Correspondence

Casting Car Wheels---Invention Wanted.

MESSRS. EDITORS:—Your correspondent, H., of Reading, Pa., relates that several accidents have happened in his neighborhood by breaking of car wheels; and he attributes the failure of the wheels to the fact that they are usually cast in cupola furnaces, and of iron having a low tensile strength. He refers to the experience of ordnance officers, on improving irons, by remelting in reverberatory furnaces.

In the cupola furnace, sulphur from the coal, and other deteriorating elements unite with the iron more rapidly than in the air furnace; but the improvement in the quality of the iron in the air furnace is due principally to the better mixing of the irons, of the charges, and to the refining that occurs while in fusion. This is shown plainly by an experiment that is often conducted at an ordnance foundery, by drawing from the furnace a small quantity of iron immediately upon all the iron being melted, and casting into a convenient form for testing its tensile strength; and by casting other pieces of the same form and size from the same iron after it has been in fusion one hour, two hours, and three hours, or at other periods; each test piece will usually be found to have increased tensile strength proportioned to the time of fusion, within certain limits. If the test pieces are taken from blocks of different sizes, cooled differently or unequally, the comparison will be lost; for the test piece is no indication of the strength of a large mass, if it is taken from a small casting, or one subjected to a different rate of cooling. Even a test piece cut directly from the large mass is not a true indication of the strength of the iron in the whole casting, because, in cutting out the test pieces, "initial tensions" may be relieved from the test piece, while they remain in the large mass in full force. So, if a small test piece had been taken from one of the 15-inch Rodman guns, that split spontaneously at the foundery at Pittsburgh, transverse across the line of later rupture, the test piece would have shown the tensile strength to have been nearly what was the estimated strength of the iron of which the gun was made, yet the gun burst afterward with no other force acting upon it than "initial tensions" induced by unequal cooling. Car wheels should be put upon their axles without "initial tensions." This can be nearly accomplished by annealing, as practiced by one or more of the manufacturers, or by giving them a proper amount of elasticity by their form, and next by adjusting them on the axle with a key, instead of forcing them upon the wrought-iron axle, upon a slightly tapered bearing, by which severe tension is produced. Car wheels break more frequently in winter than in summer; the eye of, and, in fact, the whole wheel is much contracted by the low temperature of the season; the friction of the journal warms and expands the axle within the wheel already strained by forcing the axle into it, and hence the frequency of the accidents. Notwithstanding the number of inventions and patents upon car wheels, here is a necessity which should be the mother of an important invention; who among your readers will be the father of it?

NORMAN WIARD.

New York, Jan. 17, 1866.

Ozone and Cholera.

MESSRS. EDITORS:—Dr. Scheil says: "Ozone is oxygen in a highly electro-negative condition, and air or oxygen ozonized by means of electricity, phosphorus, light, or any other method, may be combined with non-ozonized air or oxygen to form a galvanic circuit."

In support of the above theory, I will present a few facts that have come under my own observation.

In dry, sultry weather, when there is the least amount of ozone present in the atmosphere, telegraph lines are frequently interrupted by the current coming in contact with non-ozonized oxygen, which forms independent or contra-galvanic circuits on the wire, rendering the transmission of messages very difficult or impossible for the time being. A thunder storm at such times always has the effect of destroying such contra circuits. Telegraph lines always work more or less imperfectly in hot weather, and particularly so where the lines are built parallel with large rivers on the low ground, where the least amount of ozone is present.

Ozone is destructive to malaria, and highly beneficial to health in times of cholera or other malarial epidemics.

In telegraph offices there is always the maximum amount of ozone, or highly electro-negative oxygen combining with the non-ozonized oxygen, and thereby rendering the atmosphere pure. During the prevalence of cholera in this country from 1849 to 1854, inclusive, I was connected with the telegraph lines in the States west of the Ohio river, and during that whole time I never knew an instance of a telegraph operator dying of, or even being attacked with, cholera, and in those days telegraph offices in the river towns were generally located in low grounds where cholera prevailed to the most alarming extent.

