Notes & Queries

A. asks how to make a touchstone for testing gold.

T. F. asks: What other ingredients mixed with hydrauliccement and plaster of Paris will make a hard and fixed lining for the hollow iron shafts of mantels?

J. N. F. asks: Is there a soft white metal, that will not rust, as cheap as common gray iron? Something similar to white clothes line metal is wanted.

W. H. M. says: I have a mirror, and the heat of a stove has affected the glass so that it is worthless; there seems to be a blur over it, and it looks as though it were covered with dust. Is there any way to restore it?

J. H. F. wants an instantaneous black walnut stain for soft woods. "I want to dip the pieces into the stain tank and let the stain strike in as they drain on a rack."

J. S. C. asks for information respecting a plant or fungus known in the South as California moss or beer moss, used for making molasses beer. Would the beer be deleterious to health?

A. K. asks: Is there a book published on phosphorescent compounds?

E. J. B. asks (1) how to put a polish on steel or iron, such as there is on a chisel or butcher's knife. 2. What is a good preventive for rust, for use on bright articles exposed to open air? 3. How are locks japanned giving them such a hard glossy color?

Answers to Correspondents

A. will find recipes for Worcestershire sauce on pp. 249 and 281, vol. 26, and one for waterproof blacking on p. 90, vol. 26.—R. C. will find the description of Hugo Tamm's manganese process on p. 21, vol. 28.—L. S. C. can temper mill picks by following the directions on p. 106, vol. 25.—A. B. can harden set screws and similar articles by using the process described on p. 90, vol. 26.—J. G. D. can find processes for tempering steel in many of our recent numbers. We cannot repeat them so frequently as many of our correspondents seem to desire.—J. W. T. is correct; W. A. J. made an error.—C. S. P. will find directions for kalsomining on p. 351, vol. 24.—H. S. can make Pharoah's serpents by following the instructions given on p. 410, vol. 28.—A. N. will find a cement for china described on p. 346, vol. 24. Try your perpetual motion, and get the water up your siphon, if you can.—B. W. Jr. will find an account of the method of raising pearls on p. 305, vol. 26.—A. J. A. and C. T. B. should read H, C. Baird's advertisements in our journal.—P. T. R. will find an answer to his queries about magic lanterns, etc., on p. 27, vol. 29.

E. M. G. and others ask us for a rule for proportioning screw cutting gears. Answer: Multiply the screw on your lathe and the thread you wish to cut by a given number. If you want 10 threads to the inch and your lathe screw is 4 threads to the inch, multiply by 8, 10, or 12. The result will be 80 and 32, 100 and 40, 120 and 48, and so on.

J. A. G. & Bro. ask: What is the decision of the Supreme Court referred to on p. 336, vol. 28, in regard to rights of assignees under extensions of patents? We do not find it given in present volume. Answer: The article on p. 336 says: "We published last week." Look on p. 328.

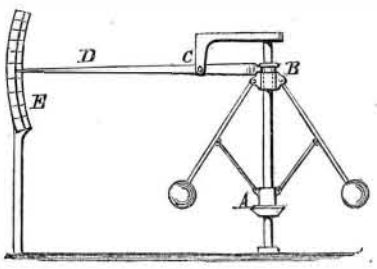
J. E. E., of Pa., asks: Will some one give the scientific cause of the light produced from lightning bugs and light wood. In a dark night I have held a lightning bug to ascertain the time by my watch, and often wondered what produced it. Is it electricity like the electricity produced by stroking a cat, more distinctly seen from a black cat? Electricity would not seem to be the cause of light in light wood. In either case, it would seem that the sun is not the only source of light unless it is held that as it is the source of all life (both animal and vegetable) these light sources could not have existed without the sun. Answer: The light produced from lightning bugs and other insects is due to the secretion of phosphorus in the form of a substance termed noctilucine. It is secreted by a special organ, just as bile is produced by the liver. Noctilucine can be obtained from the bugs mentioned, from glow worms, from phosphorescent marine animalculæ, from decaying fish, flesh, light wood, etc. Thus obtained, it yields light by contact with air, the phosphorus being thereby oxydized. In Science Record for 1873, at page 467, an interesting chapter on this subject is given.

