can be seen by applying to John Frank Smith, Box 5257, P. O., New York.

A patent is now pending on it through the Scientific American Patent Agency, by Robert L. Smith, of Stockport, N. Y.; for further information address him at that place.

A Mud Sucker.

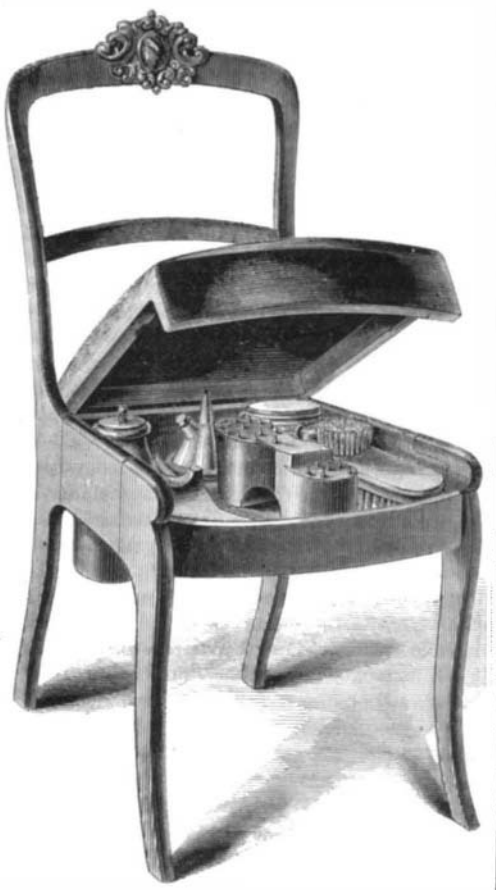
M. Agudio, the Italian engineer, who has undertaken the railroad which is to cross Mont Cenis, has invented a machine intended to be added to the mechanical sweepers, which are daily at work during this very muddy season, in the streets of Paris. The machine consists in a cast-metal receiver on four wheels, to the lower extremity of which is fixed a wide tube. A small air pump attached to the carriage creates a vacuum in the receiver. It is only requisite that the tube should graze the surface of the street for the mud to be, as it were, inhaled into this receiver—a sort of rake, fixed to the lower end of the tube, receiving the mud and facilitating its ascension.

New Method of Electro-Plating.

M. Well, a French chemist, announces a new method of depositing metals. The baths he employs consist of metallic salts or oxides in alkaline solutions by means of tartaric acid, glycerine, albumen, or other substances, which prevent the precipitation of the oxide by the fixed alkali, in some cases with, and in others without, the aid of zinc or lead, and at various temperatures, according to circumstances. He claims, also, to be able by like means, to give variety of color to articles covered with copper, by his process. M. Well says that the most important application of his discovery is the deposit of copper and the bronzing of iron (cast as well as wrought) and steel, without the preparatory dressings with conducting substances, which are necessary in proceeding according to the ordinary methods before the object is placed in the bath and submitted to galvanic action. This, if it bear the test of practice, is a very important fact. Iron and steel thus coated with copper may says M. Well, be afterwards silvered or nickelized by his process.

HARDING'S SHOE-POLISHING CHAIR.

A benefactor is by some one defined as a person who makes two blades of grass grow where but one grew before. Inventors are, then, benefactors, for although they may not make grass grow literally, they make one thing serve two purposes sometimes, which is quite as much to the point, and very convenient to boot. The invention here illustrated relates to boots, and very closely, for those who desire to appear in a shining light, before men, as to their feet, must polish their shoes properly. It is all very well to throw the responsibility of this upon a servant; but what if one has no servant? What if one boards, or has a room of his own somewhere? What if one is a wretched bachelor without privileges or "fixins" of any kind, clearly he must provide himself with some such arrangement as that here illustrated. The object of it is apparent at once. The inventor has taken advantage of the fact that mankind are prone to put their feet on the nearest chair when their boots are to be polished, and has therefore provided an assortment of all the tools, instruments, and paraphernalia of whatsoever name and nature, used in the art and mystery of shoe-blacking within the compass of a common chair bottom, so that by merely lifting the seat there lies disclosed the wonderful machinery plain to the eye. The engraving illustrates this invention so clearly and beautifully that nothing is needed to explain it. Brushes, pots, boxes and water-can, are all at hand, ready for use. The model for this unique affair is one of the handsomest that has come into our hands for some time, and the inventor is deserving of praise for the skill and pains bestowed upon it. A patent is now pending through the Scientific American Patent Agency by F. G. Harding, of Boston, Mass.; for further information address him at 35 Sheafe street.



Subterranean Pneumatic Railway.

Of the new lines in London probably the most remarkable is that proposed under the name of the Waterloo and Whitehall Railway. This is a pneumatic line, not for the conveyance of parcels only, not an iron tube like the gigantic pipe between the Post Office and Euston Square; it is an extension of the plan that has been for some time exhibited in operation in the grounds of the Crystal Palace at Sydenham. The tunnel admits about a full sized omnibus carriage, which is impelled by a pressure of the atmosphere behind the vehicle, produced by lessening the density of the air in front. It is an underground railroad worked without locomotives. The proposed line will run in a tunnel under the Thames, and open a communication between Whitehall and Waterloo Station, near Vine street. As a means of communication between one part of London and another this line will be quite an experiment.

Burglars Using Wedges.

The Birmingham correspondent of a London cotemporary says:—

"By the aid of the wedge now so much used by burglars, a safe, considered thief-proof, was opened in Birmingham on Friday night last, at the office of Mr. H. Dixon, of the Old Wharf. The safe was 3 feet by 2½ feet, and was made of three-eighth inch plates. The door was forced open, and such was the violence that had been applied that one of the sides was not only bent and broken, but the bolts by which the safe was riveted together were driven completely out of the metal. The noise of the concussion of a sledgehammer upon the wedge seems to have been muffled by the use of a book. There was only 3½d. in the safe."

THERE are now packed away in the different storehouses on the banks of the Hudson about 153,000 tuns of ice, gathered this season.