A. T. HAY.

Burlington, Iowa.

Blowing Out Boilers.

MESSRS. EDITORS:—Having been a constant reader of your valuable paper for the past ten years, and although I take some three or four other papers, yours is always the first to be read.

I have been much interested in the series of reports on boiler incrustations in the late numbers of your paper. I have been running a steam saw mill for the past thirteen years, and have had some experience with steam boilers, and from my experience and observations on the subject, I have come to the conclusion that, if a boiler is cleaned in the right way, incrustations can be prevented even if the water is strongly impregnated with lime or other impurities. A boiler should never be "blowed out." For two years I cleaned by blowing out, and, after cooling to brush out the dust with a broom, wash out with water, etc., in the usual manner, I found that the boiler retained sufficient heat to cause the lime and sediment to unite with the iron, and after it once commenced forming scale, the deposit of lime was greatly increased. I found that the above method of cleaning would never do, as it was ruining my boiler. I then adopted the following method of cleaning: I run the water down, say on Saturday evening, nearly to the top of flues, let it stand until Monday, opening the man-hole. The water is quite warm; I then use a long rake or scraper running it on the top of flues on the sides at the water lime, stirring effectually. I then have a man to knock in the hand-hole, keeping my rake on the bottom, and stirring it rapidly while the water is running out—carrying with it all the sediment and dirt in the boiler. I then let in cold water sufficient to cool it; then have a man enter with broom and scraper, and in twenty minutes the boiler is clean, ready for filling. I have adopted the above course of cleaning for eleven years past. My boiler is bright and clean, and nearly as good as new, and shows no sign of forming scale, although the water in use was strongly enough impregnated with lime to form a stone half an inch thick in my feed pipe three different times in eleven years. I will guarantee that whoever tries the above plan will never "blow off a boiler" again.

DAVID MCCURDY.

Ottawa, Putnam County, Ohio, Jan. 12, 1866.

Screw Cutting.

MESSRS. EDITORS:—Having been a reader of your valuable paper, more or less, for twenty years, I have, during that time, seen a great many communications on various subjects, and among them I have seen quite a number of rules for finding the gear for cutting screws, but I have not yet seen a rule that I consider either simple or direct, as none of your correspondents tell us how or where to find the multiplier, and as none of them have done so I will now give my rule for finding the multiplier, as it will do for all screw-cutting lathes. I find the multiplier from the gear that belongs to the lathe on which I want to cut a screw, and I find it by looking at the gear and find the ratio of increase in the teeth, and use that for the multiplier. I will now give an example. In my shop I have two lathes for screw cutting. On one the ratio of increase in the teeth is 5, commencing with 20, 25, 30, etc., so 5 is the multiplier to use for that lathe. As for example, if I want to cut a screw at 12 threads per inch, the lead screw being 4 threads per inch, I multiply 12 by 5 which gives 60 and 4 by 5, which gives 20, so 60 and 20 would be the gears required. And if I want to cut a screw coarser than the lead screw, then I double the ratio of increase for a multiplier. On my other lathe the ratio is 6, commencing with 24, 30, 36, etc. So 6 is the multiplier. If I want to cut 12 threads, the lead screw being 4 you then have 12 by 6, 72, and 4 by 6, 24, so 72 and 24 would be the gears required.

D. BOOTH.

Dunleith, Ill., Jan. 11th, 1866.

Mr. Winans on Incrustations.

MESSRS. EDITORS:—I notice with pleasure the publication of the very able report of Prof. Chandler on incrustations; it proves him thorough master of his profession, and I trust will convince steam-boiler owners—coming as it does from a disinterested source—of the utility of using something to obviate the evil. I have advanced these same ideas repeatedly, during the past ten years, urging at the same time the adoption of the anti-incrustation powder prepared by me for preventing scale, and I must add with great success, having over six hundred converts to my arguments for the use of it. Imitations and purported improvements rather prove its success, and I beg you will recommend the same when opportunity offers. The very trifling cost—six to ten cents daily—should induce its more general use, and no doubt will when people open their eyes to facts as stated by Prof. Chandler.