P. S. A. says, in answer to a great many queries on cutting old files: Acid is a good means of cleaning old files, and there it ends. It will destroy any cutting edge that may have been left on the files. The only way to renew old files is to send them to a file manufactory, have them annealed, ground out, and then cut as if the blank were new. If the steel in the files is good and the blanks heavy, this will give satisfaction. Acid has done more to condemn the recutting of files than all the poor work that has ever been put on file blanks.

T. S. S. says that E. S. can remove iron rust from tools by using carbon oil. Apply it, and in a few hours rub it with fine sand paper; it will lift it off or remove it immediately.

J. S. C. asks: What is the oil of rhodium? Answer: No such substance is mentioned in the pharmacopeia. A correspondent once informed us that a quack recommended its use, and then offered to sell the stuff at a very high price.

A. A. N. (1) encloses a sketch of a machine for measuring the velocity of the wind, and asks: Will it work? In it a governor, similar to that in an engine, is attached to a common windmill. A and B are sleeves that revolve around a spindle. B slides up and down,



while A does not. At A is a bevel wheel through which the motion is communicated from the windmill. D is an arm or pointer pivoted at C, and also to the sleeve at B; while the other end moves over the graduated part of a dial, E. As the balls rise or fall, by the force of gravity overcome by centrifugal force, the sleeve B rises and falls also, and with it the end of the pointer, D. If it will work, how can I graduate it? How can I find the position of the pointer when the wind blows at the rate of 10 miles an hour? 2. How can I whiten blocks for engraving, so that pencil marks will show? I have used the white off cards until my cards are all gone. Answers: 1. The contrivance described by our correspondent is not novel. It will work, if the scale can be graduated; and this can only be done by experiment. There are many anemometers, or instruments for measuring the velocity of the wind; but we do not know of any that record it with perfect accuracy. 2. Use Chinese white, in the form of fine powder, and apply it to the block with the finger.

A. C. S. asks: Which is the most economical style of boiler to use, say to the amount of 100 horse power? Answer: Your choice would probably lie between the locomotive or tubular, and some form of the sectional boiler. We could not give you any definite advice, without knowing more of the circumstances of the case. We would also say, in this connection, that these columns are for matter of general interest to all our readers. Special suggestions as to what particular machines to use in individual cases cannot be given here. Information of this kind should be obtained from some reliable consulting engineer. Your other query, as to bevel gears, was answered on page 11 of our current volume.

J. H. K. says: A friend says that the crosshead connected with the piston rod of a locomotive moves forward in the guides and remains stationary until the guides slip the length of the stroke, then forward again. My idea is that the crosshead moves backward and forward in the guides. He also says that the piston rod moves forward twice as quick as the guides slip up the length of the stroke. It is understood that the wheels do not slip. Answer: Probably you and your opponent are looking at the matter from different standpoints. If the driving wheels do not slip, the whole locomotive, and consequently all the moving parts, go forward at a greater speed than the piston travels in its reciprocating motion in the cylinder. Consequently the cross head and piston rod are constantly moving forward with reference to a fixed station, such as a telegraph post, on the line.

W. A. P. says: We have a 40 horse engine fed by two 50 horse tubular boilers, and we burn about eight tuns of coal per week, besides all the fuel made by our wood working establishment (which is enough to run most engines with the same amount of power that we use). The following will illustrate the situation. The engine makes 60 revolutions, and the distance

from the engine to main shaft, A, is about 100 feet. 1. Do we lose power by the long distance the power is transmitted? 2. Does it take more power to drive the intermediate counter, B, by the same belt than it would by belting back with another belt? 3. Could we get more power by moving the engine nearer the work, and carrying the steam through pipes? 4. How much would be lost by condensation if the pipe were well protected? 5. Do you think wire rope could be applied to advantage? Answers: 1. Yes. 2. Yes, if you could drive the countershaft with a smaller belt. 3. Yes, if the pipes were properly protected. 4. Probably not more than 3 per cent, if the connection were straight. 5. We would advise you to correspond with the manufacturers.

M. A. G. asks: What is bay rum? How is it prepared, and what are its uses? Answer: It is an alcoholic spirit distilled from the leaves of a species of laurel termed "bay tree"; extensively used on account of its peculiar and pleasant flavor by apothecaries.

S. A. asks: What is the best metal to use on the bottom of a small steamer in a southern or tropical climate? She is to carry about 30 tuns, and to draw about 4 feet when loaded, and to be used to tow vessels at times. We have a boat of iron; but the bottom has to be painted every 7 or 14 days, as the paint is rubbed off in crossing a sand bar from 2 to 6 times every day. We have thought of using heavy zinc plates below water line and sheet iron above; would they be durable? 2. What would be the best kind of tubes for an upright boiler, iron, brass, or copper, when salt water is used as feed for boiler and wood as fuel? Answers: 1. A light sheathing of wood, covered with copper, would answer very well. The wooden sheathing should be double. 2. Composition tubes would probably be the most durable for your boiler

G. G. asks why lithographic pictures can not be transferred by the Willis' process, described on p. 369, vol. 28. Answer: The Willis process refers to photographic pictures only.

A. M. asks for an explanation of the word "penny," as used to describe the sizes of nails, fourpenny, tenpenny, etc. Answer: It is a corrupt on. "Four pound," "tenpound," etc., is correct, and signifies the weight per 1,000 of the nails.

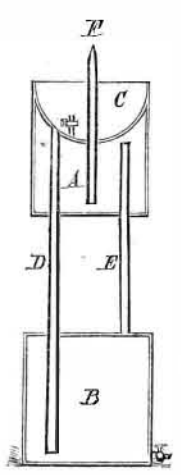
A. R. asks what are the number and dimensions of the tunnels and bridges on the Erie canal. Answer: The bridges are all 11 feet or more from the water The published statements do not give their number.

C. E. H. says: I am building a small locomotive, and I fear my boiler will be too small. The dimensions of the cylinder are 2x1¾ inches; the boiler's length, not including smoke arch, is 20 inches and diameter 8 inches. Inside of fire box is 6x7x7 inches. There is one flue 2¼ inches in diameter. The boiler is of 16 ounces copper. If my boiler is too small, can you suggest any way to remedy the evil of insufficient steam? Answer: You can reduce the diameter of cylinder by bushing it, or shorten the stroke by making the heads fit into the cylinder for some distance. By either method, you can get engines proportioned to the size of the boiler, without changing many of the parts.

G. P. S. says: I am a fireman on one of the dreaded brass engines, and all that I can do will not keep the hot brass from turning blue. I have used acid in almost every form, but with little success. Answer: Fine emery and oil, well rubbed in, will polish most brass work, but we are not sure that they act as specifics in every case.

A correspondent encloses a specimen of a grass growing largely in Mississippi, and asks: 1. Has it any commercial value? 2. The yellow pine tree of this country was never known to bud or sprout out from the stump after the tree was cut down, the stumps dying and decaying very nearly as fast as the log; but there is a spot of land, in this place, of about five acres, that is thickly covered with pine, cedar, oak, and sweet gum trees, where about ten years since there were about a dozen of the pines cut down. The stumps have remained perfectly green, and the sap has continued to rise and fall yearly ever since; yet there are no sprouts or buds springing from them. Answers: 1. The grass might possibly be used in the manufacture of paper. Its commercial value would depend upon the cost of its preparation for the market. 2. If it is really sap that rises and falls in the pine stumps, we cannot account for it. But if the stumps are in a locality where they are kept continually wet, that would account for their preservation.