H. N. WINANS.

[We publish the above as received. Mr. Winans' anti-incrustation mixture is extensively employed by prominent engineers, and this is a strong recommendation. But its cost, which Mr. Winans says is trifling, depends, we suppose, upon how much is used. A very small quantity, according to his theory, will do the business.—EDS.

A Petroleum Engine.

MESSRS. EDITORS:—Common illuminating gas forms an explosive mixture with atmospheric air, so does the vapor of benzine and other light hydro-carbons. The two former mixed in proper proportions, and fired by the electric spark, is the motor used in the newly-introduced gas engines.

Now, why could not the latter be employed in an engine worked on the same principle? No condensation of the benzine vapor will occur as when conducted through long tubes, and but comparatively little heat is required to vaporize it.

This suggestion is only made; let the details (if there are no greater impediments to overcome than mechanical) be carried out by our inventors.

E. L.

Hackettstown, N. J. Jan. 16, 1866.

Creosote for Preserving Timber.

MESSRS. EDITORS:—I notice a communication in the SCIENTIFIC AMERICAN of January 13th, from Edwin Battley, in reference to preserving timber by creosote. He speaks of its being the best mode for preserving timber, and says the creosote must be forced into the pores of well-seasoned wood, and for railway sleepers on a large scale expensive appliances are needed.

I agree with him most perfectly that creosote is the best preservative of wood, as it is also of flesh; for raw flesh that has been saturated with creosote is incapable of putrefaction. I also agree with him that the wood must be well seasoned. But I differ with him widely in the idea that it needs an expensive apparatus to force the creosote into the wood, either when used on a large scale for railway sleepers, or on a small scale for any other kind of lumber or timber. By using superheated steam, as I explained in a former number of the SCIENTIFIC AMERICAN, for seasoning the timber, the creosote can be vaporized at that stage of the seasoning when most of the moisture has passed out of the timber but while the pores of the timber are still open, so that the creosote will pervade all parts of the timber quite as effectually as smoke pervades a ham or other flesh. Besides, the seasoning, drying, and creosoting can all be done at one operation. Any number of cars may be loaded with timber or ties, and passed into the dryer, and when the timber is seasoned, dried, and

creosoted, on the car, the car can pass out to be either unloaded or to allow a fresh car-load of timber to take its place. The creosoting in this way is done at a merely nominal expense, and with a very cheap apparatus. No pressure is needed, and not even a steam boiler is required.

I once offered a Western railroad company, who obtained all of the ties for their road at one end of it, to season, dry and creosote every tie to be used on their road, provided they would simply pay me their regular charge per hundred, on the amount of weight I saved in their transportation from the place of their reception to the place to be used in the road; thus virtually charging the company nothing for the advantages to be derived from having the ties seasoned, dried and creosoted; although at a moderate estimate, it would save them not less than half a dollar on each tie, by its increased preservation, including the labor of one change of ties. But the company, on learning the simplicity of the process, found they could prepare the ties themselves, at even a cheaper rate than that.

It is a matter of great surprise to me, that such shrewd, money-loving, and money-making men as are some of those who have charge of railroads, do not more consistently practice "Poor Richard's" maxim, that a "penny saved is two pence earned," and preserve their car sills, railroad ties, bridge timbers, etc. The time is near at hand when this must be done as a necessity, for the timber is fast fading away along the lines of our great thoroughfares. This process of preservation is a very simple one, and can be done as above at an average cost of $1 per M., while the saving in freight alone will often pay several times the entire cost of seasoning, drying, and creosoting. If the great bugbears of expensive apparatus, laborious and costly handling, with a supposed mysterious manipulation, can be removed from the minds of practical men, we may soon see the work commenced and go forward in earnest.