J. W. asks: Is there any simple and inexpensive method of forcing water through a small tube say three sixteenths inch bore, after the manner of a fountain? For instance, suppose I have a tank 3 inches deep that will hold a quart how can I force the water through the tube 6 inches above the level of the water in the tank? By placing the tank a foot above the top of the tube, I can get pressure enough, but that will not answer; I want to force it through the tube from below and have pressure enough to cause it to flow through a pin hole in the nozzle to the hight of an inch. Answer You can do it by employing compressed air in your reservoir; or you can easily make a "Hero's fountain," as represented in the sketch. The operation of this fountain is as follows: The vessel, A, is first filled with water up to the top of the pipe, E. Then, by pouring water into the basin, C, the air in the vessel, B, is compressed, and the water in the vessel A, will be forced out through the jet, F, to a hight corresponding to the length of the tube, D, less the friction of the water in the discharge pipe.



G. K. asks: 1. Can steel be cast, as cheaply as forged, and of as good quality? 2. Is there a liquid, oil or spirit, that will not freeze, congeal, expand, or contract between 0° and 112° Fahr.? Answers: 1. Yes. 2. There is no liquid known to us that will not expand or contract by heat and cold.

T. C. W. says: Covington, Ky., has as fine waterworks as can be found in the United States. They are on the Holly system, and all the water is pumped out of a well on the bank of the Ohio river. The water is perfectly clear and has a good taste, but it is too hard. People cannot wash with it, even after it has been boiled. What shall we put in the water in order to make it fit for washing? A recipe to soften a barrel full of water at a time will oblige. Answer: Put in just enough milk of lime to take up the excess of carbonic acid, when the insoluble carbonate will be precipitated

B. S. asks: What is the best method of bringing water from a spring about a mile distant? The fountain head is about 15 or 20 feet higher than the reservoir. I would like to know whether wood, iron, cement, or pottery tubing would be the best. Answer: Wooden pipes would be the cheapest. They are well suited for conducting water.

S. H. N. asks if aluminum can be soldered or brazed to itself or any other metal, in such a manner that it will stand a twisting or bending pressure as well as any other metal. What flux must be used? "I can solder it, but not so as to stand the required strain." Answer: A good solder for aluminum has not yet been invented. Gold can be employed, we suppose, but cannot tell what strain it will bear. One great disadvantage attending the use of aluminum in alloys is its tendency to make them brittle.

W. P. asks: Is there any difference in the draft of a tug boat drawing a vessel or not, the tow line to be horizontal? Answer: We have an idea that the draft will be increased, up to a certain speed, when the tug is towing a vessel. Perhaps some of our readers who have made observations on this matter, will favor us with communications.

S. A. asks: Has vacuum any immediate action on the piston of an engine? Answer: Vacuum produced on one side of the piston of an engine, has precisely the same effect as an equal amount of pressure applied to the other side of the piston.

J. G. R. asks: How long does a current of electricity take to cross the ocean on the cable? Answer: One quarter of a minute is the time required to make an intelligible signal on the cable.

F. D. H. asks: 1. How many Grove's cups are required to heat a fine platinum wire to redness? 2. Does it require quantity, or intensity of electricity to accomplish this result? Answers: 1. The electricity from a No. 1 cell of Grove's battery, if passed directly through a piece of platinum wire one quarter of an inch long and one four-thousandth of an inch in diameter, will heat it to redness. 2. Quantity.