H. G. Bulkley.

Cleveland, Ohio, January, 18, 1866.

The Way Varnishes are Made.

Messrs. Editors:—In the Scientific American, No. 1, current volume, I saw an article, "Solvent for Shellac," and a saturated solution of borax, mentioned as such. This solution is used by hatters. I hereby give you the method of bleaching shellac (where you will find another solvent), and different kinds of varnishes, etc.:—

For one pound of good shellac take four ounces of crystallized carbonate of soda, and one gallon and a half of water; put the whole in a clean iron or copper vessel of double the capacity, and, under constant stirring, bring it to boiling over a slow fire. The shellac will dissolve, and, if it is intended to make colorless French polish, the solution has to be run through a woolen cloth. For brown bookbinder's varnish, or a colorless varnish for maps, photographs, etc., the solution has to boil for about an hour longer, but only simmering, and then to cool very slowly without stirring; better let it stand over night, and let the fire go out under it. In the morning you will find a wax-like substance on the surface of the solution, and the other impurities of the shellac as a deposit on the bottom of the vessel. The solution is likewise to be run through a woolen cloth, and then to be filtered. For the filter, I take a small wooden keg, remove the top and bottom, and fasten to one side a piece of muslin; on the muslin I bring about four inches of fine, washed sand, and on top of the sand a layer of clean straw; then I pour the solution into the filter and let it run through. Should the first portion run through not be perfectly clear, like red French wine, it has to be brought back to the filter. When nothing will run through any more, pour some clean water on the filter to wash the remaining solution out. If you intend to make a transparent brown varnish—bookbinder's varnish—this filtered solution has to be precipitated with diluted sulphuric acid (one part acid to twenty parts of water), the precipitate collected on a coarse muslin cloth, and washed out with cold clear water till it runs through without taste. Then fill a stone or wooden vessel with boiling water, and throw the precipitate in it; it will directly soften and stick together; this half mass has to be kneaded in the hands, doubled up, melted, and drawn out till it assumes a fine silky luster, then drawn out to the desired thickness in sticks, like candy, and it is then ready for solution.

To make white French polish, or transparent colorless varnish for maps, the solution has to be bleached. The bleaching fluid is made as follows, and the proportions are for one pound of shellac: Take one pound of good English chloride of lime, dissolve it in fourteen pounds of cold water, triturating the lumps well, let it subside and decant the clear fluid; add seven pounds of water to the residue, and when subsided, add the clear liquor to the other; precipitate this liquor with a solution of carbonate of soda, let the carbonate of lime settle, and decant the clear chloride of soda; wash the sediment out with water and add the clear liquid to the former, put it in a high stone jar, and give it a rotary motion with a wooden stick, pouring in at the same time very diluted sulphuric acid, till it assumes a greenish color and a smell of chlorine is perceptible. Then add of this liquid to the solution to be bleached, under constant stirring, till all the color is gone. French polish will look like milk, colorless varnish like whey, but more transparent. Then precipitate with dilute sulphuric acid, exactly as the solution for bookbinders' varnish, and treat the precipitate in the same manner, in hot water. All iron must be carefully avoided as soon as the chlorine liquor is added.

To make the different varnishes, it is only necessary to dissolve the different precipitates in alcohol. For bookbinder's varnish take one part to two and a half parts alcohol; French polish, one to three; colorless varnish, one to two and a half, and add to the varnishes (not to the polish) one and a half drams of oil of lavender for one pint. For photographs this solution is too strong; one part of bleached shellac to six parts of alcohol will answer. For maps the solution should not be applied immediately to the paper, but the latter should first receive a coat of boiled and strained starch.

By dissolving shellac, either in a solution of borax or in one of an alkali, shellac acts as an acid—like most other resins, or like stearic or margaritic acid, contained in the fats—combining with alkali and forming a kind of soap, easily decomposed by any of the common acids. The waxy matter, not saponifiable, is by slow boiling separated, and lighter than the solution, swims on the surface, where, after cooling, it can be collected. It is harder than common wax; made into candles it burns like wax, and resembles the vegetable wax of commerce.

It is a remarkable fact that all shellac contains a small quantity of arsenic, in the form of yellow sulphuret; it is found in the residuum, after the solution has cooled and is decanted off in small golden yellow particles, and out of a solution of ten or more pounds enough can be picked out to reduce it to metallic arsenic.

Gustavus A. Schmidt.

Swatara, Pa., Jan. 13, 1866.

Table for the Teeth of Gears.

Messrs. Editors:—Annexed is a table as a sample of the evidence on which my argument was based on the teeth of wheels. I have examined quite a number of books in two large libraries—the Franklin Institute and the Mercantile Library—and cannot find one in which a correct rule or table on the subject is given. None of them attempts to go lower than 10 teeth; in one there is a note of caution regarding the pitching of pinions below 20 teeth, but no rule or table appended.

I am obliged to your correspondents for my attention being directed to the subject, though none of them has given any data, by which such tables as these can be made:—

Number of Teeth.	Diameter.	Pitch.	Number of Teeth.	Diameter.	Pitch.
2.....	·7071	1·4142	10.....	3·196	·31287
3.....	1·	1·	11.....	3·5135	·28462
4.....	1·3065	·76536	12.....	3·831	·26105
5.....	1·6183	·618	13.....	4·148	·24107
6.....	1·93185	·5176	14.....	4·466	·22392
7.....	2·247	·445	15.....	4·7835	·20905
8.....	2·563	·39018	16.....	5·1011	·19603
9.....	2·8795	·3473			

How to Use the Table.—When the number of teeth and the pitch is given, take the diameter corresponding to the number of teeth and multiply by the given pitch for the diameter; when the number of teeth and the diameter is given, take the pitch opposite the number of teeth and multiply by the diameter for the pitch.

Daniel MacAlpin.

Philadelphia, Jan. 17, 1866.

American Sanitary Museum.

Messrs. Editors:—Penetrated with the idea that the Sanitary Commission of the United States, by mitigating the horrors of war, had resolved one of the most urgent questions of modern time, I was one of the first persons in Europe who endeavored to acquaint the public with the organization and the results of that admirable institution. I first published a book, "*La Commision Sanitaire, son origine, son organization et ses resultats,*" in which I conscientiously expressed the efforts and the final success of the Sanitary Commission during the gigantic struggle that the United States sustained with unabated courage. Afterward appeared my French translation of military, medical, and surgical essays. By acting so I felt I was serving both the cause of humanity and that of my native country.

After having shown the wonderful results of the Sanitary Commission, it would be just and proper now to acquaint the public with the great number of ingenious inventions made by my countrymen in view of relieving the sick and the wounded soldiers.

In order to realize that project, I intend to assemble in a collection the products of those inventions which have enabled the Sanitary Commission to fulfill its mission.

The universal Exhibition that is to be opened in Paris, in 1867, is certainly the best opportunity for the inauguration of this Sanitary Museum. During that exhibition no civilized nation will be unrepresented in the French metropolis. The articles exhibited in such a museum will therefore call the attention of all those who wish the welfare of mankind, and acquaint all nations with the name of their inventors.

In addressing myself to my countrymen I am firmly convinced that they will assist me in my patriotic and humanitary enterprise. Although I am willing to purchase all such as may be useful, I shall gratefully accept any object that the inventors or manufacturers would wish to contribute.

I therefore most respectfully request all such persons who are disposed to co-operate in the creation of the American Sanitary Museum, to address their communications to Dr. Thomas W. Evans, 15, rue de la Paris, France, or to M. Abner L. Ely, No. 22 Pine street, New York.