J. M. W. asks: If gunpowder be enclosed in a very strong glass tube, leaving no waste space, and then exploded, would (provided the tube did not burst) all the powder explode? If it did, would the resulting gases remain as such, or would they be changed into a solid? In short, what would be the result of the explosion? Answer: We think this experiment has never been tried. If there were no waste space and no air in the tube, no explosion would take place, for although gunpowder contains in itself a quantity of oxygen sufficient for its combustion, the gases thereby produced must have room for expansion in order to produce an explosion. A patent was once taken in England for transporting gunpowder safely by placing it in airtight vessels filled with some neutral gas like carbonic acid, which does not support combustion. But this was a useless device. To ascertain the resultants from the explosion of a given quantity of gunpowder, the latter is commonly suspended within an iron globe several times larger than the charge, and the air is then exhausted. The powder is now fired by electricity, and the chemist ascertains the nature and quantity of the gaseous and solid products. The solids are mainly carbonate and sulphate of potash; the gases, nitrogen and carbonic acid. The sudden heating and expansion of the latter gives the mechanical effect.

J. K. asks (1) how to straighten a circular saw when it gets sprung. 2. Is there a chemical preparation to sharpen worn out files? Answers: 1. No instructions for straightening saws that will assist any one can be given. It is an art only attainable by practice. 2. There are various processes of using acids for sharpening files. I have tested three of them, but my experience is that they are more trouble than benefit. The cheapest way, all things considered, is to sell the worn out files and buy new ones. It will not pay even to get them recut, for filing tempered steel.—J. E. E., of Pa.

J. B. asks: What factory turns out the greatest number of locomotives? Answer: The Baldwin works, Philadelphia. Pa.

C. G. D. asks: 1. Does the law offering the reward for the improved canal boat for use on the Erie canal require the wheels and apparatus to be so constructed that the banks shall not be washed? 2. What does a boat cost, exclusive of engine and neeessary machinery? 3. Is it probable that this season will decide the question? Answers: 1. A device that would injure the banks of the canal would not be likely to take the State reward of $100,000. 2. A common canal boat costs, we believe, about $1,000. 3. This season will probably decide the reward question.

E. McD. asks: Is there such a blessing as a clockwork fanning machine, for keeping a body cool? Answer: Yes, any quantity of them. Makers will do well to advertise them in the SCIENTIFIC AMERICAN.

S. H. asks: If I make the cores of a common sized electro-magnet extend ½ inch beyond the end of the spools in front, will the magnetism be as strong at the poles, when a current excites the cores, as though the cores were not extended? Answer: No, the magnetic force will be a trifle less.

C. H H. asks for a method of covering pulleys with leather. What sort of leather and what sort of glue should be used? Answer: Ordinary belt leather will answer quite well. Secure it to the face of the pulley with small belt rivets. For information as to the process lately described in the SCIENTIFIC AMERICAN, address the patentee.

J. O. E. says: 1. An engine pumpis 6 inches in diameter and 1½ feet stroke. The sucker is a flat one. When all the air is shut off, it makes a loud crack in the pipes, as if it was going to break everything to pieces. 2. What is the best solution to make solder adhere to old copper pipes and to tin? Answers: 1. We cannot answer this, as we do not know what our correspondent means by the air being shut off. 2. For soldering copper pipes, use sal ammoniac or chloride of zinc. For tin, resin or chloride of zinc.

W. E. F. says: We use 8 cords of pine (Jersey) wood daily. Price $3. Nut hard Schuylkill coal can be delivered at $7.25 a ton. Which is cheaper? Answer: The wood is probably the cheaper fuel of the two. If your furnace is so constructed that you can burn wood or coal without change, you might try the experiment. General results sometimes fail to be realized in special cases; and whenever the test of experiment can be readily applied, it should be done.

J. E. W. says: In your reply to V. M. K. regarding the relative power of the same machine with either a 20 inch or 10 inch driving pulley at the same surface speed, did you not lose sight of the extra friction produced in the journals by the necessarily closer hug of the belt to the smaller pulley in order to transmit the same power? Answer: In each case the belt is transmitting the same amount of power, and consequently has the same strain, as its speed is unchanged.

B. says: A cubic foot of anthracite weighs about 95 pounds. Will some one state the number of cubic feet per tun of the various sizes in common use, "nut," "stove," "egg," etc.? By measuring the coal bin, we can then decide whether we have full weight or not. Answer: From the average weights of a great variety of coals, we obtain as a mean result, for broken coal of almost any size: Anthracite, 38 5, and bituminous, 40, cubic feet per tun of 2,000 pounds. Probably many of our readers may have made observations on weight and bulk of different kinds of coal, and if they will send us their figures, specifying kind of coal, size, and weight in pounds per cubic foot, we will tabulate them, and publish them in our columns. If a sufficient number of replies are received, we shall be enabled to form a very interesting and valuable table.

E O. W. asks what is the best substitute for nitro-glycerin for blasting purposes? Answer: Dynamite is a good substitute for, or a rather a safer means of using, nitro-glycerin. If you want a powerful and dangerous explosive, use picrate of potash, either alone or combined with an equal quantity of saltpeter.

M. M. W. asks: How many pounds pressure does the water, (coming from the reservoir in your city) exert at the outlet of a half inch faucet? Answer: This depends upon the amount of water in the reservoir, the part of the city, and the height of faucet from ground. It varies every hour in the day. The fact that Croton water is often able to rise, in pipes, to the fifth floor of a house will enable you to get some idea of the pressure, remembering that a column of water 33 feet 9 inches high exerts a pressure of 15 lbs. to the square inch.

J. C. asks how many revolutions per minute an engine 6x18 inches must run to get the most power? Answer: The speed at which you can run the engine, provided you have sufficient boiler power, depends upon how well the running parts are balanced. If the engine is well designed in this respect, 100 revolutions will not be too fast.

J. P. L. asks how to tin small brass articles. Answer: The process employed in tinning small brass articles, such as pins and hooks, is to boil them in a solution of one part cream of tartar, 2 parts alum, and 2 parts common salt, in 12 parts of water. In this bath is placed a sufficient quantity of granulated tin. They can afterwards be polished with sawdust or bran and tow.

A. P. asks: 1. Is there any cheap substance known which, mixed with water, will make the same evaporate more rapidly, at the ordinary temperature, than the water would of itself? 2. Has any one metal the property of making water evaporate from its surface more rapidly than another? Answer: We should advise you to employ vacuum pans or some other method of diminishing the pressure of the atmosphere, if heat can be used. If not, keep the air in rapid circulation. If the quantity is small, place it under a receiver, and near it place fused chloride of calcium or oil of vitriol. If the quantity is large, try the German method with brine, called graduation.

R. F. says, in reply to R. A. C., who asked for a remedy for bleeding at the nose: I will give one obtained from Dr. Gleason during a course of lectures; it is a vigorous motion of the jaws, as if in the act of mastication. He advised us, in the case of a child, to make a wad of paper, put it into the child's mouth, and instruct it to chew it hard. Of course an adult does not need the paper. It is the motion of the jaws that stops the flow of blood. This remedy is so simple that people sometimes laugh when I recommend it, but I have never known it to fail in a single instance, even in very severe cases.

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

J. W. S.—The specimen is chiefly mica, with a little felspar. It has no value.

J. R.—We think it is corundum.

G. S. K.—Iron pyrites. Their only use is in making oil of vitriol.

C. D. M.—Copper pyrites.

D. Van B.—Tourmaline.

J. McM.—Quartz; of no especial value. Perhaps agates, suitable for mounting as ornaments, may be found in that locality.

J. J. F.—The rock you send contains some pyrites, iron, alumina, silica, etc. An assay will cost $10 or $15.

J. D. A.—Limestone.

DELTA sends us a specimen of chrome red (American vermilion) and asks how it can be prepared. Answer: Liebig and Wöhler state that it is best prepared by fusing together, at a very low red heat, equal parts of potassium and sodium nitrates, gradually pouring into the fused salt small quantities of chemically pure yellow chromate of lead. After cooling, the insoluble chrome red is washed and dried. It is then a magnificently colored, cinnabar-like crystaline powder. Professor Dulong prepares chrome red by precipitating a solution of acetate of lead with a solution of chromate of potassa to which caustic potassa has been added. Various shades from deepest to palest vermilion red are caused by the difference in size of the constituent crystalline particles. According to Dr. Dufios, its formula is $2PbO, CrO_3$.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

On an Auroral Phenomenon. By J. D. B.