Thomas W. Evans, M.D.

Paris, Dec. 1, 1865.

[Mr. Ely is one of our most substantial and reliable citizens.—Eds.

The Finish of Unvarnished Walnut.

Messrs. Editors:—Will you please inform me, through your column of "Notes and Queries," or otherwise, how to produce the dead, smooth, dark surface on walnut-wood carvings, furniture, picture-frames, etc.? The finish I refer to brings out the color of the wood like oil, but without its stickiness, and swelling of the grain which cannot be smoothed down again, and does not give the sickly yellow color which varnish imparts to the wood.

Edward Everett.

Quincy, Ill., Jan. 13, 1866.

[Can any of our correspondents answer this query?—Eds.

A Fossil Spider.—An English paper recently contained a description of a fossil spider discovered by Professor F. Romer. The fossil was found in a piece of scale from the coal measures of Upper Silesia. The specimen is perfectly preserved, and shows the four pairs of feet with all their segments, the two palpi, and even the coriaceous integument of the body and the hairs attached to the feet. Spiders have not hitherto been found in any rocks older than the Jurassic, but by this discovery their presence in Paleozoic rocks is proved.

Acclimatization of Ostriches.—The *Farmer* (Scotland) states that "there had been received at the Garden of Acclimatization of Paris, a hen ostrich bred at Grenoble, and four chickens hatched at Algiers. The ostriches in domestic life are quite farmyard birds; they lay, sit, and raise up their young like ordinary fowls."

Improved Grinder and Driller.

This instrument is intended for dentists' use, and is designed to enlarge cavities and remove the carious portions of the bone with dispatch. From the nature of the mechanism employed to drive the cutting tool, it will be seen that the object is attained.

In the engraving, A represents a train of gearing of the usual kind, driven by a spring in the barrel, B. This spring is wound up by the key, C, at the end (see sections), and will run for a long time; the cutting tool, D, at the end is stopped or started by a spring stop, E, which catches in the vanes of the fly, F. The tool can also be diverted from a straight line and used at an angle of 45 degrees, as shown. A universal joint, G, is provided, so that the rotary action is transmitted without any irregularity.

Externally the instrument is as shown in Fig. 1; this view is very nearly the full size. It can be easily grasped in the hand and directed to any part of the mouth with great facility. There is no prying or pushing in its use, so apt to be the case with the old-fashioned tool, and the patient suffers much less accordingly.

A patent is pending through the Scientific American Patent Agency. For further information address, Philo Soper, inventor, London, C. W.

Fig. 1

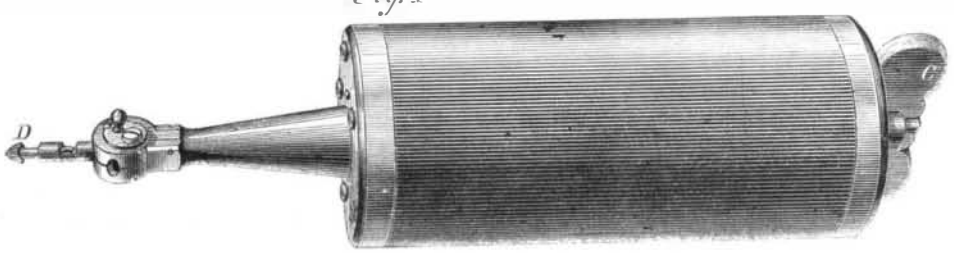
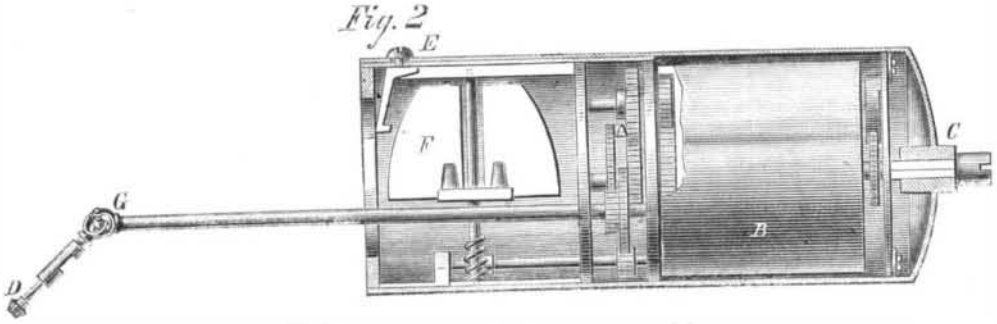