On Pressure Gages and Safety Valves. By E. D. S.

On the Natural Rights of Inventors. By T. W.

On Iron Steam Yachts. By J. H.

On Retardation of the Earth's Rotation. By J. H.

On Fresh Water Crayfish. By J. S.

On the Patent Discussion. By E. A. B., by M. J. and by M. J. D.

On Embryology. By J. L.

On Mechanical Elements. By F. M. McM.

On the Roper Engine. By H. S. W.

Also enquiries from the following:

T. R. J.—A. O.—J. S. T.—C. R.—B. L.—R. L. S.—A. M.—J. P. D.

Correspondents who write to ask the address of certain manufacturers, or where specified articles are to be had, also those having goods for sale, or who want to find partners, should send with their communications an amount sufficient to cover the cost of publication under the head of "Business and Personal," which is specially devoted to such enquiries.

[OFFICIAL.]

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June 24, 1873,

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APPLICATIONS FOR EXTENSIONS.

Applications have been duly filed, and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter mentioned:

25,565.—ROLLING MILLS.—J. & G. Fritz. September 10.
25,569.—BEDSTEAD SLATS.—T. Howe. September 10.
25,572.—MOLDING WATER TRAP.—J. A. Lowe. Sep. 10.
25,586.—BURGLAR ALARM.—A. Q. Ross. September 10.
25,588.—STEAM PUNCHING MACHINE.—J. Sparrow. Sep. 10.
25,640.—STEAM BOILER.—J. Harrison, Jr. September 10.
25,683.—HYDRANT.—C. L. Stacy. September 17.
25,796.—JACQUARD MACHINE.—A. Babbett. October 1.
27,539.—GUN BARREL.—J. H. Burton. September 10.

EXTENSIONS GRANTED.

24,531.—GAS RETORT.—W. Beaumont.
24,563.—COUCH FOR RAILROAD CAR.—C. Knight.
24,588.—HAY SPREADER.—J. C. Stoddard.

DESIGNS PATENTED.

6,711 & 6,712.—CENTER PIECES.—B. Dreyer, Phila., Pa.
6,713 to 6,720.—CARPETS.—A. Heald, Philadelphia, Pa.
6,721.—JEWELRY BOX.—E. C. Moore, Yonkers, N. Y.
6,722.—FURNITURE.—T. W. Moore *et al*, New York city.
6,723.—LOCK FRONT.—E. J. Steele, New Haven, Conn.
6,724.—DRAWER PULL.—L. Widmayer, New Britain, Conn.
6,725.—BARBER'S FOOTSTOOL.—F. J. Coates, Cincinnati, O.
6,726 to 6,733.—STOVE PLATES.—S. H. Ransom, Albany, N. Y.
6,734.—HANDLE SOCKET.—J. S. Ray, East Haddam, Conn.

TRADE MARKS REGISTERED.

1,329.—MEDICINE.—F. W. Barnum & Co., Danbury, Conn.
1,330.—VARNISH BRUSH.—E. Clinton & Co., Phila., Pa.
1,331 & 1,332.—PLUG TOBACCOS.—Liggett *et al*, St. Louis, Mo.
1,333.—WINES AND LIQUORS.—Morrow & Co., N. Y. city.
1,334.—COSMETIC.—W. T. Wenzell, San Francisco, Cal.
1,335.—STOCKING SUSPENDER.—C. A. Shaw, Boston, Mass.
1,336.—PAINT.—H. P. Webb, New York city.
1,337 & 1,338.—OILS.—Devoe Manufacturing Co., N. Y. city.
1,339.—FOUNTAIN PUMP.—J. A. Whitman, Cranston, R. I.

SCHEDULE OF PATENT FEES:

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