Fig. 2



SOPER'S GRINDER AND DRILLER.

THE WAY THE MONEY MARKET IS SUPPLIED.

In reading the money articles in our leading daily papers it is manifest that nearly all the writers suppose the supply of loaning capital—the supply of the money market, as it is called—depends mainly upon the quantity of currency or money in the community; the truth is, this supply is influenced very little, if any, by the quantity of money in the country. This will be made plain by the examination of an individual case.

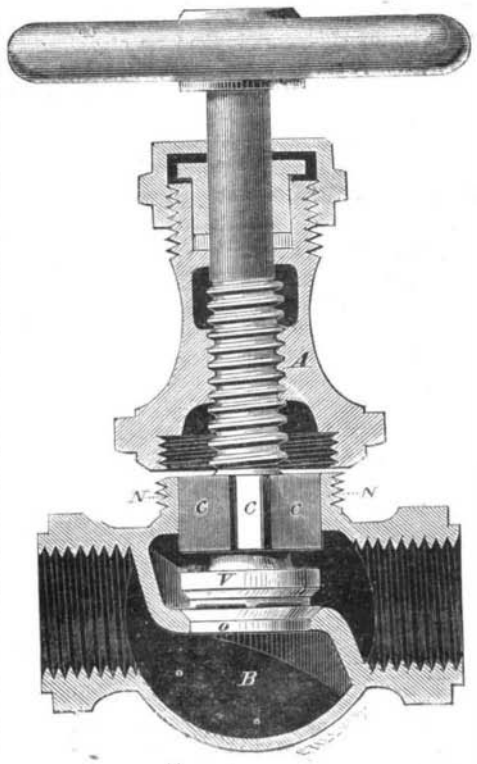
John Robbins, one of the money lenders of this city, recently died. It is said that fifty years ago he had accumulated $100,000 in the jobbing trade, and that at the time of his death his funds at interest amounted to $4,000,000. In fifty years the amount of capital that he supplied to the money market of Wall street had increased $3,900,000; let us see in what form this increase was made, and what connection it had with the volume of currency in circulation.

Mr. Robbins kept the run of dealers in dry goods, and confined his purposes exclusively to their paper. It is well understood among traders that the amount of their sales depends mainly upon the stock of goods which they have to sell; and, as their profits are proportioned to their sales, they all strive to keep as large a stock of goods as possible. When, therefore, their own capital is all invested in goods, they are generally ready to hire the capital of other men, if it is offered on satisfactory terms. It is plain that if they hire capital and keep it on hand in the form of money, they will lose the interest on it; in fact they do not want it for this purpose; they want it to increase their stocks of goods, and so soon as they hire it, they invest it in merchandise. The capital that our dry-goods dealers hired of Mr. Robbins enabled them to increase their stocks of dry goods. The enlarged stocks augmented their sales and profits, thus giving them the means to pay Mr. Robbins his interest. As the interest accumulated Mr. Robbins loaned that also, and it was immediately invested in stocks of dry goods. Thus his accumulation of $3,900,000 took place in the form of bales and cases of cloths. Had he taken a fancy to loan his funds to leather dealers his accumulation would have added $3,900,000 to the stocks of leather and hides. He called his investments "money at interest," but it would have been nearer the truth to call them merchandise at interest. It is true that Mr. Robbins paid money for each of the notes when he bought it, and each was paid in money when it was due. So is money paid for a bushel of wheat or a barrel of pork when it is bought and sold, and there would be just as much propriety in calling a pork barrel money, as in calling the capital loaned by Mr. Robbins money.

The whole supply of capital to the money market of Wall street is made by individuals like Mr. Robbins. This supply is increased by these men spending less than their income; it is diminished when they spend more than their income, or when they make loans that are not repaid. It is neither increased nor diminished by the quantity of currency circulating in the community.

POWELL'S GLOBE VALVE.

It is well known that globe valves frequently require grinding so as to keep them tight, and prevent leakage through them into the cylinders. Instances



have been known where engines have started from steam creeping through the stop valves and caused great damage.

In this engraving we show a new method of construction whereby the valve may be ground in at any time by merely removing the cap. This method also permits the valve to be constructed much more cheaply than usual, for a large number of parts may be made up at once and put together irrespective of one being specially adjusted to the other at the time of making.

In the engraving, A represents a screw cap fitting over the shell, B, as usual, at N. The top of the chamber is bored out parallel with the seat so as to receive the wings, C, of the valve, V. These wings, in addition to others at the bottom of the valve, serve as guides to the same, so that as it is drawn up or down by the screw on the stem, it always rises true, furthermore, by simply raising the cap, as shown in the engraving, and rotating the wheel, the valve will bear truly on the seat and be ground in a perfect manner, at the same time the steam passages are unobstructed, and the area of them remains the same.

The invention was patented on May 2, 1865. For further information address the inventor, James Powell, Union Brass and Plating Works, Box 247, Fifth street, Cincinnati, Ohio.

A NOVEL STORE.

We have received from Messrs. Kennedy & McCandless, of Oil City, Pa., a photograph which represents an immense barge safely moored at the Phillips Ferry Dock. The trade circular of this enterprising firm, informs us that the barge bears the name of Floating Palace "Scientific American."

The photograph represents the palace as bearing on its side, in bold letters, the title

SCIENTIFIC AMERICAN,

to which is added the following miscellaneous list of articles kept on sale in this modern Scientific Palace, viz., cigars and tobacco, pipes, pens, ink, paper, pencils, fish hooks and lines, dominoes, ready-made clothing, boots, shoes, carpet bags, *umberellas* brooms, lamps, lanterns, oil and wick thread, needles, pins, brushes, window glass, demijohns, planks, buckets, smoking mixture, clocks, watches.

This firm is bound to succeed.

Statistics of Manufactures.

The Secretary of the interior, in response to a resolution of the House, communicates a list of the cities of the United States with the statistics of their manufactures, including those having 10,000 inhabitants and upward. It includes 102 cities, beginning with New York and ending with Newport, Ky. The total capital employed is $417,129,234; hands employed, males, 410,920; females, 147,000; value of products, $874,934,827. New York stands first in the list. Capital, $61,212,757; males employed, 65,483; females, 24,721; value of products, $159,107,369. Philadelphia employs a capital of $78,318,885; male operatives, 68,350; females, 30,633; value of products, $135,979,777. Cincinnati is third in order; products, $46,000,000; capital, $17,000,000 in round numbers. Boston; products, $36,000,000; capital, $13,000,000. The other principle cities produce as follows:—Brooklyn, $34,000,000; Newark, $22,000,000; St. Louis, $21,000,000; Baltimore, $21,000,000; San Francisco, $19,000,000; Lowell, $18,000,000; Providence $15,000,000; Louisville, $12,000,000; Richmond, $12,000,000; Pittsburgh, $11,000,000; New Bedford, $11,000,000; Chicago, $11,000,000; New Orleans, $10,000,000; Manchester, $10,000,000; Troy, $10,000,000; Rochester, $10,000,000.

The average wages of sewing girls in Dublin, Ireland, are 75 cents a week.